

IBM @server pSeries 610: Models 6C1 and 6E1



IBM @server pSeries 610 rack/tower packaging flexibility

Highlights

- **Power to handle the enterprise computing requirements of small- and medium-size businesses**
- **Flexible tower or rack-mount options for office environments, datacenters and remote locations**
- **Advanced technology for superior performance, reliability and systems management**

What you need, where you need it

IBM @server pSeries™ 610 systems are one- or two-way entry UNIX® servers that deliver outstanding performance at an affordable price. As companies extend their e-business infrastructures, these systems have the versatility to function well in many roles, including application and small database serving.

The low cost, reliability and remote systems management capabilities of these servers make them ideal for retail, wholesale distribution, financial

services, insurance, healthcare and other environments that support remote stores, branches, regional offices and kiosks. At the same time, they are powerful enough to meet the enterprise computing requirements of small- to medium-size businesses. In addition, these servers are excellent replacement options for the IBM RS/6000® F50 server.

Good things come in small packages

pSeries 610 servers offer the same electronics in two different form factors, providing the flexibility needed to build or extend an infrastructure. The pSeries 610 Model 6E1 is a compact tower design with a small footprint—less than 24 inches (617 mm) deep and 8.5 inches (215 mm) wide. The pSeries 610 Model 6C1 is an industry-standard 19 inch five EIA Unit (5U) drawer, designed for “racking and stacking.” It can easily be installed in an existing rack.

Each server features one or two POWER3™-II copper-based processors running at 333 MHz, 375 MHz or 450 MHz. Memory can be expanded from 512MB to 8GB. There are two integrated 10/100 Mbps Ethernet connections, as well as three serial ports and one parallel port for exceptional connectivity and flexibility.

Two high-performance Ultra3 SCSI controllers are integrated into each pSeries 610. This can eliminate the need for additional SCSI controllers, which means less slots are utilized to save space and costs. In addition, an Ultra3 SCSI RAID controller option provides RAID 5 for internal disk devices thereby improving data availability and avoiding the need for external storage devices.

These systems provide excellent expandability, including an internal disk bay and six¹ front-accessible, hot-swappable disk bays that can accommodate 18.2GB, 36.4GB or 73.4GB drives. Two additional media bays are available for installation of CD-ROM, DVD-RAM, tape or disk drives. One bay must contain a CD-ROM or DVD-RAM drive. The other bay is available for any combination of CD-ROM, DVD-RAM, tape or an eighth disk drive. Up to 587.2GB of internal disk storage may be installed. Five PCI slots support 64-bit adapters and provide compatibility with 32-bit cards.

Leading the pack

pSeries 610 systems are part of the IBM **@server** product line—advanced servers that can help lower costs, improve efficiency and speed e-business infrastructure

transformation. These entry servers extend IBM's leadership in open UNIX systems by incorporating innovative technology introduced on larger pSeries servers and from across the entire IBM **@server** product line at a very attractive price.

To help organizations deal effectively with complexity, IBM has announced Project eLiza™, a blueprint for self-managing systems. The goal is to use technology to manage technology, thus creating an intelligent, self-managing IT infrastructure that minimizes complexity. This enables increased utilization of technology without the spiraling pressure on critical skills, software and service/support costs.

Project eLiza represents a major shift in the way the industry approaches reliability, availability and serviceability (RAS). It promises to harness the strengths of IBM to deliver open, standards-based servers and operating systems that are self-configuring, self-protecting, self-healing and self-optimizing.

pSeries 610 servers incorporate many leading RAS capabilities from across the IBM **@server** product line. These advancements include IBM Light Path Diagnostics™, which

places LEDs near critical components to provide lighted guidance for quick diagnosis and resolution of hardware problems. This capability can be extremely valuable when supporting remote systems.

An integrated service processor is included in pSeries 610 servers—a computer within a computer—to constantly monitor the system's vital signs. In the event of a malfunction, the service processor is capable of “calling home” by automatically dialing out to an IBM service center, often before any problem is apparent to users or system administrators. This systems management function allows many problems to be corrected and system function restored remotely without extended downtime.

The service processor also allows for remote shutdown or boot-up without any physical contact with the system. It enables systems management services for installing application enhancements, software upgrades and operating system patches from remote locations. This standard feature saves system administrator time when managing branch offices, multiple store locations or servers in hard to access locations.

