Announce date: October 4, 2005

IBM System p5™ Express Announcement Overview

IBM System p5 Express Servers, IntelliStation® POWER™ 285 Workstation and @server® p5 575 16-way HPC Node – Innovative design and outstanding value for businesses of all sizes

Today, IBM introduces IBM System p5 Express – a family of affordable, high-performance entry-level servers designed for smaller and mid-sized companies and for departmental and branch office installations in larger businesses. Innovative IBM technologies allow flexibility and scalability for consolidating UNIX® and Linux™ applications on a single System p5 Express server. In addition to leading-edge technology and outstanding performance, System p5 Express, AIX 5L™ and OpenPower™ Editions, offer additional value and ease of ordering to clients with smaller system needs.

These exciting new servers support the IBM Systems agenda – delivering business value through UNIX system-level innovation and commitment to virtualization and openness. Virtualization technologies extend all the way from the high-end IBM @server p5 595 down to the entry-level System p5 505 Express. The openness of System p5 Express systems is clearly shown by the conformance of AIX 5L, IBM's industrial-strength UNIX operating system (OS), to the X/Open UNIX 03 product standard and by support for the Linux OS and the open source community. System p5 Express systems support ongoing innovation through collaboration with many independent software vendors and via user communities for AIX 5L and Linux on POWER.

All System p5 Express servers offer optional Advanced POWER Virtualization, which includes Micro-Partitioning™ technologies, Virtual Ethernet and Virtual SCSI to help drive system efficiency and utilization. Micro-Partitioning technology allows each processor to be subdivided into as many as 10 "virtual servers", helping to consolidate UNIX and Linux applications. Virtual I/O and Virtual Ethernet help reduce hardware costs by sharing disk drives and LAN adapters. An exciting new capability announced today is the Integrated Virtualization Manager (IVM), which allows cost-effective management of virtualization within a single server.

System p5 Express systems share many of the same reliability, availability and serviceability (RAS) capabilities found on larger IBM @server p5 models. These include a built-in service processor, hot-swappable disk bays, hot-plug PCI-X slots (except on the ultra-thin p5-505 server), redundant cooling, optional redundant power supplies, Chipkill™ ECC and bit-steering memory, First Failure Data Capture and dynamic deallocation of system components to help keep the systems up and running.

The System p5 505 Express server offers one or two 1.5 or 1.65 GHz IBM POWER5™ processors in an extremely compact 1U (one EIA unit) rack-mount drawer. The System p5 520 Express, a high-performance server with two 1.9 GHz POWER5+™ processors, is available in a rack-mount drawer (4U) or deskside package. The System p5 550 Express server can be configured with two or four of IBM's 1.9 GHz POWER5+ processors, while the System p5 550Q Express server offers up to eight 1.5 GHz POWER5+ processors using IBM's innovative Quad-Core Module (QCM) technology. The 64-bit IBM POWER5 and POWER5+ microprocessors provide simultaneous multithreading technology to make each processor look like two to the OS, thus increasing performance and system utilization over servers without this capability.

The high performance computing (HPC) muscle of System p5 Express systems is shown by the industry-best SPECompM benchmark result for the 2-core p5-520[1] system. And, the power of System p5 Express for commercial environments is demonstrated with achievement of leading results for Java™ business applications processing[2].

System p5 Express servers are supported by the following operating systems, or later:

- AIX 5L V5.2 with the 5200-07 Recommended Maintenance Package (APAR IY67914)
- AIX 5L V5.3 with the 5300-03 Recommended Maintenance Package (APAR IY71011)
- SUSE LINUX Enterprise Server 9 for POWER (SLES 9)
- Red Hat Enterprise Linux AS 4 for POWER (RHEL AS 4)

System p5 Express Editions offer clients extra value on their initial system purchase when specific processor, memory and disk drive requirements are ordered. Incentives include processor entitlements at no additional charge plus specially priced AIX 5L licenses or Linux subscriptions. If the minimum configuration requirements are met, clients may add features and peripherals to their configuration and still receive the incentives. AIX 5L Editions offer specially priced AIX 5L licenses and OpenPower Editions provide lower priced subscription options for SLES 9 or RHEL AS 4. System p5 Express Editions may also be ordered with no OS.

