Product Announcement
February 8, 2005

IBM @server p5 575 delivers fast, 8-way IBM POWER5 processing in a cluster node

Overview

In the IBM @server p5 575 (9118-575), IBM delivers an 8-way, 1.9 GHz POWER5™ high-bandwidth cluster node, ideal for many high-performance computing applications.

The p5-575 is packaged in a super-dense 2U form factor, with up to 12 nodes installed in a 42U-tall, 24-inch rack. Multiple racks of p5-575 nodes can be combined to provide a broad range of powerful cluster solutions. Up to 16 p5-575 nodes can be clustered together for a total of 128 processors. Clusters larger than 16 nodes are available through special bid at this time; clusters of 128 nodes (1024 processors) are planned to be available on April 29, 2005.

The symmetric multiprocessor (SMP) node uses state-of-the-art, 64-bit, copper-based, single-core POWER5 microprocessors in an 8-way configuration. Each microprocessor is supported by 36 MB of Level 3 cache and up to eight memory DIMMs with point-to-point memory to processor connections. Each 8-way includes 64 slots for memory DIMMs. Memory sizes are offered from 1 GB up to 256 GB. With the optional I/O Assembly with PCI-X and RIO-2, along with a system I/O drawer, up to twenty-four PCI-X cards and up to eighteen 15,000 RPM disk drives are available.

Other features include:

- Integrated service processor
- Four 10/100/1000 Ethernet ports per node
- Two HMC ports per node
- Two integrated Ultra3 SCSI controllers
- Battery backup option for the rack
- DLPAR with optional Advanced POWER™ Virtualization

The p5-575 is capable of supporting AIX® 5L V5.2 and V5.3 and Linux™ operating systems. These operating systems can run simultaneously in different partitions within the p5-575 node.

The p5-575 is added to the hardware models supported with the IBM @server pSeries® Cluster 1600 running IBM Cluster Systems Management (CSM) V1.4 (for both AIX 5L V5.2 and V5.3 and SUSE LINUX Enterprise Server 9).

Key Prerequisites

One or more of the following operating systems:

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

Planned availability dates

- For 16 node clusters (128 processors): February 18, 2005
- For 128 node clusters (1024 processors): April 29, 2005

Availability of programs with encryption algorithm in France is subject to French government approval.

At a Glance

- The IBM @server p5 575 offers:
  - 2U rack-mount design
  - 1.9 GHz single-core IBM POWER5 processors in 8-way configuration
  - 12.4 GBps memory bandwidth per CPU
  - Up to 256 GB of memory
  - Up to 1,468 GB of internal disk storage
  - Up to 18 hot-swap disk bays and 24 hot-swap PCI-X slots
  - Up to six independent I/O buses
  - 36 MB of low-latency cache per CPU
  - Redundant rack power subsystem
  - Dynamic logical partitioning (DLPAR)
  - Optional Advanced POWER Virtualization
- IBM @server pSeries Cluster 1600 will be enhanced to include CSM support for model 575.

Description

The p5-575 is characterized by innovative, elegant conceptual design and packaging. Mounted in a sleek 2U enclosure, the modular p5-575 allows you to deploy up to 12 nodes in a single, 24-inch system frame.

The enclosure includes four upgradeable component modules, each one custom-designed to satisfy the requirements of high-performance, high-density computing. The integrated, highly efficient power distribution system (DCA) is embedded into the node's lid. The DCA relies on embedded circuitry rather than external wiring, providing more reliable, efficient power distribution. The lid is hinged, opening easily for access to the processor and memory module, which contains the distinctive single-core POWER5 processors and system memory.

The processor and memory module contain the heart of the system: eight POWER5 processors, each with 36 MB of dedicated cache, and point-to-point connections to up to eight memory DIMMs —an implementation intended to provide exceptionally high sustained memory bandwidth in support of the most demanding HPC applications.

The front-end cooling module includes two air-intake ventilation grids and two custom-designed blowers with high-capacity impellers and high-efficiency motors that are designed for extended life and easy serviceability. At the back of the enclosure, the I/O control module features up to six fully independent I/O mezzanine buses designed for very high I/O bandwidth.

Other features include:

- Integrated service processor
- Two dual Gigabit Ethernet ports per node
- Two HMC ports per node
- Two integrated Ultra3 SCSI controllers
- Battery backup option for the rack
- Dynamic logical partitioning with optional Advanced POWER Virtualization

The p5-575 is capable of supporting AIX 5L V5.2 and V5.3 and Linux operating systems. These operating systems can run simultaneously in different partitions within the p5-575 node.

The p5-575 is supported with the IBM eServer pSeries Cluster 1600 running Cluster Systems Management (CSM) V1.4 (AIX and Linux).

Accessibility by people with disabilities

IBM eServer p5 575 (9118-575) is capable, as of February 8, 2005, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

Product Positioning

The p5-575 is positioned as a substantially enhanced POWER5 follow-on to the p655 cluster node. Like the p655, the p5-575 is positioned as an extremely effective solution to the requirements of the most demanding, memory bandwidth-intensive HPC applications.

Statement of general direction

IBM plans to extend the capabilities of the IBM eServer pSeries High Performance Switch (HPS) (7045-SW4) by introducing support for the p5-575. This capability is planned to be available in second quarter 2005.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.