



# IBM *@*server iSeries 2001 Announce Overview

*Freedom to Succeed*

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# IBM *e*server iSeries: Freedom to Succeed

IBM *e*server iSeries

## iSeries Model 820/830/840

Scalable, mixed transaction  
workloads



OS/400 V5R1 and SStar  
Availability 5/25/2001

## iSeries Model 270

Application and Web server

Innovative technology that simply works

New tools for e-business

Application flexibility: Your business, your choice

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# IBM server iSeries: Freedom to Succeed

IBM  server iSeries

IBM eServer iSeries was announced in 2000, featuring new and innovative technology that separates it from predecessor AS/400 servers. iSeries is the first server in the industry to have deployed Silicon-On-Insulator, a breakthrough processor technology that improves a processor's performance, while reducing its heat output. iSeries also introduced High Speed Link, a new 1 Gigabyte bus technology that connects storage and I/O to the system, while being extensible for system-to-system clustering. Finally, a new crossbar memory switch added to iSeries balanced system performance.

iSeries products are classified into four main groups:

- iSeries Models 820, 830 840 are scalable, enterprise class servers designed for mixed application and transaction workloads.
- iSeries 270 is a server for small to medium-sized businesses that incorporates options for application and Web serving and compute intensive workloads that typically do not use a relational database. In addition to non-database applications, the Model 270 has strong relational database support for applications such as Business Intelligence, Supply Chain and ERP.
- iSeries Dedicated Server for Domino is tuned specifically for the demands of Lotus Domino, providing balanced performance for multiple Domino server instances, concurrently in a single server.
- iSeries Models SB2 and SB3 are designed as application servers, requiring very scalable processor performance, but with few disk or database requirements. These servers are typically deployed in a three-tier implementation as a front-end application server to an iSeries 840 as a database server.

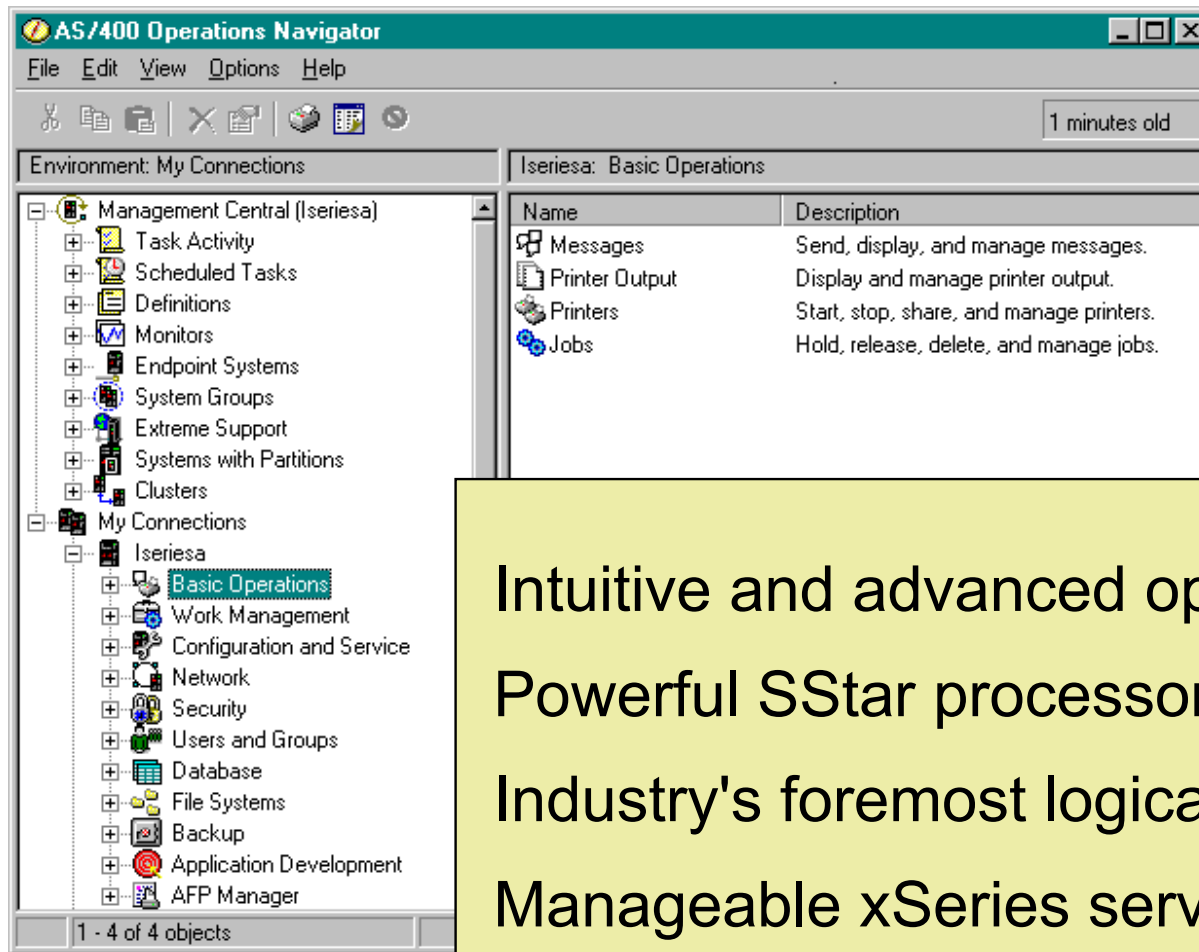
This presentation covers OS/400 Version 5 Release 1, new iSeries processor features and associated products that have a planned availability of May 25, 2001.

Together these products extend the iSeries reputation for innovative technology, application flexibility, and as a server that provides new tools for e-business.

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# 2001 iSeries Announcement Highlights

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OS/400 V5R1 and SStar  
Availability 5/25/2001

Intuitive and advanced operations

Powerful SStar processors

Industry's foremost logical partitioning

Manageable xSeries servers for Windows 2000

Robust, scalable Linux servers

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# 2001 iSeries Announcement Highlights

IBM  server iSeries

OS/400 V5R1 provides the industry's foremost application flexibility with support for Linux, Windows 2000, Java, UNIX and iSeries applications, combining high availability with superior workload management and logical partitioning.

OS/400 V5R1 and iSeries provide robust reliability and scalability for the fast growing open source Linux environment. Now the next generation of Web-enabled Linux applications can be quickly deployed and managed in a single, partitioned server alongside current business applications.

With OS/400 V5R1, a business can simply and rapidly deploy e-business applications with seamless integration of existing applications and data. With extensions to its robust security and networking options, OS/400 V5R1 enables a secure framework for business-to-business connectivity through the supply chain and to customers.

The face of OS/400 is forever changed with extensive graphical interface enhancements providing intuitive visualization, wizards and integration for simplicity of advanced operations from both PCs and pervasive or mobile devices. Operating your server has never been this simple!

With dynamic and granular Logical Partitioning, OS/400 V5R1 makes it easier than ever to manage multiple applications in a single server. Also, iSeries can now provide a storage area network for directly attached Windows 2000 Servers.

New high availability options include faster, less expensive system-to-system clustering options and the ability to switch applications, data, and resources between two iSeries servers.

In addition, V5R1 includes a broad range of enhancements for e-business and application enablement, security, networking, directory services, database, Java, OS/400 Portable Applications Solutions Environment (OS/400 PASE), Internet printing and much more.

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Innovative technology that simply works

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# Innovative Technology That Simply Works

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iSeries processor roadmap

New iSeries processor features

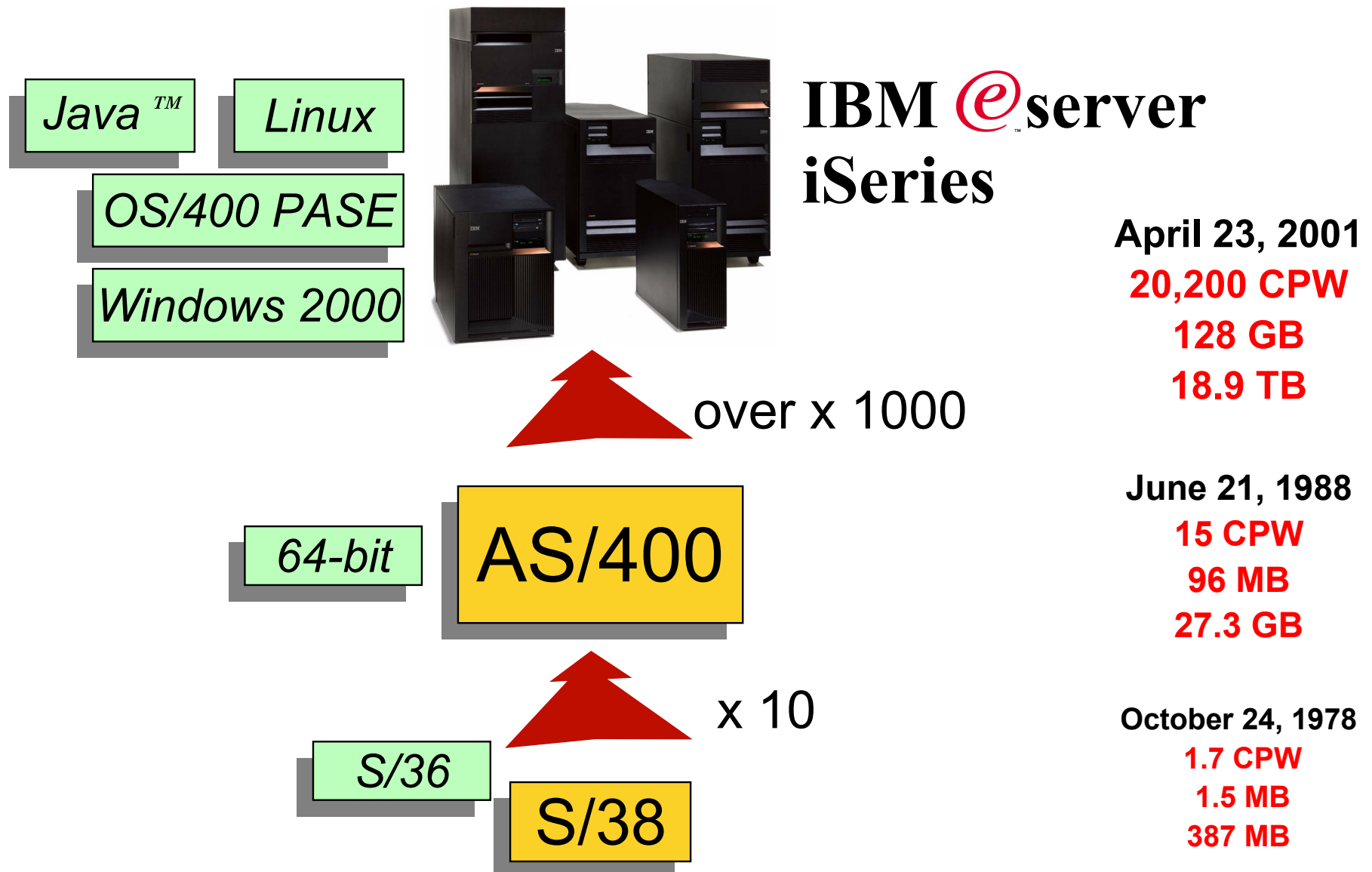
Clustering over High Speed Link

Switchable disk

Fibre Channel

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The eServer iSeries is the current generation of servers derived from the architecture that formed the foundation for both AS/400 and System/3x products. Of course, the iSeries today is fundamentally different from its predecessor products, not only in its performance but also in its underlying hardware technology and its ability to run applications from a wide variety of open application environments. Its architecture, however, has remained the key to adapting to new application models and incorporating new hardware technologies without affecting the ability to run existing applications. Of course, to be successful, an architecture must be durable enough to be relevant through multiple generations of technology and products. iSeries architecture has demonstrated that durability since its inception in 1978.

In 1978, the System/38 was the first server to use the advanced architecture that is exploited today in iSeries. With the announcement of the AS/400 in 1988, the first major architectural challenge was overcome by incorporating System/36 and System/38 applications together in a single server. The second major test of the architecture came in 1995, when the AS/400 moved to a 64-bit RISC processor base. It became the only server in the industry to make that transition with applications being automatically translated to run in full 64-bit mode, with no recompilation or application rewrites.

The introduction of 64-bit processing and symmetric multiprocessing enabled the transformation of the AS/400 from a midrange and distributed server, to the scalable enterprise server that we see today with the iSeries.

By exploiting 64-bit PowerPC processor technology, it became possible to open to new application environments, to provide a highly scalable Java server, to run UNIX applications and even to run Linux natively. Integrating an Intel processor-based server opened the platform to running Windows NT and Windows 2000.

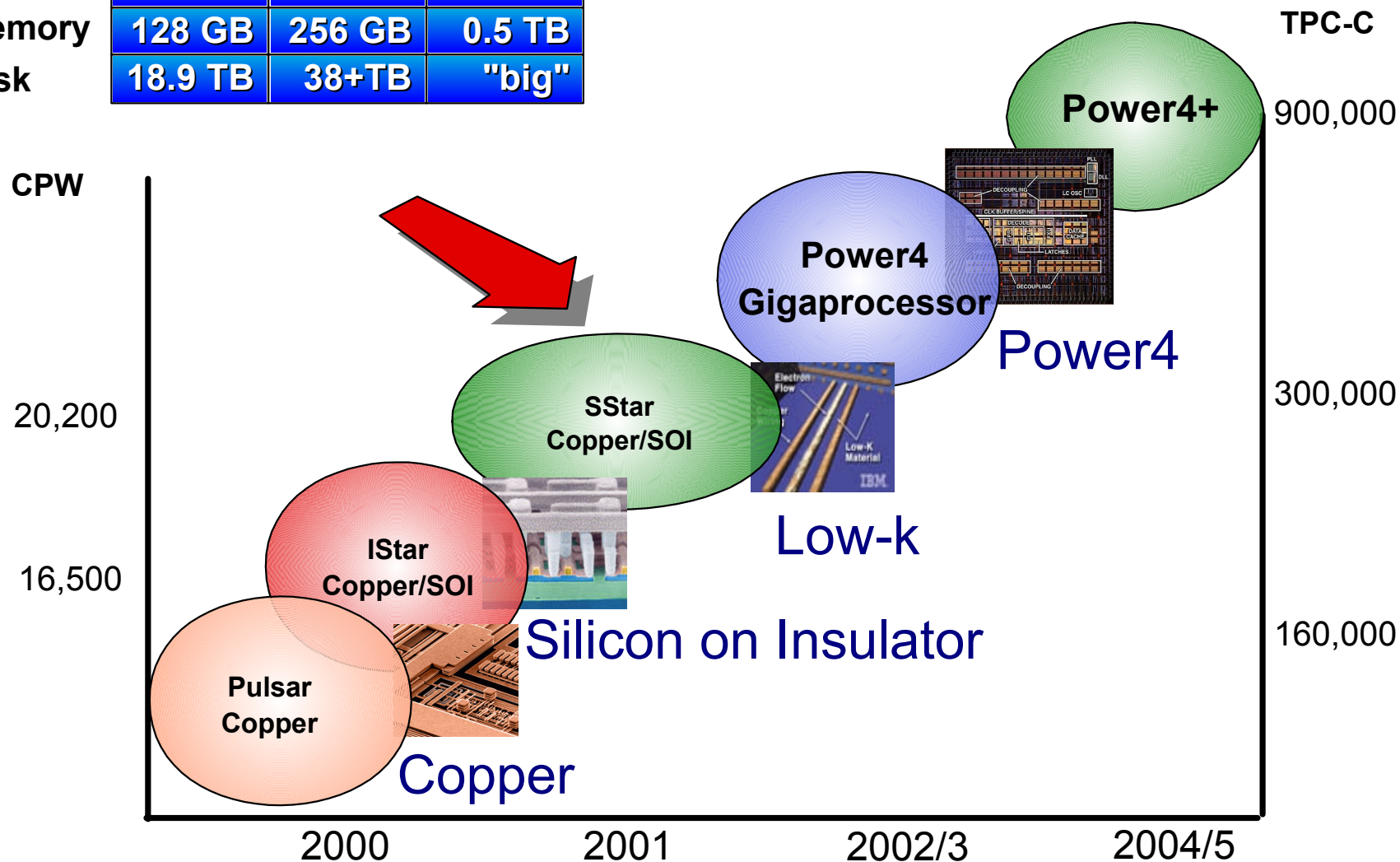
Now shipping its seventh, successful generation of 64-bit processors, the iSeries has grown to become one of the largest enterprise class servers in the industry, rivaling even the largest UNIX servers. Whereas the AS/400 at its announcement was 10 times larger than the first System/38, when the iSeries was announced in 2000, it was a massive 1000 times more powerful than the original AS/400.

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# iSeries Processor Roadmap

IBM  server iSeries

	2000/1	2002/3	2004/5
<b>SMP</b>	24	32	64
<b>Memory</b>	128 GB	256 GB	0.5 TB
<b>Disk</b>	18.9 TB	38+TB	"big"



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# iSeries Processor Roadmap



With SStar processors and V5R1, iSeries now delivers its seventh generation of 64-bit processors.

The roadmap shown here is the roadmap for IBM eServer. Both iSeries and pSeries customers benefit from IBM's ability to deliver innovative technologies that provide industry leading performance, based on exploiting scalable 64-bit symmetric multiprocessing. With support for Linux on PowerPC, the IBM eServer advantage extends to give customers robust and scalable alternatives for implementing the next generation of e-business applications.

iSeries was the first server in the industry to deliver Silicon-On-Insulator and, combined with Copper chip technology, has forged a new role as an enterprise server.

