



Accomplishments

In 1997, IBM earned a single global registration to ISO 14001 covering its worldwide manufacturing and hardware development operations. ISO 14001 is a voluntary international standard that defines the elements of an environmental management system necessary for an organization to effectively manage its impact on the environment. The registration includes the IBM pSeries development and manufacturing facilities worldwide.

Material Management

Plastics: The IBM @server design strategy incorporates the use of recycled content resin into systems when technically possible.

The pSeries products use recycled content resin on several internal resin parts such as stiffeners, clips and fillers. For example, the pSeries 620 uses a PC/ABS material in an internal processor filler part which has 50% recycled content material.



pSeries 620

IBM follows the ISO 11469 standard for marking thermoplastic parts used in IBM systems. These markings enhance the ability to identify plastic resins used and recycle the plastic where recycling programs exist. This identification system is a key component in establishing plastic recycling efforts.

Chemical Management: The IBM Corporation has eliminated the use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and methyl chloroform from manufacturing processes.

Paper: Server product technical manuals produced in the USA by the IBM Software Fulfillment Center are printed with soy-based ink on recycled paper containing up to 20% post-consumer waste fiber. This paper is manufactured using the elemental chlorine free process. Paper for technical manuals produced in Europe by IBM Software Manufacturing Solutions are printed on paper manufactured using the total chlorine free process by a mill certified to ISO 14001.

Metals: Powder coatings are used on many of the black exterior metal covers of the pSeries products. These coatings offer several quality and environmental benefits. They contain minimal solvents and the over spray from the process can be easily reclaimed. This reduces concerns about air pollution and waste disposal while providing a durable and high quality finish.

Suppliers: Environmental design specifications are provided to suppliers of parts to assist them in meeting environmental design objectives and worldwide environmental requirements. The IBM Corporation through IBM Global Procurement also encourages suppliers to receive ISO 14001 registration.

Product and Supplies Return Programs

IBM takes back used products in multiple countries. In the United States, IBM offers customers a range of services to manage end-of-life products and supplies for reuse, remanufacturing and recycling. IBM product take back program information by participating countries is available at the following web address: www.ibm.com/environment/products/prp.shtml.

IBM Global Financing (IGF) offers expertise in managing surplus and end-of-life machines through its Asset Disposition and Support Services for midrange and large customers. The options for disposition include inventory analysis, environmentally safe recycling or disposal and indemnification for customer owned assets that are scrapped and web-based sale of marketable assets. This offers customers the benefit of resale of assets with marketable value. For machines designated for disposal, a Certificate of Destruction is issued to the customer. For information on available options or a quote, contact 1-800-334-9693, select option 2, or go to web address: <http://www-1.ibm.com/financing/gars/service/adss/>.

The IBM PC Recycling Service allows consumers and businesses to recycle any manufacturer's PCs, including system units, monitors, printers and optional attachments for \$29.99 which includes shipping. The IBM PC Recycling service will either recycle or refurbish the equipment or system and arrange for a donation to Gifts in Kind International (GIKI). Customers may purchase the PC Recycling Service by calling 1-888-SHOP-IBM (746-7426 reference part #06P7513) or go to web address: <http://www.ibm.com/ibm/environment/products/pcrservice.shtml>.

Much of the equipment returned to IBM Material Recovery Centers is disassembled into reusable or recyclable parts. This process helps ensure the small percentage of hazardous components within a computer are disposed of properly.

In the United States, IBM has established a program for the collection, reuse, recycling and disposal of lead acid, nickel-cadmium and nickel-metal hydride batteries used in IBM products. For battery return information, call 1-800-IBM-4333.

For more information

For more information about the Environmentally Conscious Products program, please visit us at: <http://www.ibm.com/ibm/environment>.



© International Business Machines Corporation 2003

Printed in the United States of America
10-03
All Rights Reserved

References in this publication to IBM products or services do not imply that IBM intends to make them available in every country in which IBM operates.

IBM hardware products are manufactured from new parts, or new and used parts. In some cases, the hardware product may not be new and may have been previously installed. Regardless, IBM's warranty terms apply.

IBM, the IBM logo, the e-business logo, AS/400, AS/400e, iSeries, pSeries, xSeries, zSeries, Thinkpad, ThinkVision and IBM Infoprint are trademarks or registered trademarks of International Business Machines Corporation.

ENERGY STAR® is a U.S. registered mark.

Designing with a green pen

IBM @server pSeries Environmentally Conscious Products Program



IBM @server pSeries 690

"Designing with a green pen" signifies IBM's commitment to continuously improve the environmental quality of its IBM @server products and processes.

Our commitment to environmentally conscious products is outlined in the IBM environmental affairs policy statement:

"To develop, manufacture and market products that are safe for their intended use, efficient in their use of energy, protective of the environment and that can be reused, recycled or disposed of safely."

This brochure highlights many of the activities that are helping us reach these goals.

Awards

IBM has been named a Partner in the 2002 and 2003 Ecohitech Award in Italy. This Partnership is in recognition for the continuous improvements of the environmentally conscious product design of the IBM server product lines. This partnership also recognizes the many awards received by IBM Italy including the 2001 Honorable mention for environmental improvements achieved in server products, the 1999 award in server product design and the 1998 award in the company category.