A broad range of IBM TotalStorage® systems are supported on System p5 Express, allowing clients to configure highly available and powerful solutions to meet their storage requirements. Comprehensive testing under heavy stress environments, including clustered configurations, helps ensure combined server and storage solution with high reliability, interoperability and efficient implementation. System p5 Express and @server p5 clients of every size can realize the benefits derived from this combination of easy-to-order and rigorously tested servers and storage systems from IBM.

Planned availability for System p5 Express servers is October 14, 2005, except:

- November 18, 2005
  - PCI-X Dual-port 4x InfiniBand® (IB) Host Channel Adapter (HCA) (FC 1820) (all System p5 servers)
  - GX Dual-port 4x IB HCA (FC 1809) (System p5 550 and 550Q servers)
  - InfiniBand cables (System p5 505, 550 and 550Q servers)
- February 24, 2006 – Ultra320 SCSI PCI-X adapter (FC 1912) (all System p5 servers)
- March 31, 2006 – 8GB 533 MHz Memory option (FC 1934) (all System p5 servers)

IBM System p5 505 Express Server

The System p5 505 Express, IBM's most compact and lowest priced POWER5 processor-based server for industry-standard 19-inch rack-mount installation, offers prices[3] starting at only $3,750[4] for a server with one 1.65 GHz processor, 1GB of memory, two 73.4GB 10K rpm disk drives, DVD-ROM and three-year warranty. The p5-505 system is also available with two 1.5 GHz or 1.65 GHz POWER5 processors with 36MB L3 cache. High bandwidth 533 MHz memory can be expanded to 32GB. This compact 1U rack-mount server has two hot-swappable disk drive bays with internal storage capacity up to 600GB, two high-performance PCI-X 2.0 adapter slots, a media bay for DVD-ROM or DVD-RAM and many built-in I/O interfaces. Optional Advanced POWER Virtualization enables up to 20 micro-partitions to be defined, allowing multiple applications to be consolidated on this aggressively priced, ultra-dense entry-level server.

System p5 505 Express, AIX 5L and OpenPower Editions, include DVD-ROM, IBM bezel and rack-mount hardware, power supply and power cord. The following p5-505 Express Editions are available:

- 1-way 1.65 GHz POWER5 server, 1GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement
- 2-way 1.5 GHz POWER5 server, 2GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement
- 2-way 1.65 GHz POWER5 server, 2GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement

IBM System p5 520 Express Server

For clients who require more performance and I/O expandability than available in the p5-505 system, the deskside or 4U rack-mount System p5 520 Express server is an ideal choice for remote branch or store operations, small database server applications and high-performance computing (HPC) or business intelligence (BI) environments. It provides two advanced POWER5+ processors running at 1.9 GHz with 36MB of L3 cache and up to 32GB of memory. With optional Advanced POWER Virtualization, up to 20 micro-partitions can be defined and I/O resources can be shared, providing a cost-effective, high-performance platform for application consolidation.

With up to eight front-accessible, hot-swappable disk drive bays, the p5-520 server can accommodate up to 2.4TB of internal storage and, with four optional IBM 7311-D20 I/O Expansion Drawers attached, can include up to 16.8TB of disk storage. The six hot-plug PCI-X slots, expandable with I/O drawers to 34 slots, provide I/O adapter capacity for the most demanding applications. An additional high-performance GX bus slot supports either the RIO-2 (Remote I/O 2) interface to I/O drawers or the 4x InfiniBand fabric for cluster configurations. The p5-520 server has three media bays and many integrated I/O interfaces.

System p5 520 Express, AIX 5L and OpenPower Editions, are available as deskside or rack-mount systems with DVD-ROM, four-pack disk drive enclosure, media backplane, IBM deskside or rack-mount bezel and hardware, rack-mount drawer rail kit (if applicable), power supply and power cord. The p5-520 Express Editions include:

- 2-way 1.9 GHz POWER5+ server, 2GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement

IBM System p5 550 and 550Q Express Servers

For maximum scalability and expandability within the System p5 Express family, the System p5 550 and 550Q Express servers are up to the challenge. The p5-550 server offers two or four 1.9 GHz POWER5+ processors with 36MB or 72MB L3 cache. Using IBM's latest QCM technology, the p5-550Q server offers four or eight POWER5+ processors running at 1.5 GHz with 72MB or 144MB of L3. With prices starting as low as $30,913[5], the p5-550Q server is the lowest priced 8-core POWER5+ processor-based system available.

