Enterprise IT Management Made Simple

IBM ^ iSeries

i890 and OS/400 V5R2 Announcements

*iSeries*J *Announcement at A Glance*

- **i890 32-way with POWER4 provides unmatched iSeries growth**

Unparalled Scalability

- **Enterprise IT Management Made Simple with OS/400^{7} V5R2**
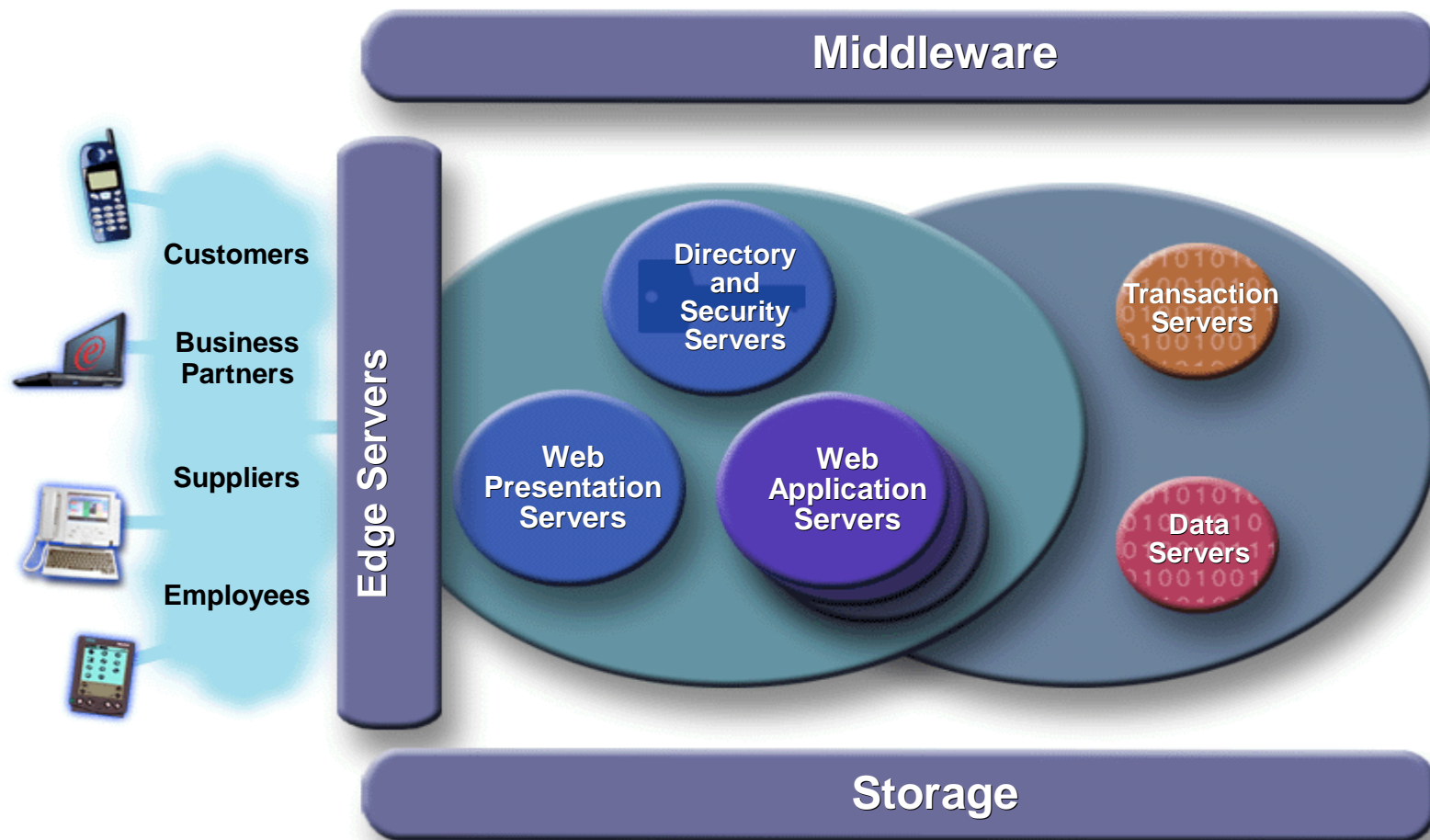
Everybody Wins !

- **Delivering outstanding flexibility for adding new workloads**

Consolidate Servers...Expand Business

- April 29, 2002   Announcement
  June 14, 2002   i890 with OS/400 V5R2 Limited Availability (English only)
  August,   2002   OS/400 V5R2 Worldwide General Availability

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Enterprise IT Management Challenge

