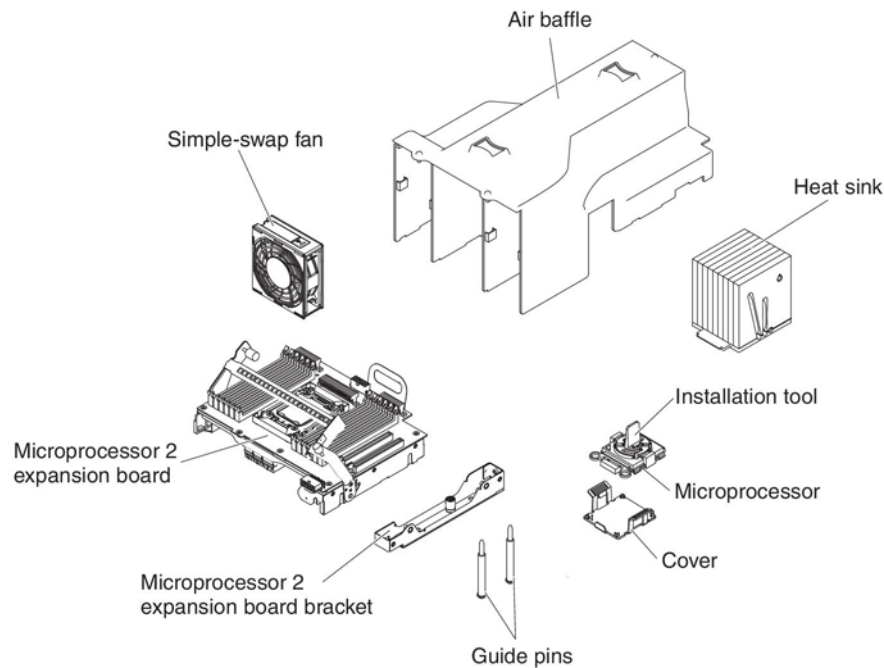# IBM

Second Microprocessor Upgrade Kit

See the server documentation for detailed instructions for installing this option in the server.

The option kit contains the following items:
- One microprocessor installation tool assembly, which consists of the following components:
  - Installation tool
  - Microprocessor
  - Microprocessor cover
- One heat sink
- One simple-swap fan
- One air baffle
- One second microprocessor expansion board
- One second microprocessor expansion board bracket
- Two guide pins
- IBM warranty information document
- Important notices document
- This document

Use this microprocessor upgrade kit to add an additional microprocessor to the server. The installation of a microprocessor must be performed by a trained technician.

Note: The microprocessor installation tool assembly, shown in the illustration, consists of the installation tool, the microprocessor, and a microprocessor cover. The tool is designed to protect the microprocessor from damage during installation. Do not remove the microprocessor cover until you are instructed to do so. (Your installation tool might be slightly different from the one shown.)

Before you install the microprocessor, make sure that the latest level of code or firmware is installed in the server. To obtain the latest code or firmware and update instructions, go to http://www.ibm.com/systems/support/.

