

I.B.M. to Introduce a Notably Improved Mainframe

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The mainframe, the aged yet surprisingly resilient survivor of computing, is getting a face-lift. A model called the I.B.M. z10, which is being introduced Tuesday, is far faster and has three times the data-juggling memory of its three-year-old predecessor, the z9.

But the significance of the new machine, analysts say, is that it is a big step in a broad campaign by I.B.M. to make the mainframe computer a high-performance, energy-efficient engine for running all kinds of nonmainframe software.

The goal, according to I.B.M. executives and analysts, is to recast the mainframe as a nimble supercomputer in corporate and government data centers, running Web-based programs, Linux, advanced data mining and business intelligence software.

To do that, I.B.M. has refined its mainframe hardware and come up with new software tools, as part of a five-year, \$1.5-billion overhaul.

"The mainframe's ability to survive is only as good as its ability to innovate and compete for these new computing workloads of the future," an analyst at Forrester Research, Brad Day, said. "And I.B.M. is starting to succeed at that."

The stakes are high. Though the sales of mainframes account for less than 4 percent of I.B.M.'s revenue, the sales of mainframe software, storage and services are a big, profitable business. The overall business dependent on mainframes represents about 25 percent of company revenue and nearly half of its profit, said A. M. Sacconaghi, an analyst with Sanford C. Bernstein & Company.

At Hannaford Brothers in Scarborough, Me., a supermarket chain with stores in five states, the company has consolidated many programs onto its two mainframes. They include its consumer Web site, its Web portal for tracking shipments from suppliers and store and customer data that were once housed on computers in individual stores.

"The mainframe has become very flexible and very scalable for us," said Bill Homa, Hannaford's chief information officer.

Robert Woeckener, a senior technology manager at Nationwide Insurance in Columbus, Ohio, said his company had consolidated more than 1,300 programs onto 480 virtual computers — software that emulates a machine — that run on two mainframes.

Nationwide began the program more than two years ago, projecting savings in energy, administration and other costs at \$15 million over three years. "We're probably running ahead of that," Mr. Woeckener said.

I.B.M. competitors say that some individual success stories among mainframe users do not change the reality that the mainframe is in retreat.

In 2004, Microsoft founded the Mainframe Migration Alliance, a group of technology companies that helps corporations move software applications from mainframes to smaller computers powered by low-cost microprocessors and typically running Microsoft's Windows server operating system. Microsoft tracked 85 mainframe migration projects last year, and the company says 55 more are under way.

I.B.M., to the contrary, says that the mainframe is in the midst of a revival. It is adding customers in developing nations, the company maintains, as banks, corporations and government agencies expand and need the kind of reliability and security that the mainframe delivers. I.B.M.'s mainframe revenue in India, China, Brazil and Russia grew 18 percent last year.

Six hundred software applications, it says, were introduced on the mainframe last year.

Rising energy costs and environmental concerns are putting pressure on growing computer data centers, with their voracious appetites for electricity. The z10, I.B.M. says, delivers the computing power of 1,500 industry-standard servers, running on personal computer microprocessors, while consuming 85 percent less energy and covering 85 percent less floor space.

So the mainframe, it argues, has become the low-cost data center technology, although the machines cost \$1 million and up.

"The market economics are moving in our direction, and we're seeing a return to the mainframe," said James Stallings, general manager of I.B.M.'s System Z division.

Traditionally, mainframe computers run at utilization rates of 85 percent and more. PC-style servers, by contrast, have had utilization rates of 15 percent or so, because they have been less able to run many computing chores at once, as if mimicking the work of several machines — a capacity the mainframe has had for decades.

But this so-called virtualization technology is increasingly coming to industry-standard servers, led by the software company VMware.

Several computer makers, including Dell and Hewlett-Packard, are announcing Tuesday that they will embed VMware's basic software into the hardware of the server computers, with shipments to begin within 60 days.

"We can get up to 80 and 85 percent capacity utilization now," Diane Greene, chief executive of VMware, said in an interview from a company gathering for partners, attended by 4,500 people in Cannes, France.

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