

## IBM *e*server iSeries Models 825, 870, 890 for Medium to Large Enterprises



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### Highlights

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- ***Simple, centralized management of multiple operating environments helps reduce complexity and lower management costs***
- ***Superior scalability capabilities with Capacity Upgrade on Demand: turn it on when you need it, turn it off when you don't***
- ***Integrated WebSphere-Express for iSeries provides easy Web modernization***
- ***New packaging makes obtaining the technology you need to compete and win simpler and more cost effective***
- ***Simple Windows integration helps reduce complexity and lower the cost of operations***

### **iSeries in an on demand world**

Today's on demand world is high-pressure and fast moving. Customers want more personal service, more customization, more value.

Businesses must respond instantly or risk getting left behind. The days of an ever expanding, out of control server farm are past; today's business challenges call for a flexible, scalable, easy-to-manage Information Technology (IT) infrastructure that can dynamically adjust to these demands.

At the same time, companies need to regain control of IT spending, identify efficiencies and manage the bottom line. Average corporate server costs more than doubled between 1996 and 2001, and research indicates that server infrastructure expenditures are growing more rapidly than those for any other IT resource.<sup>1</sup> While success in the on demand world means that businesses must adapt to customers' changing needs, they must find ways to do it using highly cost-effective systems.

That's why IBM @server® iSeries™ is ideal for medium to large enterprises. iSeries is a highly integrated, reliable platform that allows businesses to run multiple environments and a wide range of applications on a single server. The iSeries 825, 870 and 890 offer a low total cost of ownership, advanced manageability, extensive scalability and outstanding performance—all the features necessary to meet the challenges of an on demand world.

### **One server for virtually any application**

With iSeries servers, IBM customers are free to choose the best mix of applications to meet their unique business needs. Every iSeries server can simultaneously run OS/400®, Linux®, Microsoft® Windows 2000®, Windows NT®, Lotus® Domino™ and ported UNIX® applications as well as application environments and languages such as WebSphere®, Java™ and highly efficient 5250 On-line Transaction Processing (OLTP).

Advanced dynamic logical partitioning (LPAR) capabilities on the iSeries allow for dynamic reallocation of resources across multiple application environments. This translates to easy administration, the ability to adjust

quickly to changing business priorities and the freedom to run a wide variety of mixed workloads—without requiring the costs and complexity often associated with managing multiple servers.

A single intuitive graphical interface also helps reduce management complexity and costs. iSeries Navigator facilitates graphical management of storage and database resources, enabling sharing of resources across operating environments for higher utilization and greater efficiency. iSeries Navigator for Wireless allows administrators to view server status, start or stop servers and run Windows commands for integrated Windows servers from a Web-enabled cell phone, PDA or Web browser—for easy administration anytime, anywhere.

### **Integrated tools for e-business**

As well as helping to simplify the management of diverse workloads, iSeries servers incorporate a comprehensive set of critical e-business tools to help simplify the on demand world: database, storage and application development tools that can help lower acquisition costs, speed

deployment and further enhance manageability. In fact, iSeries is known for its ability to let you focus on managing your business, not your server.

iSeries servers offer an integrated, self optimizing storage management architecture that is designed to help automate the management of main memory, cache and disk storage with balanced application performance. Unlike other platforms, complex storage operations such as increasing storage capacity, data distribution for performance, load balancing and expert cache are an inherent part of iSeries storage management capabilities. For this reason, the iSeries does not require dedicated storage specialists to perform day-to-day storage management tasks—significantly helping to reduce management costs.

iSeries support enables administrators to centrally manage storage resources and share them across application environments like a Storage Area Network (SAN). Intuitive graphical management tools on OS/400 allow manual or automated storage management; administrators may configure storage space manually or simply monitor resource alloca-

tion as the iSeries dynamically optimizes available storage space. This means that businesses can more easily automate storage management for diverse workloads on a single server. Greater storage efficiency means simplified management and reduced storage administration costs.

