



# HP Z400 Workstation

## Memory configuration

The purpose of this document is to provide an overview of the memory configuration for the HP Z400 Workstation (Jan 2010 refresh) and to provide recommendations to optimize performance.



Windows.<sup>®</sup> Life without Walls. HP recommends Windows 7.

### Supported DIMMs

- The HP Z400 Workstation supports Unbuffered 1GB single rank, 2GB and 4GB dual rank PC3-10600E 1333MHZ ECC DIMMs.
- The CPUs determine the speed at which the memory is clocked. Example: if a 1067MHz capable CPU is included in the system, the maximum speed at which the memory will run is 1067MHz, regardless of the specified speed of the memory.

### Best Performance Optimization Tips

Since the memory controller is based on a three channel design, the following rules should be used for best performance:

- Configure memory in sets of 3.
- Configuring the memory using the smallest DIMM size will sometimes optimize memory performance, if it prevents single channel configurations. Example, for a 2GB configuration, buy two 1GB DIMMs, not one 2GB DIMMs.

Figure 1. Optimal Configuration for the HP Z400 Workstation (Note: The following table does not include all available CTO configurations)

	DIMM1	DIMM2	DIMM3	DIMM4	DIMM5	DIMM6	Configuration rating
1GB	1GB						Good
2GB	1GB		1GB				Better
3GB*	1GB		1GB		1GB		Best
4GB*	1GB	1GB	1GB		1GB		Good
6GB	1GB	1GB	1GB	1GB	1GB	1GB	Best
	2GB		2GB		2GB		
8GB	2GB	2GB	2GB		2GB		Good
12GB	2GB	2GB	2GB	2GB	2GB	2GB	Best
	4GB		4GB		4GB		
16GB	4GB	4GB	4GB		4GB		Good
24GB	4GB	4GB	4GB	4GB	4GB	4GB	Best

\* For 32 bit operating systems, it is desirable to only load 3GB of memory because it gives the optimal performance in 3 channel design and, because the 4th GB isn't fully accessible by the operating system, it optimizes the cost per usable memory.

### Loading Order

When loading the system memory start in the slot furthest from the CPU, DIMM1, and move towards the CPU, first filling the black slots and then filling the white slots.

Figure 2. Loading order for the HP Z400 Workstation

