3000 and 5000 Appliances Installing and Removing Memory

This document applies to these appliances:

- 3000 Appliances
- 5000 Appliances

⚠️ Important - We recommend that only experienced personnel install or remove hardware components. Installing or removing components incorrectly can permanently damage the appliance.

Preparing the Appliance

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

- The appliance is shut down and you unplug the power cables.
- 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 kit.

⚠️ Important

To protect the appliance and the memory modules from electrostatic discharge damage, make sure that you are properly grounded before you touch these components. For more information, see the Health and Safety Information in:

3000 Appliances Getting Started Guide  
http://supportcontent.checkpoint.com/documentation_download?ID=45742

5000 Appliances Getting Started Guide  
http://supportcontent.checkpoint.com/documentation_download?ID=45741
Memory Kit Contents

- Installation guide - 3000 and 5000 Appliances Installing and Removing Memory
- Memory DIMMs
- ESD grounding strap (anti-static)

To prepare the appliance:

1. Shut down the appliance from the WebUI, CLI, or by pressing and releasing the power switch quickly. Note that pressing and holding the power switch is not recommended as it results in a forced and immediate shut down.
2. Remove the power cords from the appliance.
3. Put on the ESD strap and attach the other end:
   - On 3100, 3200, 5100, 5200, 5400, 5600, and 5800 appliances - To any unpainted point on the appliance chassis.
   - On 5900 appliances - To the ESD grounding plug on the rear panel of the appliance.
4. Loosen the appliance cover screws.
5. Remove the top cover from the appliance.

To remove the top cover:

1. Unscrew the cover screws (number 2 below).
2. Pull the top cover back in the direction of the arrows.
3. Pull the cover up to remove it completely.

3000 Appliances
5000 Appliances

The 5900 appliance is shown above. Removal of the top cover is the same for all 5000 appliances.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Appliance cover</td>
</tr>
<tr>
<td>2</td>
<td>Appliance cover screws</td>
</tr>
<tr>
<td>3</td>
<td>ESD grounding plug (only available in 5900 appliances)</td>
</tr>
</tbody>
</table>
**3100 and 3200 Appliance DIMM Configuration**

The memory configuration for the 3100 and 3200 appliances is one 8 GB DIMM in the left slot (item 3 in the figure) when the front panel ports are at the bottom of the appliance.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front panel ports</td>
</tr>
<tr>
<td>2</td>
<td>Hard disk drive</td>
</tr>
<tr>
<td>3</td>
<td>Memory socket with one 8GB DIMM slot</td>
</tr>
<tr>
<td>4</td>
<td>CPU</td>
</tr>
</tbody>
</table>
To replace a DIMM:

1. Remove the old DIMM from the appliance.
2. Insert the new one.

To remove a memory DIMM from the appliance:

1. Find the DIMM memory socket on the system board.
   The basic memory configuration of the appliance ships with one DIMM installed.
2. Using your index fingers, press on the white retaining clips outward.
3. Remove the DIMM from the memory socket.
To insert memory DIMMs in the appliance:

1. Find the DIMM memory socket on the system board.
2. Press on the two white retaining clips outward.
3. Align the DIMM to the memory slot.
   
   **Note** - 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. Only touch the top of the DIMM. Pressing on other DIMM components can damage the hardware.

4. Firmly press down on the DIMM and lock it into the socket.

   ![Image of a hand inserting a DIMM into a socket]

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

   **Important** - Make sure that there are no leftover parts inside the appliance.

5. Make sure the DIMM is installed correctly.
   
   a) Replace the appliance cover without using the appliance cover screws.
   b) Connect the power cord to the appliance.
   c) Turn on the appliance.
   d) Make sure that the appliance starts correctly.

6. Use the appliance cover screws to secure the cover on the appliance.
5000 Appliance Configuration

The memory sockets in the 5100 and 5200 appliances are colored blue and in 5400, 5600, and 5800 are colored black and blue.

In the appliance DIMM configuration diagrams that follow note that:

- The view shown is always from the top
- The front panel of the appliance is always at the bottom of the diagram

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Memory socket with DIMM installed" /></td>
<td>Memory socket with DIMM installed</td>
</tr>
<tr>
<td><img src="image" alt="Memory socket without DIMM installed" /></td>
<td>Memory socket without DIMM installed</td>
</tr>
</tbody>
</table>
5100 and 5200 Appliance DIMM Configuration

The 5100 and 5200 appliances have a default memory configuration of one 8 GB, with one DIMM in memory socket number 1.

You can upgrade to 16 GB with the upgrade procedure below.