The powerful and attractively priced p5-550 and p5-550Q systems offer capacity for 64GB of high-performance 533 MHz memory, four or eight hot-swappable internal disk drive bays, three media bays, five hot-plug PCI-X I/O slots and support for up to eight 7311-D20 I/O drawers for expandability to an amazing 31.2TB of disk storage and 59 PCI-X slots. In addition, integrated controllers provide dual 10/100/1000 Mbps Ethernet, Ultra320 SCSI with optional internal RAID, USB, HMC and system ports. Two GX bus slots provide attachment to InfiniBand switches and/or I/O expansion drawers.

System p5 550 and 550Q Express, AIX 5L and OpenPower Editions, include DVD-ROM, four-pack disk drive enclosure, media backplane, processor power regulator, IBM deskside or rack-mount bezel and hardware, rack-mount drawer rail kit (if applicable), power supply and power cord. The p5-550 Express Editions available are:

- 2-way 1.9 GHz POWER5+ server, 4GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement
- 4-way 1.9 GHz POWER5+ server, 8GB memory, two 73.4GB 10K rpm disk drives, second processor power regulator, two no-charge processor entitlements

p5-550Q Express Edition options are:

- 4-way 1.5 GHz POWER5+ server, 8GB memory, two 73.4GB 10K rpm disk drives, IBM deskside or rack-mount bezel and hardware, two no-charge processor entitlements
- 8-way 1.5 GHz POWER5+ server, 16GB memory, two 73.4GB 10K rpm disk drives, IBM deskside or rack-mount bezel and hardware, second processor power regulator, four no-charge processor entitlements

Linux on POWER Solutions

To complement IBM System p5 Express offerings, IBM solutions have been designed, integrated and tested to address many common business needs of the client. Solutions for IBM System p5 Express, OpenPower Editions, integrate a wide variety of applications running the Linux OS to address business priorities in today's on demand world. Available solutions include:

1. Web serving with IBM WebSphere® Application Server
2. Web serving with Apache HTTP Server
3. File-and-print serving with Samba 3
4. Database management with IBM DB2® Universal Database™
5. Database management with Sybase® Adaptive Server Enterprise®
6. Business Intelligence with Sybase Risk Analytics Platform
7. ERP with SAP and DB2 Universal Database
8. High performance computing for Computational Chemistry

Additionally, the IBM @server OpenPower Consolidation Express solution gives clients and IBM Business Partners greater flexibility, lower cost and simplified operation through consolidation of popular Linux OS workloads — from file-and-print services to Web serving — using IBM optional Advanced POWER Virtualization. For more information about IBM System p5 solutions, see http://www.**ibm.com**/eserver/linux/power/solutions.html.

IBM IntelliStation POWER 285 Express Workstation

The IBM IntelliStation POWER 285 Express is the first POWER5+ processor-based workstation. With one or two 64-bit 1.9 GHz POWER5+ processors and 36MB of L3 cache, up to 32MB of 533 MHz memory and over a terabyte of internal storage, it has the processing power and graphics performance needed for complex Mechanical Computer Aided Design (MCAD), Computer Aided Engineering (CAE) and graphics processing applications. It supports the latest evolution of IBM 3D graphics accelerators – POWER GXT4500P and GXT6500P – and a full range of graphics I/O devices, including the USB SpaceBall® Plus 3D and USB SpaceMouse® 3D input devices announced today. It is also an excellent choice for applications that require only 2D graphics capability, such as software development or floating-point intensive computation.

