Oracle Enters the Hardware Business

Oracle OpenWorld '08: Partnering with HP and Intel, the software giant introduces not one but two servers.

By Lauren McKay - Sep 24, 2008

SAN FRANCISCO -- In what can only be described as an "extreme" keynote, Larry Ellison, Oracle's chief executive officer, announced here this afternoon that Oracle is no longer just a software company. The keynote finally brought to light product "X," the best-kept secret at this week's OpenWorld conference. Following a lead-in presentation by Hewlett Packard's executive vice president of technology solutions, Ann Livermore, Ellison told attendees of Oracle and HP's newest joint venture -- the HP Oracle Database Machine.

The new product line, Ellison boasted, operates 30 times faster than the standard Oracle database server. The machine, marked by a giant "X" on its bottom half, consists of "a grid of Oracle Database Servers and a grid of new Oracle Exadata Storage Servers packaged in a single rack ordered as a complete system from Oracle," according to the company's subsequent statement. As Ellison boasted to the crowd, in his trademark frank delivery, "Exadata is a combination of hardware and software. It's...not a bunch of dumb disk drives. In addition to disk drives, built into the machine are two Intel processes, each with four cores." The intelligence built into the storage server cuts down on the data that flows across the interconnect between storage servers and database servers.

The HP Oracle product is available for immediate delivery at the hefty price of $650,000. Ellison, while emphasizing Oracle's -- and his personal -- commitment to having "extreme engineering drive extreme performance," suggested at the start of his presentation that the inspiration for the programmable machine came from his efforts at reengineering the racing yacht he's backed for the America's Cup. He said the Exadata product is something that has been in the pipeline for more than three years, a combination of efforts with Oracle and its partners at HP and Intel.

"We really need much more performance out of our databases than we currently get," Ellison said. "The reason is [that] information is proliferating at an astonishing rate." He continued, "Disk storage available today simply cannot cope with...the amount of data that you have to embed off disk drives into data centers." Ellison said that systems are experiencing a bandwidth problem in dealing with data. He said that there are only two ways to solve the data-bandwidth problem. One is to get clever and reduce the amount of data going into the storage system and data centers. The other is to build wider, faster pipes -- and more of them. Ellison said Oracle decided to kill two birds with one stone. The programmable machine also consists of two fast InfiniBand pipes, the "interconnect" by which data is transferred between the two.

Oracle and HP let some lucky customers test drive the machine, beginning in late 2007 — or, more precisely, they were given half of a single machine, which Ellison said made the startling results even more dramatic. Bulgarian-based European telecommunications provider M-Tel experienced a system speed-up rate that averaged 28 times better than its prior performance. Another guinea pig, LGR Telecommunications, which has offices in Atlanta, Australia, and South Africa to outsource data centers for phone companies, brought the time required for queries down from 30 minutes to one minute with Exadata — in other words, the machine was able to complete processes as much as 30 times faster than the hardware it previously used.

Exadata's sheer size required an atypical frame of reference — and Ellison was able to provide one the audience could readily understand: "This holds really a lot of songs," he joked about the machine's incredibly mammoth storage and delivery capabilities. "We're not talking about an iPod Nano here. [Exadata is] 1,400 times larger than Apple's largest iPod." It was a reference he repeated toward the end of the keynote, when he was joined by HP chairman, president, and chief executive officer Marc Hurd in a video conferencing window on the massive high-definition screens inside the keynote hall. "I hope your teams are ready to turn these things out like iPods," Ellison said to Hurd.

"Conventional disk arrays cannot compete with Exadata smart storage servers," Ellison said, following up with a comparison chart of Exadata up against competing products from data warehousing vendors Teradata and Netezza. The comparison clearly played in Exadata's favor: The Oracle CEO bluntly stated that Teradata has "no intelligence in their storage server, whatsoever. It's pretty much a sophisticated database -- and they have a bunch of processors." He noted that Netezza, fairly new on the scene, does a lot better in terms of bandwidth, but while the company "does very fast table scans, [its] overall capability is really primitive." And when it comes down to database size, he said, Oracle more than doubles both Teradata and Netezza.

Fun facts about the database machine capacity include:

- Preconfiguration with Oracle Business Intelligence, Enterprise Edition tools, and Oracle Real Application Clusters;
- 14 Exadata storage servers;
- 14 gigabyte-per-second data bandwidth; and
- 112 Intel processor cores.