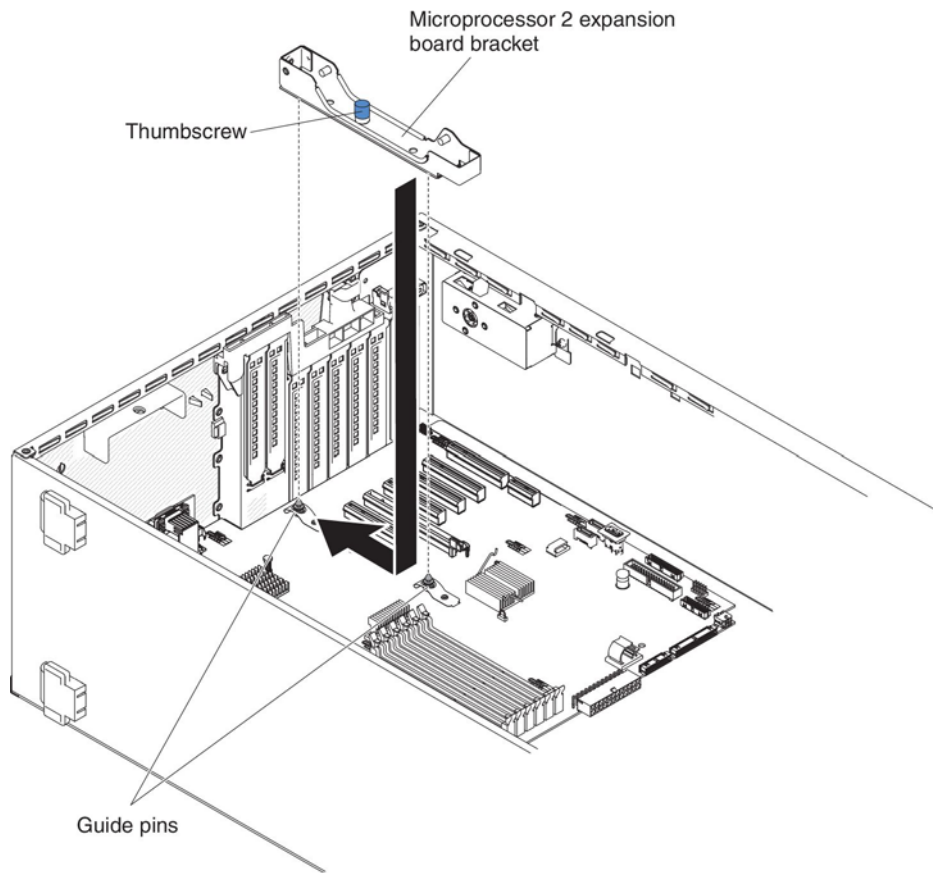Store this document with your other product documentation for future reference.

The product-specific documentation is provided on the IBM *Documentation* CD that comes with your server. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/systems/support/ and follow the instructions.

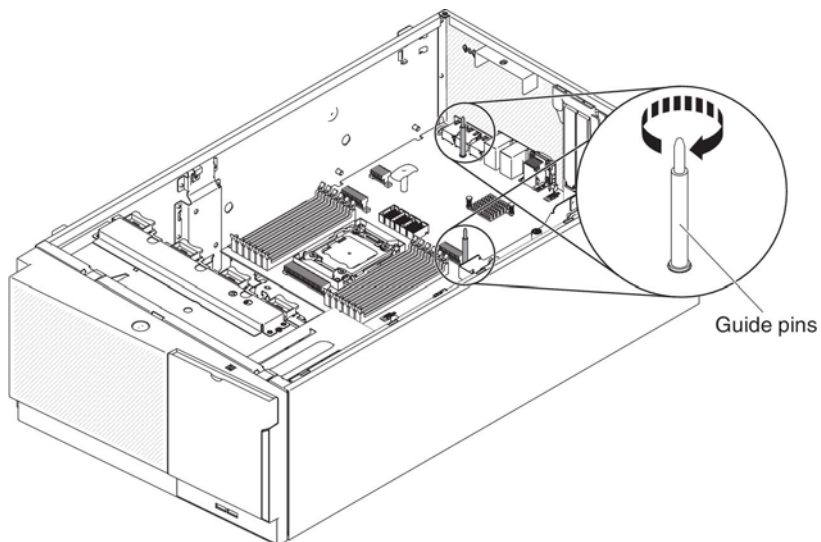## Installing the microprocessor 2 expansion board

To install the microprocessor 2 expansion board, complete the following steps:

1. See the server *Problem Determination and Service Guide* for installation guidelines and additional safety information.
2. If the server is operating, turn off the server and peripheral devices and disconnect the power cords and all external cables.
3. Carefully turn the server on its side so that it is lying flat, with the cover facing up.