Also built into every iSeries is the industry-leading IBM DB2® Universal Database™ (UDB). Operating System/400® (OS/400®) Version 5 Release 2 (V5R2) supports a comprehensive set of open and SQL standards and enhanced compatibility with the IBM DB2 family of products, allowing greater flexibility and code portability. DB2 UDB for iSeries supports multiple, independently-named database images within a single OS/400 partition. This feature allows companies to consolidate multiple databases from across several lines of business while maintaining operational and accounting independence. Extended data partitioning allows organizations to perform scheduled maintenance and seamlessly switch database objects to another system, helping minimize interruptions to normal operations.

### **Ready for e-business on demand**

On demand computing requires the tools to build e-business applications and evolve legacy applications to the Web. Staying competitive means reacting at the pace of e-business—which is why iSeries servers include a complete suite of tools to support integrated Web enablement.

iSeries supports new, open e-business solutions based on HTML, Java, XML and Web Services. Within a single package, WebSphere-Express for iSeries includes an application server and a WebSphere application development tool, including the IBM WebFacing Tool. WebSphere-Express for iSeries even includes an organizational telephone directory application, good for 1000 entries at no additional charge.

Modernizing traditional applications can be simple using the IBM WebFacing Tool, which enables traditional 5250 OLTP applications to run on a Web server such as WebSphere Application Server-Express. Each new iSeries model supports native execution of WebFaced 5250 OLTP applications using zero interactive capacity (5250 CPW), helping to ensure outstanding performance and reliability.

Finally, every iSeries server includes IBM HTTP Server (powered by Apache) and supports Java and Domino—for superior flexibility in choosing e-business applications.

### **Capacity on tap for cost-effective scalability**

In order to remain competitive, organizations need to be able to respond instantly to rapidly changing business requirements. Having the agility to scale up at a moment's notice can be the difference between, for example, capitalizing on a surge in customer demand leading up to the holiday season and alienating buyers with slow system response times and poor service.

The Models 825, 870 and 890 meet the need for “pay-as-you-grow” and “pay-as-you-go” scalability with Capacity Upgrade on Demand (CUoD). CUoD offers permanent and temporary capacity to help decrease up-front processor costs by deferring the need to buy extra processing capacity until you need it. It can be as simple as turning on additional capacity when you need it and turning it off when you don't. Upgrades—traditionally made in multi-processor increments—can be much more



granular, enabling businesses to pay only for what they need, exactly when they need it—one processor at a time. Each of these iSeries models allow businesses to dynamically add capacity as needed without installing new hardware or causing service interruptions.

#### **Windows consolidation, central management**

For local consolidation of Intel servers and storage, with centralized management of iSeries and xSeries™ servers, iSeries servers offers two options: installing the Integrated xSeries Server inside the iSeries or attaching external IBM @server xSeries servers directly to the iSeries via Integrated xSeries Adapters™.

On the Models 825, 870 and 890, you can install dozens of 1-Way Integrated xSeries servers and attach external n-Way Integrated xSeries Adapters—all managed from a single iSeries server.

Either option enables centralized administration of servers through iSeries Navigator, greatly enhancing manageability and cost-effectiveness. In addition, both options allow Windows servers to share iSeries centralized disk, tape, DVD and systems management resources. The result is true integration combining the best of both iSeries and xSeries servers—the freedom to run the best mix of applications while using the management strengths of OS/400 to operate the entire implementation as a single infrastructure with minimum complexity.

The advanced iSeries storage architecture can also provide more flexibility than conventional Windows server implementations, where dedicated disk drives are typically attached to every server and a network administrator must manage each server's capacity separately. With the iSeries server, all disks can be managed as a single pool of RAID-5 or mirrored

protected storage—for greatly simplified data administration and improved storage utilization.

#### **Mainframe-class performance and reliability**

POWER4™ processors in the i825, i870 and i890 add superior performance to iSeries servers. Advanced silicon-on-insulator (SOI) technology makes the POWER4 chip one of the fastest 64-bit processors in the world. In fact, POWER4 design is so advanced that it has received an award from MicroDesign Resources as a best workstation/server processor.<sup>2</sup>

In addition, the unique integrated iSeries architecture enables exceptionally fast connections between servers—up to 1 Gbps, or ten times faster than standard Ethernet connections between standalone machines—and enterprise-class reliability. And unlike decentralized LAN systems, all network traffic stays within the iSeries server, which can mean fewer potential points of failure and fewer potential security risks.

