

Memory selection for Xeon W5580

[rgralak](#) 1 posts since

Jul 9, 2009

Hello,

I have purchased a Dell T7500 workstation which has a single W5580 CPU and 6 DIMM slots available. I initially plan to run a 32-bit O/S on this particular PC but eventually will migrate it to a 64-bit O/S. My question concerns selecting the proper memory for it. Looking at the 5500 series memory rules it seems that if I were to populate all 6 DIMM slots the max memory speed will be reduced to 1066MHz (because there would be two DIMMs per channel). Thus to keep the option of running 1333MHz memory I would like to populate only 3 DIMM slots.

Since I initially am going to run a 32-bit O/S I only need to have about 4GB memory. So, between these configurations would I likely see any difference in system performance if I populate the DIMM slots like this (assume all DIMMs are 1333MHz):

- 1) A single 4GB RDIMM (utilizes 1 channel - allows for 2 additional 4GB DIMMS later for a 64 bit O/S)
- 2) Two 2GB RDIMMs (utilizes 2 channels - allows 1 additional DIMM for 64 bit O/S)
- 3) A 2GB RDIMM + two 1GB RDIMMS (utilizes 3 channels but would require replacing DIMMs to have more memory available)

Also, are there any advantages/drawbacks to using UDIMMs if I use only 3 DIMMS?

Thanks,

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-Ray

Tags: rdimm, dimm, udimm, w5580, xeon, 5500

[Ed Groden](#) 9 posts since

Feb 13, 2009 1. **Re: Memory selection for Xeon W5580** Jul 13, 2009 10:20 AM

Hi Ray,

It gets down to tradeoffs between bandwidth, cost, and expandability. Option 2 might be the best thing for you at this point as it's higher bandwidth than option #1 and a "balanced" configuration (as opposed to option #3). We've been recommending a balanced configuration (same DIMM type, same population per channel) whenever possible, as configs such as your #3 may cause the effective bandwidth to drop down to option #2 levels (as measured by STREAM) due to how the memory controller works.

With regards to your UDIMM question, using UDIMMs with ECC will likely be a lower cost option for 1GB and 2GB DIMMs. You still get memory ECC, and you still can run with DDR3 1333 when populating 1 DIMM per channel - populating all 6 DIMMs (2 DIMMs per channel) will drop the memory down to 1066 MHz. Of course, you need to check with Dell on what they support and the costs.

Hope this helps! Ed