- Multiple platforms, optimized for specific workloads

- Complex management and skills requirements drive high costs

Innovative Technology

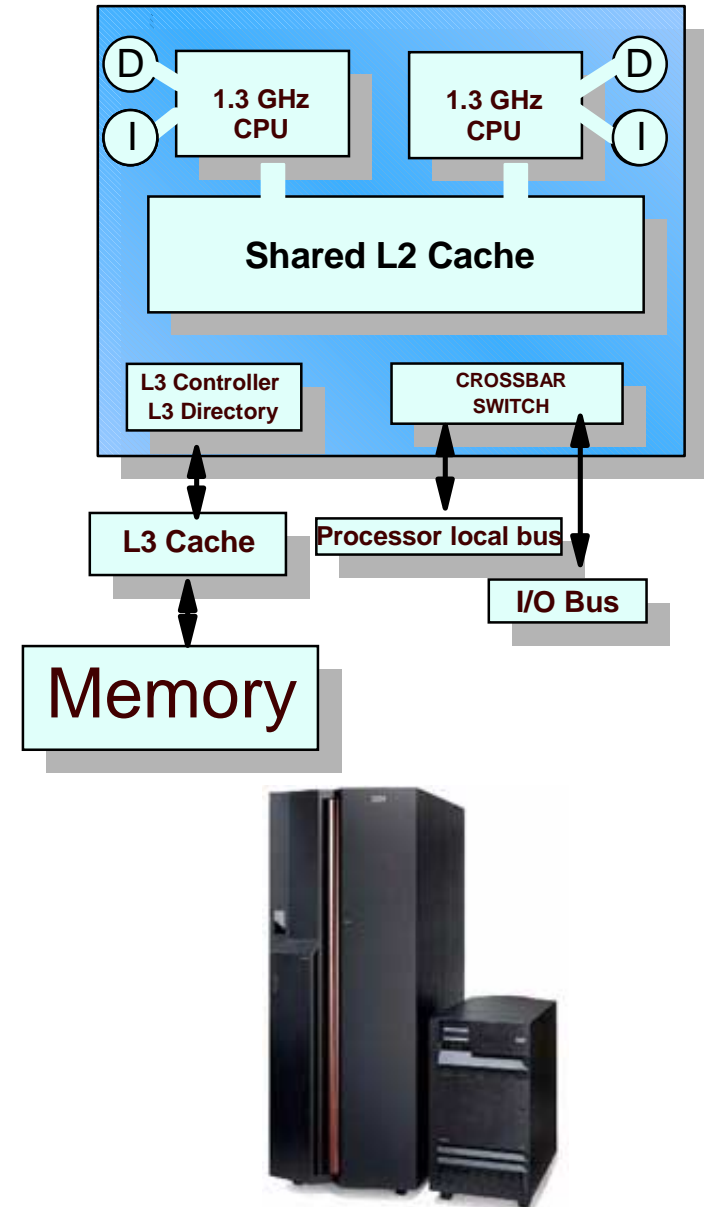# IBM @server POWER Processor Roadmap

i890 with 32-way POWER4 Processor

IBM POWER4 delivers unmatched iSeries growth on i890 32-way*

- 37,400 CPW, up to 1.85 x growth over i840

- Processor features include Capacity Upgrade on Demand and exceptional interactive processing flexibility

- 1.3 GHz POWER4 microprocessors
  - 174 million transistors on a chip

- Up to 534 MB of L2/L3 cache

- Doubled memory and I/O capacity
  - Up to 256 GB memory
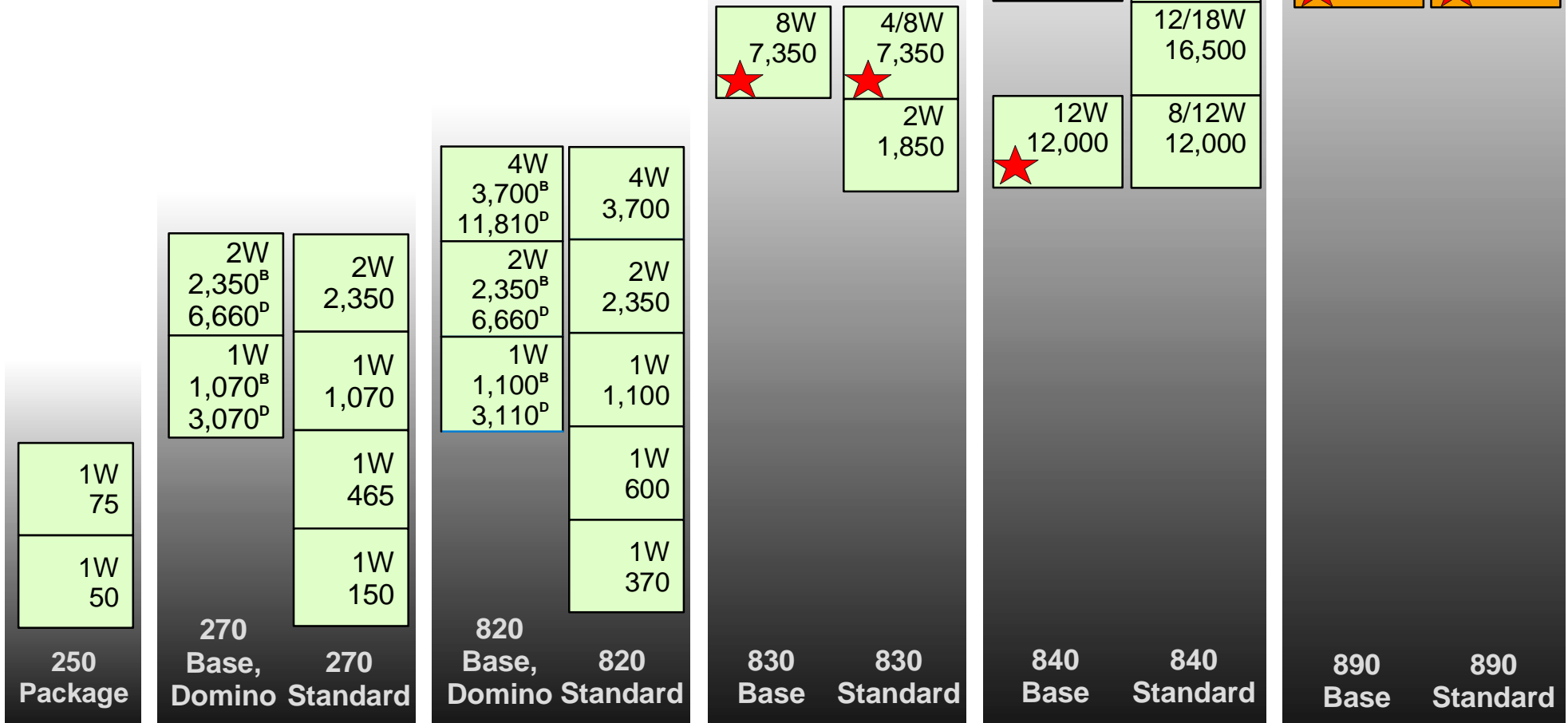 - Up to 72 Terabytes disk
  - Up to 32 IXA

Common IBM eServer processor roadmap for iSeries and pSeriesJ

* Requires OS/400 V5R2

Diagram labels:
D | 1.3 GHz CPU | 1.3 GHz CPU | D
I | | | I
Shared L2 Cache
L3 Controller L3 Directory | CROSSBAR SWITCH
L3 Cache | Processor local bus
I/O Bus
Memory