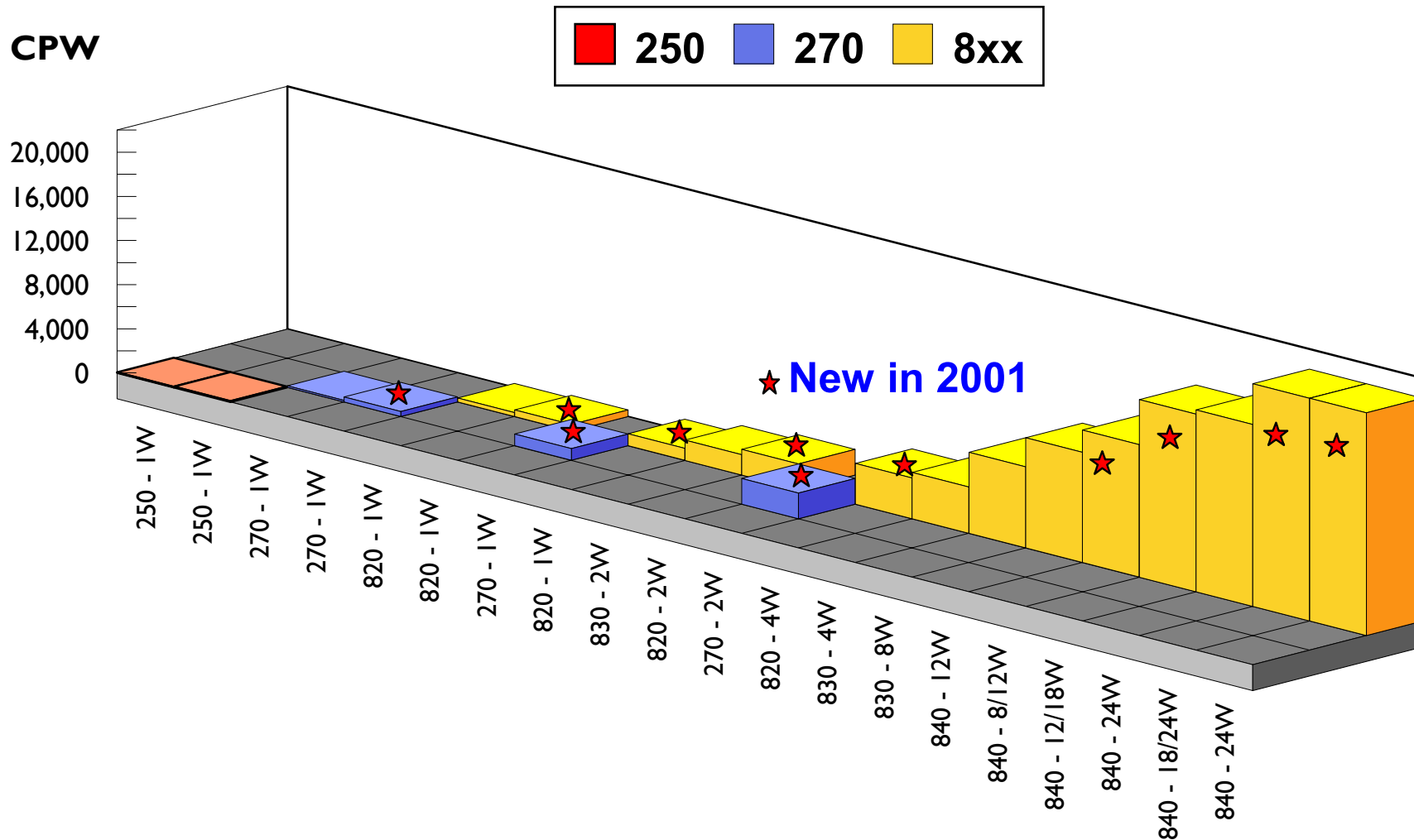
IBM has now announced another milestone in semiconductor manufacturing: a new method for building microchips that can deliver up to a 30 percent boost in computing speed and performance. This new manufacturing technique uses a material technologists refer to as a "low-k dielectric" to meticulously shield millions of individual copper circuits on a chip. IBM is the first to use the low-k dielectric technique with copper wiring. For more information on IBM's chip technology including Copper, SOI, Low-k and Power4, see <http://www.chips.ibm.com/bluelogic/showcase/>

While iSeries, with its 24-way SMP, sets impressive performance benchmarks at the high end, it is also able to scale down, bringing the same processor and robust operating system advantages to small businesses. With SStar, iSeries is again able to bring the latest Copper and SOI technology down to smaller servers and, in doing so, reaffirms its strategy for entry products designed for small business.

The iSeries roadmap includes future exploitation of Power4 and Power4+ processors, with over 1 GigaHertz clock speed. Of course, iSeries is designed with business applications requirements for balanced system performance in mind. Therefore, along with new 64-way processor technologies, our system roadmap includes designs for supporting up to .5 TB of memory and massive disk storage capabilities to match the growth expectations of large corporations.

Of course, while any roadmap is subject to change, AS/400 and iSeries has an impressive track record of delivering on past roadmaps. Unlike some technology competitors, AS/400 and iSeries has delivered on its promise of exploiting 64-bit processors and has done so without forcing customers to rewrite their applications. Note that Intel announced Merced in 1995, the same year AS/400 provided customers a seamless transition to its first generation of 64-bit computing.

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Processor Commercial Processor Workload (CPW) values are used. CPW is a relative measure of performance of iSeries processors. Performance in customer environments may vary. The value is measured on maximum configurations.

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Processors  
CPW

Requires V5R1

Processors  
CPW

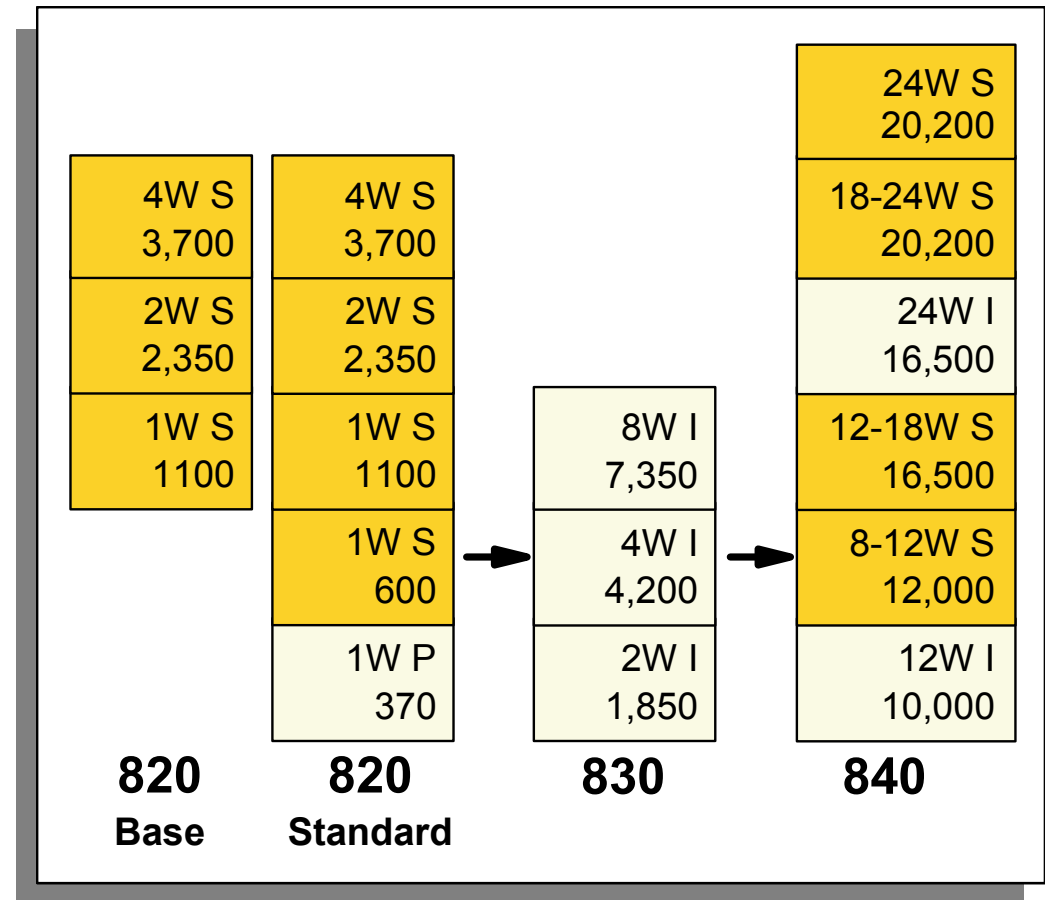
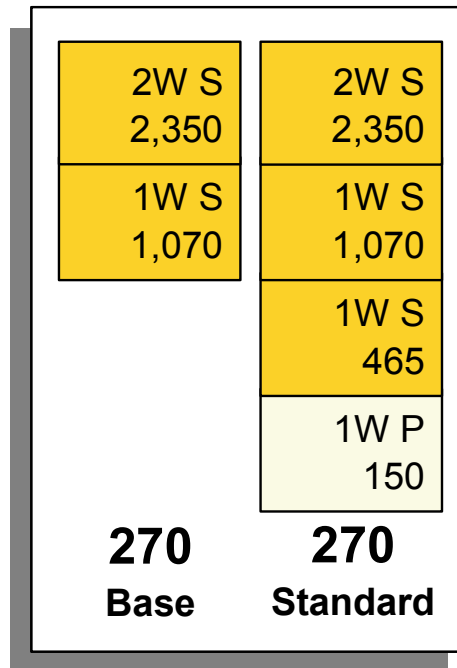
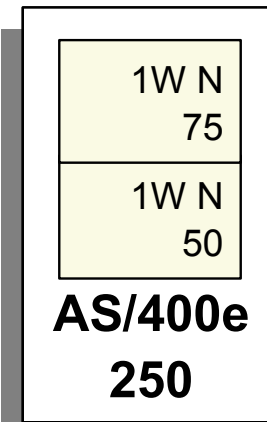
Runs V4R5 or V5R1

S = SStar

I = IStar

P = Pulsar

N = Northstar



Entry points in all models provide flexibility to run both V4R5 and V5R1

Processor Commercial Processor Workload (CPW) values are used. CPW is a relative measure of performance of iSeries processors. Performance in customer environments may vary. The value is measured on maximum configurations.

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# Scalable, Linux-ready iSeries Enterprise Servers

IBM  server iSeries



iSeries Model 820

- SStar & Pulsar Copper / SOI
- up to 3,700 CPW
- up to 32 GB memory
- up to 4 TB disk
- **Replaces** top 4 features with new SStar processors
- **Adds** 3 new base processor features



iSeries Model 830

- IStar Copper / SOI
- up to 7,350 CPW
- up to 64 GB memory
- up to 11 TB disk
- **Extends** existing options



iSeries Model 840

- SStar & IStar Copper / SOI
- up to 20,200 CPW
- up to 128 GB memory
- up to 18.9 TB disk
- **Adds** new 24-way processor feature

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# Scalable, Linux-ready iSeries Enterprise Servers

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In 2001, iSeries 8xx servers provide a full range of enterprise server options featuring Pulsar SStar and existing IStar processors, both incorporating breakthrough Copper and Silicon-On-Insulator technologies. Four of the 820 processor features are replaced with new standard features (4 SStar processors), delivering an approximately 20% performance boost versus current servers. The 820 is also extended with 3 highly competitive new *base* servers, tuned for the high demands of new workloads, and designed for companies who do not need any 5250 interactive application performance.

The new SStar-based 820s are enabled for High Speed Link clustering and those with SStar processors are Linux-ready. New SStar 820s feature shared processor support for both OS/400 partitions and for Linux, allowing companies to run LPAR on a uni-processor for the first time. Note shared processor support for OS/400 partitions is available on Pulsar and IStar based 820 servers, but Linux shared processor support is not available on these processors. Existing n-way 820s can support Linux with dedicated processors. Additionally, existing 820s can be upgraded to SStar-based processor features to take advantage of High Speed Link clustering.

The iSeries Model 830 is extended with new support for up to an impressive 64 GB of memory. Shared processor support is enabled for OS/400 partitions, but not for Linux partitions. The iSeries Model 830 is Linux-ready and enabled for clustering over High Speed Link. (For existing 830 servers, a simple feature upgrade is required to add the clustering support.)

Two new processor features are added to the iSeries 840, giving exceptional scalability of up to 20,200 CPW with the new SStar-based 24-way. Both IStar and SStar processors will continue to be available in the 840, delivering a more granular high end product line. In addition, the iSeries Model 840 now supports up to a massive 128 GB of memory. The iSeries 840 also features Capacity Upgrade on Demand options, with new upgrades available from AS/400 Models 730 and 740 as well as existing standard iSeries Model 840 servers. Shared processor support is enabled for both OS/400 partitions and, on SStar processors, for Linux. All iSeries Model 840s are Linux-ready and enabled for clustering over High Speed Link. (For existing 840 servers, a simple feature upgrade is required to add the clustering support.)

Model	Standard Proc	N-Way	Proc Speed / L2 Cache	CPW	Int CPW	
840	2461	24W SStar	600 MHz/16 Mb	20200	120-20200	Requires V5R1  Runs V4R5 <u>and</u> V5R1
840	2420	24W IStar	500 MHz/8 Mb	16500	120-16500	
840	2418	12W IStar	500 MHz/8 Mb	10000	120-10000	
830	2403	8W IStar	540 MHz/4 Mb	7350	70-4550	
830	2402	4W IStar	540 MHz/4 Mb	4200	70-2000	
830	2400	2W IStar	400 MHz/2 Mb	1850	70-1050	

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# iSeries 820: Extending Options for New Solutions

IBM  server iSeries



Linux-ready

Introducing base 820 processor options for compute intensive applications

- Flexible options for customers with no 5250-based applications
- For new iSeries portfolio of e-business, Supply Chain and CRM applications

Industry's foremost server for logical partitioning

- Up to 16 LPARs, up to 4 on a uni-processor

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# iSeries 820: Extending Options for New Solutions

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New options for the iSeries 820 extend its flexibility to run new solutions that demand compute intensive performance, but do not use any 5250 interactive application performance. Three new base processors are available with no 5250 performance, except that required by the system console.

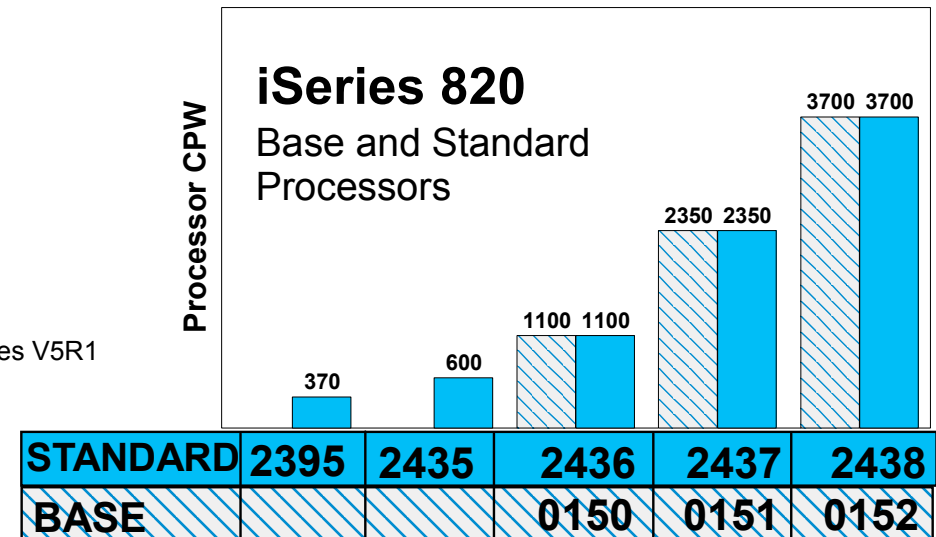
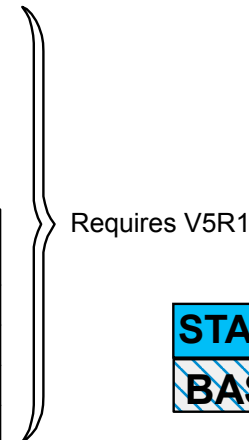
New solutions supported by the base 820 processors include Web serving and many new applications like i2, Logility, QAD, EXE, Synquest, Prelude, Ariba, WebSphere Commerce Suite, Xtricity, Siebel, Engage, Youcentric, Onyx, SAP, JD Edwards OneWorld, Intentia, Baan, etc.

The iSeries 820 was already the only midrange server in the industry to offer logical partitioning. Now, V5R1 shared processor support extends LPAR capability to uni-processor 820 servers. Supported on Pulsar, IStar and SStar processors, up to four OS/400 partitions can be run on a single processor.

Base Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
0152	4W SStar	600 MHz/4 Mb	3700	0
0151	2W SStar	600 MHz/4 Mb	2350	0
0150	1W SStar	600 MHz/2 Mb	1100	0

Standard Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
2438	4W SStar	600 MHz/4 Mb	3700	35-2000
2437	2W SStar	600 MHz/4 Mb	2350	35-1050
2436	1W SStar	600 MHz/2 Mb	1100	35-560
2435	1W SStar	600 MHz/2 Mb	600	35-240

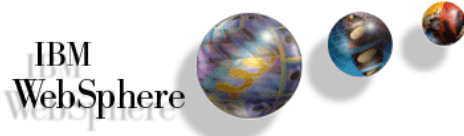
Standard Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
2395	1W Pulsar	400 MHz/0 Mb	370	35-240



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# iSeries 270: Innovative Technology for Small Business

IBM  server iSeries



Extending logical partitioning to the new SStar Model 270 processors

SStar processors - Linux-ready

Base servers tuned for Web, e-commerce, Supply Chain and CRM applications

iSeries Model 270

- Pulsar and SStar Copper / SOI
- up to 2,350 CPW
- up to 16 GB memory
- up to 840 GB disk
- **Replaces** top 3 features with new SStar processors

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# Extending Innovative Technology to Small Business

IBM  server iSeries

The iSeries Model 270 provides small businesses the opportunity to share the best and most innovative technology from IBM enterprise class servers.

With the iSeries announcement in 2000, the iSeries Model 270 already covered the majority of small business requirements.

With V5R1, logical partitioning is extended to the iSeries 270 SStar processors. This is quite an achievement as the majority of enterprise servers do not have partitioning features to rival those now on the iSeries Model 270. Partitioning on 270s will be used extensively by companies and Business Partners who want a small test server to try a new application release and to support Linux.

The SStar-based iSeries Model 270 processor features are Linux-ready with flexible partitioning capabilities to balance the demands of existing applications on the same server as new Linux applications.