Feature	Benefits
Copper used in POWER3-II microprocessors	• Improve processor performance and reliability while using less power and producing less heat, thus conserving energy for both operations and cooling
64-bit system architecture	• Supports larger amounts of memory so applications can keep more information accessible in fast-access memory (less need to retrieve from online storage); thus, applications run faster
Space-saving tower or rack-mount	• Allows greater flexibility in deployment • Allows use in high-density environments, where horizontal scalability is an important factor • Fits beside and under desks saving valuable floor space (tower)
Up to two processors per system	• Provides flexible growth in computing power
Choice of 333 MHz, 375 MHz or 450 MHz processors	• Provide flexibility to grow in performance as workloads increase with minimal disruption and incremental cost
8MB L2 cache per processor (450 MHz systems)	• Provides increased system throughput
Up to 8GB ECC SDRAM memory	• Allows exploitation of 64-bit addressing for scientific and technical applications • Lowers the number of memory failures that can cause system outages, thus increasing system availability
Five PCI adapter slots	• Provide growth options for significantly increased capacity • Support many popular expansion adapters
Front-mounted serial port (Model 6C1 only)	• Allows convenient connection of handheld devices for easy systems management
Wireless systems management	• Allows remote operations personnel to perform system maintenance and monitor system performance • Allows server farms to be managed more easily
Programmable service indicator lights (Model 6C1 only)	• Simplify the task of locating the server requiring attention
Light Path Diagnostics	• Provides lighted guidance for quick problem identification and resolution
Built-in service processor	• Continuously monitors system operations and takes preventive or corrective actions for quick problem resolution and high system availability • Allows diagnostics and maintenance to be performed remotely
Hot-swappable disk drive bays¹	• Provide greater system availability and smooth growth by allowing swapping or adding of disk drives without shutting down the system
RAID 5 support for internal disks¹	• Provides the ability to transparently survive an internal disk failure • Increases disk I/O performance in selected configurations
System boot from hot-swappable drive	• Provides the ability to locate the boot drive in either the internal disk bay (default) or one of the six hot-swappable disk bays • Facilitates easy boot drive mirroring and OS updates without system shutdown
Redundant hot-plug power and cooling subsystems	• Enhance system availability, if cooling fan or power supply fails
AIX[®] operating system	• Maintains compliance with UNIX 98 specifications • Supports full interoperability and coexistence between 32- and 64-bit applications with processes that may run concurrently and cooperatively • Provides an AIX binary-compatible environment that helps assure continuing application availability across AIX releases when binary-compatibility rules are observed
Linux[®] operating system	• Offers native support for 32-bit Linux applications • Enables access to thousands of Open Source applications • Provides common operating environment across IBM @server brand platforms

The pSeries 610 Model 6C1 rack-mount offers a number of important features designed to simplify the management of large server farms. In these environments, high-density packaging is a critical business success factor because multiple racks filled with servers make the management task more complex.

Programmable service indicator lights are located on the front and rear of the system to make it easy for an on-site technician to quickly locate the system requiring attention. In addition, a built-in, front-accessible serial interface for handheld devices such as the IBM WorkPad® or Palm™ enables quick system setup, network

configuration and performance monitoring using specialized IBM no-charge System Networking, Analysis and Performance Pilot software. This allows the system administrator to quickly set up and install the server within a network environment. Another powerful feature, Wireless System Management, simplifies the

pSeries 610 Models 6E1 and 6C1 at a glance

Minimum configuration

Microprocessor:	333 MHz POWER3-II with 4MB L2 cache
RAM (memory):	512MB
Internal disk drive:	One 18.2GB Ultra3 SCSI
Media bays:	Three (front accessible) First – diskette drive Second – CD-ROM/DVD-RAM Third – CD-ROM/DVD-RAM/tape or additional disk drive
PCI expansion slots:	Five – two 64-bit (3.3v, 50 MHz); one 64-bit (5.0v, 33 MHz); two 32-bit (5.0v, 33 MHz)
PCI bus width:	32- and 64-bit

Standard features

I/O adapters:	10/100 Mbps Ethernet controller with two ports One internal Ultra3 SCSI controller; one external Ultra3 SCSI controller
Ports:	One parallel and three serial ports; one keyboard and one mouse

System expansion

SMP configuration:	333 MHz POWER3-II with 4MB L2 cache (2-way) or 375 MHz POWER3-II with 4MB L2 cache (1- or 2-way) or 450 MHz POWER3-II with 8MB L2 cache (1- or 2-way)
RAM:	Up to 8 GB
Power:	Third hot-plug power supply available
Internal disk bays:	Six front accessible, hot-swappable ¹
Internal disk storage:	Up to 587.2GB (18.2GB, 36.4GB and 73.4GB drives available)
External storage:	IBM 2104 Expandable Storage Plus (Ultra3 SCSI), IBM 7133 Serial Disk System (SSA)

RAS features

Copper-based microprocessors
Service processor
ECC L1 and L2 cache
Hot-swappable disk bays¹
RAID 5 support for internal hot-swappable disks (optional)
Redundant hot-plug power (optional)
Redundant hot-plug cooling fans
Programmable service indicator lights
Light Path Diagnostics

Operating systems

AIX 5L™ Version 5.1 or AIX Version 4.3.3
Linux distributions available from Linux Distributors (32- and 64-bit)

System dimensions

16.8"H x 8.5"W x 24"D (426 mm x 215 mm x 617 mm)—tower
8.5"H x 16.8"W x 24"D (215 mm x 426 mm x 617 mm)—standard 5U rack-mount
Weight 35.5 kg (78.0 lb)*

Power requirements

100 to 127v or 200 to 240v AC

Warranty

On-site, next-business-day for one year (limited) at no additional cost
Warranty and maintenance upgrades available

* Weight will vary when disks, adapters and other peripherals are installed.

management of these servers using wireless handheld devices such as the Palm VII or a cell phone. Designed to work with a browser on many different types of wireless devices, wireless system management allows customers to manage these systems from anywhere in the wireless, networked world and is available from IBM as no-charge software.