   Attention: Do not allow the server to fall over.
4. Unlock and remove the left-side cover, using the instructions in your server documentation.
5. Remove the fan cage assembly, using the instructions in your server documentation.
6. Touch the static-protective package that contains the microprocessor 2 expansion board to any unpainted metal surface on the server; then, remove the microprocessor 2 expansion board from the package.
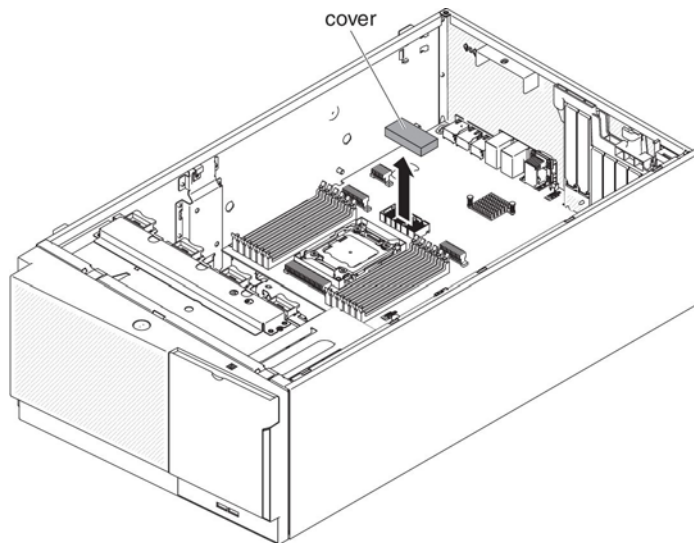7. Install the microprocessor 2 expansion board side bracket.

a. Align the side bracket with the holes on the chassis and install the side bracket on the system board.

Microprocessor 2 expansion board bracket

Thumbscrew

Guide pins

b. Slide the side bracket toward the rear of the server.

c. Fasten the thumbscrew on the side bracket.

8. Install the two guide pins on the system board.

Guide pins

9. Remove the cover on the microprocessor 2 expansion board connector from the system board.

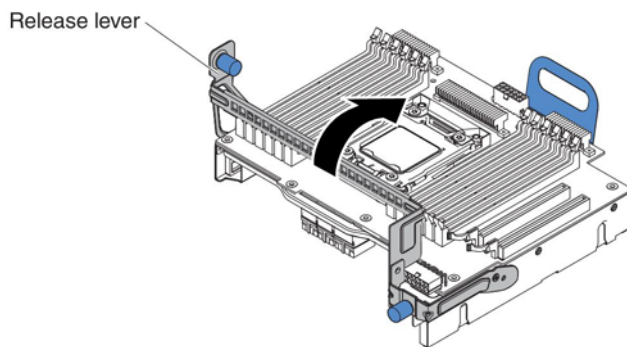10. Make sure the microprocessor 2 expansion board release lever is in the open position.