Base Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
2434	2W SStar	600 MHz/4 Mb	2350	0
2432	1W SStar	540 MHz/2 Mb	1070	0

} Requires V5R1

Standard Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
2434	2W SStar	600 MHz/4 Mb	2350	70
2432	1W SStar	540 MHz/2 Mb	1070	50
2431	1W SStar	540 MHz/0 Mb	465	30

} Requires V5R1

Standard Proc	N-Way	Proc Speed / L2 Cache	Proc CPW	Int CPW
2248	1W Pulsar	400 MHz/0 Mb	150	25

Runs V4R5 and V5R1

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# Innovative Technology for Collaborative Commerce

IBM  server iSeries



Dedicated Server for Domino  
Model 270



Dedicated Server for Domino  
Model 820



## iSeries Dedicated Server for Domino

- Powerful new SStar processors, up to 4 TB of disk
- Up to 22% more performance
- Tuned for Domino mail, groupware applications and Web serving
- Extended support for WebSphere and Java applications

Flexible logical partitioning on both iSeries 270 and 820

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# Innovative Technology for Collaborative Commerce

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iSeries has the industry's most scalable Domino server, with benchmark results of 75,000 users in a single server (see below for details).

iSeries also features the industry's first server -- the Dedicated Server for Domino -- tuned for the unique demands of running collaborative commerce workloads with Lotus Domino, from mail serving to Web serving and CRM applications. The iSeries Dedicated Server for Domino has both 270 and 820 processor feature options.

With V5R1, new Dedicated Server for Domino 270 and 820 processor features are available featuring SStar Copper and Silicon-On-Insulator technology, delivering up to a 22% increase in performance with 11,810 Domino R5 Mail and Calendar Users (MCU).

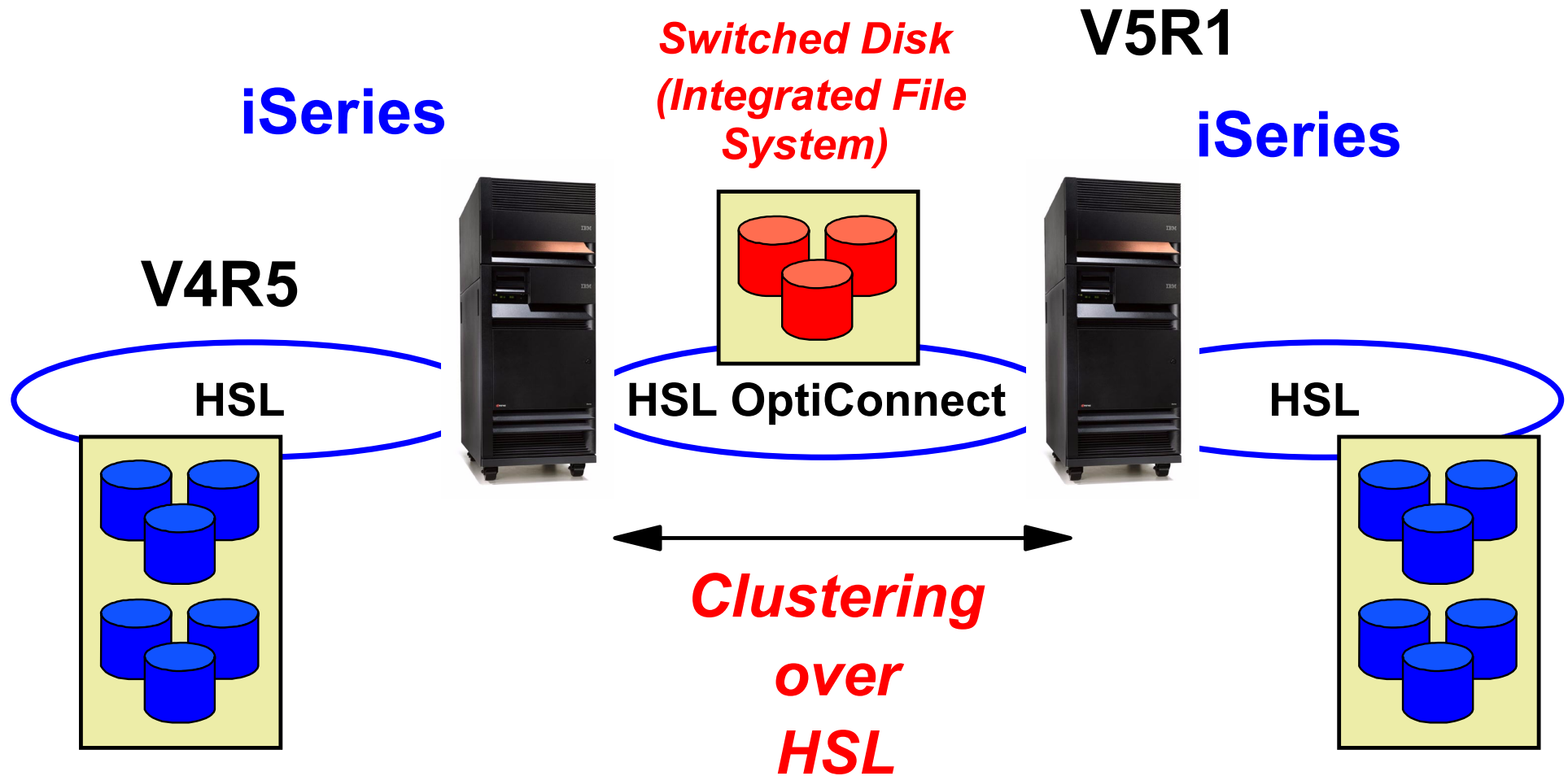
iSeries flexibility for managing multiple Domino servers on a single system with balanced performance and robust reliability is well known. Now with V5R1, uni-processor logical partitioning support is extended across the SStar 270 processor features and all 820 uni-processor options. Partitioning allows a separate operating system image within which to test a new Domino version, in a isolated and flexible environment. Resources can be dynamically moved between partitions, so new Domino versions could be tested with spare resources that can be immediately returned to production partitions as required.

	<b>270-2452</b>	<b>270-2454</b>	<b>820-2456</b>	<b>820-2457</b>	<b>820-2458</b>
<b>Number of SStar processors</b>	1	2	1	2	4
<b>Mail &amp; Calendar Users</b>	3,070	6,660	3,110	6,660	11,810
<b>Maximum Memory (GB)</b>	8 GB	16 GB	16 GB	32 GB	32 GB
<b>Maximum Disk Capacity</b>	421 GB	421 GB	4 TB	4 TB	4 TB
<b>Disk Drives (arms)</b>	24	24	237	237	237
<b>Software Tier</b>	P10	P10	P05	P10	P10
<b>LPAR</b>	Y	Y	Y	Y	Y
<b>Linux Ready</b>	Y	Y	Y	Y	Y
<b>Requires V5R1</b>	4	4	4	4	4

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# HSL OptiConnect and Clustering

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# HSL OptiConnect and Clustering

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AS/400 and iSeries are already known for leading single system availability, plus strong clustering capability, within OS/400 itself, plus through High Availability Business Partners such as Lakeview Technologies, Vision Solutions and DataMirror which provide data replication services and cluster management utilities. In addition, a growing number of ISVs offer ClusterProven applications on iSeries, solutions that have failover services that adhere to OS/400 cluster services and APIs.

There are a wide range of connectivity (cluster fabric) options from local area networks and SPD OptiConnect, plus communications lines for longer distances. OptiConnect is the most elaborate cluster fabric, supporting special application services and exceptional performance. In V5R1, HSL OptiConnect extends clustering to High Speed Link on iSeries models.

Also new with V5R1 is the option for switchable disk clusters. This option allows I/O towers (and the disk and I/O they contain) to be switched between a primary server and backup server. In this release, switched disk clustering is supported for Integrated File System (IFS) objects only, not for database and other system objects.

Lotus Domino is a good example of an application that stores its files in the Integrated File System (IFS) and thus can take advantage of the new switched disk support. In addition, Domino (5.0.7 and above) is now a ClusterProven™ application allowing automatic failover between a primary and secondary server in the event of a failure. Unlike the clustering support that is built into Lotus Domino that requires two servers and two sets of disks, iSeries switched disk clustering provides for failover between two servers, but maintaining a single disk copy that can be switched between the two servers.

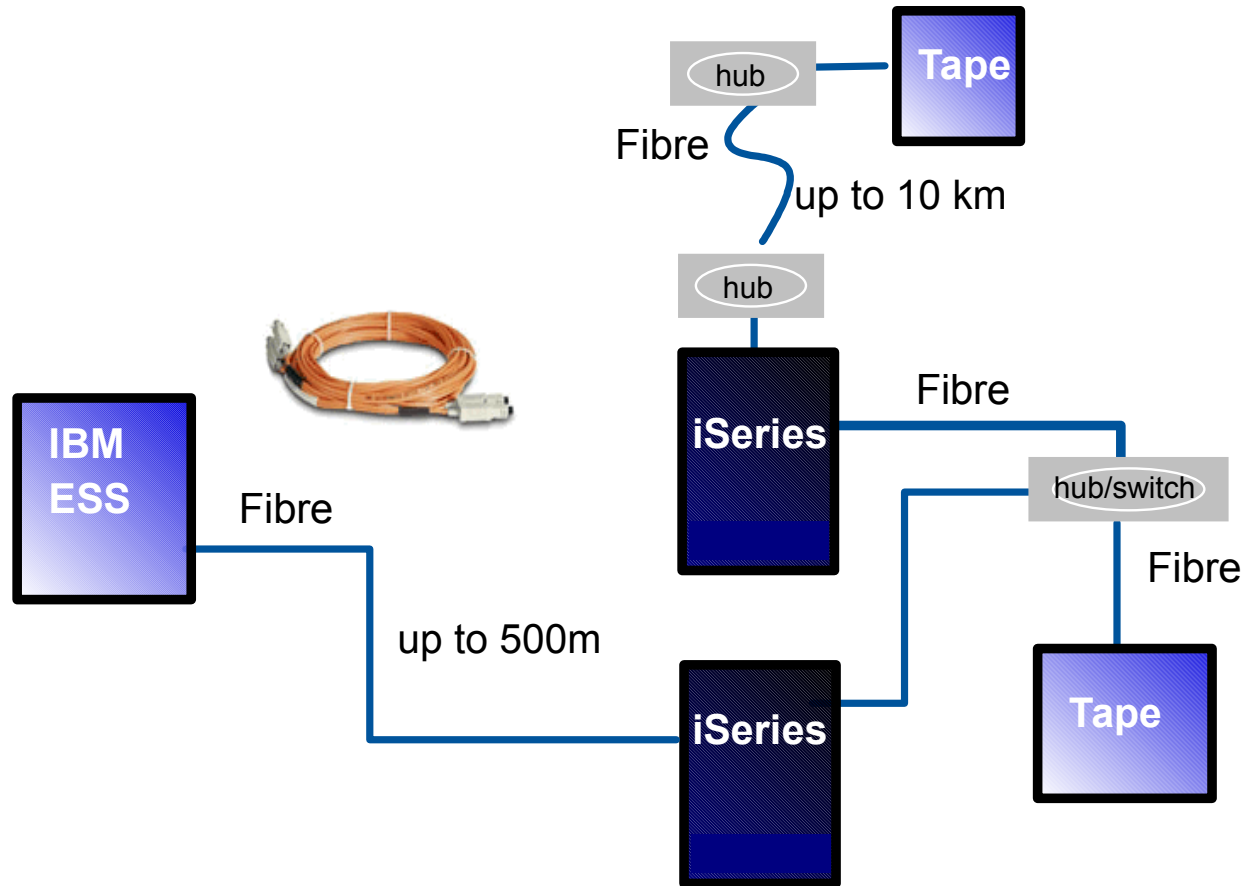
The capability to switch I/O towers extends the availability options for iSeries servers that are managing Windows 2000 Servers. Integrated xSeries Servers, contained in an I/O tower, plus their disks defined in an auxiliary storage pool can be switched between two systems. In the event of an iSeries failure, the Windows configuration and disks can be simply switched to the backup iSeries server and then the Windows servers restarted.

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# Fibre Channel

IBM  server iSeries



## New PCI Fibre Channel Disk and Tape Controllers

- Tape Controller extends tape distance and sharing options
- Disk Controller simplifies IBM ESS storage attachment

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# Fibre Channel

IBM  server iSeries

iSeries with V5R1 now supports options to participate in Storage Area Networks (SANs), with new Fibre Channel Controllers for tape and disk attachment.

Note that dedicated storage, whether internal or network connected, continues to provide the best and most consistent performance to iSeries applications, especially high volume transaction workloads typical of banking, ERP and telecommunications customer care and billing applications. In benchmarks, these application types have not performed consistently when mixed on the same external storage device with high I/O demanding workloads such as a sequential batch processing or file serving.

For tape devices, fibre channel presents new opportunities for resource sharing and distance of up to 10 KM with hubs.

For those customers that are attaching IBM Enterprise Storage Server via an SPD tower and #6501 I/O controllers, the new fibre channel storage controller provides for simpler connectivity. Note switching from #6501 to fibre channel controllers will only improve performance if the #6501 was a performance bottleneck. Typically, the #6501 has not been the performance bottleneck and so existing customers may choose to migrate to fibre only as they transition from SPD to PCI towers.

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# iSeries I/O Enhancements

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## Operations Console with LAN Connectivity

- Flexible management of multiple servers and partitions from a single PC console

## PCI RAID Disk Controller

- Improved performance via advanced caching

## PCI Expansion Unit (#5078)

- Contains 14 I/O slots for expanding I/O requirements without requiring a disk tower

## Rewriteable DVD-RAM

- For Save / Restore with over 7 times the media capacity of CD-ROM (4 GB)

## New Tape Options

- 3590 Exx and 3584 UltraScalable Library with improved flexibility/performance via Fibre Channel
- 50 GB QIC Tape with 2x the data rate of previous models

## New Communications Adapters

- 1 Gbps Ethernet Unshielded Twisted Pair (UTP) IOA
- Dual WAN / Modem IOA and 155 Mbps Multi-Mode Fiber (MMF) ATM IOA

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# iSeries I/O Enhancements

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Operations Console with LAN Connectivity offers Token-Ring and Ethernet options for additional flexibility in distributed and LPAR environments. It is designed for customers running LPAR or managing multiple systems from a single console.

PCI RAID Disk Unit Controller (#2778/4778): In addition to providing RAID-5 protection for disks, this controller is also designed to work as a high performance controller for disks protected by system mirroring or disks with no protection. This controller is Ultra2 SCSI capable when installed in a #5065, Storage/PCI Expansion Tower or #5066 I/O Tower, and is Ultra SCSI capable when installed in the system unit or #5064/#9364 System Unit Expansion. It supports a maximum of 15 drives. It also supports the #4331/#6831 1.6 GB Read Cache Device. Larger read cache is supported only when it is not in compression mode. It has a maximum compressed cache size of 104 MB which provides RAID-5 protection and compression for internal disk units.

PCI Expansion Unit (#5078): The #5078 PCI Expansion Unit is a "top hat" that installs on top of the #9079 Base I/O Tower of the Model 840, and on top of the #5074 PCI Expansion Tower. The #5078 has 14 PCI slots, which allows up to 11 PCI IOAs to be added. Disk units and removable media devices are not supported in the #5078. The #5078 can be ordered with a #5074/#9079 on initial orders and the #5074/#9079 will ship with the #5078 installed. The #5078 may also be ordered as an field install on an existing #5074/#9079.

Rewriteable DVD-RAM is a new optical technology that advances the capabilities that CD-ROM brought to the iSeries. It provides the software distribution capability of CD-ROM, but it is also a writable device. The 4 GB (up to 8 GB compressed) capacity of the media is over seven times larger than CD-ROM. The drive will read CD-ROM, CD-R, CD-RW, DVD-ROM and DVD-RAM media. It can write only DVD-RAM media. The speed at which it transfers data from the media is roughly equivalent to a 24x speed CD-ROM, or about 3.6 MB/sec average sustained.

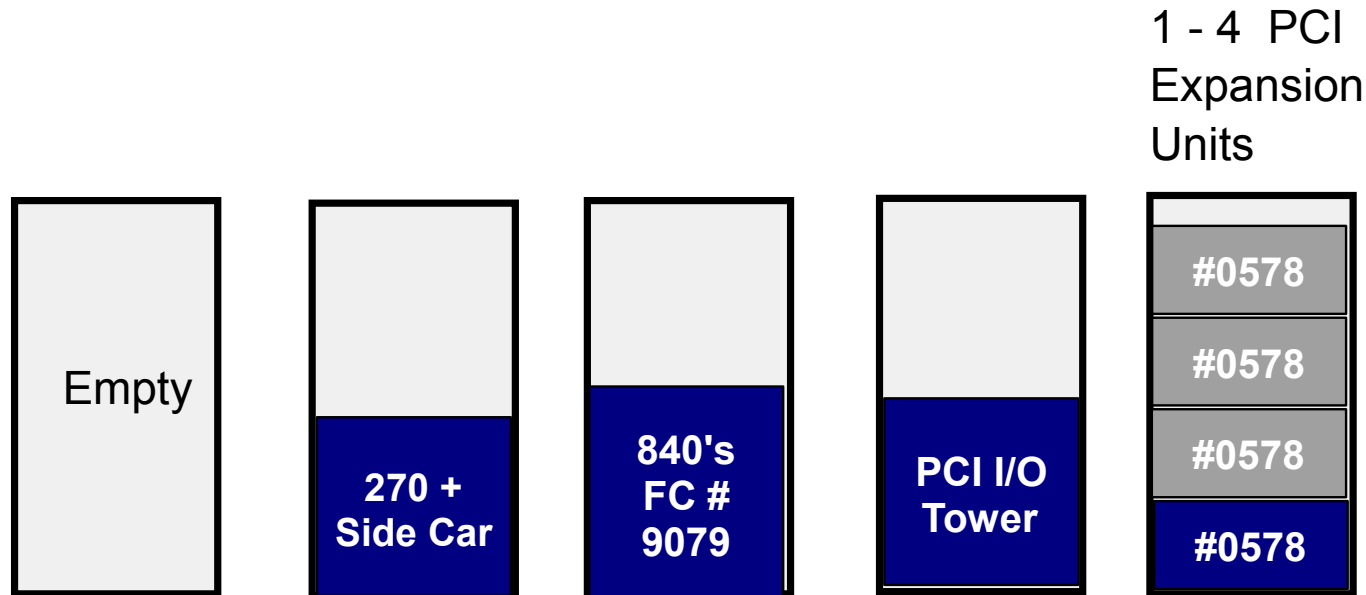
The 3590 Exx and the 3584 Ultrascalable Library are enhanced by providing for improved flexibility/performance via Fibre Channel connectivity.