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IBM ^ iSeries Models

★ New processor features

250 Package
- 1W 75
- 1W 50

270 Base, Domino
- 2W 2,350ᴮ 6,660ᴰ
- 1W 1,070ᴮ 3,070ᴰ

270 Standard
- 2W 2,350
- 1W 1,070
- 1W 465
- 1W 150

820 Base, Domino
- 4W 3,700ᴮ 11,810ᴰ
- 2W 2,350ᴮ 6,660ᴰ
- 1W 1,100ᴮ 3,110ᴰ

820 Standard
- 4W 3,700
- 2W 2,350
- 1W 1,100
- 1W 600
- 1W 370

830 Base
- 8W 7,350 ★

830 Standard
- 4/8W 7,350 ★
- 2W 1,850

840 Base
- 24W 20,200 ★
- 12W 12,000 ★

840 Standard
- 18/24W 20,200
- 12/18W 16,500
- 8/12W 12,000

890 Base
- 32W 37,400 ★
- 24W 29,300 ★

890 Standard
- 24/32W 37,400 ★
- 16/24W 29,300 ★

Notes:
1. 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.
2. Model 830, 840 Base Processor Features and Model 830 4/8 way do not support V4R5.

| # of Processors Processor CPW Domino MCU | Runs V5R1 or V5R2 |
| # of Processors Processor CPW | Requires V5R2 |

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Mainframe Class Technology, iSeries Servers

i270 with up to

- **2,350 CPW**
- **8 GB memory**
- **840 GB disk**

i820 with up to

- **3,700 CPW**
- **32 GB memory**
- **8 TB disk**

i830 with up to

- **7,350 CPW**
- **64 GB memory**
- **22 TB disk**

NEW
- **4/8-way Standard Processor Features**
- **8-way Base Processor Features**

i840 with up to

- **20,200 CPW**
- **128 GB memory**
- **38 TB disk**

- **8/12, 12/18, 18/24-way Standard Processor Features**

NEW
- **12-way & 24-way Base Processor Features**

i890 with up to

- **37,400 CPW**
- **256 GB memory**
- **72 TB disk**

- **16/24-way & 24/32-way Standard Processor Features**
- **24-way & 32-way Base Processor Features**

NOTE: Values quoted for CPW, Memory and Disks are the maximum values configurable within each of the models

iSeries Product Updates

Domino
Processor
Features

Domino Capacity
No Choice of 5250
interactive features
No Capacity
Upgrade on Demand
Limited DB2 UDB
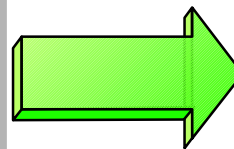for iSeries capacity

Base Processor
Features

Processors
w/Fixed Capacity
No Choice of 5250
interactive features
No Capacity
Upgrade on Demand

Standard
Processor
Features

Standard
Processor
Features
Choice of 5250
interactive features

Standard
+
CUoD Features

POD Processor
Features with:
Choice of 5250
interactive features
Capacity Upgrade
on Demand

270   820
830+

Current

New for 2002

270   820   830+   890

Domino
Processor
Features

Domino Capacity
No Choice of 5250
interactive features
No Capacity
Upgrade on Demand
Limited DB2 UDB
for iSeries capacity

820 DSD
upgrade to
830+ Base

Base Processor
Features

Processors
w/Fixed Capacity
No Choice of 5250
interactive features
No Capacity
Upgrade on Demand

Standard
Processor
Features

POD Processor
Features with:
Choice of 5250
interactive features
Capacity Upgrade
on Demand

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Positioning the iSeries Product Line

Domino Processor Features	**Base** Processor Features	**Standard** Processor Features
Domino Capacity No Choice of 5250 interactive features No Capacity Upgrade on Demand Limited DB2 UDB for iSeries capacity	**Processors w/Fixed Capacity** No Choice of 5250 interactive features No Capacity Upgrade on Demand	**Processors w/Optional Capacity** Multiple 5250 interactive features Capacity Upgrade on Demand

Domino Serving

Workloads
- Domino + WebSphere
- Domino + LinuxJ
- Domino + JavaJ
- Domino + File serving
- Domino Web serving

NEW !

820 DSD to
830+ Base

Models
270,820

Application & Web Serving

Domino Serving

Workloads
- WebSphere
- LinuxJ
- JavaJ
- e-commerce
- Domino
- Windows
- Web serving
- File Serving
- other...

All
Models

Application & Web Serving

Scalable, Mixed Transaction

5250 Transaction

Workloads
- 5250 interactive
- WebSphere
- LinuxJ
- JavaJ
- e-commerce
- Domino
- Windows
- Web serving
- File Serving
- other...

All
Models

Notes
1. Processor on Demand activation feature available on 4W processors and above

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More Hardware News: Everybody Wins !

- **Make it easier to add new workloads on iSeries (both install base and new)**
  - ► All 4-way and above machines ship with "extra capacity" (CUoD)
    - – Announce 4-8way CUoD for 830, reduce pricing on 840 CUoD, 890 is CUoD
    - – To activate for 830/840 customers $41K per engine , $60K for 890 (more power)
  - ► Create attractive optional workload price for 270 customers
    - – 36% price action on 2432 (1070 with 50 Interactive)
    - – 43% price action on 2434 (2350 with 70 Interactive)
  - ► Expand "0" interactive/fixed workload offerings into high end & reduce 820 fixed workload price
    - – Complete product line (830/840/890) available with "0" IA or fixed workload
    - – Reduce prices on 820 existing fixed workload machines (50-56% price action)

- **Re-balance our Value Proposition: Move value from components to SW**
  - ► Drop DASD pricing to Unix levels (HP , pSeries, SUN)
    - – 30% Price Action on 18GB DASD, makes it equal to 9GB
    - – 23% Price Action on 35GB DASD
  - ► Reduce High Capacity (512, 1GB) memory for 270/820/830 systems
    - – New workloads require large amounts of memory
  - ► Increase SW subscription pricing -- industry trend to place more value on SW
    - – Announce April 29th , effective July 1st

