

A case for Integrity

At the recent **HP Asia Pacific Business Critical Systems Media Summit** in Macau, an expert panel from the company discussed four key IT imperatives for enterprises. We present the first part of an exclusive, on-site report



(L to R) Vish Mulchand, Director Business Development, Enterprise Storage and Servers, Asia Pacific; Donovan Nickel, VP & GM, Hardware Systems & Technology Division, Business Critical Systems, HP; Brian Cox, Director of Server Marketing, Business Critical Systems, HP Worldwide and Nick van der Zweep, Director of Virtualisation and Integrity Server Software, HP Worldwide.

By **ANOOP KOCHAPPAN**

Take server consolidation, virtualisation, business intelligence – key top-of-the-mind concerns for Senior IT executives today. Now add solution experts on these

areas to create a high-power panel; Throw in a fine moderator to manage the sound bytes. The result: A fast-paced panel discussion that didn't slacken one bit in its allotted 75 minutes, listened to with rapt attention by the assembled and serving up sharp insights into today's IT imperatives and how HP proposes to address them

through its Integrity Server line. The venue of this discussion – Macau and the event – HP Asia Pacific Business Critical Systems Media Summit.

Constituting the high-power panel were Donovan Nickel, VP & GM, Hardware Systems & Technology Division, Business Critical Systems, HP; Nick van der Zweep, Director of virtualisation and Integrity Server software, HP Worldwide and Brian Cox, Director of Server Marketing, Business Critical Systems, HP Worldwide, while Vish Mulchand, Director Business Development, Enterprise Storage and Servers, Asia Pacific moderated the discussion.

Consolidate to grow

To understand server consolidation, one must understand server proliferation, and that requires a brief trip into the past. Recounted Donovan, "For a lot of companies, servers and IT have evolved from a client-server model, departmental IT and Business Group IT, one at a time." The work team/business group/department built up their own servers, their own applications, their own environment with data centres. As they began to scale up, they started having lot more of data centres and servers, different applications and databases, and

an army of people to administer them. As costs ballooned, the trend started to reverse and today, Donovan points out, server consolidation is a hot trend. According to Donovan, it encompasses reducing the number of data centres, servers, unique applications and people administering all of these. Donovan then listed out the drivers and motivations for server consolidation, seen with many HP customers.

- Lower cost of infrastructure and support
- Get to a level of availability and scale the performance; scale up as size

According to Donovan, an important business driver of server consolidation is Merger & Acquisition (M&A) activity. For example, in the telecom industry, where companies have acquired enormous scale, in part, through M&As, it is possible that each acquired entity in the long M&A list would have gone through a different evolution of IT infrastructure. "Now you have an enormously complex IT environment with consolidation as a mandate," states Donovan.

Security is another motivation, Brian noted. Server consolidation

ment in the data centre, this scales up further. Says Donovan, "Companies are rightly concerned about the cost of operations in the area of power consumption. But an area of bigger concern is the trend wherein a lot of companies evaluating future data centre requirements extrapolate through the next five years, the trend we had seen in the last five years. The cooling problem then becomes un-containable."

To deal with such issues, chip manufacturers like Intel (and even HP with its PA-RISC processors) are embedding thermal management technology within the processor, to optimise performance throughout and dynamically adjust power consumption, whereby the chip consumes less power during idle cycles.

Donovan also predicted that the industry is going to see a trend in processors which is contrary to what we have come to expect over the last decade. This was driven mainly by the consumer market. He said, "The world of PCs taught us as consumers that higher frequency is a good thing. To achieve the higher clock rates, the processor companies went for very long pipe lines. While this really didn't help performance in a lot of cases, it helped the clock rates which was good from a marketing perspective. The unfortunate fall out was growth in power consumption. But in the x86 world and even in Itanium, the pipeline won't be as long. They represent a much more power efficient way to deliver a performance as opposed to going by pure frequency and the amount of work getting done per clock cycle will be higher."

As for HP's initiatives, Donovan said that HP has lot of ongoing investments in data centre server management technology. HP has invested in improving power conversion, thermal flow – for example, in the case of Superdome, the high end of HP's best selling Integrity server line, its bottom to top air flow model neatly fits it into the data centre environment. HP has

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of the projects grow or new projects come along, or as databases increase in size.

- Flexibility to respond to changing business requirements. With consolidation, IT operations can become a flexible resource that can shift between the operating environments and between applications as business evolves, projects scale and some disappear
- Elimination of some of the older legacy environment that are expensive to support

Joining in, Brian Cox said that server consolidation actually makes it easier to set up Disaster Recovery (DR) operation. For instance, if you try to set up a high availability DR for a 200 server set up, the required duplication will take the total number of servers to 400, with exponential jump in costs. Server consolidation can cut the cost of a secondary site for DR. Donovan added that with greater centralisation of resources, DR becomes more important.

makes security more manageable by simplifying the number of access points, compared to the sprawl of servers and data centres in a decentralised environment.

Panacea or problem?

At this juncture, Vish tossed a question to the panelists – As we consolidate servers, do we end up creating new problems, in terms of power and cooling? Donovan started off with the observation that over the past five years, the trend at the processor level has been performance improvement. Therefore, these days, high chip powers of 100W to 150W are pretty common. With the increase in the processing power of a single chip comes an increase in power consumption, and a subsequent increase in heat discharge by that chip.

In large systems, therefore, bringing power in and getting thermal energy out is a major technology challenge, and in a consolidated environ-

also developed technologies for data centre cooling and management that it has licensed to players like Emerson and other key partners.

Come backs

Continuing in the same vein, Brian Cox said that the next generation of Itanium dual core processors will have advanced cooling technologies that will dynamically lower the chip's input voltage/frequency based on processor activity, thereby cooling the chip off.

HP has developed cooling technologies at the rack level. Said Brian, "For data centre deployment, we have come out with a modular cooling system. Basically, it is a water-cooled rack cabinet wherein you can put your equipment." HP's modular cooling system attaches to the side of a rack of HP computers and provides a sealed chamber of cooled air" separate from the rest

of the data centre. But water cooling ie. cooling air using chilled water, is an old method deployed mainly around mainframes that is making a comeback because it's more efficient than air conditioning. According to Brian, vendors must come up with solutions at the chip level and system level. "HP also provides consulting – we can tell you how to place your equipment and how to arrange it in the data centre – which can address a lot of the cooling issues."

Vish then turned the spotlight on to what HP is doing in terms of server consolidation since "HP internally isn't different from a large customer." Once the answers started coming, it wasn't difficult to figure out why HP prides itself in understanding and addressing customer imperatives better than competition. As Donovan revealed, HP has the world's largest implementation of

PeopleSoft for human resource management and the company has gone through several M&As over the years, among the many things that provide a fertile ground for the company to test the concepts it sells. On the consolidation front, HP has brought down the number of data centres from 200 a few years ago to 60-65 now. However, HP is already working on consolidating all this into six mega data centres. Said Donovan, "We will be standardising on similar small set of operating environments, centred around HP UX, Windows, Linux and a fewer, smaller consolidated set of core applications that we will be running for the company. That will consolidate a lot of supply chain operations and processes as well. We expect continued substantial savings." **[2.0]**

To be concluded
(The author was in Macau at the invitation of HP)