Online, all the time

pSeries 610 systems use Error Checking and Correcting (ECC) memory technology to enhance reliability. ECC can detect single- and double-bit errors and can correct all single-bit errors. In addition, these systems offer redundant hot-plug cooling fans (standard) and power supplies (optional), which may be replaced without affecting system operations.

For even higher levels of availability, these servers can be clustered with High Availability Cluster Multiprocessing (HACMP) UNIX disaster recovery software. When combined with applications that meet IBM ClusterProven® standards, this solution provides a superior base for high availability, which is an essential ingredient for e-commerce.

An advanced operating system

pSeries 610 systems are matched with AIX, the advanced UNIX operating system from IBM. Providing real value in reliability, availability and security, AIX is tuned for e-business application performance and is widely recognized as state-of-the-art in systems and network management.

AIX delivers Java™ technology, Web performance and scalability enhancements for managing large, complex e-business installations. Web-based remote management tools control the system and monitor key resources such as adapter and network availability, file system status and processor workload. AIX also incorporates Workload Manager, which can help ensure that critical applications remain responsive even during periods of peak system demand. AIX runs across all pSeries and RS/6000 servers for greater compatibility and investment protection.

The latest release of AIX, AIX 5L™ Version 5.1, adds new functionality to further enhance security, system availability and Workload Manager. In fact, the systems management and Internet/Web-application services of AIX 5L rank as industry leaders.²

Native Linux operating system

The Linux operating system is available for the pSeries 610 from one or more Linux Distributors. They provide a full complement of Open Source tools and applications. Linux runs natively on the pSeries 610 and does not require the use of AIX. Full service and support for Linux is available from IBM Global Services or a pSeries 610 Linux Distributor.

Greater application choice

The IBM @server product line is about uncompromising flexibility in selecting, building and deploying the applications a business needs. Toward that end, IBM offers one of the industry's broadest range of platforms and operating systems. IBM is committed to industry-standard, cross-platform technologies—such as Java, XML, HTML, SOAP and UDDI—that are at the heart of a flexible e-business infrastructure. Support for these standards in our key middleware—including DB2 Universal Database™, WebSphere® Application Server and MQSeries®—means that companies won't be locked into a single platform as their businesses grow. As a result, they always have the flexibility to deploy applications in a cost-effective way.

pSeries 610 systems represent the IBM **@server** commitment to true application flexibility through open standards. In addition to including enhanced Java scalability and performance, AIX 5L provides integrated Linux system-compatible Application Programming Interfaces that allow popular Linux and Open Source applications to run on AIX with a simple recompilation. The AIX Toolbox for Linux Applications (distributed "AS IS" with AIX 5L) provides compilers, utilities, editors, debuggers and other application development tools to aid in this recompilation.

Tools for managing e-business

pSeries 610 systems are backed by a comprehensive suite of offerings and resources that provide value at every stage of IT implementation. These tools can help customers test possible solutions, obtain financing, plan and implement applications and middleware, manage capacity and availability, improve performance, and obtain technical support across the entire infrastructure. The result is an easier way to handle the complexities and rapid growth of e-business. In addition, IBM Global Services experts can help with business and IT consulting, business transformation and total systems management services, as well as customized e-business solutions.

Backed by IBM

pSeries 610 systems are backed by a one-year basic warranty. This warranty is end-to-end and includes

operating system software support, hardware fixes, manned phone hardware support and call tracking.

In the United States, the basic warranty provides next-business-day service, and warranty upgrades are available for same-business-day service or 24x7x365 coverage with four-hour response time. In other countries, the warranty terms and conditions may be different. Please consult your local IBM Business Partner for country-specific terms and conditions.

Summary

These compact, powerful servers deliver exceptional versatility and value and are ideal for companies that need to replicate solutions across a variety of sites. With a low entry price, pSeries 610 servers are perfect for small- to mid-size organizations to handle current needs, but with expandability to anticipate future growth. In either case, these servers are cost-effective, scalable and reliable, and they share the same heritage as the IBM **@server** product line that powers the e-business infrastructures of the Fortune 1000.

For more information

To learn more about IBM **@server** pSeries 610 systems, contact your IBM marketing representative or IBM Business Partner or visit the following IBM Web sites:

- **ibm.com/eserver/pseries**
- **ibm.com/servers/aix**
- **ibm.com/servers/solutions**
- **ibm.com/eserver/wireless**
- **ibm.com/ibmlink**



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¹ *Standard on 375 MHz and 450 MHz Models; optional on 333 MHz Model*

² *2001 UNIX Function Review*, D.H. Brown Associates, Inc., March 2001 and *IBM Flexes UNIX Muscle with AIX 5L*, D.H. Brown Associates, Inc., May 2001.