Flexible Storage Options with SAN Switch Fabric

Switch fabric expands options across multiple initiators and multiple targets

- Enabled by IBM 2109 switch

Now multiple SAN targets can be connected through a single iSeries fibre channel adapter

- Optimizes number of fibre channel adapters
- Zoning recommended for performance

2 Gbps/sec SAN fabric support

- Existing iSeries Fibre Channel adapters can benefit from new high performance SAN fabric

IBM 2109

iSeries Announcement Hardware Summary

- **i890**

  - 16/24 and 24/32-Way with Capacity Upgrade on Demand

  - More granular 5250 Interactive Features

  - 24 and 32-Way Base Processor Features

- **i840**

  - 8/12, 12/18 and 18/24-Way with Capacity Upgrade on Demand

  - 12 and 24-Way Base Processor Features

- **i830**

  - 4/8-Way with Capacity Upgrade on Demand

  - 8-Way Base Processor Feature

- Key Dates:

April 29	Announcement
June 4	Configurator support and detailed RFA / pricing
June 14	i890 with OS/400 V5R2 Early Availability (English only)
August	OS/400 V5R2 Worldwide General Availability

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OS/400 Version 5 Release 2

Enterprise IT Management Made Simple

OS/400 V5R2 Highlights

Performance at your fingertips

- Flexible Capacity Upgrade on Demand now standard on i830 4-way and above*
- Dynamic logical partitioning for award-winning 64-bit Linux[7]
- Intuitive iSeries Navigator workload management tools

Adaptive storage virtualization for high availability

- Mainframe-class availability with switched disk cluster management
- Self-optimizing, multiple IBM DB2[7] UDB images for business unit consolidation
- Extensive Windows server management now supports Microsoft[7] Cluster Server

Flexible, secure management of e-business infrastructure

- Industry's first eLiza Enterprise Identity Mapping enables true single signon
- High performance Apache Web serving with secure sockets and caching accelerators
- Simple and pervasive operations with wireless-optimized Web-ready micro-drivers

*Capacity Upgrade on Demand also available on i830 and i840 with V5R1

Performance at Your Fingertips

IBM ∧   *iSeries Capacity Advantage*

Flexible capacity management without interrupting business

- 33% of i840 customers exploited Capacity Upgrade on Demand in 2001

Capacity Upgrade on Demand solutions for i830*, i840* and i890

- Dynamic processor activation of stand-by capacity

- No system or application restart required

i890
16/24-Way

16-way
Activated for
production
workload

Capacity
activated on
demand

Start-up Processors   Stand-by Processors

*Available with V5R1 and V5R2

Performance at Your Fingertips

IBM's Capacity Upgrade on Demand . . .

. . . offering customers a flexible way to
add new workloads or manage
peak capacity requirements

Application Flexibility - Simple, flexible implementation of new workloads
and workload peaks without business interruption

No Premium - shipped on all Model 830 4-way processors and above

Trial Capacity - 14 days (power-on time) of no charge capacity

ASP Solution Server - Model 830 1/8-way available via I-listed RPQ

33% of Model 840 customers are using CUoD today

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OS/400 V5R2 iSeries Navigator

Extensive automation for workload management

- New file and B2B transaction monitors

- Systems and storage management

- Backup and media policies

- Network management, including support for IPv6

IBM DB2 UDB transaction management

Switched disk cluster management

Linux dynamic partition management

Enterprise Identity Mapping security
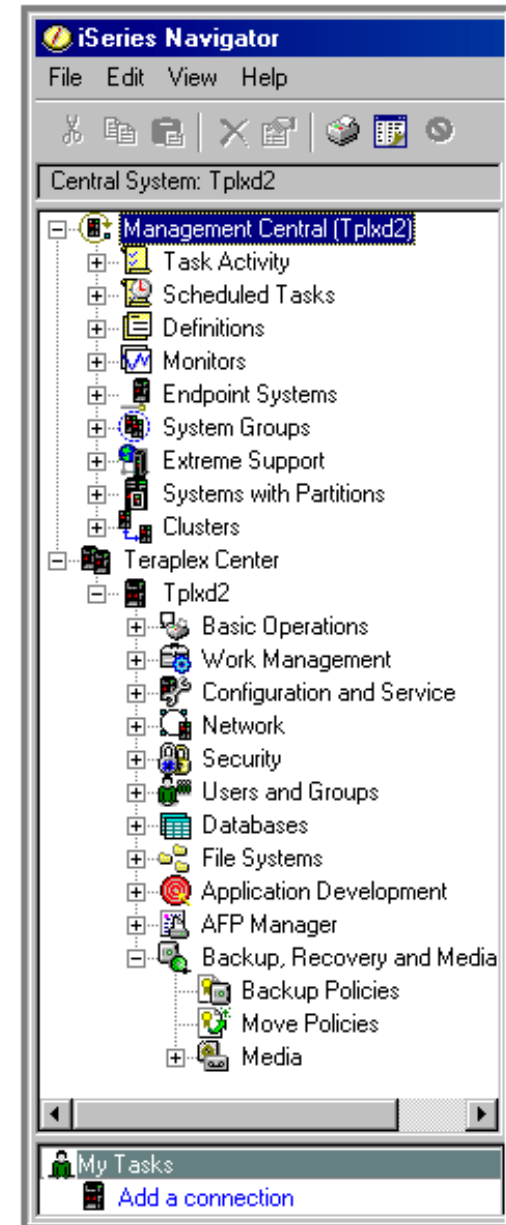
Mainframe Class Logical Partitioning

