Check Point 21000 Appliances
Installing and Removing Memory

**Important** - We recommend that only experienced personnel install or remove hardware components. Use only Check Point's recommend DIMMs, and never mix DIMMs from different manufacturers. Installing or removing components incorrectly can permanently damage the appliance.

If you find a DIMM that is defective, we recommend that you replace all the DIMMs in the appliance with Check Point recommended memory.

Preparing the Appliance

Before you start to install or remove memory DIMMs, make sure that:

- You can connect to the WebUI or CLI to shut down the appliance.
- The appliance is in a clean environment and on a level surface.
- You can physically access and open the cover of the appliance.
- You have the Check Point memory DIMM upgrade kit.
Important - To protect the appliance and the memory modules from electrostatic discharge damage, make sure that you are properly grounded before you touch any of the electronic components. Read the Health and Safety Information in the Check Point 21000 Appliances Getting Started Guide before you start to prepare the appliance.

We recommend that you use the grounding wrist strap that is included in the upgrade kit. The grounding plug on the rear of the appliance provides a chassis grounding point.

Upgrade Kit Contents

- Installation guide - Check Point 21000 Installing and Removing Memory
- Memory DIMMs
- Screw driver
- Upgrade kit sticker
- ESD grounding strap (anti-static)

To prepare the appliance:

1. Press the power switch, and release it immediately.
   The appliance shuts down.
2. Remove the power cords from the appliance.
3. Put on the ESD strap and attach the other end to a grounding point.
4. Loosen the two retaining screws for the bottom tray.
   Only use the screwdriver that is included in the upgrade kit on the retaining screws.
5. Pull hard on the extraction handles for the bottom tray and remove the tray from the appliance.

Note - The previous diagrams show the 21400 appliance.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Slot for optional Security Acceleration Module tray</td>
</tr>
<tr>
<td>2</td>
<td>Bottom tray with the system board</td>
</tr>
<tr>
<td>3</td>
<td>Two retaining screws and extraction handles for the bottom tray</td>
</tr>
<tr>
<td>4</td>
<td>Grounding point for ESD strap</td>
</tr>
</tbody>
</table>
## 21400 - Memory DIMM Configuration

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cooling fans</td>
</tr>
<tr>
<td>2</td>
<td>Memory sockets with DIMMs installed</td>
</tr>
<tr>
<td>3</td>
<td>LOM card</td>
</tr>
<tr>
<td>4</td>
<td>CPU 0</td>
</tr>
<tr>
<td>5</td>
<td>CPU 1</td>
</tr>
</tbody>
</table>
The 21400 appliance has a default 12GB memory configuration with six 2GB memory DIMMs.

To upgrade to 24GB, add six new 2GB DIMMs.

### Default DIMM Configuration

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Memory sockets with DIMMs installed</td>
</tr>
<tr>
<td>2</td>
<td>Expansion memory sockets</td>
</tr>
</tbody>
</table>
### 21600, 21700 and 21800 - Memory DIMM Configuration

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
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<td>1</td>
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</tr>
</tbody>
</table>
The 21600, 21700 and 21800 appliances have a default 16GB memory configuration with eight 2GB memory DIMMs.

- To upgrade to 32GB, remove all DIMMs and replace with eight 4GB DIMMs
- To upgrade to 64GB, remove all DIMMs and replace with eight 8GB DIMMs

Removing Memory DIMMs

**Important** - The appliance contains sharp metal parts such as the heat sink fin and bracket that can cause injury or damage the DIMMs.

Make sure that you prepare the appliance before you remove memory DIMMs ("Preparing the Appliance" on page 1).

To remove memory DIMMs from the appliance:

1. Press the two retaining clips outward.

![Image of retaining clips being pressed outward]

2. Carefully pull the DIMM up.

**Important** - Only touch the rear corners of the DIMM. Pressing on the heat sink or other DIMM components can damage the hardware.
If necessary, pull one end of the DIMM, then the other, to gradually release it from the contact pins.

3. Do steps 1 and 2 again for the other memory DIMMs.

Installing Memory DIMMs

To install memory DIMMs in the appliance:

1. Find the DIMM memory slots on the system board.
2. Press on the two white retaining clips outward.

3. Align the new DIMM above the socket.
Only touch the top corners of the DIMM. Pressing on the heat sink or other DIMM components can damage the hardware.

The top of the DIMM is smooth. The bottom edge has two different-length sets of contacts, which connect to the slots on the socket.

**WARNING!** - There are sharp metal parts in the appliance, like the heat sink fin and bracket, that can cause injury and damage the hardware.

4. Press the new DIMM into the socket until it clicks into position.

The retaining clips move into the lock position as you press the DIMM into position.

5. Do steps 1 - 4 again for the other memory DIMMs.
6. Insert the bottom tray in the appliance.
   a) Move the bottom tray into the appliance until it clicks into position.
   b) Tighten the two retaining screws for the bottom tray.

7. Make sure the memory DIMMs are installed correctly.
   a) Connect the power cords to the appliance.
   b) Turn on the appliance using the power switch at the rear of the appliance.
   c) Make sure that the LCD screen shows the appliance model.
   d) Confirm the appliance RAM configuration, from the CLI run `cat/proc/meminfo`. 
Attaching the Upgrade Kit Sticker

After you install the new upgrade component, attach the upgrade kit sticker on the appliance.

⚠️ Important - Failure to attach the upgrade kit sticker correctly will void the appliance warranty.

To attach the new upgrade kit sticker:

1. Make sure that the appliance operates correctly.
2. Attach the new upgrade kit sticker to the side of the appliance.
3. Clearly mark this information on the sticker:
   - Upgraded component on the appliance
   - Year and month of upgrade

Sample Upgrade Kit Sticker

![Sample Upgrade Kit Sticker](image)