

IBM @server pSeries 620 Model 6F1



IBM @server pSeries 620 Model 6F1 tower server

Highlights

- **Outstanding technology, performance and price/performance in a tower package**
- **World-class reliability, availability and serviceability features for business-critical e-business applications**
- **Extensive range of processor and I/O expansion options to meet explosive growth needs**

Power and performance at the right price

The IBM @server pSeries™ 620 Model 6F1 is part of the IBM @server product line—advanced servers that can help lower costs, improve efficiency and speed e-business transformation. It is a high-performance tower UNIX® server with the availability, scalability and range of performance demanded by today's growing e-business applications. Outstanding price/performance makes the pSeries 620 Model 6F1 ideal for

small- and medium-size companies—particularly in the distribution, financial and healthcare industries—to run their businesses.

For an enterprise that is considering implementing e-commerce, the Model 6F1 server provides a great platform for integrating high-end system capabilities and scaling up to six times within a desktide package. It is also well suited to be a distributed application server for larger companies seeking to effectively integrate suppliers, business partners and customers, using various e-business applications. These applications can range from Web hosting to more advanced enterprise resource planning, supply chain management and customer relationship management.

The Model 6F1 is compatible with the entire pSeries product line and gives enterprises—such as retail stores, distributors, banks, hotels, and other organizations with remote locations—the ability to seamlessly integrate their IT infrastructures into the corporate network.

The Model 6F1 offers a choice of up to six advanced 64-bit RS64 IV microprocessors, running at up to 750 MHz, to provide excellent levels of performance and price/performance in a tower package. For applications with less demanding performance requirements, the Model 6F1 also offers one-, two- and four-way 64-bit RS64 IV microprocessors running at 600 MHz. The processors utilize innovative copper and silicon-on-insulator (SOI) technology. The result is high performance with less power consumption and lower heat generation for higher levels of reliability and system availability.

The entry-level, one-way system has either a 600 MHz microprocessor with 2MB of Level 2 (L2) cache (a special memory subsystem in which frequently used data values are duplicated for quick access) or 750 MHz with 8MB of L2 cache. Larger configurations with two-, four- or six-way

processors at up to 750 MHz and with 8MB of L2 cache are available to help meet growth needs. The base 256MB of main memory can be expanded to 32GB for enhanced performance with large data sets and exploitation of 64-bit addressing used in large database and enterprise applications.

Flexibility for e-business

The Model 6F1 can be used as a standalone system or as a multiuser application or database server. It has the connectivity to participate in virtually all currently installed UNIX and PC networks, helping to leverage existing infrastructure, applications and skills. Designed to operate in a typical office environment with standard AC power, the Model 6F1 has an optional power supply available to allow continued operation in the unlikely event of a power supply failure.

To accommodate changing e-business workloads, the Model 6F1 includes a modular hot-swappable disk subsystem that simplifies the addition and replacement of disk drives while the system continues to operate, and 10 hot-plug PCI slots for enhanced I/O availability. These capabilities allow flexibility and uninterrupted growth in disk storage capacity and connection of internal and external devices.

The Model 6F1 is designed to meet the critical requirements of e-business in small- and medium-size enterprises or as a distributed system in larger organizations. For example, it is an excellent application server for enterprise resource planning applications with its powerful processors, memory and data storage capacity. It can also serve as a fast, highly reliable business-to-business Web server that can connect with other systems for sharing business data or hosting the data storage itself.