The 50 GB 1/4-inch cartridge tape features #4487 and #4587, provide up to 100 GB of storage capacity, per cartridge using Scalable Linear Recording (SLR), an extension of the Quarter Inch Cartridge (QIC) tape technology.

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# New iSeries Rack Options

IBM  server iSeries



Flexible rack mounting options for iSeries servers  
and I/O expansion towers

New Power Distribution Unit (PDU) in iSeries racks

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# New iSeries Rack Options

IBM  server iSeries

iSeries now has flexible rack mounting options that help to conserve valuable floor space.

iSeries rack configurations can now be ordered as follows:

- An empty iSeries rack (new)
- An iSeries rack with one Model 270 server (new)
- An iSeries rack with two Model 270 servers
- An iSeries rack with one Model 830 server
- An iSeries rack with a Base 1.8m I/O Tower for a Model 840 Server (new)
- An iSeries rack with a Base 1.8m I/O Tower and a PCI Expansion Tower for a Model 840 server
- An iSeries rack with one or two PCI Expansion Towers (new)
- An iSeries rack with one to four PCI Expansion Units (new)

The iSeries racks are 1.8 meters high (36 EIA units) with EIA standard 19-inch width. Configurator support is not available for management of unused space available within any of the rack offerings. Empty space will have filler panels installed when shipped from the plant. One to four Power Distribution Units (PDU) may be specified with the iSeries rack (#0551). The PDUs may be ordered on initial order of the #0551 or on field upgrades. Each PDU has six power sockets.

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# New Tools for e-business

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# IBM server Capacity Advantage

IBM  server iSeries

Flexible capacity management without interrupting business

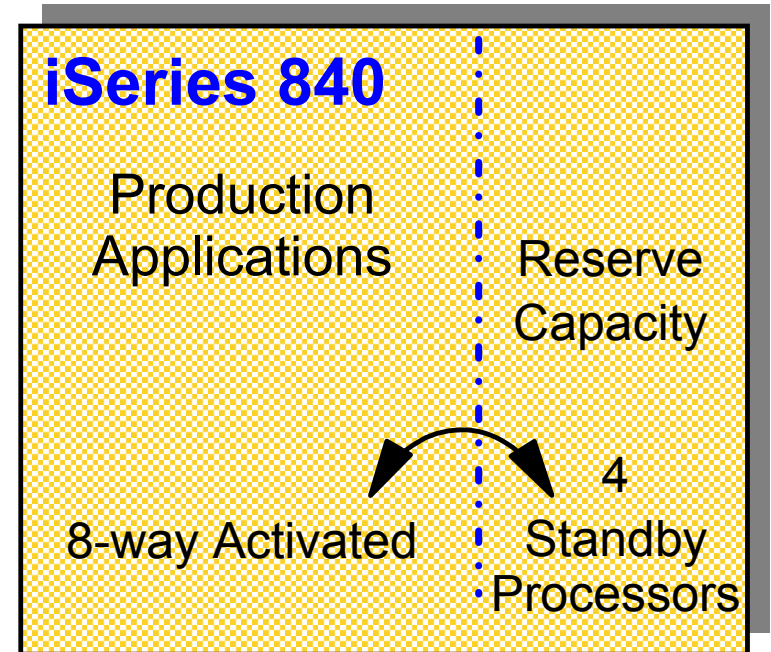
For ASPs and high growth companies

New Capacity Upgrade on Demand features for SStar iSeries 840

Immediate activation of reserve processor capacity

- Temporary activation for 14 days

New upgrade paths from AS/400e servers 730/740 and iSeries 840



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# IBM server Capacity Advantage

IBM  server iSeries

Capacity Upgrade on Demand provides flexible upgrade options with pre-installed processors that can be activated immediately, without restarting the server. It provides flexibility for fast growing companies, like ASPs and mobile telecommunications providers, who have difficulty anticipating future capacity requirements. Also, it provides strong advantages for banks and other companies that need to add capacity quickly, but want to avoid system downtime for processor upgrades.

With Capacity Upgrade on Demand, additional, reserve capacity processors are pre-installed in the system. The reserve processors can be immediately activated without an IPL of the system, all processors are activated together. A 14-day temporary activation period allows a company to determine its exact processor requirements and purchase processor activation features, one per processor to be permanently activated.

Processors can be activated one at a time, or together as required. Once the permanent activation feature key has been entered into the system, the 14-day period is reset.

Three new Capacity Upgrade on Demand processor features have been added to the iSeries Model 840. Upgrades are now available from AS/400 Model 730 and 740, and iSeries Model 840 into iSeries Model 840 Capacity Upgrade on Demand features.

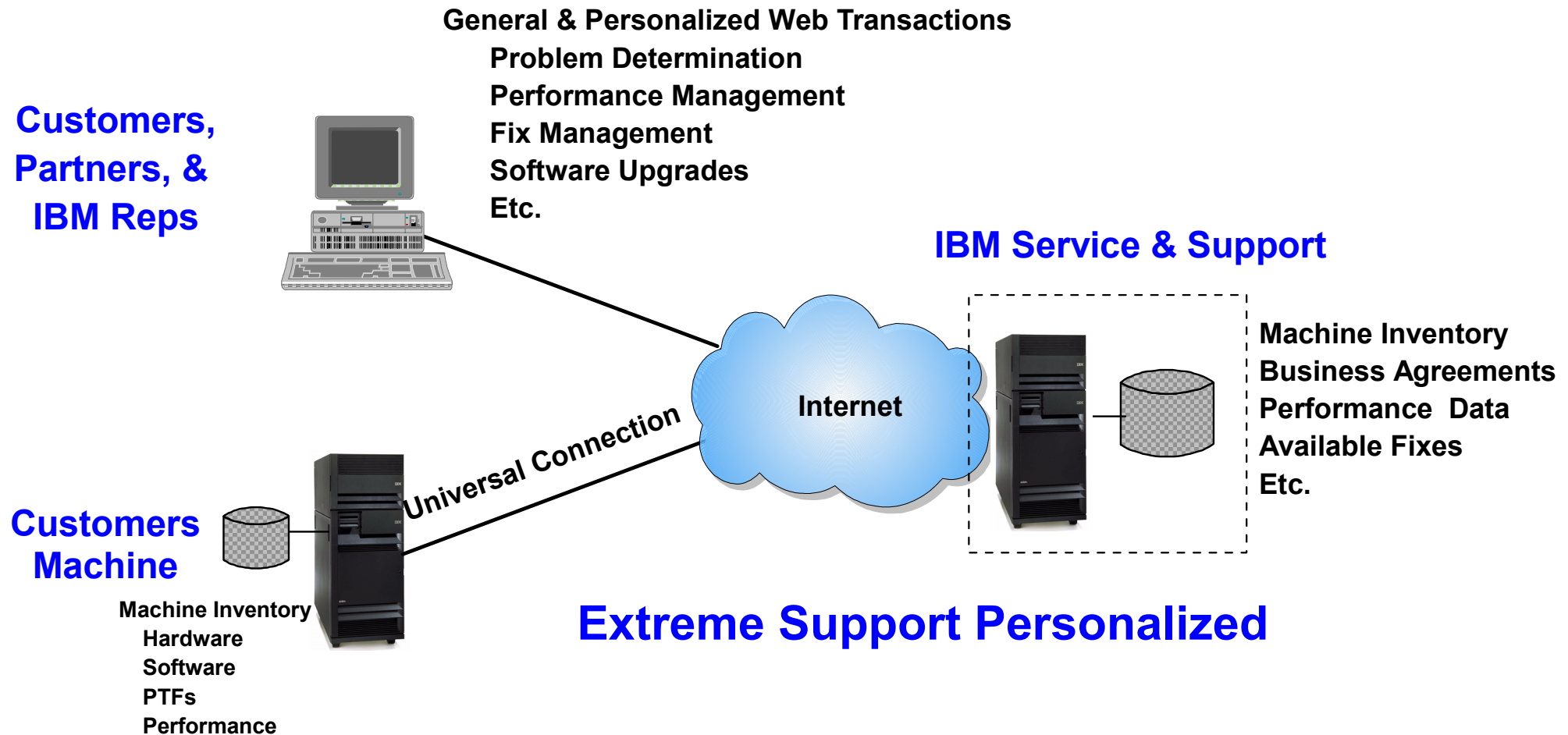
iSeries 840 Processor Feature	Processor	Base Processors	On Demand Processors	Installed Processors	Maximum CPW
2352	SStar	8	4	12	12000
2353	SStar	12	6	18	16500
2354	SStar	18	6	24	20200

For more information about Capacity Upgrade on Demand for iSeries servers, see <http://www.ibm.com/eserver/series/ondemand>

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# IBM server Customer Care Advantage

IBM server iSeries



IBM server. For the next generation of e-business.

The iSeries Extreme Support Personalized (ESP) initiative helps you easily manage your system, streamline your support, and reduce risk for your business. ESP is total solutions support, personalized for you in the form you need it. ESP involves support over the Internet, voice, and on-site support, along with support integrated into the product.

New capabilities at V5R1, such as:

- Internet connection utilizing Virtual Private Network
- ECS, PM/400e, and consolidated HW/SW inventory over the Internet
- Multisystem data collection consolidation
- Simplified ordering of release upgrades with Software Upgrade Assistant (SUA)
- Direct input of performance data into workload estimation
- Simplified PTF Notification and Delivery
  - Electronically download Group PTFs from service
  - New commands to manage cover letters
  - Progress indicators during PTF load and apply
  - Preconditions to preview PTF apply/remove when preconditions present

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# Application flexibility: Your business, your choice

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# Application flexibility: Your business, your choice

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IBM  server iSeries

Logical Partitioning

Linux

Windows

Domino

Application Development

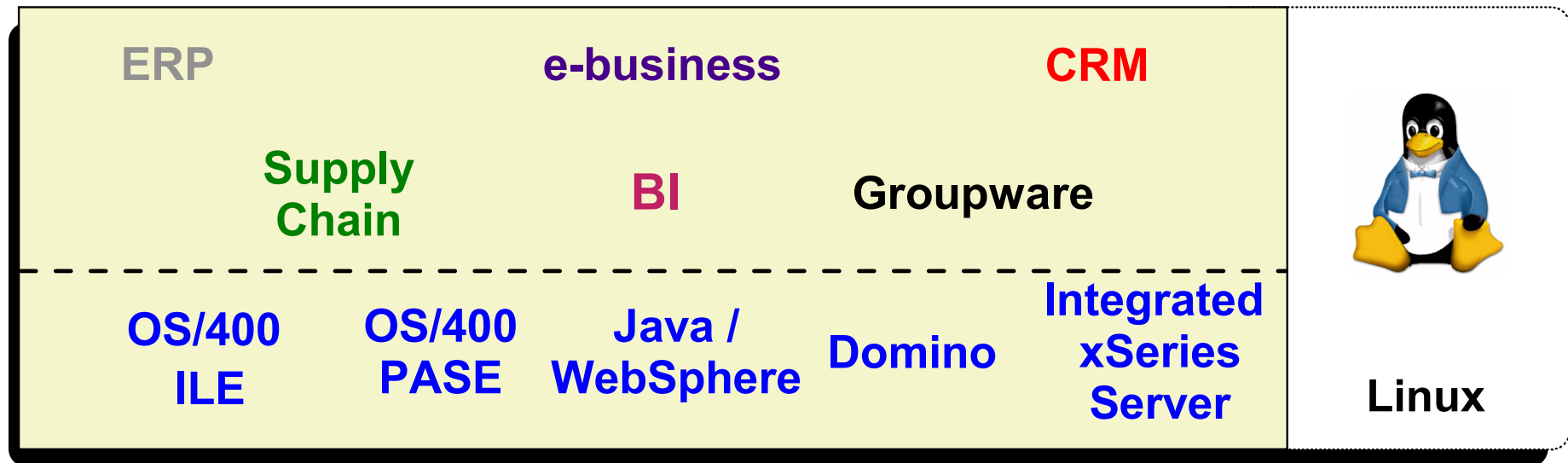
OS/400 PASE

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# Application Flexibility = Solutions Vitality

IBM  server iSeries

## iSeries



SAP	i2	Intenia	Lawson	JDE
JDE	SPSS	Kingland	Binary Tree	Siebel
Logility	Serena	QAD	Synergistics	Logility
Siebel	Uniserv	Ariba	ParaResearch	Clear Technologies

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# Application Flexibility = Solutions Vitality

IBM  server iSeries

Why do you buy an application server? To run the applications you need to support your business. No application servers do that better than iSeries.

OS/400 V5R1 provides the industry's foremost application flexibility with support for Linux, Lotus Domino, Java, Microsoft Windows, UNIX and iSeries applications, combining high availability with superior workload management and logical partitioning.

The iSeries offers enterprise-class technology for all size companies that is simply not available on competing systems. So you can consolidate applications and tune them for performance, rather than trying to manage expanding server farms.

The result? A reliable, high-performance e-business infrastructure that also gives you the flexibility to choose the right applications for your business, no matter what popular operating environment they were written for--all on one, very manageable server platform.

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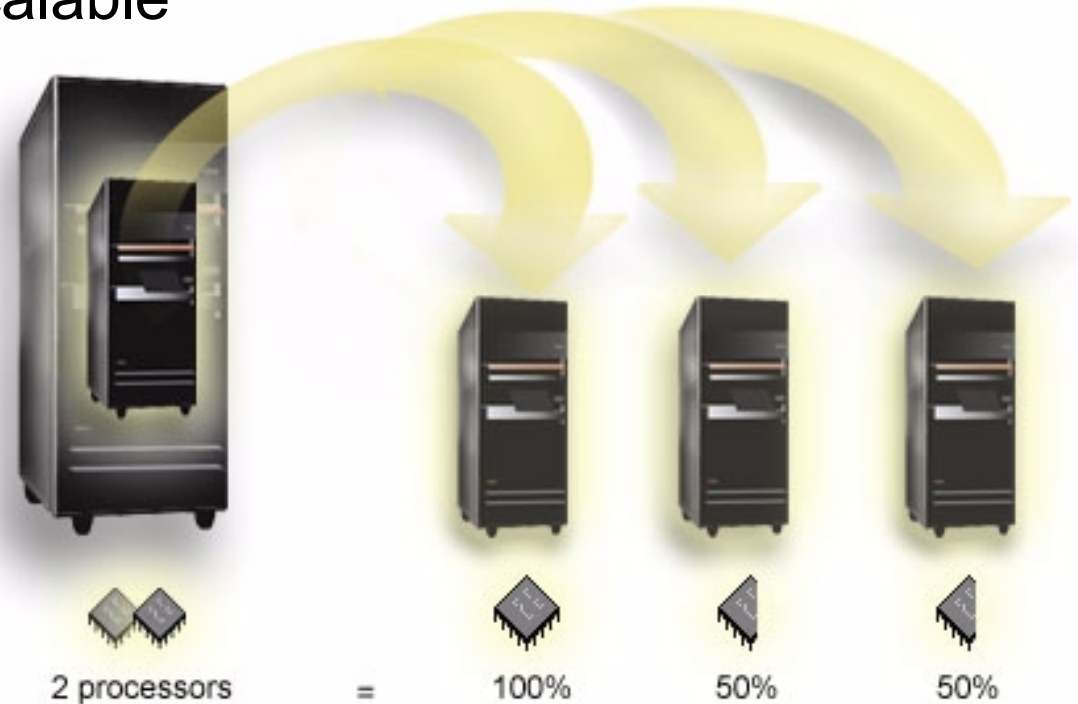
# iSeries Logical Partitioning

IBM  server iSeries

At the forefront of partitioning technology

Enterprise class, flexible and scalable

- Dynamic resource movement
- Shared processor support
- Up to 32 partitions
- Virtual Ethernet
- Graphical management
- LPAR on iSeries 270\*
- Linux in a partition
- Industry's first entry and midrange servers with partitioning



\*Available on new 270 SStar processor features

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# Notes: iSeries Logical Partitioning

IBM  server iSeries

Logical partitioning (LPAR) has been available on iSeries and AS/400 servers since 1999, and is used by many companies worldwide to optimize I/T infrastructure and reduce operating costs. Often LPAR is used to consolidate multiple systems into a single server, while maintaining application independence. Benefits of using LPAR include cost savings from software, maintenance, data center operations costs such as heating, cooling, floor space etc.

Logical partitioning is enhanced with OS/400 V5R1 to provide dynamic resource movement on all iSeries Model 8xx systems, Model 270 features with SStar technology, and n-way AS/400 Models 6xx, Sx0, and 7xx.

Logical partitioning processor granularity is improved with the introduction of shared processors for the iSeries Model 8xx and Model 270 with SStar processor technology. Shared processors allow you to create a primary partition with partial processor allocation, thereby removing the requirement to allocate a full processor on iSeries system for partition management functions. Note: Customers with AS/400 models will continue to require a minimum of 1 processor per partition regardless of whether they have OS/400 V5R1 or a previous release.

OS/400 V5R1 logical partitions will also benefit from the new Virtual Ethernet capability, used to establish multiple high speed TCP/IP connections between logical partitions without additional communication hardware.

iSeries systems will also be enhanced to support Linux running in a secondary logical partition on Model 270 and Model 820 with SStar processor technology - including uni-processor features. In addition, it will also support Linux in a secondary partition on n-way Models 820, 830, and 840.

In addition to improving partitioning granularity, Operations Navigator (part of OS/400) provides new graphical interfaces to secure and authorize access to partition creation and management functions for multiple partitions from a single LAN-based console.

Enhancements are also provided to support LPAR APIs for software license management and system resource management . These APIs will be used by ISVs to extend the functions of systems management utilities to support LPAR, plus to allow applications to recognize the size of the underlying partition for software pricing purposes.

