Supported Memory Modules

The types of memory supported on a HP Z420 are:

• 2 GB, 4 GB and 8 GB PC3-12800E 1600MHz DDR3 Unbuffered ECC DIMMs
• 1.35V and 1.5V DIMMs are supported, but the system will operate the DIMMs at 1.5V only.
• 2 Gb and 4 Gb based DIMMs are supported.

See the Memory Technology White Paper for additional technical information.

Platform Capabilities

Maximum capacity: 64 GB
The HP Z420 has a total of 8 memory sockets.

• 4 channels with 2 sockets per channel

Speed

• 1600MHz, 1333MHz and 1066MHz DIMMs are supported in this platform

• Memory will operate at the speed of the slowest rated installed processor or DIMM

Dynamic power saving is enabled.

Memory Features

ECC is supported on all of our supported DIMMs.

• Single-bit errors are automatically corrected.
• Multi-bit errors are detected and will cause the system to immediately reboot and halt with an F1 prompt error message.

Non-ECC memory does not detect or correct single-bit or multi-bit errors which can cause instability, or corruption of data, in the platform.

See the Memory Technology White Paper for additional technical information.

Optimize Performance

Generally, maximum memory performance is achieved by evenly distributing total desired memory capacity across all operational channels. Proper individual DIMM capacity selection is essential to maximizing performance. Refer to the Optimal Memory Configuration table on page 2 (figure 1) for more information.
# Optimal Memory Configurations for HP Z420

(Note: The following table does not include all available factory installed configurations)

<table>
<thead>
<tr>
<th>Total Capacity</th>
<th>DIMM1</th>
<th>DIMM2</th>
<th>DIMM3</th>
<th>DIMM4</th>
<th>DIMM5</th>
<th>DIMM6</th>
<th>DIMM7</th>
<th>DIMM8</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
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<td></td>
<td></td>
<td>2 GB</td>
<td>Good</td>
</tr>
<tr>
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<td></td>
<td>2 GB</td>
<td></td>
<td></td>
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<td></td>
<td>2 GB</td>
<td>Better</td>
</tr>
<tr>
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<td>4 GB</td>
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<td></td>
<td>2 GB</td>
<td></td>
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<td></td>
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</tr>
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<td>2 GB</td>
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<td></td>
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</tr>
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<td></td>
<td>2 GB</td>
<td>Best</td>
</tr>
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<td>8 GB</td>
<td>8 GB</td>
<td>8 GB</td>
<td>Best</td>
</tr>
</tbody>
</table>

* For 32-bit operating systems, there is a memory limit of 4 GB.

- Although supported, these configurations are not factory configurable at this time.

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# Loading Rules

Each channel includes two DIMM sockets; black and white connector pairs represent a channel. Load all black slots first and then load the white slots.

Load the memory modules in order of size, starting with the largest module and finishing with the smallest module.

The DIMMs should be loaded first in the black sockets and then in the white sockets. The DIMMs should be loaded starting with the DIMM furthest from the CPU, with the first DIMM loaded in the socket on the right side of the system and alternate sides of the CPU.

See diagram for loading order.

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**Screen images courtesy of Autodesk.**

1. Each processor supports up to 4 channels of DDR3 memory. To realize full performance at least 1 DIMM must be inserted into each channel.

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