The POWER 285 workstation runs AIX 5L, IBM's high-performance UNIX OS, and is the first UNIX engineering design workstation to support 64-bit CATIA V5 for large engineering assemblies. Specific AIX 5L requirements, or later, are:

- AIX 5L V5.2 with the 5200-07 Recommended Maintenance Package (APAR IY67914)
- AIX 5L V5.3 with the 5300-03 Recommended Maintenance Package (APAR IY71011)

POWER 285 Express, AIX 5L Editions, include DVD-ROM, four-pack disk drive enclosure, media backplane, GXT4500p graphics accelerator, L191p flat-panel monitor, audio PCI adapter, USB keyboard, USB optical mouse, power supply and power cord. Clients may add features or substitute components with greater functionality, including graphics accelerators and monitors. AIX 5L Editions available are:

- 1-way 1.9 GHz POWER5+ workstation, 2GB memory, one 73.4GB 10K rpm disk drive, one no-charge processor entitlement
- 2-way 1.9 GHz POWER5+ workstation, 4GB memory, two 73.4GB 10K rpm disk drives, one no-charge processor entitlement

Planned availability for the POWER 285 Express Workstation is October 14, 2005, except:

- November 1, 2005 – USB SpaceBall (FC 8424) and USB SpaceMouse (FC 8425)
- February 24, 2006 - Ultra320 SCSI PCI-X adapter (FC 1912)
- March 31, 2006 – 8GB 533 MHz Memory option (FC 1934)

IBM @server p5 575 Cluster Node 16-way Option

Today's announcements include a 16-way 1.5 GHz POWER5 option for the high-density IBM @server p5 575 supercomputer cluster node, offering greater floating-point performance and double the number of active processor cores per rack, compared with the 8-way 1.9 GHz POWER5 option. With memory capacity ranging from 1GB to 256GB per node and almost

100Gbps of peak memory bandwidth, the 16-way p5-575 node is designed to handle the most demanding HPC applications that require continuous access to large amounts of data, such as oceanographic studies, weather observation, energy research and fluid dynamics. It is capable of sustaining an amazing 87.3 GFlop/s of performance, based on the LINPACK HPC benchmark[6].

The innovative p5-575 cluster node occupies only a 2U space in a 24-inch 42U system frame and includes two hot-swappable disk drive bays and the DC power converter assembly, which is hinged to allow easy access to the processors, memory and cooling blowers. Integrated into every p5-575 node are two dual-ported Ethernet 10/100/1000 Mbps controllers (four ports total), two HMC ports and two Ultra3 SCSI controllers. To provide additional I/O capability, an optional I/O assembly with four hot-plug PCI-X slots and a RIO-2 (Remote I/O 2) hub for attaching an I/O drawer may be installed. The system rack (FC 5793) provides integrated Ethernet switch hubs for interconnecting p5-575 nodes. For greater I/O adapter and disk storage expandability, each p5-575 node with a RIO-2 hub can be attached to a 4U I/O expansion drawer.

Up to 128 p5-575 nodes (up to 2,048 processor cores) can be managed in an IBM @server Cluster 1600 system running IBM Cluster Systems Management (CSM) for AIX 5L and CSM for Linux on POWER. IBM @server p5 575 clusters may be interconnected via Ethernet, the IBM @server pSeries® High Performance Switch (7045-SW4) or 4x InfiniBand using the Topspin InfiniBand Server Switch Models 120 (7048-120) and 270 (7048-270).

The p5-575 is supported by the following operating systems, or later:

- AIX 5L V5.2 with the 5200-04 Recommended Maintenance Package (APAR IY56722), plus APAR IY60347
- AIX 5L V5.3 with APAR IY60349
- SUSE LINUX Enterprise Server 9 for POWER (SLES 9)
- Red Hat Enterprise Linux AS 4 for POWER (RHEL AS 4)

Planned availability for the 16-way p5-575 node is October 14, 2005.

InfiniBand Switches and Adapters

Today, IBM introduces support for the industry-standard InfiniBand cluster interconnect technology on its UNIX and Linux server family. InfiniBand is a high-bandwidth, low latency switched I/O fabric, designed for interconnecting servers, storage and communications networks. The Topspin InfiniBand Server Switch Model 120 (7048-120) is a compact, cost-effective 1U rack-mount unit which provides 24 ports of non-blocking 4x (10 Gbps, full duplex) InfiniBand connectivity. The Topspin InfiniBand Server Switch Model 270 (7048-270) is a 6U rack-mount unit that offers 48 to 96 ports at 4x connectivity. Both switches offer hot-plug, redundant power and cooling, a RS-232 serial port and an Ethernet management port. The Model 270 provides many other features designed to minimize downtime, including hot-swappable FRUs (field replaceable units) with automatic failover capability. Planned availability for the Model 120 and Model 270 is October 14, 2005. Availability may vary by country.