V5R2 provides additional LPAR management with iSeries Navigator

- Sophisticated, Windows-based graphical management tool

- Multi-partition management

Reduce costs via mixed workload consolidation and IT resource optimization

- 44% of i840 customers exploiting LPAR

Sub-capacity pricing on n-way servers

- WebSphere™ Commerce Suite

- WebSphere Application Server

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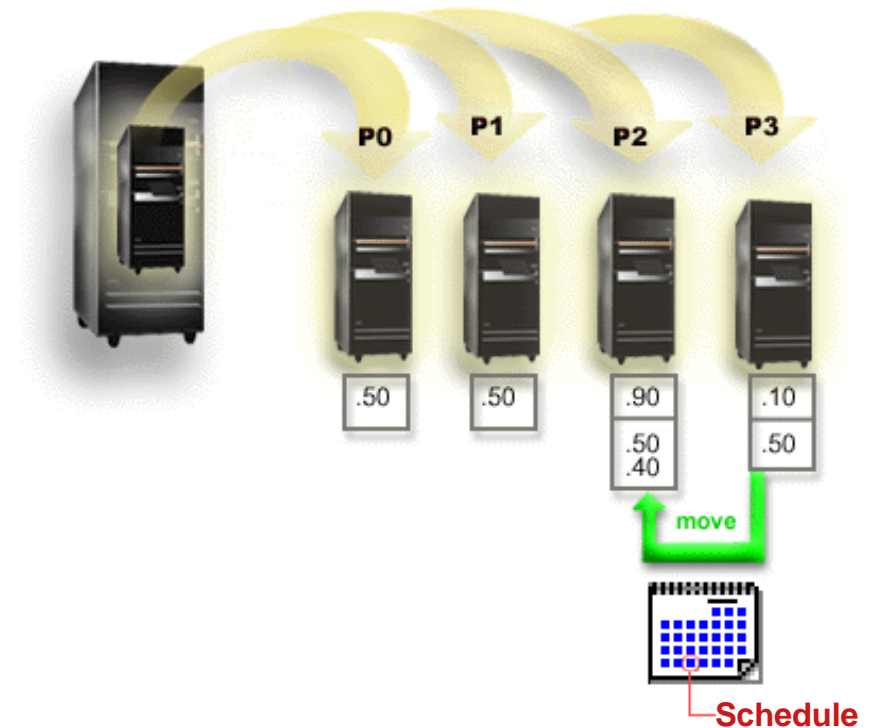
Server Consolidation with Linux
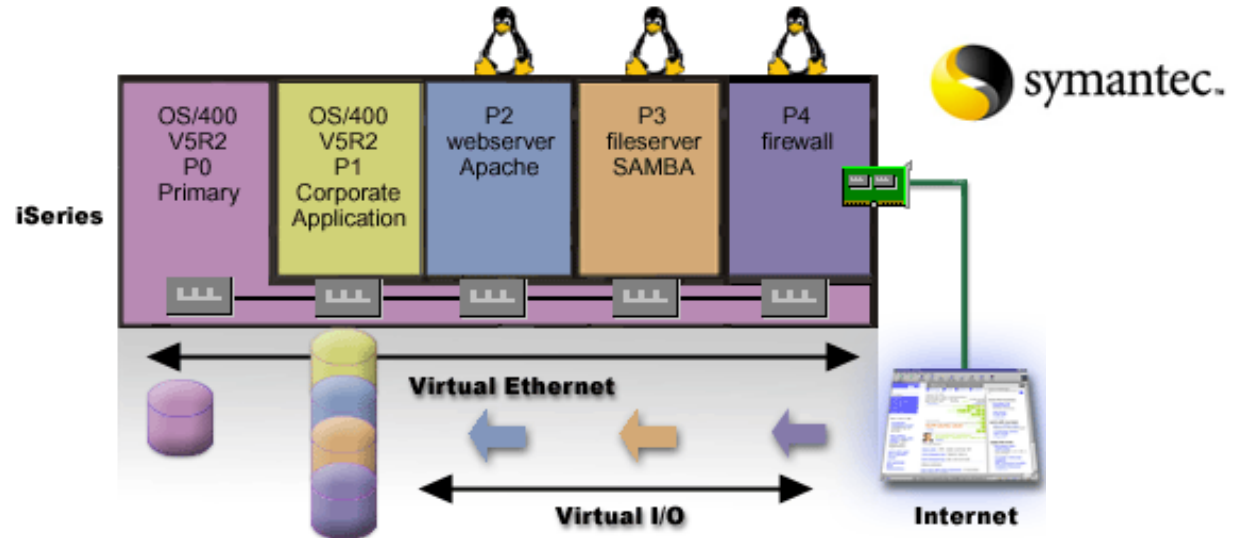
- Dynamic virtual processor allocation for Linux partitions

- iSeries Linux now supports 64-bit kernel

- Symantec Enterprise Firewall planned for iSeries

- IBM DB2 Universal Database and WebSphere Application Server*

*Statement of Direction: This presentation contains IBM plans and directions. Such plans are subject to change without notice.