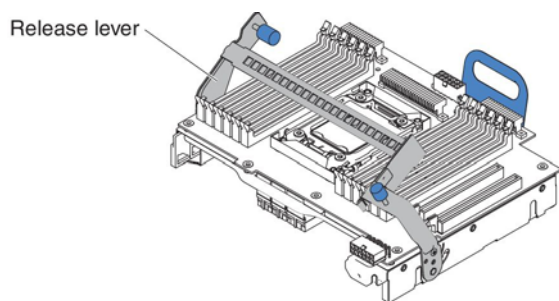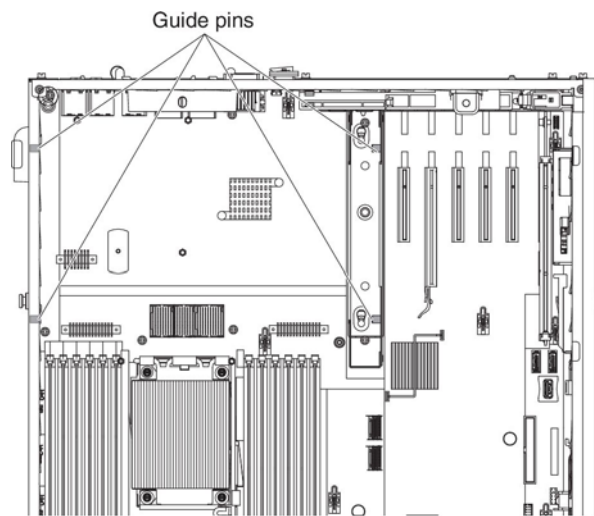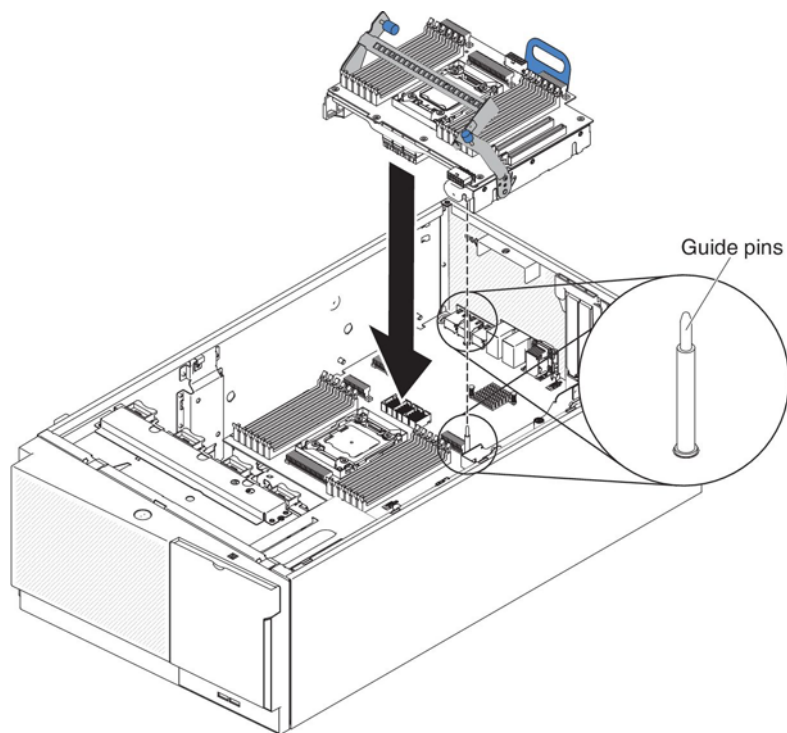*Figure 1. Release lever in original position.*
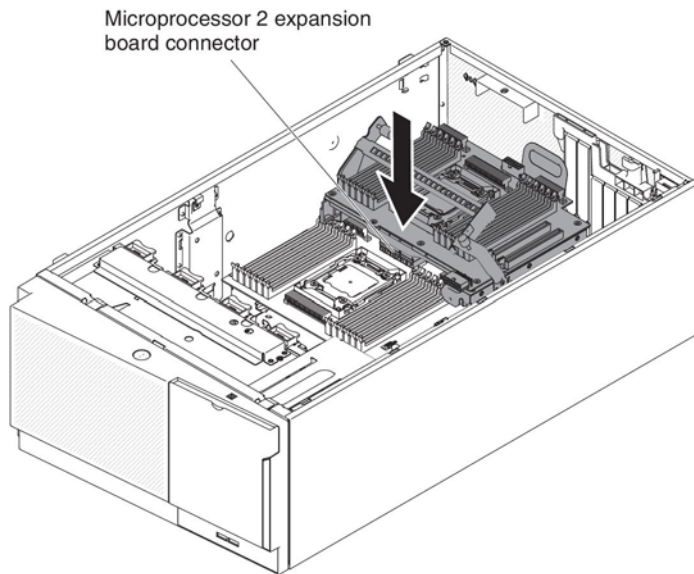

Figure 2. Release lever in open position.

