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Pete's all things Sun: the status of Sun products



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EVERY SUN OBSERVER—WHETHER CUSTOMER, partner, or competitor—is trying to get as much information as possible about the directions that Oracle is taking its Sun products. Each observer has their own reasons for doing so, and each has different hopes and goals. Certainly there is a lot of speculation and opinion—again, as varied as the reasons for the speculation.

In this column I collect together all that is known and some of what is being guessed about the future of Sun products under the new regime. Questions and comments are welcome, and probably best posted at the blog posting based on this column at <http://ctistrategy.com>. Also, where possible, I include a reference to the source of each data point I discuss here, so that you can read the details for yourselves and use that extended information to draw your own conclusions. I am just our humble guide on this journey through product status and futures.

Sources of Information

Nothing is certain until Oracle makes official product change announcements. Some of those have been made, but it is likely that more are to come. Which products will be canceled, which emphasized, and which perpetuated with little change? While waiting for firm product direction, all we have to go on for datacenter planning in some areas is what Oracle has announced and scattered reports about product directions. There is no NDA information included in this article for obvious reasons, but Oracle has clamped down on NDA information and presentations, making it more difficult than ever for IT managers to plan datacenter changes. Without further ado, here are the Sun product categories and their future, as far as I can tell.

Storage

The Sun 7000 Open Storage line (also known as the "ZFS Storage Appliance" by Oracle) is clearly going forward [1, 23]. Oracle has stated that the Sun 7000 will be the heart of its storage strategy. Likewise, the Sun tape libraries are market leaders and will be a continuing product line from Oracle [14]. As Oracle competes with IBM (as stated in its ads), storage and tape must be included in its product offerings to have a full line of solutions. Part of

the Oracle plan to differentiate from other storage vendors is to aggressively add flash storage throughout the storage lines.

The Sun partnership with Hitachi Data Systems (HDS) has been terminated, and Oracle/Sun does not sell the HDS storage arrays any longer [2]. This move seems to be part of a trend by Oracle to cancel agreements that involve Oracle reselling other companies' products. If that is the case, then Oracle either will not have a high-end storage product or believes that they can create their own. The recent addition of the FC protocol to the Sun 7000 software stack makes it a player in the SAN space, but it still lacks some features required in enterprise storage, such as near-instant failover of components when a fault occurs and synchronous replication. At the rate that the Sun 7000 feature set is evolving, such features are certainly possible. Could this be where Oracle is placing its enterprise storage hopes?

Servers

Sun had a variety of servers, in a variety of configurations and form factors. Many IT executives have been asking about the future of SPARC M servers and x86 servers. This product area has been especially rife with uncertainty and rumors. Again, a lack of NDA roadmaps adds to this confusion. The current plan appears to be as follows.

Intel-based x86 servers continue on in the Oracle portfolio. By the time you read this there are likely to have been more new products announced, but already Oracle has upgraded one product—the x2270 [3]. Less clear is whether the other existing products in the x2??? line get updated, or whether the x2270 becomes the lone server in the low-cost, fast, single-power supply race. Such servers tend to be for HPC and other fault-tolerant uses and the lowest margin servers, so it's a bit of a surprise that Oracle even has an offering in this space. Still, it is convenient to have a bare-bones server available for low-cost computing.

Sun was one of the first vendors to embrace the AMD CPUs for servers, having some exclusivity long ago as part of the deal. That deal is long past, and many other vendors have also shipped AMD-based servers. The great leap that Intel has made with its Nehalem-based CPUs is undeniable, to the point where AMD seems to be having trouble competing. Thus it is not much of a surprise that Oracle has no plans to continue creating AMD-based servers. It will be Intel CPUs only in the x86 servers [4].

Based on the ads Oracle has placed in various publications, they clearly want to compete (and win) in the server space. Oracle has stated that they will invest more in SPARC and Solaris R&D than Sun did, for example [5]. In a talk given by Sun's John Fowler and others at the Oracle/Sun launch after the approval of the merger, some details about SPARC futures were revealed [6]. In the T-server space, Oracle plans to release the T3 chip in 2010, including doubling the number of cores and increased performance all around. Beyond that, they plan on the T-servers moving from "throughput" to high-performance—that is, not just lots of cores and threads, but lots of fast cores and threads.

