XEON BUMPED TO 800 MHz

By Keith Diefendorff {1/31/00-02}

Less than a month after launching its 800-MHz Coppermine into the desktop-PC market (see MPR 12/27/99-msb, "Intel Counters Athlon With Pentium III-800"), Intel has rolled out Xeon at the same frequency into the workstation and server markets.

The new Xeon, code-named Cascades, may be welcomed by customers wishing to boost the performance of their Slot 2–based workstation platforms. But the processor is not the large-cache Cascades that Intel's server customers have been anxiously awaiting. Instead, the new offering is simply the 800-MHz desktop Coppermine die repackaged in a Slot 2 SECC2 module. Although Coppermine's small 256K on-chip L2 cache is sufficient for some workstation applications—and the SPEC benchmarks—it is woefully inadequate for most real server applications. Unlike Katmai-based Xeons (Tanner), the L2 cache on Coppermine is currently available only in a single size.

In some situations, the 133-MHz front-side bus of the new Xeon will offer a performance advantage over the 100-MHz bus of the current Tanner. But Tanner's larger caches (512K to 2M) are probably more important in most cases, and the 133-MHz bus speed extends only to two-processor systems, leaving larger multiprocessor systems—which really need the extra bandwidth—stuck at 100 MHz.

As a consequence, some customers may pass over this version of Xeon, holding out for the large-cache Cascades, which we expect to appear this quarter in 1M and 2M on-chip-cache versions. In the interim, at least some workstation and server makers that are not willing to let the market appeal of 800 MHz lie on the table will probably elect to use the desktop Pentium III-800, avoiding the 6% price premium carried by the $901 Xeon-800.

Although the performance of the two parts will be the same, Xeon offers a few system-reliability features that the standard Pentium III lacks, such as the system management bus (SMB) and an on-module voltage-management capability. These features are important to customers building high-reliability server systems and present some enticement for users to opt for Xeon-800 rather than Pentium III-800.

While we don't expect this version of the Xeon-800 to be a big seller, the cost to Intel of creating it was low—merely the cost of qualifying Coppermine in the Xeon package—and it may be a useful product for a few of Intel's customers until the large-cache versions appear. ◇