11. Align the microprocessor 2 expansion board to the guide pins on the bottom of the chassis and the side bracket.

12. Align the holes on the microprocessor 2 expansion board to the guide pins on the system board. Install the microprocessor 2 expansion board on the system board.
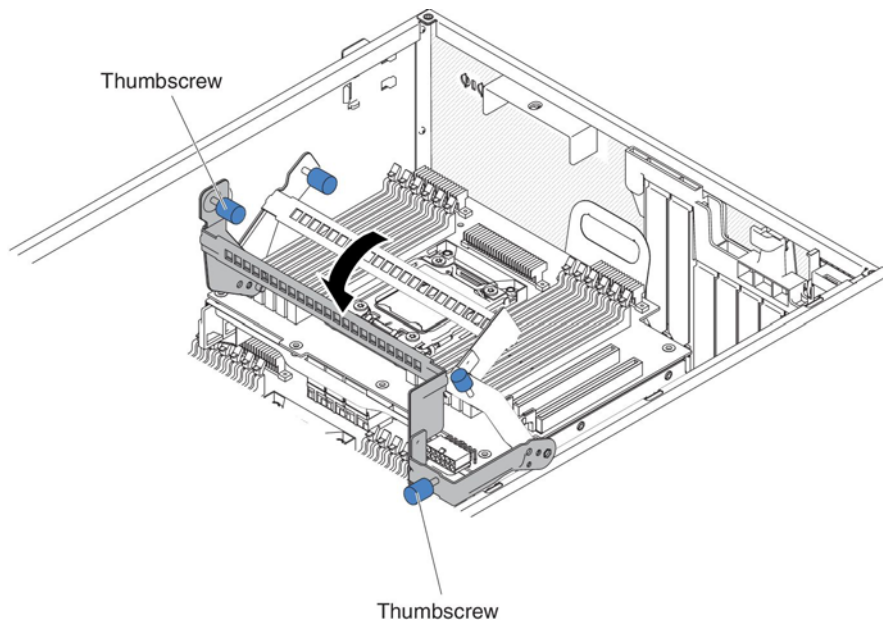
13. Press the microprocessor 2 expansion board firmly and horizontally to the system board.
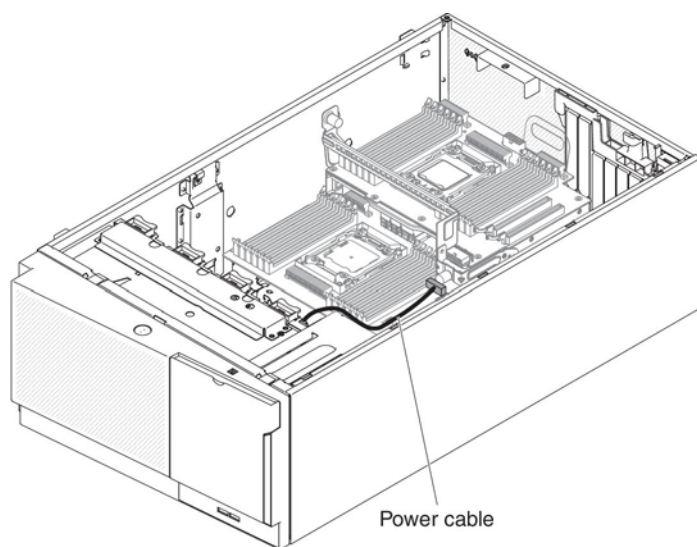
Microprocessor 2 expansion
board connector

Notes:

a. Static electricity that is released to internal server components when the server is powered-on might cause the server to halt, which might result in the loss of data. To avoid this potential problem, always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server with the power on.

b. Make sure that none of the server cables are caught under the microprocessor 2 expansion board.

14. Rotate the release lever toward the front of the server to secure the microprocessor 2 expansion board in place.

Thumbscrew

Thumbscrew

Note: Press the microprocessor 2 expansion board connector to make sure the connector is seated securely on the system board.

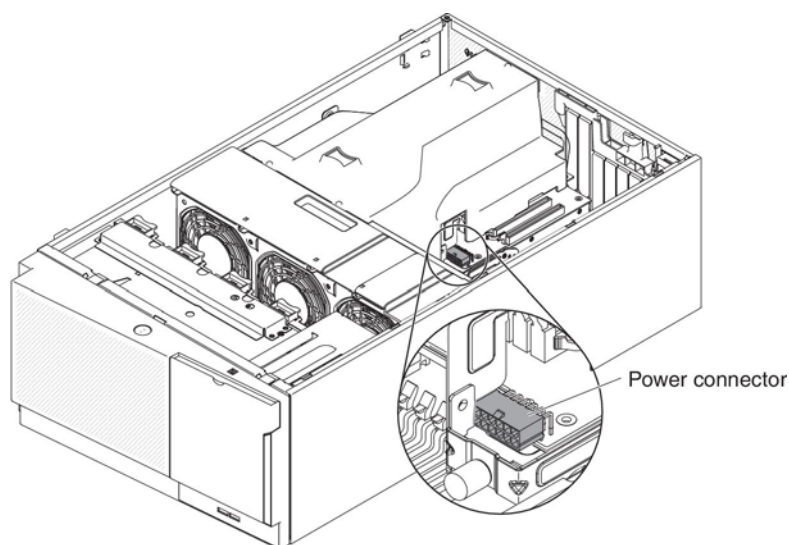15. Fasten the two thumbscrews on the release lever.

16. Route the power cable to the microprocessor 2 expansion board power connector from the power paddle card.

Power cable

17. Install the microprocessor on the microprocessor 2 expansion board (see "Installing the microprocessor on the microprocessor 2 expansion board" on page 8).
18. Install the heat sink, using the instructions in your server documentation.
19. Replace the fan cage assembly, using the instructions in your server documentation.
20. Install fan 2, using the instructions in your server documentation (remove the fan filler if it has not been removed).
21. Install the air baffle, using the instructions in your server documentation.