Feature	Benefits
Copper and SOI technology	<ul style="list-style-type: none"> • Provides significant performance increases over non-copper technologies • Offers improved reliability over processors without copper while reducing the heat produced
High system memory capacity (32GB)	<ul style="list-style-type: none"> • Enables complex e-business applications to execute quickly and efficiently
ECC Chipkill™ memory	<ul style="list-style-type: none"> • Significantly lowers number of memory failures that cause system outages, thus increasing system availability • Minimizes the potential for loss of business data
Compact deskside form factor	<ul style="list-style-type: none"> • Accommodates several different configurations for flexibility • Allows for 12 hot-swappable disk drives, up to 32GB of memory, multiple performance options and one, two, four or six processors
10 hot-plug PCI slots	<ul style="list-style-type: none"> • Dramatically improve availability and provide uninterrupted growth in new adapters • Provide increased connectivity for e-business applications
Built-in service processor	<ul style="list-style-type: none"> • Continuously monitors system operations and takes preventive or corrective action for quick problem resolution and high system availability • Allows diagnostics and maintenance to be performed remotely
High-performance, hot-swappable disks	<ul style="list-style-type: none"> • Provide reliable and high capacity disk storage • Provide data transfer rates of up to 160MB/sec (Ultra3 SCSI and SSA) • Provide for uninterrupted growth to meet unplanned demand for storage
Hot-plug redundant power and cooling subsystems	<ul style="list-style-type: none"> • Allow uninterrupted operation if a power supply or fan becomes disabled
Dynamic Processor Deallocation	<ul style="list-style-type: none"> • Automatically deallocates resources when impending processor failures are detected so applications continue to run uninterrupted
Linux® operating system	<ul style="list-style-type: none"> • Offers native support for 64-bit Linux applications • Enables access to thousands of Open Source applications • Provides a common operating environment across IBM @server platforms
AIX® operating system	<ul style="list-style-type: none"> • Supports full interoperability and coexistence between 32- and 64-bit applications with processes that may run concurrently and cooperatively • UNIX 98 technology-compliant and first to achieve UNIX 98 Server registration • Provides an AIX binary compatible environment that helps assure continuing application availability across AIX releases when binary compatibility rules are observed

High availability, all day, every day

To help ensure that strategic applications remain available 24x7, the Model 6F1 features an integrated service processor—a computer within a computer—that constantly monitors 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. In this fashion, the service technician may be able to correct the problem and restore system function remotely without interruption or downtime.

To maximize system availability, the Model 6F1 server has built-in fault and error correction functions. For the main memory, Chipkill memory technology—developed by IBM for the S/390® mainframe server—detects multiple bit errors and corrects most of them transparently. If the error rate exceeds the critical threshold, a maintenance action is initiated automatically by the system, to be resolved at the customer's convenience. IBM studies indicate that systems with Chipkill memory are up to 100 times less likely to experience an outage due to memory failure.¹

The Model 6F1 also uses error checking and correcting (ECC) memory technology to enhance reliability and error correction of L1 data cache and L2 cache memory, as well as main memory. This approach has significant advantages over the industry-standard parity memory technology. ECC technology can detect single and double errors and correct all single bit errors. Parity memory can only detect, but not correct, single bit errors. Thus double bit errors may be missed altogether, which can lead to a complete system shutdown. The use of these advanced memory technologies, Chipkill and ECC, on the Model 6F1 helps protect the server from memory failures that can cause costly, unscheduled downtime.

Another unique availability feature of the Model 6F1 is Dynamic Processor Deallocation. In the unlikely event that a processor indicates an impending failure, this feature—working with the AIX operating system and service processor—is designed to dynamically take the processor offline. Its workload is reassigned automatically to other processors, and replacement can be scheduled during normal service to minimize system and application downtime.

Additional reliability and availability features include optional redundant hot-plug cooling fans and power supplies, which may be easily replaced without affecting system operations. Also available is a temperature monitoring capability that increases the fan speed in response to above-normal temperatures. The hot-swappable disk bays and hot-plug PCI slots allow disk drives and adapter cards to be added, replaced or changed without rebooting the entire system.

