INSTALLING AND REMOVING MEMORY IN SANDBLAST TE2000XN-28VM/56VM APPLIANCES
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Revision History

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<tr>
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SandBlast TE2000XN Appliances Installing and Removing Memory

This document applies to TE2000XN-28VM and TE2000XN-56VM 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 remove and then install 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, make sure that you are properly grounded before you touch these components.

- For more information, read the Health and Safety Information in the SandBlast TE2000XN Appliances Getting Started Guide.

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

Memory Kit Contents

- QR code document - Installing and Removing Memory in Check Point TE2000XN Appliances
- Memory DIMMs
- ESD grounding strap (anti-static)

To prepare the appliance:

1. Shut down the appliance from the Gaia Portal, 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 to a grounding point.

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.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<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 point</td>
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</tbody>
</table>
# About DIMM Sockets

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Appliance front panel</td>
</tr>
<tr>
<td>2</td>
<td>Appliance rear panel</td>
</tr>
<tr>
<td>3</td>
<td>DIMM sockets</td>
</tr>
</tbody>
</table>
The memory sockets are colored blue. In the appliance configuration diagrams 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>
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<tbody>
<tr>
<td></td>
<td>Memory socket with DIMM installed</td>
</tr>
<tr>
<td></td>
<td>Memory socket without DIMM installed</td>
</tr>
</tbody>
</table>

**DIMM Configuration**

The TE2000XN appliance has a memory configuration of 128GB: 8 x 16GB.

If necessary, you can remove a faulty DIMM and replace it with a new one. Make sure to replace the new DIMM in the same DIMM slot used by the faulty DIMM. DIMMs can only be placed in slots as shown in 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 5.

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.

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

You can replace a faulty DIMM with a new one in the same slot.

**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.

10. Use the appliance cover screws to secure the cover on the appliance.
Verifying the Memory Configuration

To verify memory configuration using the free command:

1. In the CLI, enter Expert mode.
2. Run: `# free --hwt`

Sample output:

```
[Expert@TE2000XN:0]# free --hwt
           total       used       free      shared    buffers   cache available
Mem:       1256      176      1080      133M       1.5M      2.5G    106G
Swap:       636       88       648
Total:      1896      176      1896
```

**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.

To verify memory configuration using Gaia Clish:

1. In Gaia Clish, run: `show asset memory`

Sample output:

```
Total Memory: 131072 MB
Memory Slot 1 Size: 16384 MB
Memory Slot 2 Size: 16384 MB
Memory Slot 3 Size: 16384 MB
Memory Slot 4 Size: 16384 MB
Memory Slot 5 Size: 16384 MB
Memory Slot 6 Size: 16384 MB
Memory Slot 7 Size: 16384 MB
Memory Slot 8 Size: 16384 MB
```

2. Make sure the total memory reflects the installed memory. The slot numbers reflect the number of DIMMs installed.