### **Linux ready: innovative on-demand virtualization**

iSeries allows Linux applications to be combined with all your other business applications and e-business solutions on a single server. By leveraging iSeries advanced logical partitioning, dynamic resource movement, virtual storage, POWER4 processors and 64-bit Linux distributions; iSeries can efficiently support the most demanding workloads. Up to 10 Linux partitions per processor (maximum of 32 on a single server) are supported. Processor resources can be dynamically moved between partitions to support changing business demands. With storage virtualization, Linux can take advantage of the performance, protection, and management provided by the advanced iSeries storage architecture.

### **A server that takes care of itself**

Even the most comprehensive, powerful systems need to be simple in order to be managed effectively. Workload requirements will grow as your business does, and companies need intuitive, optimized management facilities every step of the way. iSeries meets that need by building on IBM's autonomic computing initiative—a blueprint for self-managing

systems that respond to changes with little human intervention. The goal: new highs in reliability, availability and serviceability, and new lows in downtime and cost of ownership.

With OS/400 V5R2, iSeries expands the use of self-optimizing and self-healing features as well as intuitive graphical tools that can help automate management tasks, making them simple enough for anyone to implement with a click of a mouse or a wireless device.

Self-healing features help automate monitoring to promote availability and prevent downtime. For example, the server can proactively alert IBM to problems—without requiring human intervention. In some cases, IBM may even be able to correct errors before an administrator spots them, greatly reducing troubleshooting time, lowering staffing costs and limiting service interruptions.

Self-optimization features are also designed to automate routine administrative tasks. The server dynamically optimizes available storage space for OS/400, Windows and Linux servers,

and can monitor processor utilization and dynamically reallocate resources across application environments for maximum efficiency. Automation can free administrators from the repetitive daily chores of server farm management, which translates to lower staffing costs for businesses looking to streamline IT spending.

### **New Packaging**

iSeries models 825, 870 and 890 come in two new and highly versatile editions to make it easier than ever to select the features you need, regardless of the size of your business. Both the Standard and Enterprise editions support a wide variety of e-business and client server solutions and tools to that can enable your IT infrastructure to dynamically adjust to changing business priorities. The Enterprise Edition includes many of the tools, functions, multiple operational environment components and middleware needed for an on demand environment.

### **Standard Edition**

Designed to meet the needs of e-business and clients server solutions based on integrated middleware such as DB2, WebSphere Application Server and IBM HTTP Server (powered by Apache). Also included:

- *Capability to simultaneously run multiple operating environments, such as OS/400, WebSphere, Domino, Windows and Linux*
- *Integrated OS/400 Workload manager, dynamic logical partitioning and Capacity Upgrade on Demand (permanent and temporary)*
- *Support for 5250 OLTP applications that have been modernized with the WebFacing Tool of IBM WebSphere Development Studio for iSeries*

### **Enterprise Edition**

Designed for the exploitation and management of an e-business including 5250 OLTP solutions based on integrated middleware such as DB2, WebSphere Application Server and IBM HTTP Server (powered by Apache). Also included:

- *Capability to simultaneously run multiple operating environments, such as OS/400, WebSphere, Domino, Windows and Linux*
- *Integrated OS/400 Workload manager, dynamic logical partitioning and Capacity Upgrade on Demand (permanent and temporary)*

- *Support for 5250 OLTP applications to run using the maximum 5250 CPW provided in the Enterprise package or to run on a Web Application Server such as WebSphere after being WebFaced using IBM's WebFacing Tool*
- *A broad range of enterprise class tools for optimizing and managing e-business, client server and 5250 OLTP solutions*
- *Education voucher(s) from IBM*
- *Installation services provided by IBM*
- *Standby processor activation for Linux on Models 870 or 890 (Linux software license required)*
- *An Integrated xSeries server for world-class Windows integration and more*

### **iSeries 825**

The Model 825 is a powerful server designed for medium to large enterprises that need high versatility in a world of e-business on demand. With 3/6-Way POWER4 processors ranging from 3600 to 6600 CPW, up to 48GB of memory and up to 58TB of disk, the i825 provides excellent scalability and large I/O capacity for server consolidation. CUoD capabilities and a choice of two editions: Standard or Enterprise provide outstanding flexibility to respond to changing business needs.