IBM @server Development and Thomas J. Watson Research Center received the IBM 2001 Chairman's Environmental Affairs Citation.



The "IBM Energy Efficiency Total Solutions" application was awarded the Sustainable Development Neuronne Award in Paris in November, 2001. IBM received the award for integration of innovative technologies for significant reduction of energy consumption of IBM products in operation and stand-by.



In 2001, IBM received the U.S. Environmental Protection Agency's 2001 ENERGY STAR® "Excellence in Corporate Commitment" award. ENERGY STAR® awards recognize leadership in voluntarily reducing energy use and preventing pollution.

In 2000, the RS/6000 7025 - F80 server was one of six finalists in the product

category of the London Design Museum's second annual Design Sense awards. The awards promote and recognize the very best standards of sustainable design - products and buildings which not only look good, but have taken into account the use of materials, energy, water, process and packaging in their production and use.



In 2000, IBM Enterprise Systems Group and IBM Corporation were selected by Cinergy Corporation as the overall Supplier for Environmental Excellence. A \$1000 donation to the World Wildlife Fund was made in recognition of this award.

In 1999, IBM Server Group received the Tennessee Governor's Award for Industrial Pollution Prevention for Product Stewardship.















IBM Server Group received the 1998 Minnesota Governor's Award for Excellence in Waste and Pollution Prevention Management for its Product Environmental Design Program.



Energy Use of pSeries Products*

Relative Performance -

This chart shows the typical power consumption per unit of relative performance for some of the pSeries models.

	Workstation/Servers				Midrange Servers				Enterprise Servers				
2003													
Processor Feature Code	5220	5133	5133	5133	5133								
rPerf (Relative Performance)**	2.50	2.50	2.50	2.50	2.50								
Processor	1200 MHz	1200 MHz	1200 MHz	1200 MHz	1200 MHz								
Maximum Memory	16 GB	32 GB	32 GB	32 GB	32 GB								
Typical Power Consumption per Unit***	300 W	330 W	330 W	330 W	330 W								
Typical Power Consumption per Unit/Relative Performance****	120.0 W	132.0 W	132.0 W	132.0 W	132.0 W								
2002													
Processor Feature Code					4452	4453	4453						
rPerf (Relative Performance)**					1.69	1.91	1.91						
Processor					1000 MHz	750 MHz	750 MHz						
Maximum Memory					16 GB	32 GB	32 GB						
Typical Power Consumption per Unit***					330 W	560 W	300 W						
Typical Power Consumption per Unit/Relative Performance****					195.2 W	293.1 W	157.0 W						
2001													
Processor Feature Code					5211	5211	5213	5242					
rPerf (Relative Performance)**					1.26	1.26	3.71	12.72					
Processor					600 MHz	600 MHz	750 MHz	1100 MHz					
Maximum Memory					32 GB	32 GB	64 GB	64 GB					
Typical Power Consumption per Unit***					560 W	520 W	645 W	3042 W					
Typical Power Consumption per Unit/Relative Performance****					444.4 W	412.7 W	173.9 W	239.2 W					

* The energy use numbers in this chart are provided only for information purposes. Power consumption may vary depending on configuration and application of a given pSeries total solution. For installation planning, consult the pSeries Site and Hardware Planning Information Manual.















** The rPerf (Relative Performance) is an estimate of commercial processing performance. It is derived from an IBM analytical model which uses characteristics from IBM workloads, TPC and SPEC benchmarks. The rPerf model is not intended to represent any specific public benchmark results and should not be reasonably used in that way. The model simulates some of the system operations such as CPU, cache and memory. However, the model does not simulate disk or network I/O operations. Although the model uses general database and operating system parameters, it does not reflect specific database or AIX version or releases. Unless otherwise indicated, the model assumes the use of 32-bit applications.

Unless otherwise indicated, rPerf is estimated only at the time a system is introduced. The IBM @server pSeries Model B80 is the baseline reference system and has a value of 1.0. Although rPerf may be used to compare estimated IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration.

*** This information is available in the pSeries Site and Hardware Planning Information Manual at www-1.ibm.com/servers/eserver/pseries/library/hardware_docs/sa38/380508.pdf.

**** The Typical Power Consumption per Unit/Relative Performance is a relative system/watts performance ratio used in pSeries computing environments. The typical power consumption is calculated to be a percentage of the maximum measured power consumption.

Customize your pSeries solution with these energy-saving peripherals.

ENERGY STAR®
The ENERGY STAR® Office Equipment program is a voluntary partnership effort between the United States Environmental Protection Agency (EPA) and equipment manufacturers to promote the introduction of energy-efficient products, including personal computers, monitors, printers and multi-functional devices. Equipment manufacturers that design and sell energy-efficient equipment meeting the requirements of the program are eligible to have the product identified with this EPA ENERGY STAR® logo found below.

IBM participates in the ENERGY STAR® Program and has developed products that meet these requirements. Some of these qualifying products are pictured on this page.

The ENERGY STAR® logo does not represent EPA endorsement of any product or service.

As an ENERGY STAR® Partner, IBM has determined the referenced products meet the ENERGY STAR® Program guidelines for energy efficiency.

IBM @servers do not qualify for the ENERGY STAR® computer program. This page shows some energy saving peripherals that can be used with some IBM @server products.