    Note: Do not pinch on the power cable.
22. Connect the power cable to the microprocessor 2 expansion board power connector from the power paddle card.
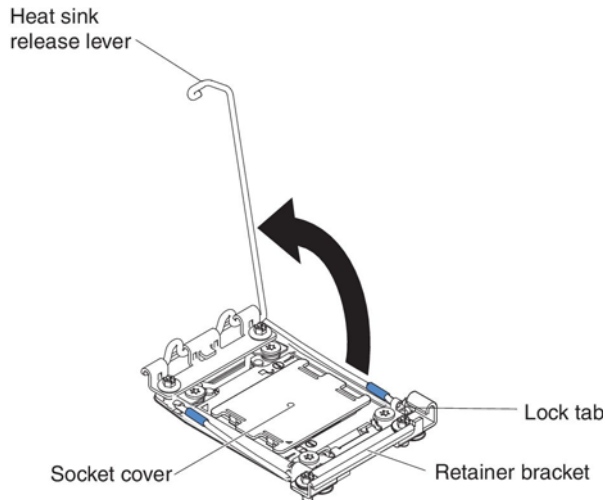
Power connector

23. Replace the left-side cover, using the instructions in your server documentation.
24. Reconnect the power cords and any cables that you removed.
25. Turn on the peripheral devices and the server.

Installing the microprocessor on the microprocessor 2 expansion board
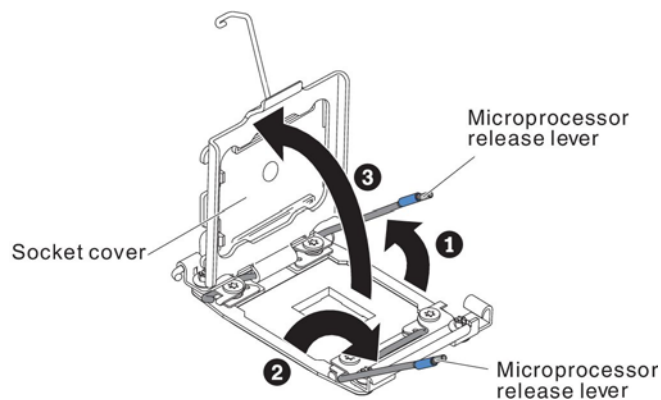
To install the microprocessor on the microprocessor 2 expansion board, complete the following steps:

1. Locate microprocessor socket 2 on the microprocessor 2 expansion board.
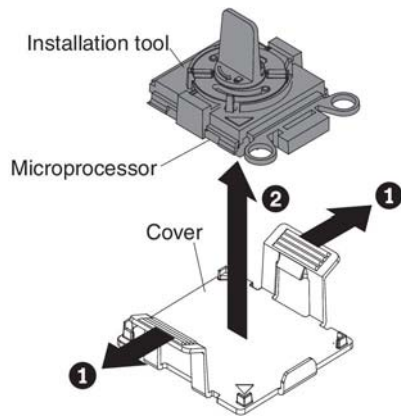2. Rotate the heat sink release lever to the open position.

3. Open the microprocessor socket release levers and retainer:
   a. Identify which release lever is labeled as the first release lever to open and open it.
   b. Open the second release lever on the microprocessor socket.
   c. Open the microprocessor retainer.
      Attention: Do not touch the connectors on the microprocessor and the microprocessor socket.
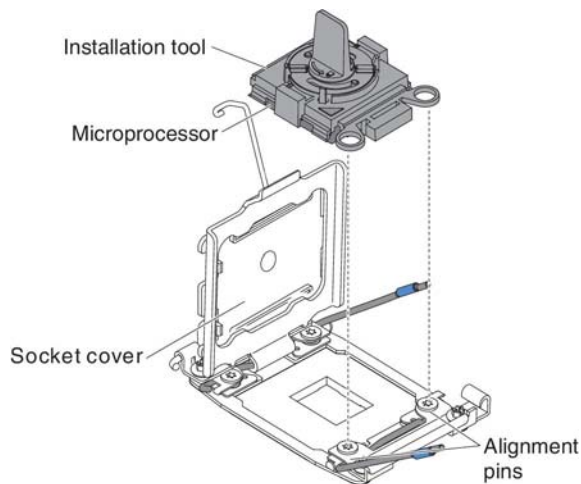
4. Install the microprocessor on the microprocessor socket:

a. Touch the static-protective package that contains the new microprocessor to any *unpainted* on the chassis or any *unpainted* metal surface on any other grounded rack component; then, carefully remove the microprocessor from the package.

