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IBM OpenPower Launches New Linux Opportunities

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Today IBM announced the latest member in its server family, the eServer OpenPower 720. It is the first IBM server specifically designed and tuned for Linux. The OpenPower 720 comes as a one-, two-, or four-way SMP server built on the same POWER5 technology as the i5 and p5, and supports both SuSE and Red Hat Linux. The server will be available in either a rack or tower configuration with configuration options and features including:

- ◇ POWER5 Processor 1.5GHz for one-, two-, or four-way systems and 1.65GHz for two- or four-way systems;
- ◇ Memory minimum 512MB for one-way systems / 1GB for two- or four-way systems;
- ◇ Memory maximum 32GB for one- or two-way systems / 64GB for four-way systems;
- ◇ Five PCI-X slots;
- ◇ Eight disk drive bays;
- ◇ RAS features including concurrent firmware updates;
- ◇ Self healing capabilities: Finer grain L2 cache deallocation, improved L3 cache line deletes and ECC cache;
- ◇ Operating Systems:
 - ◇ SuSE Linux Enterprise Server 9 for POWER (SLES 9) or later, or
 - ◇ Red Hat Enterprise Linux AS 3 for POWER (RHEL AS3) Update 3.

IBM has also announced that in 4Q 2004, it will provide its Virtualization Engine option for the server. This will include:

- ◇ Dynamic logical partitions;
- ◇ Micro-Partitioning of increments of processors;
- ◇ Shared processor pool;
- ◇ Virtual LAN for communications between partitions;
- ◇ Virtual I/O for sharing of fibre channel and SCSI adapters.

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With today's announcement, IBM is putting the beef behind in its oft-stated intentions to propel Linux into the enterprise and to make Linux on Power a market standard. In the short-term it's a stake in the ground that affirms IBM's much touted Linux leadership position; and for the long term, it sets the ground rules for a much more serious game. It's the next step in IBM's grand scheme to drive its vision of On Demand computing beyond high-end applications and Global Services to all customers. More importantly it's about

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changing customer perceptions of commodity technology and expectations of entry-level servers; rewriting the rules for the commodity server game rather than just continuing investments in me-too technologies.

Challenging the common wisdom, IBM has commoditized a powerful RISC server specifically optimized for Linux. With the pricing for this system intended to compete with similarly configured x86 hardware, IT managers looking at Linux systems have another option, but with technology under the hood that puts it in a class usually reserved for the high-end technical elite. This announcement is also an important step forward for IBM's Power-everywhere vision. If Power is to be an industry standard for 64-bit Linux computing, then it must be available as a pre-integrated package (like the i5) and at commodity prices as well as in build-it-yourself trim for large enterprises. If OpenPower is as successful as we believe it can be, especially in the SME space, we wouldn't be surprised to see commodity-priced, integrated OpenPower workstations appearing in the near future augmenting the Apple G5 as the only Power Linux desktop. One measure of OpenPower's success in the market might be the impact on IBM's xSeries offerings, perhaps intensifying its reliance on Windows. This might end up a good thing for IBM as xSeries represents a well executed, but low-margin me-too implementation of the x86 world.

After digging through the tsunami of marketing material, it becomes clear that IBM has chosen three usual suspect markets for this system. The most obvious audience is infrastructure server customers currently served by x86 or entry-level RISC boxes wanting to take advantage of Linux' benefits. These customers are attracted by Linux's lower hardware and software costs, but they have also come to appreciate Linux's flexibility and its potential built-in future proofing. Additionally, a growing group of infrastructure application developers have selected Linux as their development platform which means that players in this market may see a future capability advantage with Linux as well. For these customers, IBM has announced solutions for simple infrastructure such as file and print, firewall, web infrastructure, and infrastructure consolidation. While we generally see chasing speeds and feeds as a losing game, we believe that IBM's approach of delivering fully formed infrastructure solutions on a platform that is ahead of the commodity pack will be a huge advantage to SMEs and partners alike.

The second target is the ever present consolidation crowd. These customers want to take existing horizontal infrastructure applications and/or custom-created business applications currently running on some form of UNIX, and consolidate them on a single platform that makes better use of human and system resources and ideally lowers costs. For these customers, the performance of the POWER5 processor and the Virtualization Engine capabilities are the key enticement to move to the OpenPower platform. By focusing their go-to-market strategy on the existing xSeries partner channel, IBM may risk losing some potential short-term sales as this group, on the whole, has the least experience with complex computing environments where the OpenPower system is most likely to shine. However, those partners with experience in UNIX or Linux systems as well should be able to fulfill IBM desires to leverage OpenPower's unique capabilities in the shortest period of time to a wider audience than might be found in their other channels.

Finally, there are the vertical solutions from ISVs and partners. IBM has taken the initiative by announcing solutions for retail point-of-sale, branch bank transfers, retail payments witching, and biotechnology research first – all areas where Linux has been most fully explored – and began laying the groundwork for its partner network to join in. Over time, IBM expects to see more vertical applications and partner announcements develop, with success going, as always, to those partners who take first advantage of what IBM is offering.

To our way of thinking, the jewel in the crown of this announcement is OpenPower's virtualization capability. The OpenPower 720 provides the highest potential of virtualization to the smallest commodity boxes. IBM is leveraging the technology it originally developed for the mainframe – and recently brought to its other Power platforms (the i5 and p5) – down to the SME space. Commoditizing the value proposition of IBM's high-end platforms will apply significant downward market pressure on x86 platforms with limited virtualization capabilities. The OpenPower 720 not only takes advantage of the performance, scalability, and reliability features of its bigger/more expensive Power brethren, but it also incorporates the most important syllable in the word *virtualization*: AUTOMATION. For the first time, customers with multiple workloads, consolidation

problems, or issues of workload isolation have a commodity-priced system capable of automatically managing that level of complexity, even in an environment of changing workload demands. The OpenPower 720 has the potential to rewrite the rules of the game for entry-level server computing, provide a unique IT advantage to SMEs, and give IBM the pole position in the never-ending race for total server domination.