For near-continuous operations, two Model 6F1 servers can be clustered using High Availability Cluster Multiprocessing (HACMP) UNIX disaster recovery software from IBM. This clustering solution minimizes downtime of systems and applications for both planned and unplanned outages and provides a superior base for high availability, an essential ingredient for e-commerce.

pSeries 620 Model 6F1 at a glance

Minimum configuration

Microprocessor:	1-way 600 MHz RS64 IV or 1-way 750 MHz RS64 IV
Level 1 (L1) cache:	128KB data (ECC)/128KB instruction
Level 2 (L2) cache:	2MB (ECC) 600 MHz; 8MB (ECC) 750 MHz
RAM (memory):	256MB (ECC)
Memory bandwidth:	2.4GB per second
System bus:	Two busses, each 128 bits wide
Storage options:	18.2GB disk installed in a boot bay or one of 12 disk bays
I/O expansion:	10 hot-plug PCI slots
I/O bus width:	10 64-bit
I/O bus speed:	6@66 MHz(3.3v)/4@33 MHz(5v)
I/O bandwidth:	1GB per second – aggregate peak

Standard features

Integrated ports:	Keyboard, mouse, four serial, one parallel
Integrated bays:	Diskette drive, CD-ROM or DVD-RAM, one additional media bay
Integrated controllers:	SCSI-2 F/W (internal), Ultra2 SCSI (external), 10/100 Mbps Ethernet

System expansion

Processor:	2- or 4-way (600 MHz) RS64 IV SMP; 2-, 4- or 6-way (750 MHz) RS64 IV SMP
Level 2 (L2) Cache:	4MB/processor (600 MHz) or 8MB/processor (750 MHz)
RAM:	Up to 32GB (Chipkill)
Storage:	2 SCSI or SSA backplanes providing 12 1" hot-swappable disk bays; 2 optional non hot-swappable boot bays; 18.2GB, 36.4GB and 73.4GB Ultra3 SCSI 18.2GB SSA disk drives; maximum internal disk is 1027.6GB

RAS features

Copper, SOI microprocessors
Chipkill RAM memory
ECC of L1 data cache, L2 cache
Hot-plug PCI slots, power supplies and cooling fans
Hot-swappable disks bays
Service processor
Dynamic Processor Deallocation
Redundant cooling fans (optional)
Redundant power supplies (optional)

Operating systems

AIX 5L™ Version 5.1 or Version 4.3.3
Linux 2.4 available from one or more IBM Linux Distribution Partners

Power requirements

110-127v AC or 200-240v AC

System dimensions

24.0" H x 19.0" W x 28.7" D (610 mm x 483 mm x 728 mm), Weight - 155 lb (70 kg)*

Warranty

Onsite 24x7 for one year (limited) at no additional cost

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

The AIX advantage

The Model 6F1 system is 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.²

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 network availability, file system status and processor workload. AIX 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 system management and Internet/Web-application services of AIX 5L rank as industry leaders.²

Native Linux

The Linux operating system is available for the Model 6F1 from one or more major Linux distributors. These distributors can provide a full complement of Open Source tools and applications. Linux runs natively on the Model 6F1 and does not require the use of AIX. Full service and support for Linux is available from IBM Global Services or a 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.

The Model 6F1 represents the IBM @server product line 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

The Model 6F1 is supported 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

The Model 6F1 is backed by worldwide service and support from IBM. Our commitment behind every system sold is to provide the highest possible customer satisfaction.

Availability support is enhanced with advanced maintenance and diagnostic capabilities built into the Model 6F1 offerings with a framework for delivery of system and performance information via the Web.

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, Model 6F1 servers are perfect for small- to mid-size organizations

to handle current needs, with the 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 the IBM **@server** pSeries 620 Model 6F1, contact your IBM marketing representative or IBM Business Partner or visit the following Web sites:

ibm.com/eserver/pseries

ibm.com/servers/aix

ibm.com/servers/solutions

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Server Group
Route 100
Somers, NY 10589

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¹ *IBM Chipkill Memory* white paper available at www.pc.ibm.com/qtechinfo/MCGN-46AMQP.html

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.