### **iSeries 870**

The Model 870 is a mainframe-class server built to handle the needs of large enterprises. This server includes CUoD and provides tremendous power and maximum flexibility to run mixed, multiple workloads: 8/16-Way POWER4 processors ranging from 11500 to 20000 CPW, up to 128GB of memory and up to 144TB of disk. The i870 delivers outstanding response times for core 5250 OLTP applications, high performance for Web and e-business applications plus a wide array of integrated management tools that can help you respond to business needs in an instant.

### **iSeries 890**

As the largest and most powerful iSeries server, the Model 890 can support thousands of users and deliver top-end performance for Web, e-business and core 5250 OLTP applications: 16- to 32-Way POWER4 processors ranging from 20000 to 37400 CPW, up to 256GB of memory and up to 144TB of disk. With CUoD and multi-platform and application support, this server delivers maximum function and adaptability for e-business in an on demand world.

**Thousands of applications available**

With iSeries servers, customers can choose from a vast array of software tailored to meet the needs of medium and large enterprises. A global network of leading independent software vendors (ISVs) offer an outstanding portfolio of business-to-business (B2B), business-to-consumer (B2C), customer relationship management (CRM) and supply chain management (SCM) products. These applications simplify deployment and lower costs by providing proven solutions—tested to work on iSeries servers.

**Comprehensive ongoing support**

IBM delivers support for our customers—even before the initial installation of an iSeries server—with Technical Support Advantage: comprehensive technical service and support that helps you learn about, choose, implement, and use the right IT solution based on your business requirements. Our experts can help with business and IT consulting, business transformation and total systems management services, as well as customized solutions. The Web provides quick access to technical information and tools. Plus, we have a vast amount of experience to help

you develop your e-business infrastructure from end-to-end; experience that can give you peace of mind.

**For more information**

To learn more about the iSeries 825, 870 and 890, contact your IBM marketing representative, IBM Business Partner, or visit:

**ibm.com**/eserver/series

<b>Model</b>	<b>825</b>	<b>870</b>	<b>890</b>	<b>890</b>
<b>Processor</b>	2473	2486	2497	2498
<b>n-Way</b>	3/6-Way	8/16 Way	16 /24 Way	24 /32 Way
<b>Processor CPW</b>	3600-6600	11500-20000	20000-29300	29300-37400
<b>5250 CPW*</b>	0 or maximum	0 or maximum	0 or maximum	0 or maximum
<b>Main Storage</b>				
Min Capacity (GB)	2	8	8	16
Max Capacity (GB)	48	128	192	256
<b>Disk Storage (GB)</b>				
Min (GB)	17.5	17.5	17.5	17.5
Max (GB)	58216	144446	144446	144446
<b>Disk Arms (max)</b>	825	2047	2047	2047
<b>Internal DVD/Tape</b>	18/36	26/48	26/48	26/48
<b>ExternalTape/Optical/CD/DVD</b>	18/36	26/48	26/48	26/48
<b>Physical Packaging (max)</b>				
HSL Loops	3	8	12	14
I/O Towers	18	47	47	47
PCI Card Slots	263	672	672	672
Maximum PCI IOA Cards	206	528	526	526
Twinaxial Controllers (max)	135	180	180	180
Twinaxial Devices	5400	7200	7200	7200
Communication Lines (max)	320	480	480	480
LAN Ports (max)	96	128	128	128
<b>Linux Capable</b>	y	y	y	y
<b>Integrated xSeries Servers</b>	36	48	48	48
<b>Integrated xSeries Adapters</b>	18	60	60	60

\* Dependent upon Edition. Standard = 0, Enterprise = maximum

Note: Some maximums and combinations of devices may be subject to configuration restrictions.



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01-03  
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<sup>1</sup> "Value Proposition for e-Infrastructures: Cost/Benefit Case for IBM @server," International Technology Group, May 2002. Available at [ibm.com/servers/solutions/serverconsolidation/pdf/itg.pdf](http://ibm.com/servers/solutions/serverconsolidation/pdf/itg.pdf).

<sup>2</sup> Source: [www.mdronline.com](http://www.mdronline.com), January 30, 2002