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# Linux on iSeries

IBM  server iSeries

iSeries scalability and robust availability  
for Linux

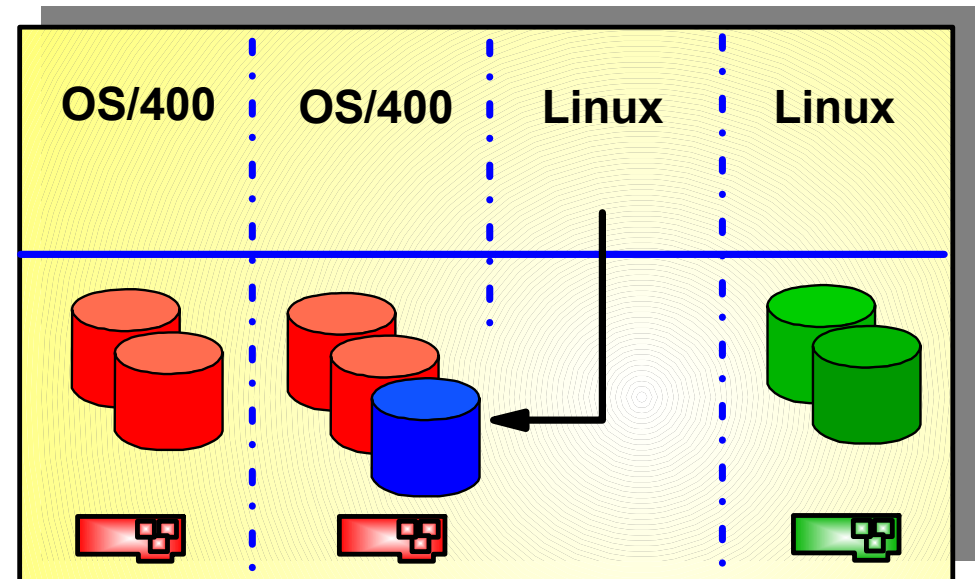
Linux kernel in a logical partition

Shared processor support\*

- Uni-processor partitioning  
on SStar 270 and 820

Flexible resource allocation

- Dedicated and virtual I/O



\*Available on Model 270, 820 and 840 SStar processor features

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# Notes: Linux on iSeries



IBM is committed to supporting Linux, across all its server platforms, including iSeries to foster the growth of the open source operating system as a source for new e-business applications. Companies running Linux on iSeries stand to gain from its robust reliability and scalability, plus take advantage of integrating with existing core business solutions.

With V5R1, OS/400 LPAR is enhanced to support Linux natively on PowerPC in a secondary partition. The new iSeries SStar processor features will support shared processors so that, for example, a uni-processor SStar can support up to 4 partitions - 1 OS/400 and 3 Linux. iSeries Models 820, 830, and 840 will support Linux on IStar processors, but require a minimum of 1 processor per Linux partition. Since one primary OS/400 partition is required for partition management, iSeries can support a maximum of 31 Linux partitions.

Logical partitioning provides the flexibility to move processor and memory resources between Linux partitions. This movement will require a restart of the affected Linux partitions.

iSeries provides outstanding I/O flexibility for Linux partitions, with options for both dedicated and virtual I/O. With dedicated I/O, the Linux partition owns and manages resources such as disks and LAN adapters. Using dedicated I/O is good for partitions where totally separate resource management is required, a firewall for example. Virtual I/O, on the other hand, provides a more cost effective and integrated I/O strategy, where storage and LAN adapters can be owned and managed by OS/400, but are made available 'virtually' to Linux. Virtual I/O provides storage management advantages to Linux such as being protected by OS/400 RAID-5 or mirroring and backup. Virtual I/O is also ideal for getting started with a small and flexible Linux partition, without the requirement to dedicate hardware resources. Also, it allows disk resources to simply be switched or allocated between Linux and OS/400 applications.

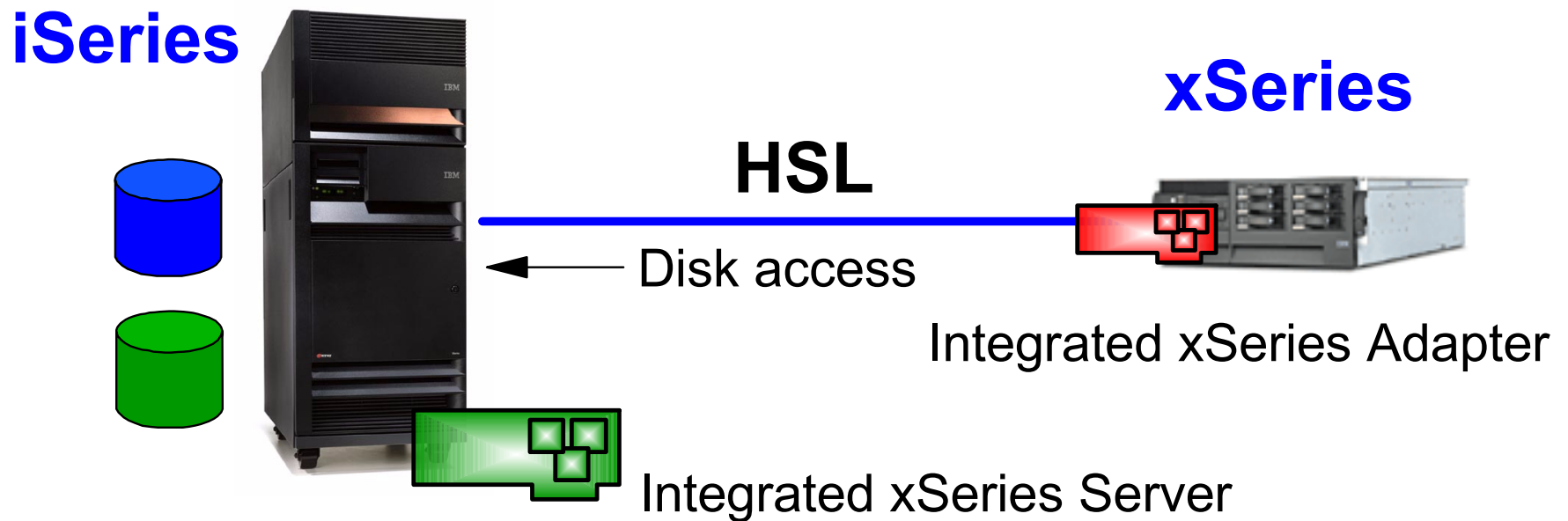
A Linux partition can utilize the new Virtual Ethernet capability to establish multiple high speed TCP/IP connections between logical partitions without additional communication hardware.

To enable Linux to run on the iSeries, IBM has contributed to the open source 32-bit kernel version 2.4 for PowerPC. IBM is currently working with the Linux community to create Linux distributions for iSeries. IBM plans to support selected Linux distributions running on iSeries in the second half of 2001.

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# Windows 2000 Integration with iSeries

IBM  server iSeries



Manage Windows servers and applications from iSeries

- Integrated xSeries Server Intel 850 MHz Pentium III
- Integrated xSeries Adapter to attach xSeries servers

iSeries Storage Area Network (SAN) for Windows servers

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# Notes: Windows 2000 Integration with iSeries



Since many iSeries customers also run Windows applications, IBM has provided a means to combine both applications in a single consolidated server. iSeries also takes advantage of IBM eServer innovative technology to provide a storage and systems management solution for Windows servers. Many Windows applications, such as Siebel, SAP APO, and BAAN FOS, are ServerProven to run on iSeries using the Integrated xSeries Server technology.

The Integrated xSeries Server is a PC server under the covers of the iSeries, logo'd by Microsoft to run standard Windows NT Server and Windows 2000 Server. The Integrated xSeries Server can also run Citrix MetaFrame which is used with Windows NT or 2000 to run Windows applications on IBM Network Stations. The 850 MHz Integrated xSeries Server can attach up to 2 TB of storage and is supported on iSeries Models 270, 820, 830 and 840. iSeries supports up to 32 Integrated xSeries Servers, depending on the model.

With V5R1, a new Integrated xSeries Adapter (IXA) extends iSeries management of Windows servers to selected xSeries models. xSeries Servers connected to iSeries with the Integrated xSeries Adapter are supported with Windows 2000 Server. Currently, the Integrated xSeries Adapter provides support for the xSeries models 250 and 350 and the Netfinity models 7100 and 7200.

The IXA fits into two of the xSeries server's PCI slots and connects the Intel server to iSeries storage across its High Speed Link I/O infrastructure. The xSeries server's storage is all held in and managed by the iSeries, fully protected by RAID-5 or mirroring alongside other iSeries applications. The Integrated xSeries Adapter also provides power control to the xSeries server, allowing it to be booted automatically from iSeries. iSeries supports up to 16 Integrated xSeries Adapters, depending on the model.

The xSeries or Netfinity server used with the Integrated xSeries Adapter are standard models, containing processors, memory, and ServerProven adapters but no disks. All disks are housed in the iSeries, so that its operations and backup can be integrated with OS/400 applications.

The Integrated xSeries Adapter interfaces directly with IBM eServer xSeries' service processor. This IBM technology advantage is not available on OEM Intel servers.

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# iSeries SAN for Windows Servers

*Flexible storage and systems management*

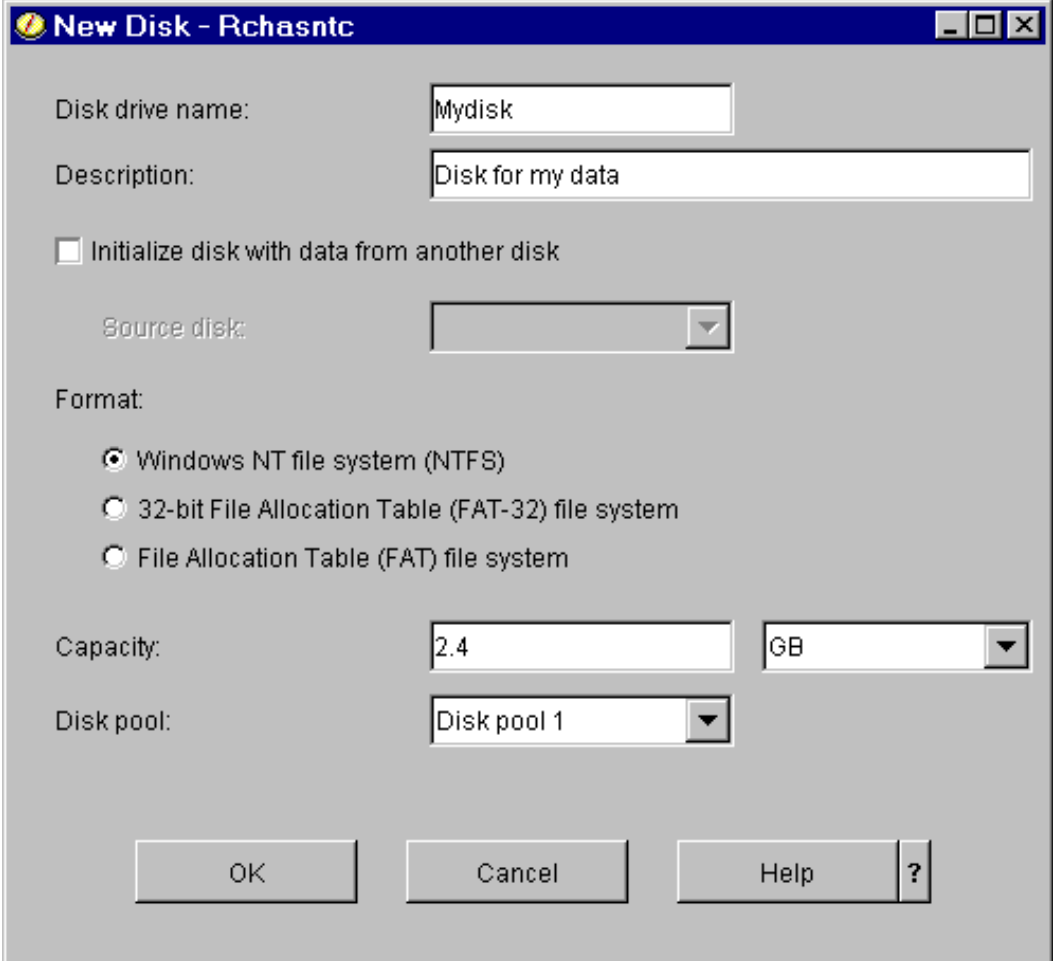
IBM  server iSeries

Exploits OS/400 automated storage management

Dynamically add storage

Allows storage consolidation

- Up to 32 Integrated xSeries Servers
- Up to 16 Integrated xSeries Adapters
- Up to 2 TB storage per server
- Supports storage spaces in independent ASP



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# Notes: iSeries SAN for Windows Servers



The iSeries can be used to provide a flexible storage area network (SAN) to consolidate the disk requirements of multiple Windows NT and 2000 servers. While full Windows Server storage capability is maintained, the iSeries provides the value of its advanced storage management facilities and reliability.

iSeries disk storage is allocated to Windows NT or 2000 Servers by creating a storage space object or virtual disk space from the iSeries pool of disk resources. Up to 32 storage spaces can be created and linked to each Integrated xSeries Adapter, and up to 16 storage spaces can be created and assigned to each Integrated xSeries Server. The storage limit has also been increased from 1 TB to 2 TB. By using iSeries disks, Windows NT and 2000 Server files are protected by the iSeries RAID-5 and mirroring.

Windows NT/2000 storage spaces can either be located in the iSeries system disk pool, or separated from iSeries applications and data on specific drives in a user auxiliary storage pool, or (with V5R1) in an Independent Auxiliary Storage Pool (Switchable I-ASP). Switchable ASPs allows an I/O tower containing Windows server storage spaces to be switched between two iSeries servers connected via High Speed Link (HSL). Switching storage allows a primary iSeries server to be taken down for scheduled maintenance without affecting users and disk storage of the Windows NT/2000 servers. The storage spaces can be switched between Windows servers via simple tools provided through Operations Navigator.

OS/400 V5R1 also provides the ability to increase the storage limit from 1 TB to 2 TB, and dynamically add disk storage without having to shutdown Windows 2000 Server, thus utilizing the built-in functions offered by Windows 2000 server.

User administration integration through Operations Navigator enables OS/400 users and groups to be enrolled on an Windows NT/2000 server or a domain and for user passwords to be synchronized. This feature significantly reduces the overhead of maintaining two separate administration systems for OS/400 and Windows NT/2000.

When you create an OS/400 user, you can add the user to a group that is predefined to propagate users to the Windows Server. The user is then created on Windows NT/2000 Servers using a predefined template, to allocate the correct security rights and user preferences. If the user leaves the company, deleting the OS/400 profile will also delete the Windows NT/2000 Server profile. Once OS/400 users are enrolled, their password changes are passed automatically to the Windows Server. If a password is changed through the Windows Server interface, however, the change is not synchronized back to the OS/400 side.

Operations Navigator with V5R1 is also enhanced to support restart or shutdown for multiple Windows NT or 2000 servers.

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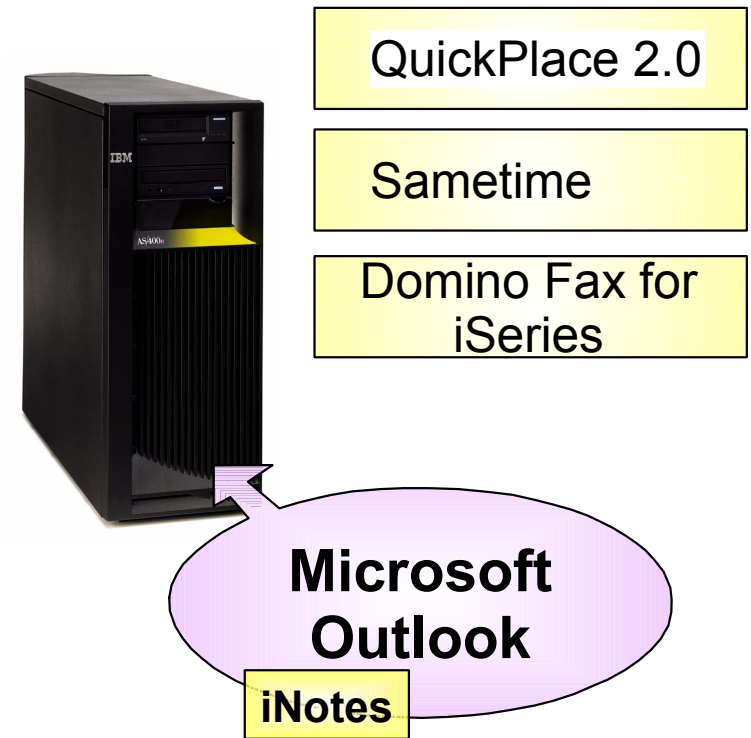
# iNotes and Domino for iSeries

*Delivers power of iSeries and Domino mobility to Outlook users*

IBM  server iSeries

## Reliable, scalable messaging for Microsoft Outlook users

- Replace MS Exchange servers with Domino for iSeries
- Retain existing Outlook client software with iNotes™ Web Access for Microsoft Outlook
  - Plus synchronization and off-line services



EZ Setup Wizard, TCP/IP autostart

B to B collaboration with Sametime and QuickPlace

ClusterProven for robust availability

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# Notes: iNotes and Domino for iSeries

IBM  server iSeries

A new Lotus client brand called iNotes is an umbrella that encompasses access to the Domino server with the user's choice of a variety of non-Notes clients. iNotes represents the extension of Domino messaging and collaboration, personal information management (PIM), and off-line services to current Web browsers and Microsoft Outlook clients. Support for Microsoft Outlook and off-line function for these clients are available beginning with Domino for iSeries 5.0.5. Components of the iNotes brand include WebMail, iNotes Access for Microsoft Outlook, Domino Off-line Services, and the newly announced iNotes Web Access. The iNotes licensing model also includes access to Domino mail from standards-based mail clients such as POP3 or IMAP4.

Domino supports online access by browsers and standards-based mail clients. Domino Off-line Services (DOLS) provides off-line functions for WebMail, iNotes Web Access, and iNotes Access for Microsoft Outlook clients via the Lotus iNotes Sync Manager. DOLS and support for Microsoft Outlook clients became available with Domino 5.0.5. iNotes includes the iNotes Sync Manager, which provides browser users with replication and other advanced functions that enable working with Domino e-business applications off-line. A Domino Off-Line Services design template allows application developers to offline-enable their Domino applications. Even with the new iNotes off-line capabilities, the full-function Notes client still offers advantages over a Web browser because it integrates so many disparate data types. For more information about Lotus iNotes, see <http://www.lotus.com/inotes>.