In that same announcement, Oracle had fewer details about the future of the M-servers. The next release is to include higher frequencies, increased I/O throughput, and larger caches. Assuming Fujitsu continues to iterate their SPARC CPUs, there should be more updates beyond that. Of course, an entirely new product line is possible as well, but nothing like that was announced. Generally, Oracle is hiring into the hardware engineering groups

with the announced goal of accelerating the multi-year roadmap for the SPARC servers (i.e., bringing them to market sooner than Sun had planned).

The question of which CPU is the “best” to run Oracle remains open, and is complicated by software pricing. The normal analysis method for determining platform direction is to look at the total cost of ownership (TCO) over a period of time, typically three years. Into that calculation go initial purchase cost of the servers, maintenance cost, and sometimes personnel costs, power, cooling, datacenter rack space and cost, and software licensing and support costs. Frequently, the software costs dwarf the other costs, so maximizing the performance per software license is a driving factor. Oracle publishes a document describing software licensing to help sort through the options [7]. They also publish a document discussing partitioning mechanisms and what are considered valid ways to limit the number of CPUs on which the Oracle database runs (and needs to be paid for) [8]. For example, a Solaris container running in a Dynamic Resource Pool (DRP) can be used to limit Oracle to a specific number of CPUs, and the Oracle license is needed only for that number. Finally, Oracle publishes a chart providing a “core factor”—a CPU-specific multiplier of core count that is used to determine how many Oracle licenses are needed for a given system [9]. For example, the UltraSPARC T2+ has a factor of .5, while the M series has a factor of .75. Multiply that times the number of cores used in the partition in which Oracle is running to determine how many licenses are needed. The factor for all x86-based systems is .5, giving them a pricing advantage at the moment. However, a change in the factors could change the TCO equation, so I recommend monitoring that core factor table.

Operating Systems

One of the more confusing aspects of the Oracle purchase of Sun is the operating system direction of the combined company. Oracle has been a big contributor to Linux and a big driver of its acceptance in the enterprise. But Oracle doesn't own Linux. Solaris has a leading feature set and is owned by Oracle. Add to the confusion the use of Linux in the Oracle Exadata appliance, and IT managers have a challenge in choosing operating system direction. What we do know is that Oracle has stated that Solaris is “The World's Best Operating System” [6]. That is not something one would say about a technology being put out to pasture. On the other hand, Oracle has also stated that they would continue contributing to the development of Btrfs, a next-generation file system for Linux [10]. It now becomes clear that Oracle is firmly behind both operating systems for the long term.

Unfortunately (in my view), Oracle has pulled back on the reins for spreading the use of Solaris. Solaris is no longer free to use, for example, and, in fact, a site can only buy support for Solaris if it is running on Sun hardware (rather than the previous policy of allowing hardware-independent Solaris maintenance contracts) [11]. On the other hand, Oracle seems to be allowing the selling and support of Solaris on other platforms when a contract with Oracle is in place. For example, the resale of Solaris on HP x86 servers appears to be continuing [12]. It would be a shame if Solaris got less emphasis over time. Solaris x86 gets Oracle database patches after other first-tier operating systems such as Solaris on SPARC and RHEL. Increasing its priority at Oracle would translate well to customers worried about its future and would increase its installed base. Solaris remains a great operating system (even a survey commissioned by HP shows Solaris as the number one mission-critical OS [13]), so the ball is in Oracle's court to foster use of Solaris.

OpenSolaris is a different kettle of fish, with no clear direction yet given by

Oracle. The OpenSolaris community is a bit miffed by this lack of direction, as can be seen by reading the exchanges at <http://opensolaris.org>. Certainly, OpenSolaris as the testing ground for new Solaris features will go forward, as Oracle has no other development environment for Solaris. Personally, I find it unlikely that OpenSolaris would move away from the open source path, due to the legal terms under which it was originally released. However, could some components added to Solaris “Next” (the next major release of Solaris) be close-sourced? Will Oracle continue to sponsor (via engineering and financial support) the OpenSolaris community? Those questions seem unanswered at the moment.

Appliances

Previous to the Sun purchase, Oracle had two appliances. Exadata V1 was jointly engineered with HP. Once the Oracle plan to purchase Sun was announced, that version was terminated and Exadata V2 was announced, being a joint venture between Oracle and Sun [1]. Oracle takes great pride in Exadata V2 and makes broad performance and success claims, but just how many orders have been placed for it is difficult to determine. Nevertheless, Oracle plans on creating more appliances. At least two more are expected to be released at Oracle World in September 2010. In their own words, “Where we think we’ll make our money—where we think we’re able to differentiate ourselves from IBM and everybody else—is by building complete and integrated systems from silicon all the way up through the software, all prepackaged together” [1].