Default Configuration

![Diagram of Default Configuration](image)

Top View

(front panel of the 5100 and 5200 appliance is at the bottom of the diagram)
<table>
<thead>
<tr>
<th>To upgrade to</th>
<th>Use DIMMs</th>
<th>Procedure</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 GB</td>
<td>2 x 8 GB</td>
<td>Install one additional 8 GB DIMM</td>
<td>In blue memory socket number 2</td>
</tr>
</tbody>
</table>

**Upgraded Configuration**

Top View
(front panel of the appliance is at the bottom of the diagram)
5400, 5600, and 5800 Appliances DIMM Configuration

The 5400, 5600, and 5800 appliances have a default memory configuration of 8 GB with one DIMM in memory socket number 2. You can upgrade to 16 GB or 32 GB. Use the applicable upgrade procedure below.

**Default Configuration**

Top View
(front panel of the appliance is at the bottom of the diagram)
<table>
<thead>
<tr>
<th>To upgrade to</th>
<th>Use DIMMs</th>
<th>Procedure</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 GB</td>
<td>2 x 8 GB</td>
<td>Install one additional 8 GB DIMM</td>
<td>In blue memory socket number 4</td>
</tr>
</tbody>
</table>

**Upgraded Configuration**

Top View
(front panel of the appliance is at the bottom of the diagram)
<table>
<thead>
<tr>
<th>To upgrade to</th>
<th>Use DIMMs</th>
<th>Procedure</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 GB</td>
<td>4 x 8 GB</td>
<td>Install four 8 GB DIMMs</td>
<td>In all slots</td>
</tr>
</tbody>
</table>

**Upgraded Configuration**

```
Top View
(front panel of the appliance is at the bottom of the diagram)
```
5900 Appliance DIMM Configuration

The 5900 appliances has a default memory configuration of 8 GB with one DIMM in memory socket number 1. You can upgrade to 16 GB or 32 GB.

Default Configuration

Top View
(front panel of the appliance is at the bottom of the diagram)
<table>
<thead>
<tr>
<th>To upgrade to</th>
<th>Use DIMMs</th>
<th>Procedure</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 GB</td>
<td>2 x 8 GB</td>
<td>Install one additional 8 GB DIMM</td>
<td>In blue memory socket number 3</td>
</tr>
</tbody>
</table>

**Upgraded Configuration**

Top View

(front panel of the appliance is at the bottom of the diagram)
<table>
<thead>
<tr>
<th>To upgrade to</th>
<th>Use DIMMs</th>
<th>Procedure</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 GB</td>
<td>4 x 8 GB</td>
<td>Install three additional 8 GB DIMMs</td>
<td>In blue memory sockets numbers 3, 6, and 8</td>
</tr>
</tbody>
</table>

**Upgraded Configuration**

Top View
(front panel of the appliance is at the bottom of the diagram)
Removing 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 DIMMs. For more information, see Preparing the Appliance (on page 1).

To remove DIMMs from the appliance:

1. Remove the power cords from the appliance.
2. Put on the ESD strap and attach the other end to a grounding point.
3. Press the two retaining clips outward.

4. 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.
Important - Make sure that there are no leftover parts inside the appliance.

5. Make sure the DIMMs are installed correctly.
   a) Replace the appliance cover without tightening the appliance cover screws.
   b) Connect the power cords to the appliance.

   The appliance turns on and the LCD screen shows the appliance model number when the OS is up (in 5800 appliances). This may take a few minutes.

6. Tighten the appliance cover screws to secure the cover on the appliance.

Installing DIMMs

You can add more DIMMs to the memory sockets.

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

To install DIMMs in the appliance:
1. Find the DIMM slots on the system board.
2. Press on the two white retaining clips outward.
3. Align the new DIMM above the socket.

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.

**Important:**

- Only touch the top corners of the DIMM. Pressing on the heat sink or other DIMM components can damage the hardware.
- DIMMs are not symmetrical. Use the hole in the DIMM to guide the DIMM into the raised tooth in the slot.

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 DIMMs.

6. Make sure that there are no leftover parts in the appliance.

7. Make sure the DIMM(s) are installed correctly.

8. Replace the appliance cover without using the appliance cover screws.

9. Connect the power cords to the appliance.

   The appliance turns on and the LCD screen shows the appliance model number when the OS is up (in 5800 appliances). This may take a few minutes.

10. Use the appliance cover screws to secure the cover on the appliance.

Verifying the Memory Configuration

To make sure that the memory configuration is correct:

1. In the CLI, enter Expert mode.

2. Run: `# free -g -o`

Example for a 5800 appliance with 16 GB of memory:

```
[Expert@gw-419463:0]# free -g -o

```

<table>
<thead>
<tr>
<th>Mem:</th>
<th>total</th>
<th>used</th>
<th>free</th>
<th>shared</th>
<th>buffers</th>
<th>cached</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mem:</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Swap:</td>
<td>16</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note - The amount of installed memory is shown in the row named Mem under the column named total.

For reasons related to available memory address space, the total installed memory shown in the free utility is similar but not identical to the actual installed memory.

In the above example, 16 GB of RAM are installed on the system. This corresponds to the 15 GB of total memory shown in the free utility.