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## Cray Ventures Into Small Computers

By DON CLARK

Cray Inc., a name long linked to some of the world's biggest computers, is breaking from tradition and introducing a low-end machine that can sit next to a user's desk.

The new computer, which starts at \$25,000, uses chips from Intel Corp. and ships with a version of Microsoft Corp.'s Windows software. It is designed to handle technical chores that are too big for a personal computer but don't require the resources of supercomputers, large server systems that Cray and other companies typically sell for millions of dollars.

"It's the smallest thing we've done," said Ian Miller, a Cray senior vice president.

Cray's move is the latest sign of big changes in the technical-computing market. While conventional supercomputers remain a mainstay for jobs such as simulating underground oil deposits and designing cars, some customers are buying a new class of less-expensive servers for smaller technical jobs.

In some cases, the lower-end systems are being purchased by small companies that can't afford a supercomputer—such as companies that design components for auto makers—or to serve groups of employees at companies or universities. "For everyone who can't get time on the big server, if they have something like this in their office it's a home run," said Earl Joseph, an analyst at the market-research firm IDC.

Cray, based in Seattle, inherited the supercomputer business started in 1972 by the late Seymour Cray. Silicon Graphics Inc. purchased Cray in 1996 and



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sold it in 2000 to Tera Computer Co., which assumed the Cray name. The company, a onetime leader in supercomputer sales, now trails the market share of companies such as International Business Machines Corp. and Hewlett-Packard Co.

One factor is that those companies have general-purpose-server businesses to help defray hardware-development costs. Cray, which originally designed its own circuitry, also was affected as users shifted to less-expensive x86 chip technology that Intel and Advanced Micro Devices Inc. developed for personal computers.

Cray has now added super-

computers that use AMD chips and in April announced plans to begin using Intel technology, too. Its new Cray CX1 is a small cabinet that can hold up to eight circuit boards, known as blades, that each have one or two Intel Xeon microprocessors. Higher-end configurations cost up to \$80,000, Mr. Miller said.

The CX1 faces plenty of competition, including an H-P system dubbed Shorty. Other rivals with low-end machines include Silicon Graphics; Eng Lim Goh, its chief technology officer, said profit margins on those servers are much lower than on high-end systems.

Technical servers using x86 chips, often called clusters, typically use versions of the Linux

operating system. But Cray and Microsoft are hoping to appeal to technical-computing newcomers who are used to Windows. The CX1 can run Linux but comes standard with an operating system called Windows HPC Server 2008 that won't be formally introduced until next week.

Eventually, Microsoft is pushing for advances in programming techniques so that an array of programs that work with Windows can work efficiently on the dozens or hundreds of processors found on supercomputers. "That will be just a revolution," said Burton Smith, a co-founder of Tera who holds the title of technical fellow at Microsoft.