When DIMMs are populated in an unbalanced fashion, memory bandwidth can be significantly reduced from its maximum potential. PowerEdge customers seeking maximum memory bandwidth and minimized memory access latency should populate DIMMs in a balanced configuration if possible, or a near balanced configuration if balanced cannot be implemented. Populating memory in accord with the guidelines in this technote will ensure optimized performance.

Guidelines for Balanced Memory

1. Balanced Configuration
   - Populate all memory channels with one or two DIMMs for best performance; a total of eight or sixteen DIMMs per CPU

2. Near Balanced Configuration
   - Populate four or more DIMMs per CPU
   - Populate an even number of DIMMs per CPU
   - Populate DIMMs in correct assembly order (see Figure 1)

3. All CPU and DIMM parts must be identical

4. All server sockets should have identical memory configurations

Assembly Order

* If you are interested in reading the full white paper on balanced memory, please click [here](#)