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## Sun builds on N1 vision

*With N1, Sun wants to build up its professional services group by leveraging its strength in the data centre. The company is already 75 percent there in executing its N1 vision. By year-end, Sun should have N1-enabled systems across its product line, says Prashant L Rao*

"It's the next big thing for data centres," proclaims Anil Valluri, director of Systems Engineering, Sun Microsystems India, speaking of N1. This includes both Internet data centres, and more significantly, corporate data centres that are mushrooming in India. N1 is for operations; it is aimed at system administrators in data centres and manages service levels. Sun believes that N1 will change the way that networking, storage and computers are managed and utilised.

Today, the average utilisation of servers in an organisation is a pathetic 15-20 percent. Worse, you can't reallocate resources. Therefore, IT managers tend to plan for peak requirements, which is quite wasteful. After all, how often do you see peak usage? The answer is rarely. Another feature of today's server set-up is that resource requirements are driven by applications. Sun is betting that system administrators want to manage services and not servers. What Sun's doing is repackaging the technology that lets its Sun Fire 15K slice and dice resources using domaining and partitioning and extending this concept to an entire data centre. The idea is to manage things centrally and dynamically allocate resources through 'soft' switching of network storage and CPUs. Simply put, the goal of N1 is to virtualise all data centre resources. What makes N1 possible is the fact that today network bandwidth in a data centre is faster than server throughput.

While resource management and partitioning software have been available for a while on Sun's servers, N1 brings the new concept of goal-based partitioning or even SLA (service level agreement)-based partitioning. Essentially, the set-up becomes service driven and resources are allocated based on



Anil Valluri say that N1 will increase server utilisation to as high as 80 percent with existing infrastructure

the priority allotted to each service. If the data centre begins to run short of resources, low priority services are choked and high priority ones get more resources till the burst of traffic fades away. "N1 will increase server utilisation to as high as 80 percent with existing infrastructure," adds Valluri.

### **Three steps done, one to go**

Sun has divided the data centre into four parts—storage, network, horizontal computing (blades, rack servers) and vertical computing (massive SMP systems like the Sun Fire 12k and 15k). In Q1 CY 03, Sun released the N1 provisioning server 3.0 and N1 compliant blades. Now in Q2, it's extending the N1 umbrella to rack servers and storage arrays. The N1 components for managing the network are also in place. The only missing piece is the vertical compute part of N1.

N1 provisioning server manages one or two processor blades—what Sun likes to call the horizontal compute platform. B1600 blade shelves can fit 16 Sun Fire B100s blades in a 3U form factor. Today N1 provisioning server is limited to virtualising blades and entry-level servers. N1 provisioning server lets IT managers allocate resources to applications across blades. Resources managed by the provisioning server can be dynamically allocated—changes can be made on-the-fly. The software can even create additional instances of an application when demand for that application spikes. This could be payroll processing at the end of the month or a surge of hits on a Web server when a new product is introduced. It's not just blades anymore; Sun's latest volume servers, the V210 and V240, are both N1 ready.

Sun Bandwidth Manager is the bandwidth allocation and load-balancing component of N1. "It can aggregate multiple data pipes into a single one or split a large pipe into several smaller ones. The software lets you allocate bandwidth to servers as needed," says Valluri.

N1 data platform is Sun's storage virtualisation engine for data centres. The PSX-1000 is the heart of the N1 data platform. This 16- or 32-port box combined with the virtualisation engine lets CIOs manage storage from diverse vendors, including EMC, HDS, IBM and, obviously, Sun. Administrators can do volume management from a single console, allocating storage across boxes from various vendors. Essentially, all the storage hardware in a data centre becomes part and parcel of a single vast pool of storage.

### **N1 in India**

Sun India is going to its customers with assessment services built around the N1 platform products. Sun's business model for N1 goes like this—N1 engagements are sparked off by customer interaction, leading to a pilot, which will eventually

lead to a full-blown N1 rollout. Sun's 20-member Professional Services team is the spearhead for N1 activity in India. Sun's consulting arm will do the high-level analysis and design work in an N1 rollout. After that, Sun's system integration partners, Wipro and HCL will come into the picture to do the actual implementation. Sun Professional Services will be offering the PSX-1000 implementation service. Pricing starts at \$75,000 to \$100,000 for the product and services. The N1 provisioning server costs in the range of \$20,000 to \$25,000. The Sun Bandwidth Manager is priced at \$16,000 for the Sun Fire 15K, for any number of CPUs. As costing is done on a per-CPU basis, it works out cheaper for mid-range servers.

### **N1 tomorrow**

Later in the year, Sun will release provisioning server software that will manage its enterprise and Sun Fire servers, massive SMP boxes that Sun calls the 'vertical' compute platform. Sun plans to extend the N1 data platform with features like archiving and storage resource management in the second half of 2003 and in 2004. Also coming in 2004 is the ability to automatically provision storage when a storage box 'maxes' out. Policy automation is another important feature that's due next year. At that point, N1 data platform will be able to auto-provision storage according to policies set by the data centre manager. Sun also plans to add billing to N1. This will let data centres bill their customers for resources used rather than customers paying for a server or bandwidth pipe even if they don't use it most of the time.

N1's success will depend to a large extent on Sun's ability to support hardware from other vendors. There's no doubt that Sun will be able to make its own hardware play ball with N1. The question is, will it be able to make resources from multiple vendors in a data centre appear and act as one common pool of resources? If it can, this could be Sun's chance to make its mark in consulting. IBM's already taken this route, Global Services is the biggest revenue earner for that company. Sun's N1 initiative is ultimately aimed at getting Sun into consulting in the area where it is strongest—the data centre.

### **What's new?**

#### **Secure version of Solaris**

Trusted Solaris is being pitched at the database and Web tier of bank data centres. The extra security rubs off on applications running on top of the OS to the extent that application developers don't have to write extra code to secure the application, it's built into 'trusted' Solaris. This is significant in light of the fact that a good number of Indian banks run Solaris.

#### **UltraSPARC IIIi**

A workgroup level version of the UltraSPARC III that powers Sun's server line, the IIIi reduces memory expandability to 64 GB from the mammoth 512 GB limit of the US III. In the process, it lets Sun sell Solaris-SPARC

boxes at prices approaching SIAS (Intel servers). This new processor is being used in 1-4 processor servers and it debuts in the Sun Fire V210 and V240. The 210 should be available in India for Rs 2.8 lakh.

### Pieces of the N1 puzzle

<b>N1 component</b>	<b>Product or service offering</b>	<b>What it does</b>
Storage	N1 Data Platform	All storage hardware in a data centre becomes part of a single vast storage pool.
Network Computing	Sun Bandwidth Manager	Bandwidth allocation, load balancing.
Horizontal (blades)	N1 provisioning server	It lets you allocate resources to applications across blades and entry-level servers.
Vertical (SMP)	Not yet available	When it debuts the vertical component of N1 will let data centre administrators allocate resources to applications across Sun mid-range and high-end servers, including its flagship the Sun Fire 15K.

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