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AIX 5L

* Statement of Direction

Windows 2000

xSeries

OS/400

Linux

HSL

Virtual I/O

Virtual I/O

Virtual Ethernet

Hypervisor
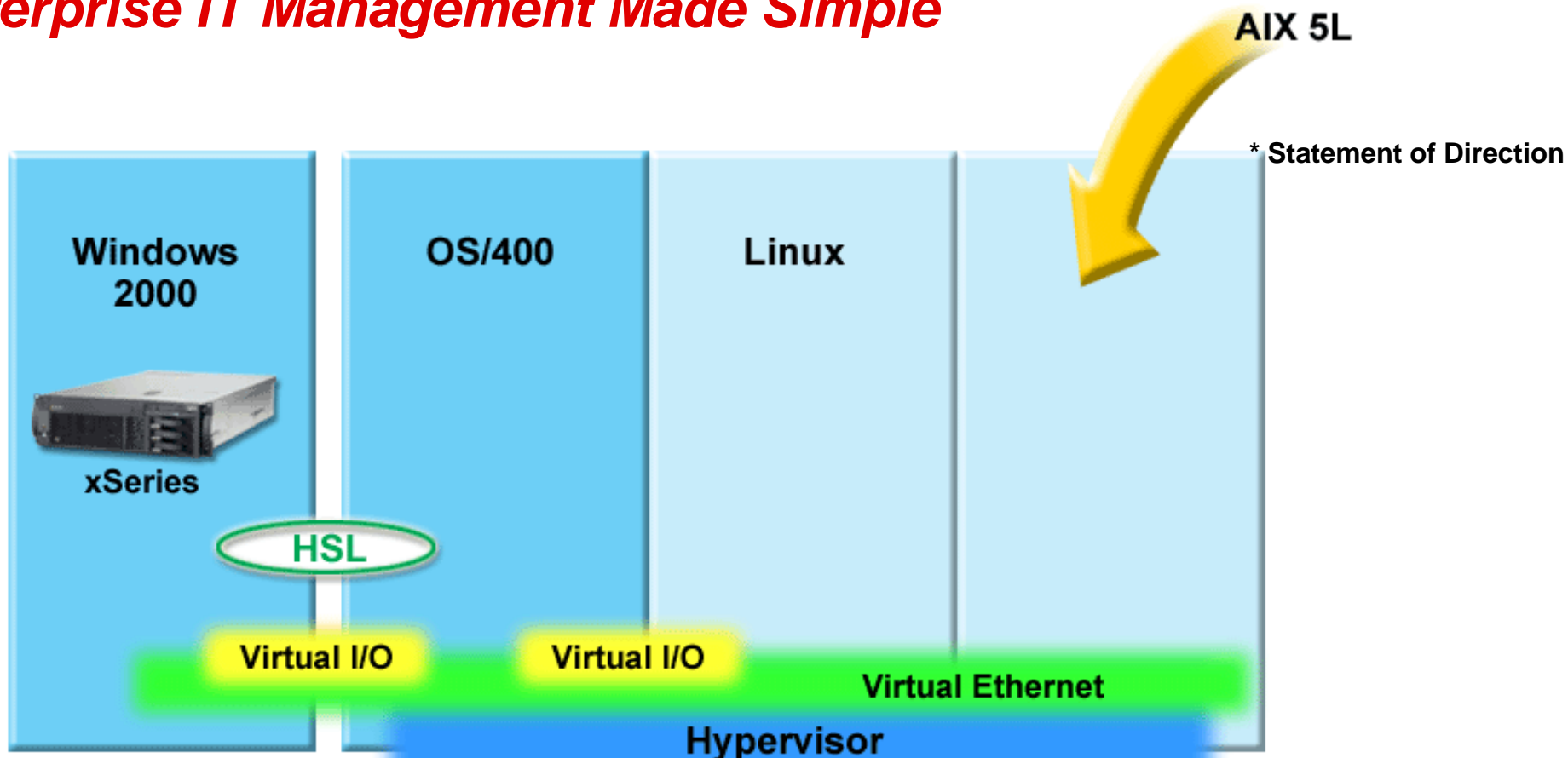
Lowering e-infrastructure management costs across multiple environments

V5R2 OS/400 PASE now provides integrated runtime for AIX[7] 5L applications

Project eLiza will extend to future management of AIX 5L in iSeries partitions*

*Statement of Direction: This presentation contains IBM plans and directions. Such plans are subject to change without notice.

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BMC PATROL Predict for iSeries

PATROL Predict provides powerful graphical analysis tool for capacity and performance planning

Collects, measures and projects future performance requirements

Comprehensive graphical analysis, "what-if" modeling
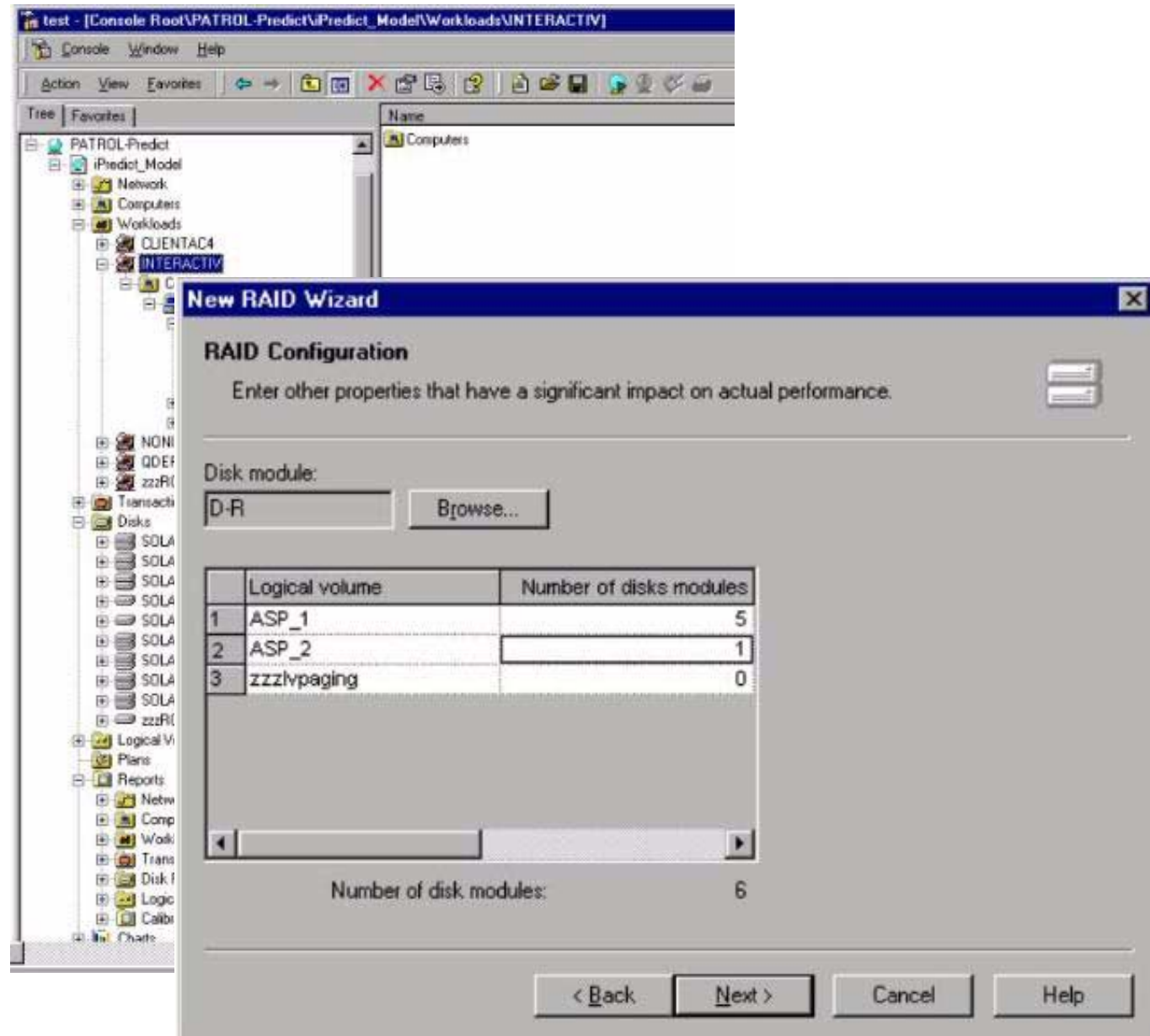
Enterprise Class Adaptive e-transaction Services

