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IBM Announces New System p5 Servers

By Clay Ryder

IBM has announced eight new System p5 servers, including several based on the latest POWER 5+ processors including the Quad-Core Module technology. In particular, the company noted the new performance gains made by many of its new offerings. IBM also released three new systems featuring a unique four-core processor module, the POWER5+ Quad Core Module, creating a family of quad-core systems from 2U form factors with up to four cores, to 8U with sixteen cores. In addition to the System p5 570 server, the new 2.2 GHz POWER5+ processor is also part of the new IBM System p5 575 supercomputer building block.

Additional details of the System p5 announcement include::

- The System p5 570 set a record for transaction processing performance in a sixteen-core system, delivering 1,025,169 tpmC on the TPC-C benchmark. Using new POWER5+ processor technology at 2.2GHz, the p5-570 server is targeted at clients with large database, ERP, and CRM applications as well as those interested in server consolidation.
- The System p5 185 Express is available as a desk side or rack mount form factor. Customers can choose from thousands of AIX or Linux applications, as well as IBM integrated offerings including WebSphere software, Apache, SAMBA, Network E-Mail Security Express, and J-Scribe Intelligent Server Solution, amongst others.
- The System p5 510 Express is IBM's lowest priced POWER5+ server and targets those seeking fast two-core performance for Java business applications. The 2U rack server is enabled for optional Advanced POWER Virtualization with the web-based Integrated Virtualization Manager.
- The System p5 510Q Express offers the Quad-Core Module to provide four-core performance in the same package as the two-core p5-510. The system is designed for application or server consolidation and medium to large transactional applications as well as multi-threaded high-performance HPC applications.
- The System p5 520 Express and System p5 520Q Express deliver 90% faster performance over their predecessor—the IBM eServer p5 520—at lower price points. The desk side or 4U rack models come in one-, two-, or four-core POWER5+ configurations and offer more internal expansion than the p5-510 and 510Q.
- The System p5 560Q Express offers customers up to four- or eight-core POWER5+ scalability with the ability to upgrade to sixteen-core.
- The System p5 Express servers are available in special, pre-configured AIX 5L Editions and OpenPower Editions for Linux environments and can be configured to run both concurrently.
- The System p5 575 server sixteen-core is available with 100 GFLOPS/node for computationally demanding applications and up to 256 GB of memory, with less than 200 GBps memory bandwidth. The system offers just under 1 TeraFLOP per footprint and includes an optional Rear Door Heat Exchanger, designed to reduce heat emissions by up to 55%. The System p5 575 server eight-core is available with just under 25 GBps of memory bandwidth per processor.

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- IBM Intellistation POWER 185 Express is IBM's lowest priced AIX 5L workstation. It has advanced 3D graphics capabilities for a UNIX workstation and is targeted at AIX 5L and Linux application development and exceeds IBM's Quiet Office standard for low-noise environments.

Pricing/Availability

IBM stated that it intends to offer promotional software pricing of up to 50% savings for customers who purchase select IBM middleware products, such as WebSphere Application Server and DB2 Enterprise Server Edition, in conjunction with any System p5 model 510Q, 520Q, 550Q, or 560Q. Details on this promotional offering, including specific terms and conditions and eligible middleware products, are expected to be available by the end of April.

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To say that Big Blue released a couple of new servers would be a substantial understatement. There are many configurations represented here and several that have achieved some leapfrogging of performance metrics over the competition. As we have said before, the leapfrogging of benchmarks is a short-lived victory, so enjoy the moment, but be aware of competitors preparing to make the same jump. Nevertheless, we find much worthy in this announcement.

With all of the talk about dual core this, dual core that, it is not surprising to see much of this announcement focused on the merits of the quad core module, dual duallies (to steal a Texan trucking term), if you will, but a substantial consideration nonetheless. The performance levels that are being achieved here are noteworthy, but also the reality that this is being done at lower clock rates, which can lower (but not eliminate) heat dissipation concerns. The Rear Door Heat Exchanger option on the p5 575 illustrates that heat is still a factor in server design. The market in general has been gushing aplenty with respect to dual core and performance in the x86 segment, but it is important to remember that the concept of multi-core predates Intel's initiatives, and Big Blue is no stranger to the advantages of the approach. However, the conflicting usage of how to count multiprocessing solutions causes FUD especially when comparisons between IBM POWER and Sun UltraSPARC are made. For example, an IBM sixteen-way system would be an eight-way system in Sun nomenclature, yet they are both marketed as sixteen-way. But this is an in depth discussion in and of itself, and not one to attempt when handling power tools or sharp instruments. Look for a paper from Sageza on this topic in the near future.

Technology itself aside, the inclusion of the quad core modules into the Express line of services illustrates that to IBM, Express is not a cheapened-down line of products. Yes, it remains tailored to the needs of the SMB market, but not at the expense of losing state-of-the-art capability. Bringing the quad core to this line of offerings delivers a consistent price performance yield to SMBs that is similar to the benefits offered to larger system purchasers. This parity in how customers are treated remains to us one of the reasons driving the success of Express. Similarly, the software pricing accommodations with respect to Q model p5s is illustrative of IBM's focus on price performance yield to the customer, irrespective of how or which technology is implemented. Helping customers both large and small to benefit from state-of-the-art hardware without necessitating unnatural software licensing gymnastics is a smart move, and hopefully one that over time ISVs will come to realize is ultimately to their advantage.

So with all of this in mind, we see the p5 as a family of systems with several worthy enhancements, some jaw-dropping performance, and new quad-core techno fun, but most importantly with a mission of sustainable price performance to customers at all scales of engagement. We are pleased to see the p5 being positioned as a top-dog high-end UNIX solution but also are seeing its merits as a compelling Linux platform for the mid- and entry-level markets being acknowledged as well. For those who a few years back declared IBM's days as a relevant UNIX vendor over, this announcement serves notice that this is clearly not the case today. Add to this unquestioned support for Linux, Virtualization, and the unique abilities of POWER, and it is easy to see why System p5 is enjoying growing market success.

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