Besides iNotes, Domino for iSeries also supports Lotus QuickPlace, Sametime, Integrated Domino Fax for iSeries (5733-FXD), and Mobile Notes through the Integrated xSeries Server for access to Domino through PDAs and cellular phones. Lotus's fax solution will only be available on the iSeries.

- Lotus QuickPlace is the self-service Web tool for team collaboration. QuickPlace enables the creation of a team workspace on the Web instantly. Teams use QuickPlace to share and organize ideas, content and tasks around any project or ad-hoc initiative. QuickPlace provides a central on-line workspace structured for productivity.
- Lotus Sametime is a family of real-time collaboration products providing instant awareness, communication, and screen sharing capabilities. Sametime brings the flexibility and efficiency of real-time instant messaging and secure-Web meetings to the business world.
- IBM Integrated Domino Fax for iSeries (5733-FXD) enables Lotus Notes users to send and receive faxes, both text-based and graphics-based documents, directly from their Notes client. Use your current telephone system and Domino infrastructure. You can use a standalone NT workstation to perform format conversions or choose a single box solution by utilizing the iSeries Integrated xSeries Server (IXS). The Domino Fax solution for the iSeries uniquely offers native integration with the iSeries fax hardware and with Domino.

This rich e-collaborative application environment is further enhanced with OS/400 V5R1 by providing a graphical interface for server setup, automatic TCP/IP startup, and enabling Domino servers to take advantage of IBM's ClusterProven program demonstrating continuous application availability.

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# OS/400 PASE

*iSeries Management, UNIX Development*

IBM  server iSeries

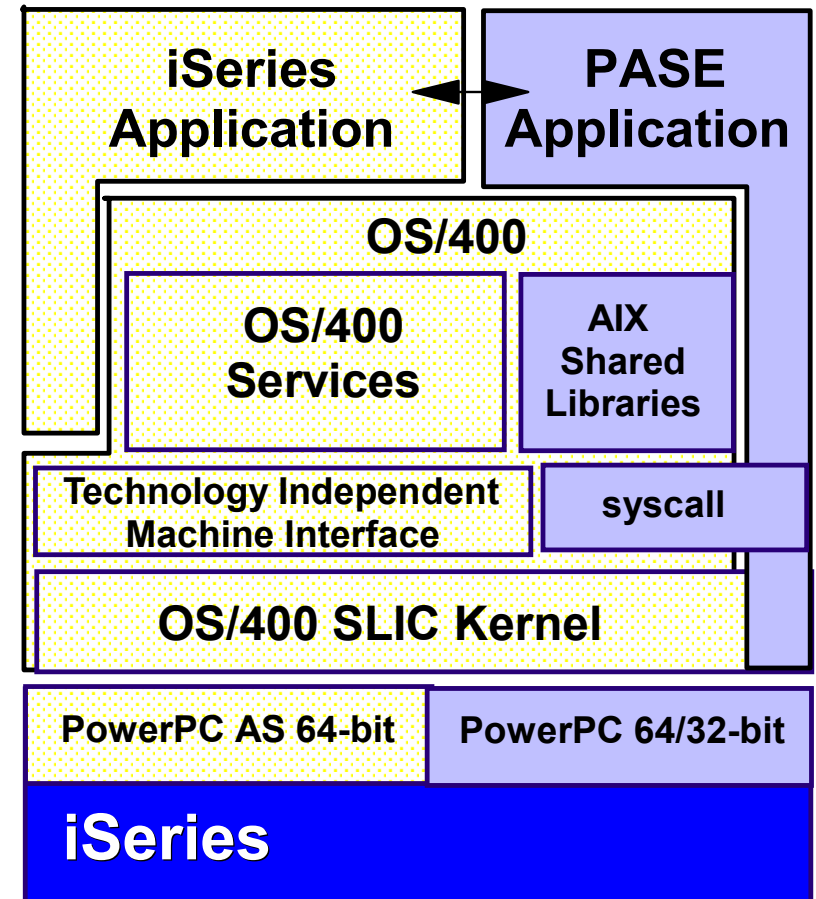
An integrated OS/400 runtime for porting selected UNIX applications

- Integrated with OS/400 file systems and work management

Exploits PowerPC's ability to switch runtime modes for applications

Enhanced to support AIX 4.3 64-bit application model

Enabled for National Language Versions



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# Notes: OS/400 PASE



The OS/400 Portable Application Solutions Environment (OS/400 PASE) is a technology designed to expand the solutions portfolio of iSeries. OS/400 PASE is an integrated runtime environment that simplifies UNIX\* application porting.

The iSeries broad base of applications is continually enhanced by new applications coming to the platform from a variety of sources. Up to now, the Integrated Language Environment (ILE) accounted for the majority of C or C++ application ports, many originating on UNIX systems. While many applications continue to be ported to iSeries in this manner, other applications, specially those with highly compute-intensive demands now have the option to use OS/400 PASE.

OS/400 PASE provides a broad set of AIX interfaces, in a runtime that allows many AIX binaries to execute directly on the PowerPC processor of iSeries. The strategy for OS/400 PASE is to use the new technology to enhance and expand its solutions portfolio in specific industry and application segment targets.

OS/400 PASE is supported on all iSeries models, as well as any AS/400e servers 6xx or Sxx, or later. OS/400 PASE applications run directly on the hardware and take advantage of OS/400 services such as file systems, security and DB2 Universal Database. OS/400 PASE applications run in a normal OS/400 job and are managed using standard OS/400 operations and management facilities.

Some of the significant enhancements to OS/400 PASE in V5R1 include:

- Support of the AIX 4.3 64-bit application model
- National Language Version (NLV) enablement - including translated message catalogs for IBM supplied runtime libraries and utilities
- Documentation for OS/400 PASE runtime, shells, and utilities in the IBM iSeries Information Center
- Header and export files for OS/400 PASE extensions now packaged with option 33.
- SQL Call Level Interface (CLI) server mode support
- Additional locales, runtime APIs and utilities
- Updated versions of the AIX C++ and FORTRAN language runtime libraries

For more information, see <http://www.redbooks.ibm.com> (search on PASE), <http://www.iseries.ibm.com/developer/factory/pase> or the IBM iSeries Information Center.

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# WebSphere Development Studio

IBM @server iSeries

## iSeries and AS/400

### iSeries Host Tools and Compilers

ADTS

RPG

COBOL

C

C++

## Workstation

WebSphere  
Studio

VisualAge  
Java

CODE

VisualAge  
RPG

WebFacing

### WebSphere Development Studio

A single toolset for *all* iSeries application developers

New WebFacing tool extends 5250 apps

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# Notes: WebSphere Development Studio

IBM  server iSeries

WebSphere Development Studio for iSeries is a fully integrated application development toolset, packaged to provide a full suite of visual development tools that encompass all phases of e-business applications. It incorporates both Web design (workstation-based tools) and deployment capabilities (iSeries-based tools and compilers) of WebSphere Studio, VisualAge Java and the new Web Facing Tool, and the development and integration of business logic using CODE or VisualAge RPG.

WebSphere Development Studio for iSeries is priced aggressively to encourage e-business development. Customers with Software Subscription will be able to upgrade to these tools at no additional charge. For example, a customer with RPG and ADTS licensed program products will benefit from getting access to the complete suite of application development tools that are offered with the WebSphere Development Studio for iSeries.

A variety of language resources and compilers are provided to allow customers to accomplish the transformation to e-business easily, either by extending existing application investments already made in RPG or COBOL applications and skills, or by investing in new Java, XML, C or C++ applications.

Based on industry standards, companies can develop applications with procedural code, object-oriented constructs, architecting applications for browsers, thin clients, fat clients, or even for batch. When targeting their application development to new e-business needs, they can also take advantage of OS/400's built-in IBM HTTP Server powered by Apache and WebSphere Application Server (Standard Edition).

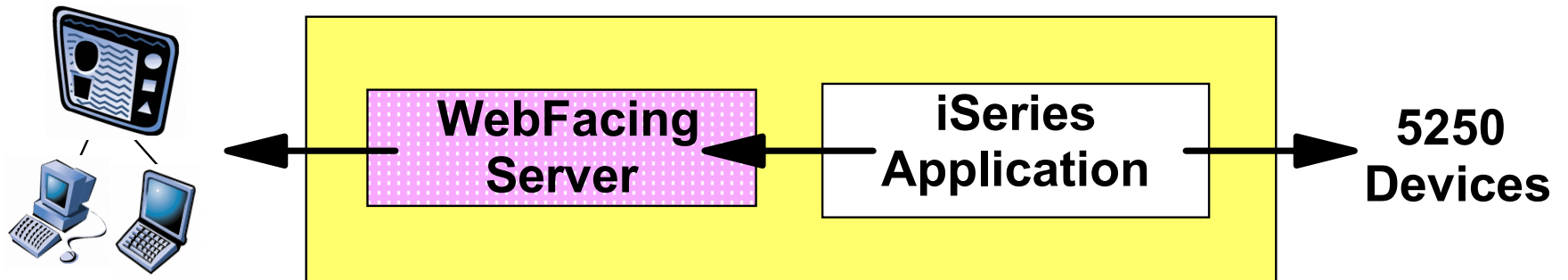
For ease of application integration in a heterogeneous environment, MQSeries can be added to provide a robust messaging infrastructure. Domino adds another dimension to e-business initiatives by providing a rich collaborative development environment. On top of these e-business enabling technologies are a variety of frameworks from which to choose such as WebSphere Commerce Suite, and Connect for iSeries.

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# WebFacing Tool of WebSphere Development Studio

IBM  server iSeries

## Web Clients



## Rapid Web conversion of 5250 applications

- Single code base supports both Web browser clients and 5250 devices
- Automatic conversion with good performance

## Included with WebSphere Development Studio

- No separate development or runtime license

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# WebFacing Tool of WebSphere Devel Studio

IBM  server iSeries

A new WebFacing tool is shipped as part of the WebSphere Development Studio to provide rapid conversion of 5250 applications to support Web browser clients in addition to existing 5250 devices from a common code base.

No additional development or run-time charges are made for using the WebFacing tool.

The WebFacing tool designed for developers to simply convert DDS source to JSPs and Java Beans. Little change to program objects is required, since the majority of DDS keywords are supported.

Once converted, the application program can be used by either a 5250 device or through a Web browser. The runtime component converts between display files and JSPs automatically, with performance that is comparable to running on a standard 5250 device.

The WebFacing Tool is English only at GA, see [www.ibm.com/software/ad/wds400](http://www.ibm.com/software/ad/wds400) for translation and national language support.

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# Innovative Technology: Software Enhancements

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# Innovative Technology: Software Enhancements

IBM  server iSeries

Connect for iSeries

Web Serving

Pervasive Computing

Networking and Security

Database and File Systems

Client Access

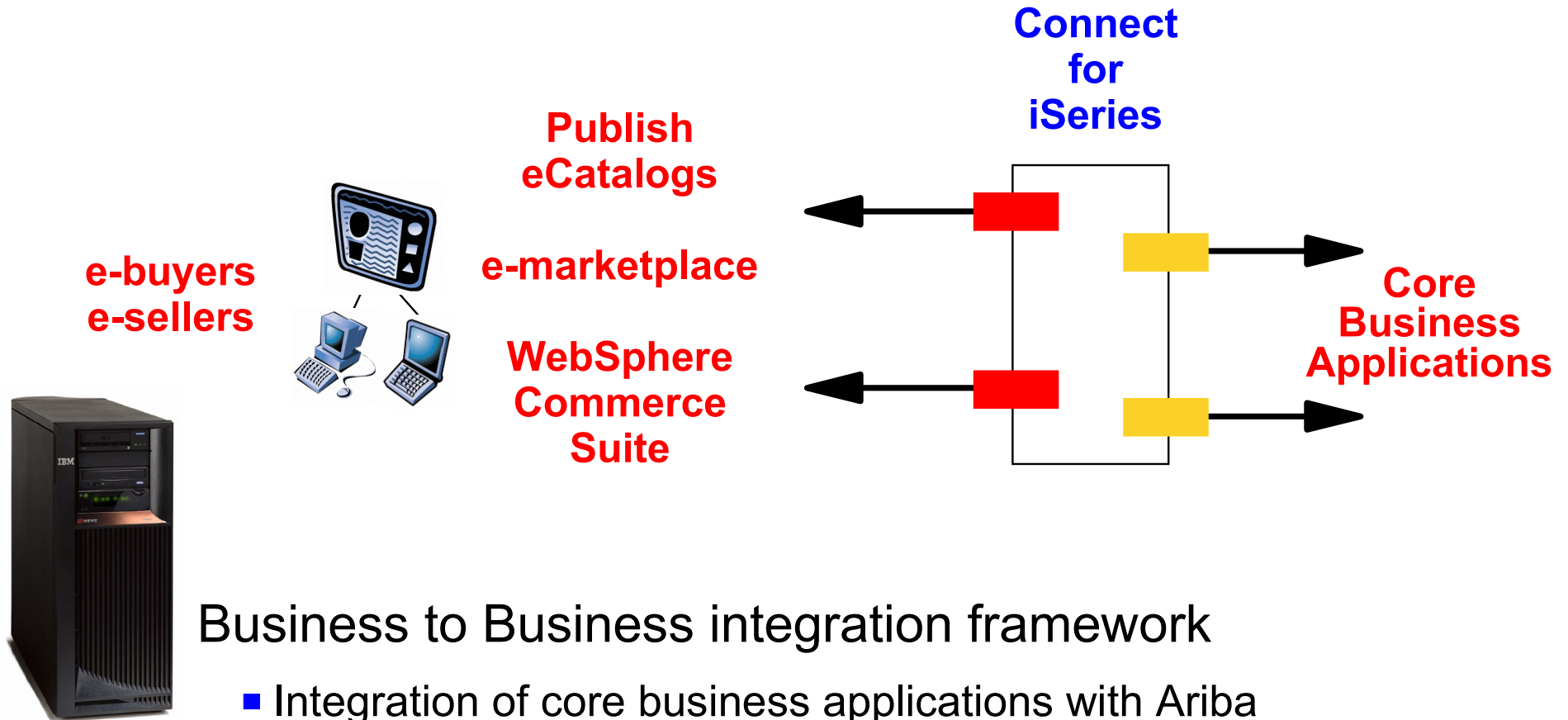
Printing

Operations Navigator

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# Connect for iSeries

IBM @server iSeries



## Business to Business integration framework

- Integration of core business applications with Ariba and Metiom Commerce Services Network

Plug-ins for WebSphere Commerce Suite and MQSeries

IBM @server. For the next generation of e-business.

# Connect for iSeries

IBM  server iSeries

Connect for iSeries is an integration framework for B2B that enables seamless and very secure integration of existing core business applications with the business applications of trading partners.

Connect for iSeries is built on industry standards and it works with Domino, WebSphere and MQSeries. It was announced on Oct. 3, 2000 and its initial delivery on Feb. 2001 was on V4R5.

Connect for iSeries is a Licensed Program Product which includes front end plug ins that provide connections to e-marketplaces such as Ariba and Metiom. Front connections are also provided for WebSphere Commerce Suite and also to directly publish an electronic catalog.

It also provides back-end connections to existing core applications, with messaging provided by MQSeries.

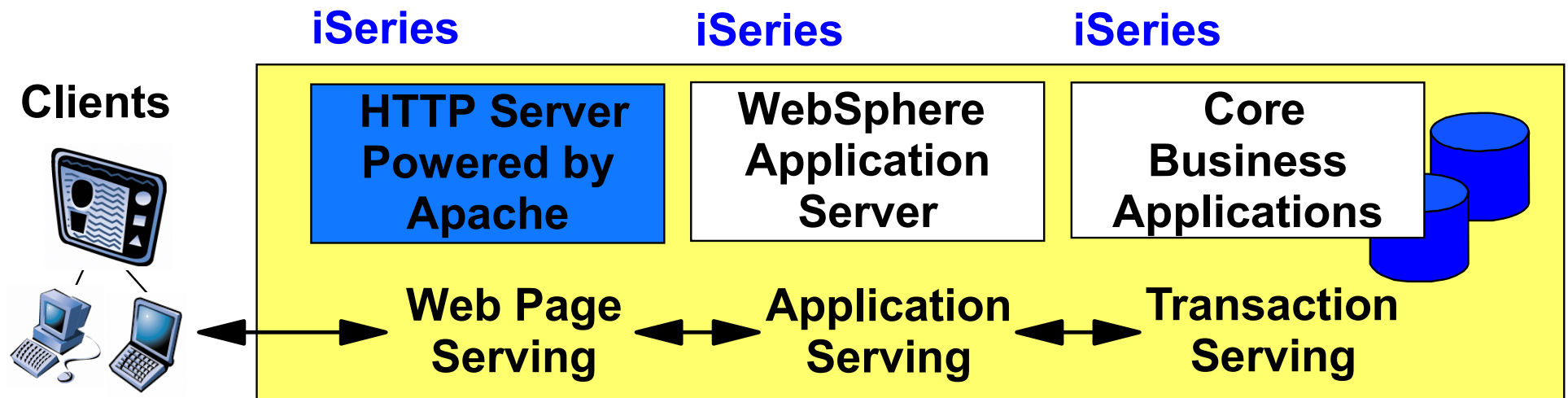
Version 1.1 of Connect for iSeries builds on a solid foundation, extending functional capability and flexibility. Some of the additions include:

- Support for new trading partner protocols
- Better application integration
- Enhanced flow processing
- Visual mapping tools
- Improved catalog management capabilities
- Support for the latest middleware from IBM

Connect for iSeries Version 1.1 is planned for availability on 8/31/2001.

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## IBM HTTP Server for iSeries (powered by Apache)



- Support for switched disk (HTTP Server only)
- Improved caching performance
- DBCS search engine

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# Web Serving

IBM  server iSeries

iSeries supports extending core business applications to the Web with options for HTTP Web serving and WebSphere Application Server. OS/400 includes the new HTTP Server, powered by Apache. OS/400's HTTP Server includes a highly scalable multithreaded runtime as well as Apache Portable Runtime (APR) which allows Apache modules to be written independently of the target deployment platform with only a simple recompile required to run on iSeries. With V5R1, the HTTP Server includes switched disk support, triggered cache manager for better performance, a DBCS-based search engine and Webcrawler support.