iSeries optimized for both traditional and e-business transactions

Adaptive e-transaction Services

- Extends robust iSeries transaction services to e-business applications

- Transaction server automatically adapts to application requirements

- No programming changes required

Further optimizes iSeries for highly scalable WebSphere and Java™ transaction performance

e-business transactions   Traditional transactions

J2EE WebSphere

OS/400 V5R2

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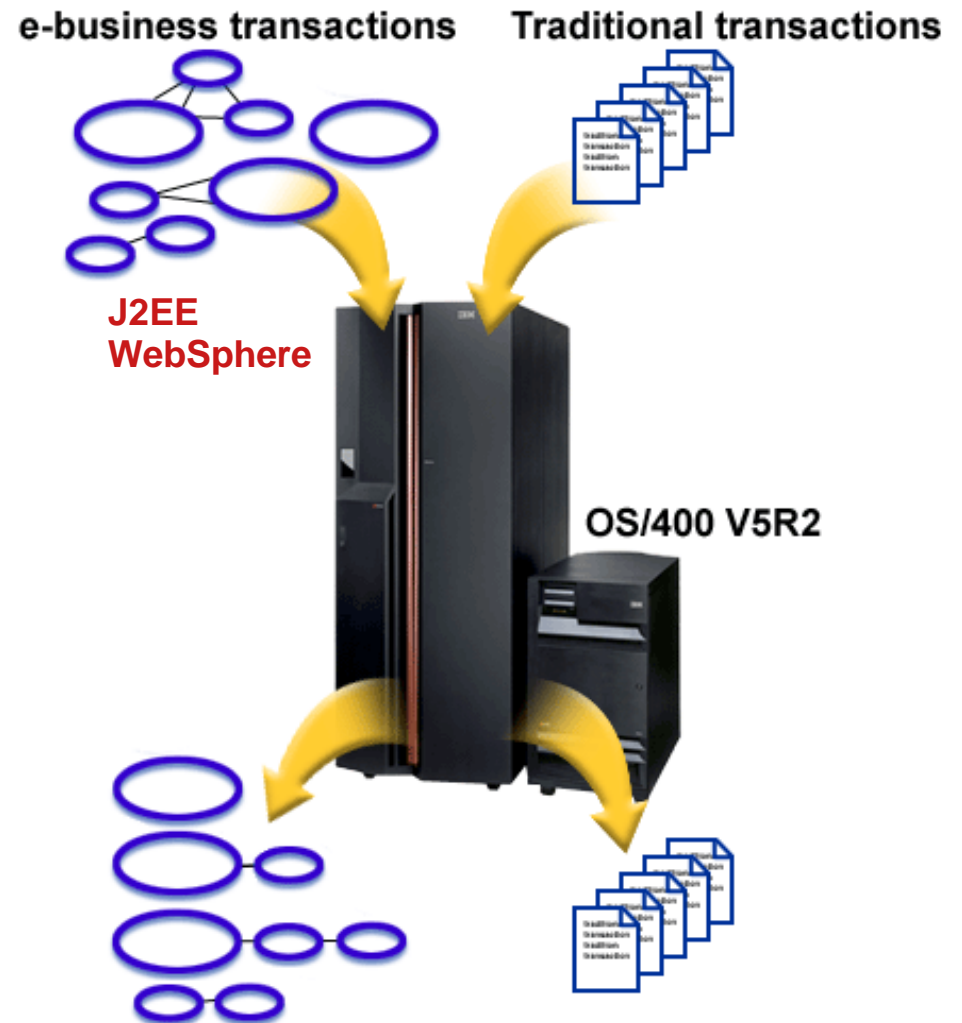
iSeries and Grid Computing
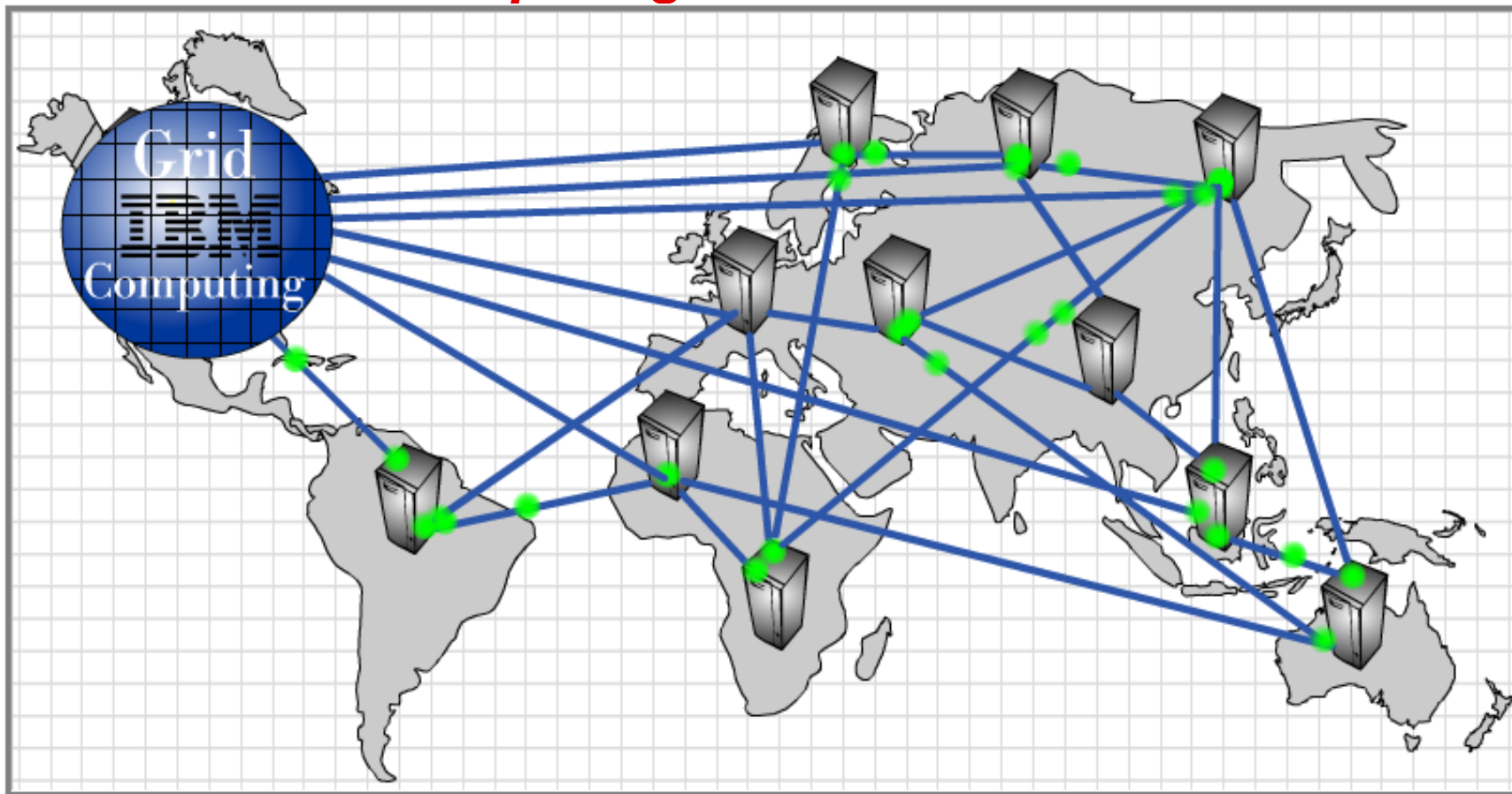
Flexible, secure, standards-based access to shared computing resources