Several InfiniBand adapters are announced today, allowing all System p5 Express, @server p5 and OpenPower servers to be connected in high-performance cluster configurations using the Topspin InfiniBand Server Switches Models 120 and 270. For most servers, clients have two options for attachment at 4x InfiniBand speed – the PCI-X Dual-port 4x IB HCA (FC 1820) or,

on systems with a GX bus slot, one of the GX Dual-port 4x IB HCAs. Selected IBM @server pSeries servers also support the PCI-X IB HCA. The GX Dual-port 12x IB HCA (FC 7820) provides attachment of high-end @server p5 590 and 595 systems to the Topspin switches using the 12x to three 4x cable (FC 1838).

InfiniBand adapters are supported by AIX 5L V5.3 and SLES 9, or later, on POWER5 processor-based systems (System p5 Express, @server p5 and OpenPower) and by AIX 5L V5.3, or later, on POWER4 processor-based pSeries servers. Planned availability dates are:

- October 14, 2005
  - GX Dual-port 4x IB HCA (FC 1811) for the p5-575
  - GX Dual-port 4x IB HCA (FC 1812) for the System p5 520 Express
- November 18, 2005
  - PCI-X Dual-port 4x IB HCA (FC 1820)
  - GX Dual-port 4x IB HCA (FC 1809) for System p5 550 and 550Q Express, @server p5 550 and 550 Express and OpenPower 720 servers
  - GX Dual-port 4x IB HCA (FC 1810) for the @server p5 570 and 570 Express servers
- December 9, 2005
  - GX Dual-port 12x IB HCA (FC 7820) and 12x to three 4x InfiniBand cable, 8 meter (FC 1838) for @server p5 590 and 595 servers

I/O Devices and Adapters

The new IBM 7031-D24/T24 TotalStorage EXP24 Ultra320 SCSI Expandable Disk Storage Enclosure provides more than 7TB of disk storage in a 4U rack-mount (7031-D24) or compact deskside (7031-T24) unit. Whether clients require high availability (HA) storage solutions or simply high capacity storage for a single server installation, the EXP24 provides a cost-effective solution. It provides 24 hot-swappable disk bays, 12 accessible from the front and 12 from the rear. Disk options are 73.4GB, 146.8GB or 300GB 10K rpm or 36.4GB, 73.4GB or 146.8GB 15K rpm drives. Each of the four six-packs may be attached independently to an Ultra320 SCSI or Ultra320 SCSI RAID adapter. For HA configurations, a dual bus repeater card (FC 5742) allows each six-pack to be attached to two adapters, installed in one or multiple servers. Optionally, the two front and/or two rear six-packs may be connected together to form a single Ultra320 SCSI bus of 12 drives. Planned availability for the 7031-D24/T24 is October 14, 2005.

Also included in today's announcements is the IBM 7036-P16 LAN Attached 16-port Remote Async Node (RAN). This LAN attached server attaches via Ethernet to System p5 Express, @server p5, OpenPower and pSeries servers. Each 7036-P16 RAN can control up to 16 async (EIA-232) devices, such as modems, printers and terminals. The 7036-P16 converts the serial datastream into TCP/IP traffic on the LAN, so that the host server(s) may treat the async devices as if they were directly connected. As many as eight RANs can be attached on a single Ethernet LAN, allowing up to 128 async devices to be controlled by one or multiple servers. RAN application software for AIX 5L and Linux is shipped on CD-ROM with the hardware. The 7036-P16 is shipped as a desktop unit and rack-mounting hardware is also included. Planned availability for the 7036-P16 LAN Attached RAN is November 18, 2005. Support in the eConfigurator tool is planned for November 8, 2005.

