Dell Scales Out its Data Center Philosophy

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Management Summary

Back during the dot-com bubble, expectations for meteoric growth were rampant, and server farms were a hot buzzword. The boom has long faded, but the server farms live on as *scale-out* architectures, because it turns out that they were useful for many more things than meteoric growth. A swarm of common elements - and the streamlined provisioning developed for those expectations of meteoric growth - give a less chatty form of system resilience than traditional clustering. When turned from a *capacity* axis to a *time* axis, the same elements turn the ability to *easily grow* into the ability to *easily change*. Also, in the past few years, there have been other technology developments to take fuller advantage of the robustness scale-out has to offer.

- Tools have been developed to allow deconstruction of vertically-oriented legacy applications into component-style-architectures. This deconstruction was often initially done to "Webify" the applications – but the component model is key to giving applications the flexibility to match business change, not just access mode.

- There has been a general move in software from a session orientation to a transaction orientation, mirroring the transition of telephony from a switched basis to a packet basis. The shorter scale of transactions allows applications to scale out (using scale-out infrastructures) and avoid the expense of scaling up.

- The use of virtual machines and other containers eases the management and deployment of scale-out environments. It lets administrators configure once and clone as needed, rather than custom-configure for each installation. And, of course, it enterprises it gets higher utilization of their servers, and even longer use out of their aging assets when necessary.

- The increasing general use of multi-core architectures allows data centers to get as much work out of 2- and 4-processor machines as much-larger-processor-count servers used to deliver. The kinds of applications that can be run on scale-out architectures are far less limited than it used to be.

- Together with multi-core architectures, Infiniband and 10-gigabit Ethernet turn scale-out architectures from an edge tier into a pervasive data center infrastructure.

- The enrichment of chip architectures with more memory, and the availability of 64-bit address spaces, let scale-out architectures address the needs of databases and other large transaction systems.

Dell - a big proponent of scale-out environments - recently offered some enhancements to its basic set of enterprise hardware, software, and services. If you are tired of too many bewildering choices offering capabilities you do not need, Dell's emerging enterprise vision may be a comfortable fit. Read on for more details.

IN THIS ISSUE

The Dell Data Center Philosophy

Dell focuses on what is needed for fundamental data center enablement. Michael Dell used this same strategy on the personal computer when he started the company. **Dell believes that data center is a concept, not a physical space, and certainly not necessarily, a space with particular needs for a broad array of special, high-maintenance IT skill sets.** It is actively partnering to complete its offerings and to offer enrichments to those of its customers who want more. Let's look at the new enhancements to their data center foundations:

Dell Hardware

Dell's new ***PowerEdge 6800 and 6850*** rack-mount servers have more memory and more hot-plug components than earlier models. The new models offer more room to grow internal storage[1], a higher-speed bus, and optional Fiber Channel connectivity. All of these enhancements help make scale out architectures more broadly useful to the growing enterprise.

Dell Services

In keeping with the Dell philosophy, Dell focuses on the kinds of services that all of its customers need.

- In ***Support Services***, Dell is taking the role of single point of problem resolution for the customer's environment seriously. The complex hardware and software problem resolution management service it offers its Silver, Gold and Platinum level customers includes unlimited OEM operating system and firmware troubleshooting support for break/fix issues, as well as resolution packs for advanced application and third-party product support. Dell has targeted an 89% success rate in achieving a twelve-hour maximum-time-to-resolution for all problems and six hours for severe system down situations.

- ***Readiness Assessments*** can be done locally or at Dell's Oracle/PeopleSoft Competency Center. They are targeted at the solution as a whole, not just at the hardware. When you think about it, anything less is insufficient.

- ***Migration and Consolidation*** - Migration is a fact of life – or at least of the lifecycle of technology equipment. Consolidation is more than a matter of cost savings these days, though that is always attractive. It is also a matter of *time* (fast failover, fast recovery) and of *simplicity* (of management and of security). Consolidation can be done at multiple levels – physical, logical, application and workload. Dell has services that cover all dimensions of that landscape.

- ***Power and airflow within the data center environment*** is another area where Dell services, and, in particular, use of Dell's simulation tool, can quickly let a customer simulate and analyze the power and thermal needs of various configurations in their particular environment. Customers get the information they need to optimize the environmental conditions in their data centers, and to make deployment less risky.

Dell's Management Software

Dell's ***Open Manage 4.3*** for server provides core management modules for deployment (*Server Assistant*), Monitoring (*IT Assistant*) and Change (*Change Management Toolkit*), focusing on performance management and trending. It partners for more sophisticated functionality. Since Dell's software is built to the *IPMI (Intelligent Platform Management Interface)* standard[2], this modular approach can work well, and allows intelligent, remote management of open systems components.

Conclusion

Once again, Dell has analyzed the situation to determine what most enterprises really need for their applications. If you are looking for good, solid, easy to understand, no-frills, less-skills IT functionality, it is time for your enterprise to think about data center infrastructure from Dell.

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[1] It is time to start thinking of this internal storage as a lower level of cache, rather than just as a terminal destination of enterprise information.

[2] IPMI runs on a dedicated controller embedded in a server to provide a separate platform management subsystem,, independent of application host OS and BIOS, that can redirect information to remote consoles if a server node hangs or fails, identifying the fault and speeding recovery. IPMI was introduced by Dell, Intel, HP, and NEC in 1998.

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