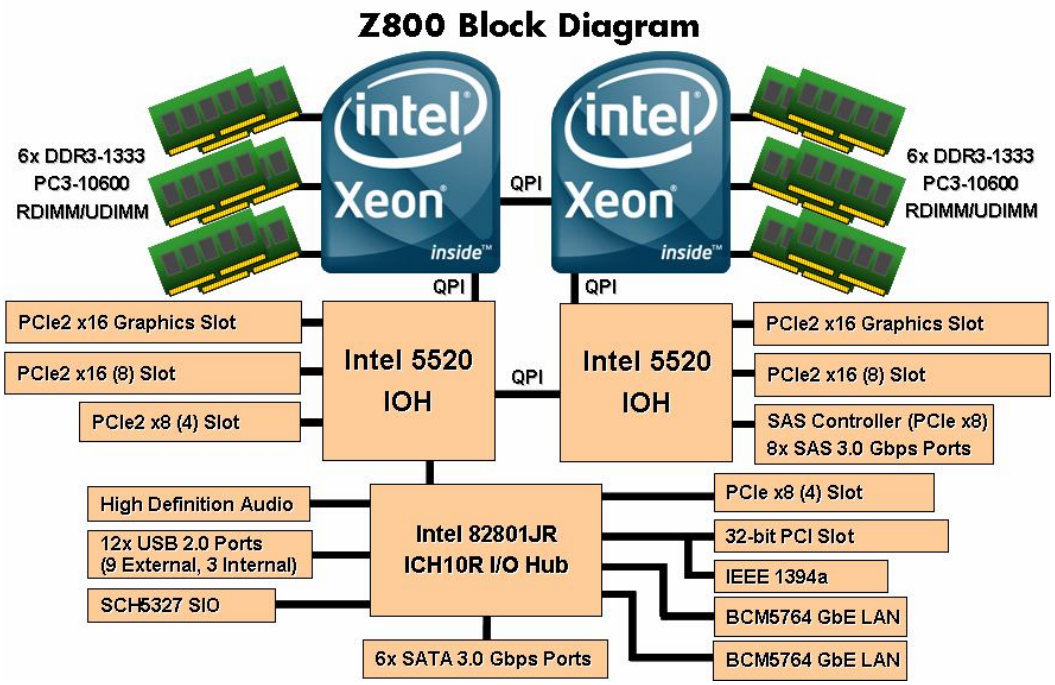
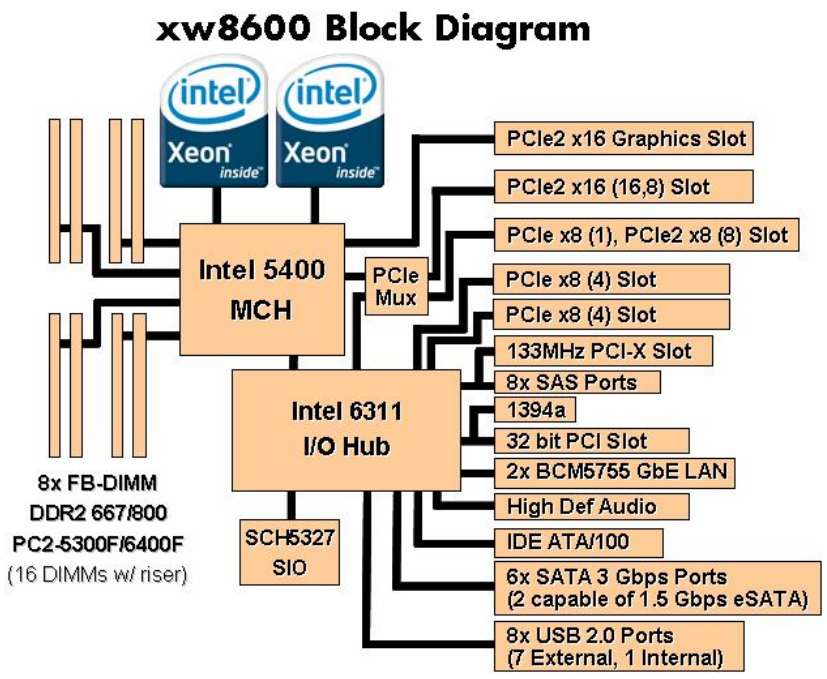
Comparison of the Z800 and xw8600 Architectures

Introduction: The HP Z800 is the successor to the HP xw8600 Personal Workstation. Its architecture introduces several improvements. The most significant of these are the processor microarchitecture, cache, memory attachment and capacity, I/O slots, and performance.

Processor Technology: The HP Z800 uses the Intel® 5520 chipset to support the latest Quad-Core Intel® Xeon® processor 5500 Series (Nehalem), including processors up to 130W. These 45nm processors incorporate an integrated 3-channel memory controller, microarchitecture improvements and large L3 cache to provide significantly better performance than the previous generation (Penryn). The Z800 uses the Intel® QuickPath Technology to connect the processors and I/O controllers with speeds up to 6.4 GT/s, significantly increasing peak aggregate data bandwidth over the xw8600.



Memory Technology: The Z800's DIMMs are based on DDR3 1333MHz technology, and are still ECC-protected. Six direct attach memory channels (three per CPU) enable low latency accesses and fast data transfer, providing significant performance advantages over the xw8600 architecture. Configurations with one processor provide access to six DIMM slots, while addition of a second processor provides access to six more DIMM slots, supporting a total system memory size up to 192GB[1] (using 16GB DIMMs).



Graphics: The Z800 continues support for PCIe Gen2 (PCIe2) bus speeds and can support dual PCIe Gen2 graphics cards in PCIe2 x16 slots. In general, with the standard 850W power supply, the Z800 can support up to two 150W graphics cards. With the optional 1110W supply, the Z800 can support up to two high power (~225W) graphics cards.

I/O Slots: The Z800 implements two Intel® 5520 chips to provide a total of seven high-performance Graphics and I/O slots. The Z800 eliminates the legacy PCI-X slot and implements a PCIe slot in its place. This implementation results in a dramatic improvement in available I/O bandwidth.

Other Features: SATA RAID modes 0, 1, 5 and 10 are supported. eSATA (3.0 Gbps) is supported using an optional adapter. The Z800 provides 9 external and 3 internal USB 2.0 ports. The 850W power supply is 85% efficient, the 1110W supply is 89% efficient, and both enable Energy Star Version 5.0 configurations. HP WattSaver technology enables support of the European Union EuP power limit of 1W in off mode.

[1] Maximum memory capacities assume 64-bit operating systems. Microsoft® Windows® XP (32-bit) and Vista (32-bit) support 4GB (with Microsoft 32-bit, the amount of usable memory will be dependent upon your system configuration - it may be less than 4GB); 32-bit Linux can support up to 8GB. 16GB DIMMs available 2H 2009. The Z800 supports registered DIMMs (RDIMM) and unbuffered DIMMs (UDIMM), while the xw8600 supports fully buffered DIMMs (FB-DIMM).

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