The ThinkVision L191p Flat-panel Monitor is a 19-inch TFT (thin film technology) liquid crystal display (LCD) suitable for both 3D and 2D applications. The L191p supports analog and digital inputs and provides a very bright and clear image with maximum resolution of 1280 x 1024 pixels, a very high contrast ratio (1,000:1 typical) and viewing angle of +/- 85 degrees. Planned availability is October 14, 2005.

The high-capacity, high-performance 146.8GB 15K rpm disk drive is announced for support on System p5 Express, @server p5 and selected pSeries servers, as well as on 7311-D20 and 7040-61D I/O expansion drawers and the IntelliStation POWER 275 workstation. Planned availability is October 14, 2005.

Using two of the new service processor cards (FC 7997) announced today, redundant service processor support with automatic failover is enabled on @server p5 570 servers that have at least two building-block units installed. For the benefit of clients with existing p5-570 servers, a feature conversion from the existing service processor (FC 7881) to the new service processor is available. Planned availability is October 14, 2005.

For clients of @server p5 590 and 595 servers, the FSP (Failover Service Processor)/Node Redundancy Enablement feature (FC 0319) provides automatic failover between the two service processors that are required in all p5-590 and p5-595 configurations. In addition, for systems with two or more processor books and a minimum of four RIO-2 GX adapters (FC 7818) installed, the FSP/Node Redundancy Enablement feature supports redundancy between two or more processor books. This feature is enabled via a no-charge firmware update and is planned for availability October 14, 2005.

The Ultra320 SCSI PCI-X adapter will help clients get high performance when installed in a double data rate PCI-X 2.0 slot on a System p5 Express server. On other supported servers, workstations and I/O drawers, this adapter provides high-bandwidth Ultra320 SCSI performance. Planned availability is February 24, 2006. eConfigurator support is planned for October 17, 2005.

Smaller System Racks

Today, IBM introduces the 0.6 meter IBM 7014-S11 and 1.3 meter IBM 7014-S25 system racks designed to meet the requirements of smaller installations of System p5 Express servers, selected @server p5 servers, OpenPower servers and associated I/O units. These 19-inch 11U and 25U racks are manufactured to meet the EIA 310-D standard and provide lockable doors, blank filler panels behind front doors for a finished appearance and casters for mobility. When new systems are ordered at the same time, a customer-specified rack placement feature allows clients to designate where system units and other enclosures are to be located. Planned availability is October 14, 2005, except that Customer Specified Rack Placement (FC 0469) will be available for orders placed on or after October 18, 2005.

Virtual I/O Server, Version 1.2

Today's announcements include IBM Virtual I/O Server (VIOS), Version 1.2, available at no additional charge with the optional Advanced POWER Virtualization feature on System p5 Express and @server p5 servers and with the optional POWER Hypervisor and VIOS software feature on OpenPower servers. VIOS V1.2 includes the new Integrated Virtualization Manager (IVM), a Web-based user interface that allows clients to set up and manage logical partitions

(LPARs) with Micro-Partitioning and virtual I/O devices on a single server without the requirement that an IBM 7310 Hardware Management Console (HMC) be attached. IVM is an excellent choice and a great value for smaller and mid-sized businesses and for distributed environments (e.g., branch locations) in larger businesses, since it provides easy implementation of optional virtualization capabilities on a standalone server at a lower entry cost, as compared with the additional purchase of an HMC. IVM is supported on the following servers:

- System p5 505, 520, 550 and 550Q Express
- @server p5 510, 520 and 550 and @server p5 510, 520 and 550 Express
- OpenPower 710 and 720

The new version of VIOS continues to provide Virtual SCSI (sharing of physical storage adapters and devices among LPARs) and Virtual Ethernet (shared Ethernet adapter connectivity among LPARs). DVD installation media for VIOS V1.2 is shipped with the server order and is available via Electronic Software Delivery. Optionally, the client may specify factory preinstall of VIOS V1.2, in which case preinstall of AIX 5L is not available. VIOS V1.2 supports the following OSs, or later, as virtual I/O clients – AIX 5L V5.3, SLES 9, RHEL AS 3 and RHEL AS 4. Planned availability for Virtual I/O Server, Version 1.2, is October 7, 2005.