b. Release the sides of the cover and remove the cover from the installation tool. The microprocessor is preinstalled on the installation tool.
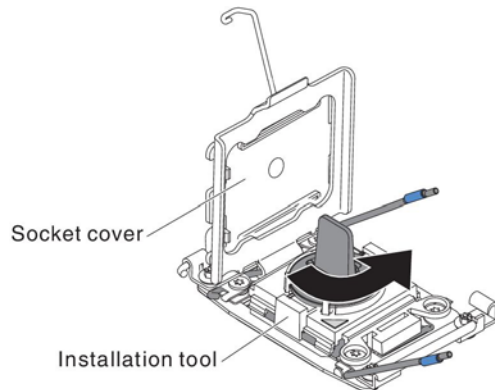

Note: Do not touch the microprocessor contacts. Contaminants on the microprocessor contacts, such as oil from your skin, can cause connection failures between the contacts and the socket.

c. Align the installation tool with the microprocessor socket. The installation tool rests flush on the socket only if properly aligned.
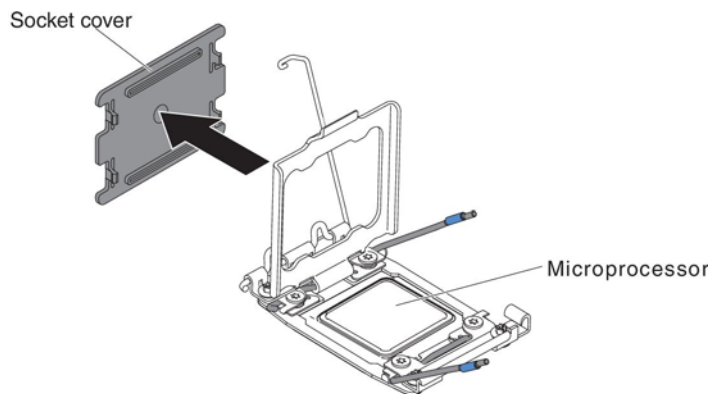
d. Twist the handle on the microprocessor tool counterclockwise to insert the microprocessor into the socket. The microprocessor is keyed to ensure that the microprocessor is installed correctly. The microprocessor rests flush on the socket only if properly installed.
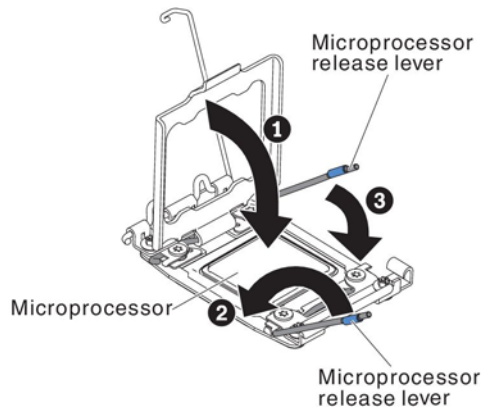

Attention:

- Do not press the microprocessor into the socket.
- Make sure that the microprocessor is oriented and aligned correctly in the socket before you try to close the microprocessor retainer.
- Do not touch the thermal material on the bottom of the heat sink or on top of the microprocessor. Touching the thermal material will contaminate it. If the thermal material on the microprocessor or heat sink becomes contaminated, contact your service technician.

5. Remove the microprocessor socket dust cover, tape, or label from the surface of the microprocessor socket, if one is present. Store the socket cover in a safe place.

Attention: When you handle static-sensitive devices, take precautions to avoid damage from static electricity. For details about handling these devices, see the server *Problem Determination and Service Guide* for installation guidelines and additional safety information.

6. Close the microprocessor socket release levers and retainer:
   a. Close the microprocessor retainer on the microprocessor socket.
   b. Identify which release lever is labeled as the first release lever to close and close it.
   c. Close the second release lever on the microprocessor socket.

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