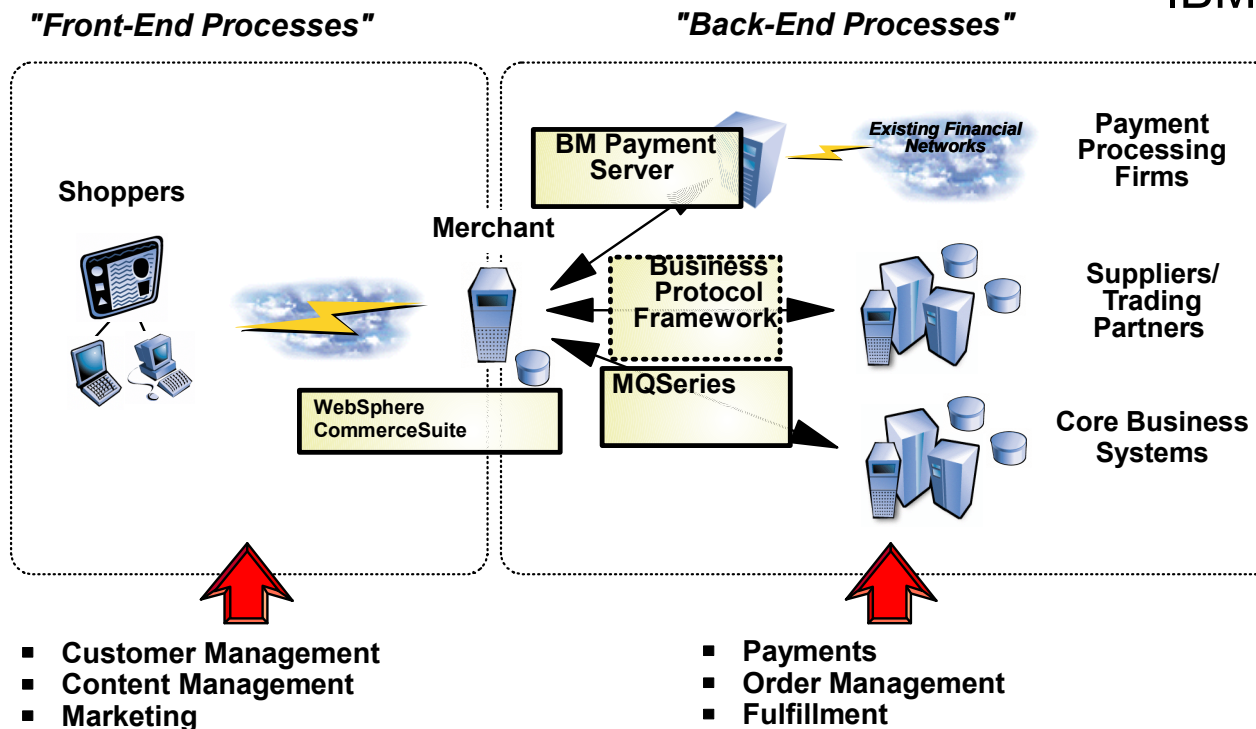
Working from a common Apache Version 2 code base, iSeries has incorporated many features that differentiate its Web serving from other Apache-based servers in the following areas:

- Usability
  - OS/400 provides the only Apache-based server with a complete, task-oriented, browser-based User Interface that is fully NLS-enabled and translatable utilizing a built-in, industry standard Java servlet engine.
  - LDAP used to store configuration information and share across multiple physical systems.
- Availability and Serviceability
  - iSeries delivers greater serviceability for its Apache-based server with robust, configurable, trace points and on-the-fly tracing capability.
  - APIs for updating configuration information allowing Web applications to set up server instances with no manual intervention.
  - Idle backup server provides seamless failover within one server instance with improved server throughput and scalability.
- Security
  - User credentials passed to CGI programs allowing true, secure, single sign-on for Web applications.
  - Persistent CGI and Net.Data to maintain process state across multiple browser requests as a single transaction.
  - Validation Lists to secure user lists with no inherent system authority.
  - Optional or required user sign-on using SSL Client Certificates (not userid/password) associated with either an OS/400 user profile or users in validation lists.
  - Configurable dynamic protection against denial of service attacks that try to tie up server TCP/IP connections.
- Performance:
  - Pre-started and reused CGI jobs, significantly improving performance and throughput.
  - Pre-cached static files at a directory level and dynamic caching of the most-accessed static files.
  - Asynchronous I/O to decouple browser requests from server threads, for high volume HTTP persistent connections.

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# WebSphere Commerce Suite V5.1

IBM  server iSeries



Provides a framework for customers to establish effective, enterprise B2B and B2C e-commerce web sites

- Includes WebSphere Advanced Edition
- Includes WebSphere Payment Manager

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# WebSphere Commerce Suite V5.1

IBM  server iSeries

WebSphere Commerce Server V5.1 is the follow-on to WebSphere Commerce Suite 4.1 and Net.Commerce.

WCS is a great starter kit for a modern e-commerce solution. It can be used as a very robust electronic catalogue component in a Private Valuenet B2B solution or in a B2C solution.

WebSphere Commerce Suite provides catalog function as well as many other important functions such as:

- Commerce Server for Online Store operations
- Database for product, store, and customer data
- Payment Server
- WebSphere App Server, providing foundation and basic services
- Catalog Subsystem for catalog navigation and merchandising
- User Subsystem for user registration, authentication, access control
- Negotiation Subsystem for Auctions with multiple bidding technology options
- Order Subsystem for shopping carts, order processing, taxation, etc.
- Messaging Subsystem for notification schemes.. e-mail, etc.
- WCS Accelerator for campaigns, merchandising, promotions
- Commerce Analyzer provides business intelligence.. analyze customer behavior
- Multicultural enablement for language, currency, taxation, shipping, price, etc.
- Mass Loader utility to populate the WCS database
- Commerce Studio development tools

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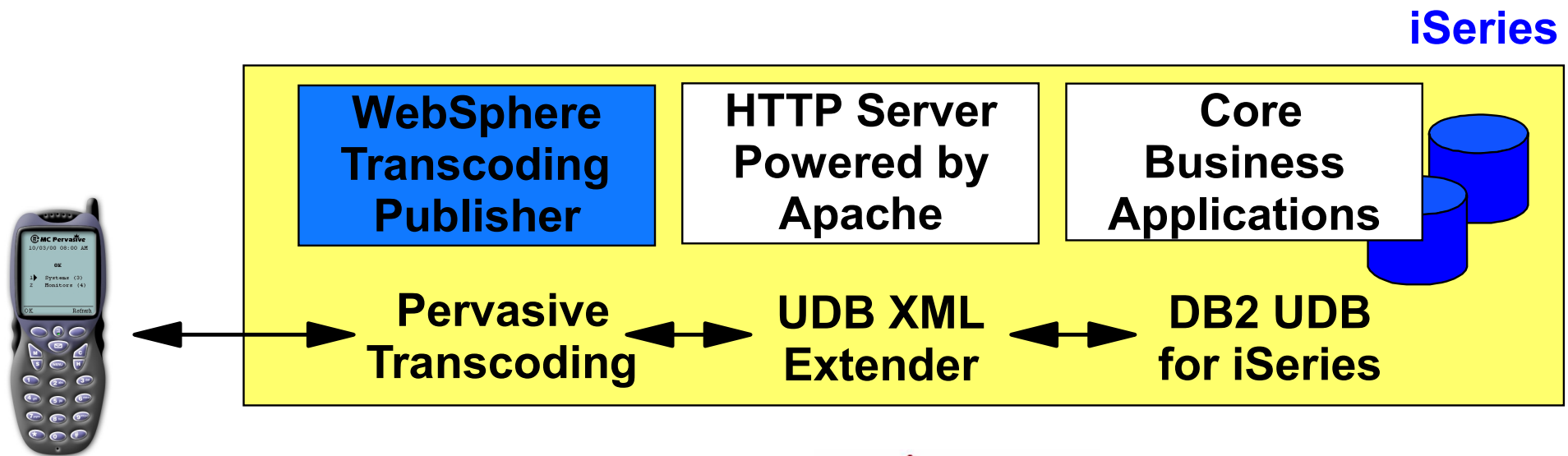
# Pervasive Computing

IBM  server iSeries

## iSeries application enablement for pervasive devices

- XML
- DB2 UDB XML Extender
- WebSphere Transcoding Publisher\*
- Management Central Pervasive

\*Supported on V4R5;  
Watch this space for V5R1



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by ADVANCED BusinessLink

**LAUSA**  
ADVANCED SOFTWARE MADE SIMPLE

**jacada**

**SEAGULL™**

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# Pervasive Computing

IBM  server iSeries

iSeries provides a wide range of application enablement options for extending business solutions to pervasive and wireless devices. In addition to solutions from IBM, such as Management Central Pervasive, a number of iSeries Business Partners provide wireless solutions. The Business Partners include LANSA, Seagull, Jacada and Advanced Business Link.

Extensible Markup Language (XML) is one of the key technologies fueling growth of e-business and mobile e-business solutions. XML is becoming the standard way to represent data in a portable, reusable format for use in a number of solutions, ranging from B2B solutions which link together trading partners, to pervasive computing applications which connect mobile devices such as cell phones to core business solutions. OS/400 includes a wide range of XML applications enablers, including with V5R1:

- XML parsers (common building blocks) used to work with data in new Java and C++ applications.
- XML parsing interfaces to extend enablement options to existing applications written in RPG, COBOL and C.

IBM DB2 UDB XML Extender is a new product that provides two-way data interchange between XML and DB2 relational database formats. It provides new data types to allow XML documents to be stored in DB2 UDB databases plus utilities to work with the new database formats.

Management Central Pervasive is shipped with OS/400 and based on the industry standard protocols WAP and WML . It allows iSeries operators to monitor their iSeries servers from a pervasive devices. Using an Internet capable cellular phone (mobile), a PDA with a wireless modem, or a Web browser, the administrator can monitor and manage iSeries operations. With V5R1, you can both monitor system messages and jobs and, now, manage jobs and run commands.

IBM WebSphere Transcoding Publisher is designed to extend existing Web pages to pervasive computing platforms (cell phones, PDAs) via on-the-fly data conversion. The publisher allows you to select the data in a Web page and omit graphics and images that are not practical to render to the smaller mobile device screens or with the available wireless bandwidth. It is supported on V4R5.

Watch this space for plans to support it on V5R1.

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## Infoprint Server for iSeries V5R1

- e-business output management with new PDF output support

## Infoprint Designer for iSeries V5R1

- Integrated, fully graphical design system for iSeries output

## Print Services Facility (PSF) for iSeries

- Integrated OS/400 features for AFP and IPDS printing management
- Integrated e-mail of iSeries output PDF files

## iSeries as Internet Print Protocol server

## Java AFP print architecture

## Unicode



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With V5R1, iSeries strong core print architecture is expanded both with new composition features, plus with new output delivery options. V5R1 provides significant changes to iSeries-AS/400 printing and 'e-output' capabilities. Although the changes are wide-ranging, the primary focus is 'e-output'. e-output refers to the ability to create information output and deliver it to the required destination in the format desired. Where business processes typically printed then distributed information in hard copy, e-business processes quite frequently require information to be delivered electronically.

Infoprint Server is focused on enterprise and e-business driven output management. On the e-output side, Infoprint Server provides PDF and portable AFP support for the iSeries. Any standard iSeries-AS/400 output format can be transformed into PDF. The PDF is text-based, fully navigable, and provides high-performance. In addition, you can segment an output file, triggering the PDF server to create multiple PDF files - this is an "electronic burst and bind" function. In addition, e-mail options are fully integrated and automated so that output files can be transformed to PDF and automatically sent to any destination .

Infoprint Server is also focused on allowing the iSeries to manage network output. Infoprint Server provides transforms for PCL, Postscript, and PDF into AFP so output generated in those formats can be brought into the iSeries and effectively managed to the printer.

Infoprint Designer for iSeries provides a fully-graphical document composition interface to the iSeries-AS/400 printing and e-output system. It supports the requirements of today's complex documents and reports, producing fully electronic documents combining data, text, electronic forms, graphics, image, bar coding, and typographic fonts. Infoprint Designer for iSeries can be used for the design of new output applications or the reengineering of existing applications. V5R1 is also enhanced to provide new interfaces from DDS and Java to the output formatting architecture (page definitions) that Infoprint Designer addresses.

PSF/400 is a feature of OS/400 and provides AFP system management and IPDS print management. PSF/400 addresses two key elements in e-business driven transformations. First, printers have moved to the network and PSF/400 (via IPDS) means that the assured delivery and printer management characteristic of twinax printers is extended to network-attached printers (assuming they are IPDS). For V5R1, PSF/400 is enhanced on many fronts including the support for automatic e-mail of output (PDF).

With V5R1, the iSeries becomes an IPP (Internet Print Protocol) server. IPP is the emerging standard for Internet printing, allowing you to submit print jobs direct to a URL anywhere in the network. Two new print architectures for Java server printing are announced, one that is XML-based for simple reports and one that is AFP-based for complex documents. iSeries now supports Unicode-encoded data for worldwide applications that are National Language-independent.

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# OS/400 Security

IBM  server iSeries

Enhanced security with 128 character passwords

Digital signature and object signing

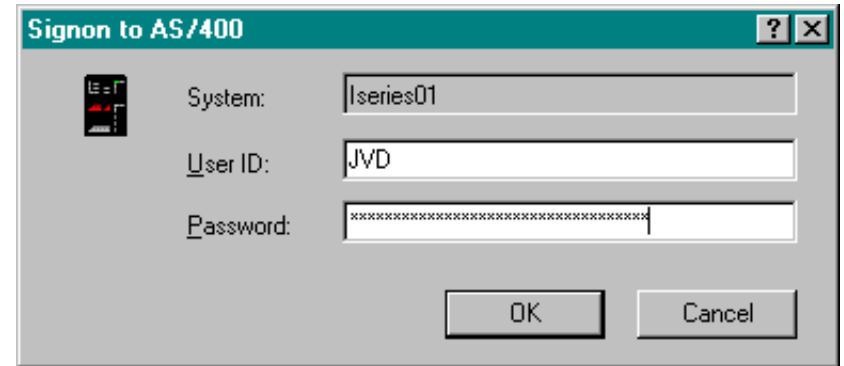
IBM SecureWay Directory V3.2

- Supports Kerberos V5 APIs for Windows interoperability

Cryptographic processor now handles SSL

- Offloads iSeries processor for improved session throughput

Digital certificate manager can be stored in cryptographic processor



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Robust security is one of the major reasons many companies, including many of the world's largest banks, trust iSeries for their mission critical applications. OS/400 V5R1 provides further enhancements to iSeries system security, including increased support for security interoperability via digital certificates and, with Windows applications, via Kerberos.

Password support is enhanced with new case sensitive user profile passwords, with up to 128 characters in length and broader character set options .

New support for digital signatures on several OS/400 object types provides an even greater degree of integrity. Software providers, or system administrators, can add digital signatures to software, and use those signatures both to verify the source of the software and to ensure that the software has not been changed since it was signed. This added layer of protection against altered software, both unintentional and malicious, is also being used by the operating system to protect itself from unauthorized changes.

The operations interface for the Digital Certificate improves ease-of-use plus adds the following enhancements:

- Storing the certificate private keys using the IBM #4758 Cryptographic Coprocessor
- Digitally signing objects and verifying the signature
- Creating certificates using a Public Key Infrastructure for X.509 (PKIX) Certificate Authority (CA)

OS/400 Directory Services in V5R1 now supports IBM SecureWay Directory Version 3.2 which provides Network Authentication Services via Kerberos V5 protocol APIs (server and client), used for interoperability with Windows 2000. This function was originally announced as a PTF in 10/2000.

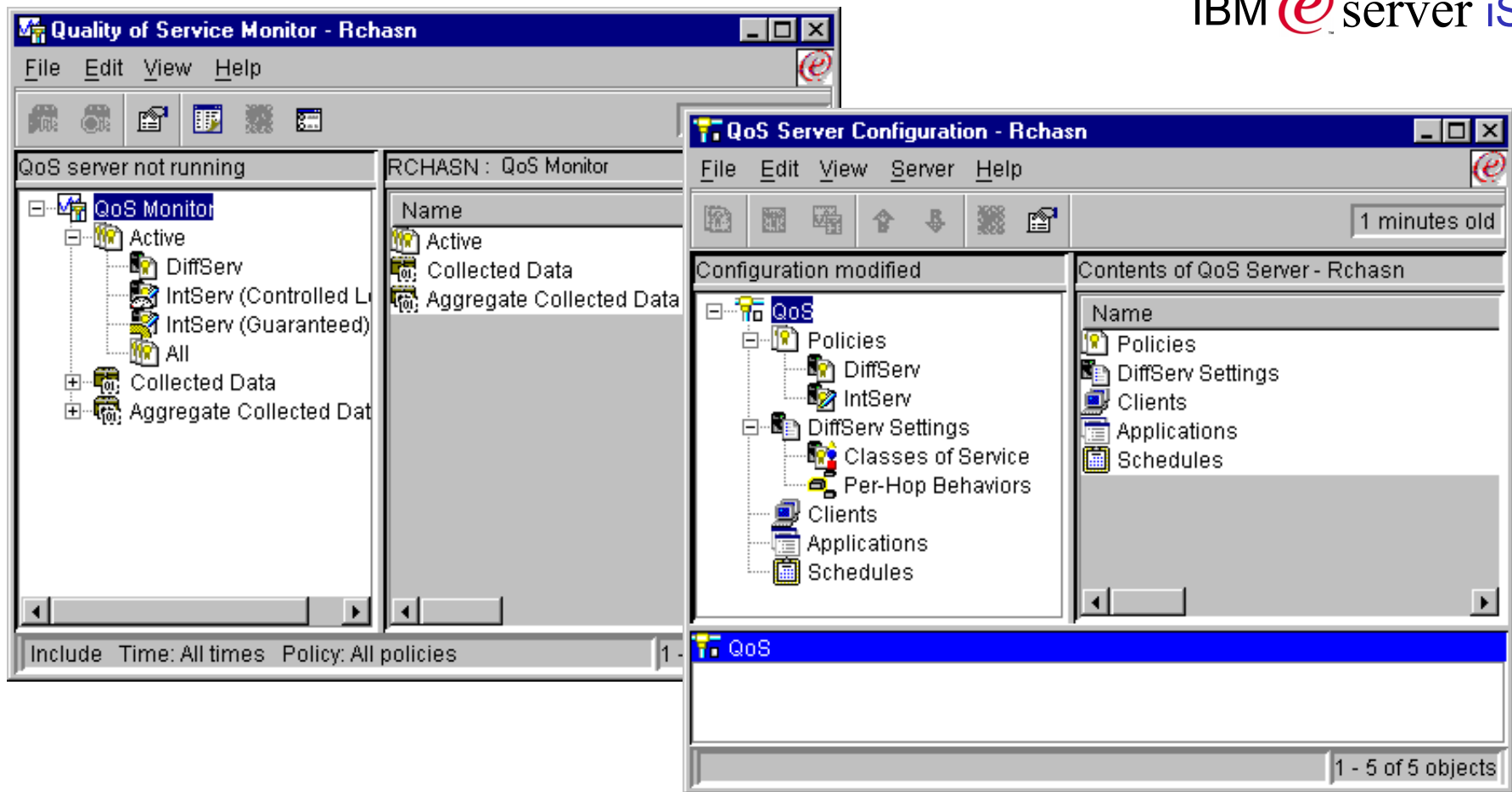
The iSeries cryptographic coprocessor is also enhanced as follows:

- The maximum number of Cryptographic Coprocessors (CC) per system is increased to 8 (from 3)
- A new graphical interface simplifies setup and management of cryptography
- The Cryptographic Coprocessors can now handle Secure Sockets Layer requests - offloading their heavy workload from the main iSeries processor and improving the throughput of secure Web server sessions.