What will be interesting about those next appliances are the technologies from which they are composed. That could indicate where Oracle is putting its emphasis within the Sun line, or maybe just what they thought would make compelling appliances with potential high demand and relatively quick development times. The Exadata appliances include Oracle Linux as the operating system, for example—what will the new appliances be based upon?

Other Areas

Some other areas of the Oracle/Sun product line have been fleshed out by Oracle. Virtualization, for example, has a full spectrum of solutions from a full suite of products. Those products include Oracle VM VirtualBox for desktops, Oracle VM Server for x86 (based on Xen), Containers for Solaris, Oracle VM server for SPARC (previously called LDOMS) for T-servers and Domains for M-servers [15]. Other Sun products seem to be continuing unabated, including SunRay desktops, Secure Global Desktop, and VDI. One sign to watch for is whether a product has been rebranded with “Oracle” at the front of its name—a sure sign it is now part of the Oracle family.

In many areas where Sun and Oracle had overlapping products, Oracle has announced at least general direction guidance, if not detailed roadmaps. Oracle’s Identity Manager seems to be the winner over Sun’s, for example, while Glassfish will continue alongside WebLogic and MySQL will live on as yet another database in the Oracle portfolio.

Management products is an area that Sun was continually weak in, and it hurt them competitively. Nowhere in the Sun catalog was a product like IBM’s SMIT, for example. While SMIT might not be the best possible solution to the system administration problem, at least it is a solution (and has an ethos). Going forward, Oracle Enterprise Manager (OEM) will be the um-

brella under which products like XVM Ops Center live, and likely will gain features from those products as the products are merged into OEM.

As mentioned above, Oracle seems to be canceling some long-standing Sun agreements with other product vendors. The state of those relationships is not clear at this point, but some partnerships seem to be going forward even if product resale might not. For example, Brocade still touts their partnership with Oracle [16], but Oracle may not be reselling Brocade products. Likewise, Oracle and Red Hat are working together on multiple fronts [17], but Oracle does not seem to be reselling RHEL (especially since it competes with Oracle via Oracle Enterprise Linux—essentially RHEL but with lower support costs).

Maintenance of Sun hardware and software has changed drastically under Oracle. Before Oracle, Sun maintenance was complicated—single and multi-year options, multiple “metal” levels of support depending on the desired response time and weekend support requirements, and so on. Oracle has turned this model on its head, providing just one level of support—“Oracle Premier Support” for software and systems. It is similar to the previous “gold” Sun level support, but with many complex details, including expensive recertification of a system if it goes off maintenance. Oracle has published a document describing the full program [18].

Sun Futures

It is expected, but unfortunate, that there has been quite a bit of turnover at Sun as a result of the purchase by Oracle. Some of the biggest names at Sun are not employed by Oracle, including McNealy, Schwartz, Gosling, Bray, Phipps, and Tripathy [19]. Some will be missed more than others, but Oracle has to counter the brain-drain by adding excellent management and engineering to the Sun staff.

But not all Oracle changes to Sun have been for the worse. For example, Oracle is now offering free online courses about Solaris [20]. Oracle’s increased investments in SPARC and Solaris is certainly welcome, but its effect will remain unknown in the short term. Also, Oracle is showing signs of making the Sun portfolio and R&D more sane by canceling non-core projects and emphasizing those that are core. An example of this is Project Darkstar, Sun’s open-source, scalable, flexible architecture for massively multiplayer online games. Of course, the downside of these difficult decisions is that by limiting more long-term speculative R&D efforts, Oracle/Sun restricts its ability to come up with breakthrough technologies and solutions.

Oracle ownership of Sun is in its infancy, but already some are saying that Oracle is having difficulty managing the Sun purchase [21]. Many aspects of the hardware business are new to Oracle, and Oracle is rapidly changing how Sun does business. Hopefully, Oracle will be a fast learner, recognizing what is good and bad at Sun and sorting those out. Of course, doing that without alienating customers and partners would be the best result. Only time will tell if that is a result Oracle can attain.

Tidbits

As this issue of *login*: is security based, I thought I should include at least something about security. As described in a previous column, the CIS Benchmark [22] is a tremendous tool for gauging the current security stance and improving the stance of Solaris systems. The document has recently

been updated, so whether you've previously had a look or not, now would be a good time to do so.

Also, Oracle has produced a new quick reference document covering their Sun offerings [23].

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