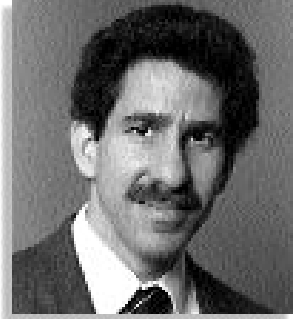


RISC Vendors Will Have to Change



Last year was a transition year. It became apparent that business as usual would no longer give midrange vendors the automatic market growth associated with RISC technology and the Unix operating system. Instead, the technology front is about to undergo a major change in the traditional mind-set; it is moving beyond the RISC-versus-CISC microprocessor debate. As users graduate from simple client/server applications to enterprise integration and data warehouse schemes, latency of the entire system complicates the performance equation.

The good news for RISC proponents is that a great deal more performance can be wrung out of the shared-memory model using symmetric multiprocessing (SMP). Many avenues remain to be explored before new data models such as massively parallel processing (MPP) will be required. Midrange vendors will still be able to provide investment protection for legacy applications. The downside is that with increased system complexity come less refined measurement and analysis techniques for evaluating an architecture's strengths and weaknesses. These are necessary to accommodate and adapt to a variety of application workloads. We can expect vendor hype to run rampant before this technologically fertile territory matures at the end of the decade.

The upshot of this change is that RISC vendors must shift the battlefield from processor technology to software-related issues. High availability, clustering and storage management must be high-level dif-

ferentiators against Intel, whose key weapon is to commoditize the CPU-memory subsystem for SMP. Supporting and integrating configurations that may serve up to 1,000 users and 500GB to 1,000GB of storage is not an area Compaq, for example, will address, despite its increasing posturing as a data center server vendor.

On the other hand, RISC vendors cannot count on their scaling advantages to continue to provide boundless market rewards. Users will struggle with ever-more complex environments, and many initiatives may founder, slowing market growth for high-end Unix servers. Thus, the users' functional learning curve will lag behind technology availability, slowing shipment growth of Unix RISC servers.

By 1997, Intel-based servers running Windows NT will force Unix RISC vendors to align their hardware and software pricing with the current commodity-based server structure. Intel-based servers will equal RISC revenue share in systems priced between \$25,000 and \$100,000 by 1998 and will challenge Unix servers for enterprise server deployment by 2000.

What Will They Do?

All Unix RISC vendors will formulate defensive survival strategies against the cost pressures and economy-of-scale issues of maintaining proprietary architectures in the face of shrinking hardware differentiation. To survive, they will adopt one or more of several alternative strategies. Let's look at these options and the companies that are choosing them.

- Join Intel and forsake RISC entirely (e.g., Data General, Intergraph).
- Join Intel and maintain RISC compatibility (Hewlett-Packard in the future).
- Join Intel for departmental application servers but maintain Unix and RISC in high-end database and data warehouse applications (Digital Equipment).
- Maintain separate organizational and distribution channel structures for PC servers and enterprise servers (Digital, HP, IBM).

- Build separate businesses around RISC hardware—including servers, workstations, hand-helds, video games, set-top boxes, Internet devices and as embedded controllers (Silicon Graphics, Sun)—and software such as multiplatform Unix ports (Sun Solaris for PowerPC and Intel).

All RISC vendors will face important milestones in 1996 that could impact their success in the Unix market. For example, IBM must improve SMP scaling, but thus far it has slipped with the PowerPC 604 (originally expected in the third quarter of 1995 and now likely due in the second quarter of this year) and has serious challenges in delivering the next-generation 64-bit architecture. Sun announced the next-generation UltraSparc but will only begin shipping high-end servers in the second quarter of 1996; the systems initially will not have 64-bit OS and DBMS capability. HP will ship the next-generation PA-RISC 8000, but only in midrange servers by midyear and not for the high-end T500 class before late 1996. Silicon Graphics will begin shipping Mips R10000 systems but not before mid-1996, while it continues to struggle for commercial systems recognition.

During 1996 and 1997, users should focus on the vendor's business model, view the microprocessor race as subsidiary to architectural balance, longevity and continuity, and evaluate emerging vendor marketing strategies in packaging and bundling quick-start solutions. The critical balance of power among Unix vendors, and between Unix and NT, will be driven by the database and application vendor communities, through the porting priorities they assign to the dominant revenue-generating platforms. With NT's importance increasing, Unix vendors will face consolidation into fewer top-tier suppliers. The rest will be forced into niche categories and limited enterprise roles or away from RISC to Intel. **IT**

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