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# Networking and TCP/IP Quality of Service

IBM @server iSeries



## TCP/IP Quality of Service

- Provides differentiated traffic flow based on policies or applications
- Support for both integrated and differentiated services

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# Networking and TCP/IP Quality of Service

IBM  server iSeries

In V5R1, iSeries provides the ability to control and manage TCP/IP traffic in the network and take advantage of the leading-edge networking Quality of Service (QoS) functions contained in routers and switches. The iSeries QoS functions for managing TCP/IP traffic provide the ability to drop, mark, and shape TCP/IP traffic based on the QoS policy being applied. In addition, QoS admission control capability is provided for controlling bandwidth management requests. Support is provided for both integrated and differentiated services. Applications can either be written to use QoS APIs, or they can simply use QoS policies without making application changes. QoS can be monitored and policies maintained using Operations Navigator. APIs are also provided for network devices to monitor iSeries QoS functions.

Network security enhancements include support for Digital Certificates on Virtual Private Networks (VPN), on demand VPN and Secure Sockets Layer (SSL) support for FTP.

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# Network Management

IBM  server iSeries

Simple, graphical  
network management

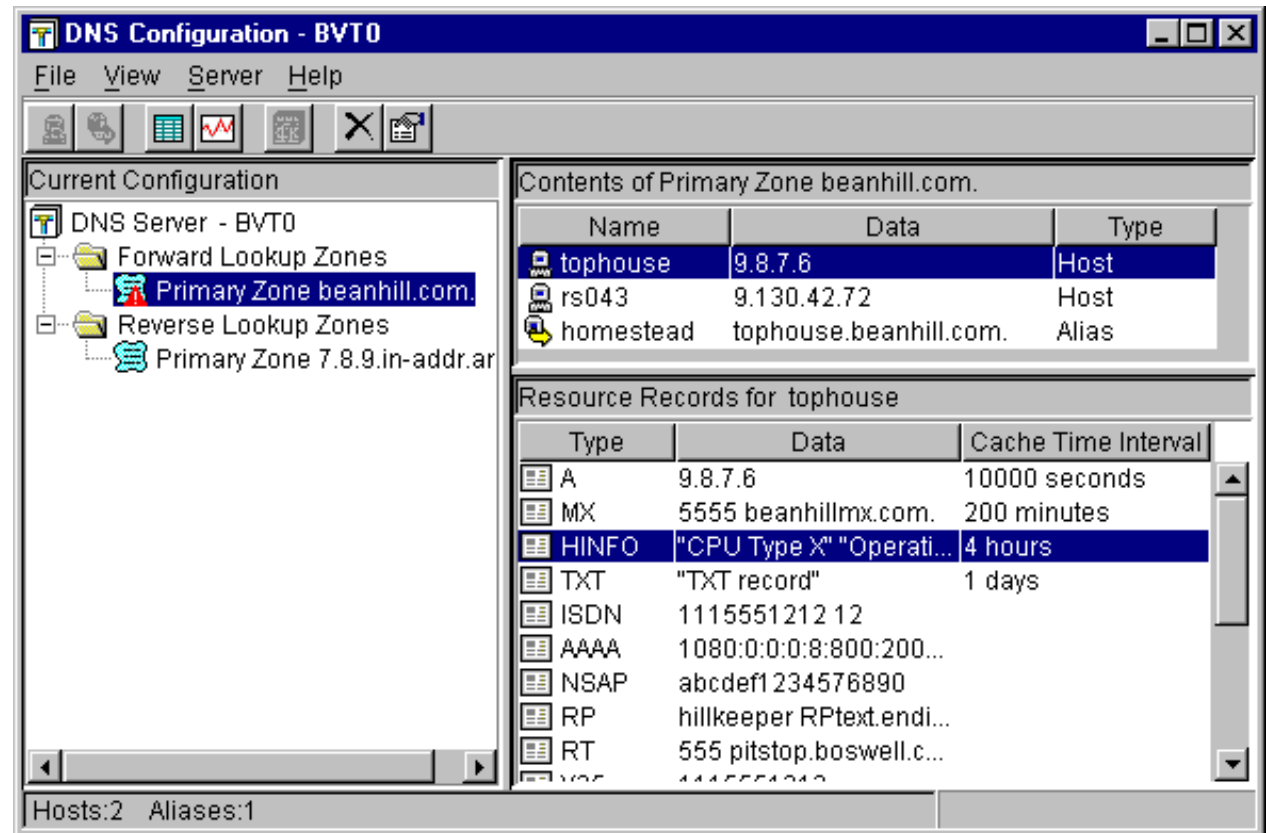
## Dynamic DNS

- DHCP enhancements
- Implemented on OS/400 PASE

Connections through VPN for  
Internet security

NetStat now part of  
Operations Navigator

- Monitor/Work with TCP/IP
- Interfaces, Routes, Connections
- Address Resolution Protocol
- DNS Lookup and Trace Route



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# Network Management

IBM  server iSeries

With OS/400 V5R1, iSeries now provides support as both a Dynamic DNS (DDNS) and a DHCP (Dynamic Host Configuration Protocol) server. Enhancements to DHCP allow it to be configured to send dynamic DNS update transactions, to provide a fully integrated and dynamic IP solution, with automatic management of both TCP/IP addresses and their associated DNS host names. Dynamic DNS requires OS/400 PASE.

iSeries VPN (Virtual Private Networking) support, introduced in V4R4, has been enhanced to provide additional security, greater reliability and performance. Operations Navigator has been redesigned to intuitively navigate VPN configurations, and you can use the VPN wizard to set up and implement your network security policy. Digital certificates provide a scalable and secure mechanism for cryptographic security operations, and in V5R1 you can now use them in your VPN configurations to authenticate the identities of the VPN endpoints. IP packet filtering is an integral part of iSeries VPN, and in V5R1 it is enhanced to allow filter activation and deactivation on a per-TCP/IP interface basis. SSL support for FTP is also included in V5R1 as well as OnDemand VPN.

Several TCP/IP management enhancements have been made in V5R1 give the network administrator more control when monitoring their TCP/IP network as well as troubleshooting networking problems. The enhancements include:

- A graphical version of network status (NetStat)
- Graphically mapping a socket connection to a list of jobs for that connection
- The ability to trace the route a TCP/IP packet will take through the network
- Address resolution protocol (ARP) monitoring.

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# Database and File System

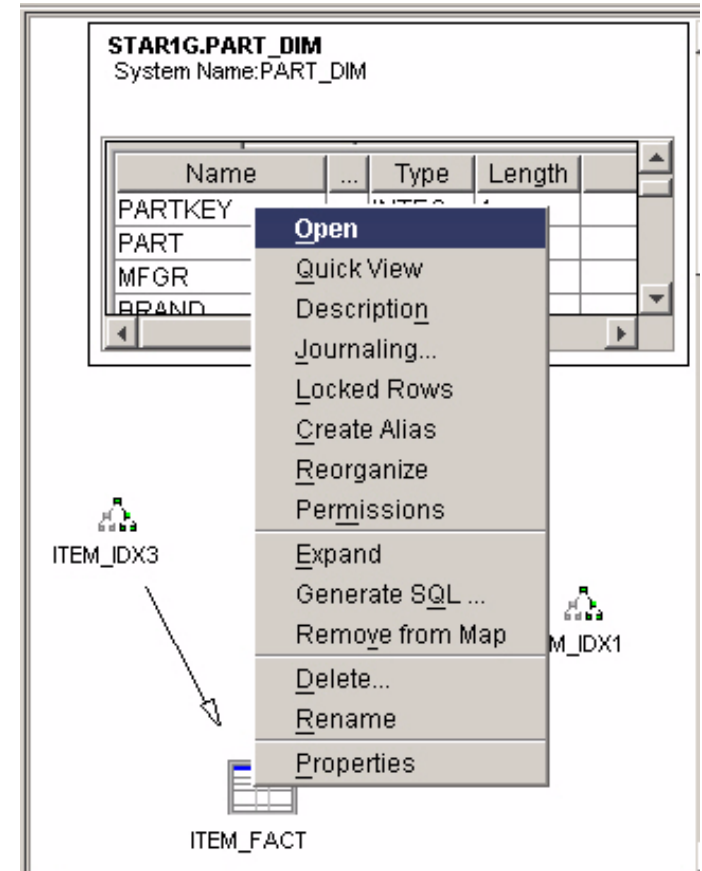
IBM  server iSeries

## Database

- Database Navigator
- DRDA over TCP/IP
- SQL Triggers
- ODBC V3.5 support including Unicode support
- Maximum size of large objects increased

## Integrated File System (IFS)

- Improved clustering support via journaling of byte stream files and directories and switched disk



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# Database and File System

IBM  server iSeries

DB2 Universal Database for iSeries is enhanced with V5R1, providing new support for open standards and portability enhancements. Support for distributed databases is improved with DRDA running over TCP/IP, allowing transactions which span databases to be committed or rolled back by using two-phase commit protocols. Another key DRDA enhancement is the ability to return multiple result sets from iSeries servers to clients for improved performance.

Database triggers can now be written in the SQL language, allowing more business logic to be built directly into the database. A new Database Navigator interface (part of Operations Navigator) displays the relationship among relational objects such as tables, views, and indexes. Another enhancement to Operations Navigator is the ability to generate SQL statements used to create a database object, regardless if it was created with SQL or not.

The ODBC driver for DB2 is enhanced with ODBC 3.5 support and support for Microsoft Transaction Server (MTS) which enables DB2 to participate in transactions involving two-phase commit coordinated through MTS. ODBC 3.5 also delivers support for Unicode.

The maximum size of large objects stored in column is increased from 15 MB to 2 GB and the maximum total size for all large objects for a table row is increased from 1.5 MB to 3.5 GB. In addition, DB2 UDB for iSeries supports the ability to optionally minimize the size of journal entries.

The Integrated File System is used to hold files in a variety of file systems, such as NFS, NTFS etc and is used to store and share PC files on the iSeries with NetServer. The IFS is also used as to store Lotus Domino databases and Windows disk images that are attached to the Integrated xSeries Server or via an Integrated xSeries Adapter. With V5R1, files and directories held in the IFS can now be journaled, allowing clustering support through third party software via replication to another iSeries server. The journaled information can also be used for other recovery and monitoring purposes.

Clustering of IFS files is also enabled through the ability to switch disks between iSeries servers. To switch a disk tower between servers requires that an Independent Auxiliary Storage Pool (IASP) be created to hold the IFS files. When the IASP is moved from one system to another the files are then mounted and made available to applications and users. Switched disk support is of great value to Domino installations where clustering can be provided between two systems with a single set of disks containing the Domino databases.

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## iSeries Access for Web client (9/2001)

- End user access to the Web client through a browser
- Includes IBM Host Publisher

## Client Access Express for Windows

- PC5250 Emulation V5.0
- Extended data transfer support for Microsoft Excel 8.0
- OLE DB and ODBC drivers enhanced

## NetServer

- iSeries acts as a file/print server to Windows clients
- iSeries can be Primary Logon Server in Windows Network

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# Windows Clients

IBM  server iSeries

The new iSeries Access for Web client is planned for availability in September, 2001. It will be added to iSeries Access Client Family (5722-XW1). It provides end user access to the Web client through a browser. No code is installed on the end user workstation and it runs on any desktop that has a browser (such as Netscape and Internet Explorer). It includes IBM Host Publisher.

Client Access Express for Windows is refreshed to provide an enhanced PC5250 Emulation (new V5.0 version) and an enhanced Data Transfer which includes an Excel add-in for uploads, supports Excel 8.0 file types, and supports floating point. The Client Access OLE DB and ODBC drivers are enhanced to support new Windows standards including Microsoft ODBC V3.5 specification, OLE DB 2.1 specification and ADO 2.1. Client Access Express for Windows now also provides support for large database objects and integers through data transfer, ODBC, OLE DB and new SQL APIs.

Note the following clients are no longer available with V5R1:

- Client Access for Windows 95/NT (XD1)
- Client Access Enhanced for Windows 3.1 (XK1)

NetServer provides the capability to share PC files and printers amongst Windows clients. On the Windows client, users access NetServer using their standard Explorer and Network Neighborhood capability. With V5R1, NetServer is enhanced so iSeries can operate as the Logon Server for Windows clients. The iSeries can be used to authenticate logging onto Windows, providing home directory and logon scripts to the Windows user. Additionally, Windows user profiles can be stored and retrieved from an iSeries server. A Windows NT or Windows 2000 server is no longer needed in the network to provide these functions.

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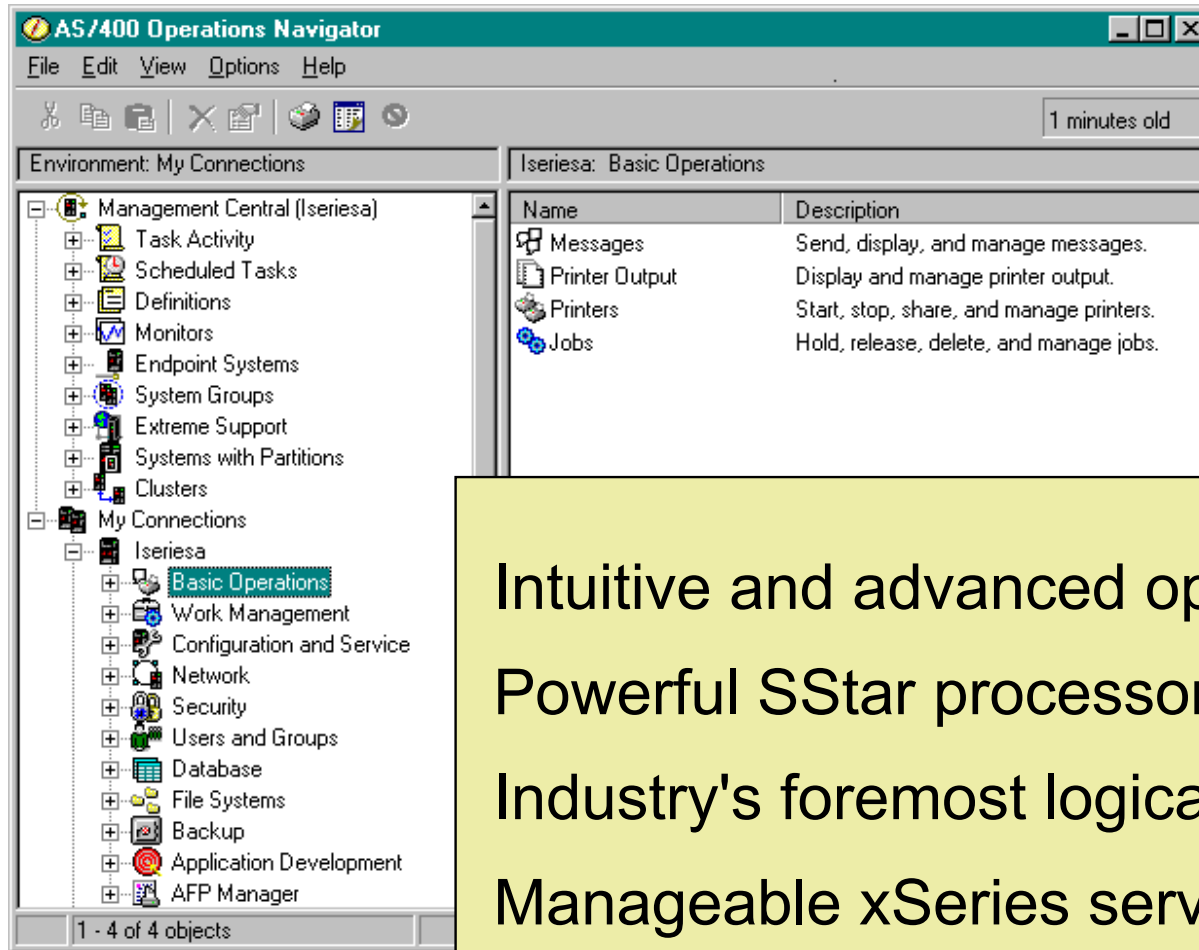
# Summary

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# 2001 iSeries Announcement Highlights

IBM  server iSeries



OS/400 V5R1 and SStar  
Availability 5/25/2001

Intuitive and advanced operations

Powerful SStar processors

Industry's foremost logical partitioning

Manageable xSeries servers for Windows 2000

Robust, scalable Linux servers

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# IBM server iSeries: Freedom to Succeed

IBM server iSeries

Linux

ERP

MQSeries

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SCM

Web Security

Copper/SOI

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**New tools for e-business**

HTTP Server Powered  
by Apache

LPAR

64-Bit

OS/400 PASE

WebSphere

Domino

XML

Java

B2B

CRM

Windows 2000 Server

IPP



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