IBM Director for pSeries, Version 5.10

Today's announcements include IBM Director for pSeries, Version 5.10 (5765-DR1), a major new release of IBM's proven hardware management solution that provides an integrated suite of software tools for comprehensive management and automation from a single point of control. IBM Director V5.10 provides ease-of-use enhancements and a more open, integrated toolset to help clients achieve high system availability and lower IT costs. Administrators can view and track the hardware configuration of remote systems in detail and monitor the usage and performance of critical components including processors, disks and memory. From a single user interface, administrators can monitor and manage events across a heterogeneous mix of server families – Intel® architecture-based, POWER5 processor-based and mainframe-based.

IBM Director V5.10, including both server and agent components, is available with online access to fixes and associated information at no additional charge for use with new or existing Power Architecture™ systems running one of the operating systems listed below. Clients who require software maintenance (SWMA) must order either 1-year SWMA for IBM Director (5660-DR1) or 3-year SWMA for IBM Director (5662-DR1) at an additional charge.

IBM Director is supported on the following operating systems, or later:

- IBM Director Server - AIX 5L V5.3, SLES 9 or RHEL AS 4
- IBM Director Agent - AIX 5L V5.2, SLES 8, SLES 9, RHEL AS 3.3 or RHEL AS 4

Clients may obtain IBM Director V5.10 code in either of two ways:

- Beginning at planned availability of November 25, 2005, clients may download IBM Director electronically (requires registration). See http://www.ibm.com/servers/eserver/about/virtualization/systems/pseries.html

- Beginning December 13, 2005, CD-ROM media packs (code and documentation) may be ordered at U.S. list price[4] of $50 through an IBM representative or IBM Business Partner using AAS (Advanced Administrative System) and the eConfigurator tool.

Footnotes

1 -Based on 2-way SPECompM2001 (peak) results as of October 4, 2005. IBM 2-way p5-520 1.9 GHz POWER5+ (2 cores, 1 chip, 4 threads) result of 8,174 submitted to SPEC October 4, 2005. Source: http://www.spec.org

2 - Based on the following SPECjbb2005 benchmark results submitted to SPEC October 4, 2005. IBM 2-way p5-520 1.9 GHz POWER5+ (2 cores, 1 chip, 4 threads) result of 32,820 business ops/sec. IBM 4-way p5-550 1.9 GHz POWER5+ (4 cores, 2 chips, 8 threads) result of 61,789 business ops/sec. IBM 8-way p5-550Q 1.5 GHz POWER5+ (8 cores, 4 chips, 16 threads) result of 91,806 business ops/sec. Source: http://www.spec.org

3 – All price information is based on IBM U.S. list prices effective October 4, 2005. Prices are subject to change without notice and reseller prices may vary.

4 – Based on IBM System p5 505 Express with one 1.65 GHz POWER5 processor, one no-charge processor entitlement, 1GB of memory, two 73.4GB 10K rpm disk drives, DVD-ROM, IBM bezel and rack-mount hardware, power supply, power cord and 3-year warranty at U.S. list price of $3,750. Configuration price does not include operating system.

5 – Based on IBM System p5 550Q Express minimum configuration with eight 1.5 GHz POWER5+ processors, eight processor entitlements, 1GB of memory, one 73.4GB 10K rpm disk drive, DVD-ROM, four-pack disk drive enclosure, media backplane, IBM bezel and rack-mount hardware, rack-mounting slide kit, two processor power regulators, power supply, power cord and 3-year warranty at U.S. list price of $30,913. Configuration price does not include operating system.

6 – Based on LINPACK HPC result of 87.34 Gflop/s for IBM @server p5 575 16-core 1.5 GHz POWER5 running AIX 5L V5.3, submitted October 4, 2005. See http://www.netlib.org/benchmark/performance.pdf

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Information concerning non-IBM products was obtained from the suppliers of these products.
Questions on the capabilities of the non-IBM products should be addressed with the suppliers.

All performance information was determined in a controlled environment. Actual results may vary. Performance information is provided “AS IS” and no warranties or guarantees are expressed or implied by IBM.

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