iSeries support signals growth of commercial grid applications

OS/400 V5R2 provides support for Globus Toolkit J

Available with OS/400 PASE or Linux

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Adaptive Storage Virtualization for High Availability

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IBM DB2 UDB for iSeries

Availability enhancements

- Multiple independent name spaces

- Switched disk (IASP)

Open standards support

- SQL enhancements

- Java Transaction API (JTA)

- X/Open Distributed Transaction Processing (XA-DTP)

- Enhanced DB2 UDB family compatibility

iSeries Navigator Enhancements

- Self-optimizing automatic index advisor and statistics collection

- Graphical management for local DB2 UDB and global WebSphere transactions

DPAR !
Data Partitioning
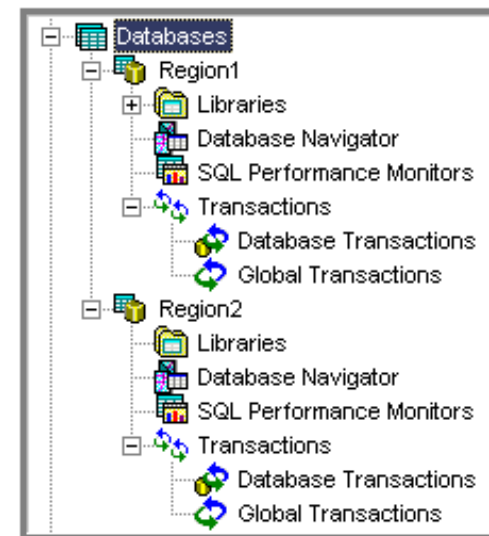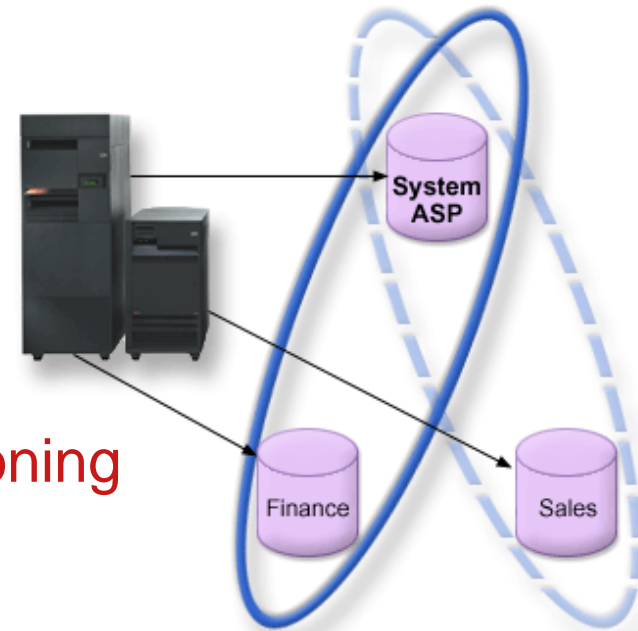
Switched Disk for High Availability and Clustering

Consolidate data with multiple name spaces within single server

- Multiple independent databases, system libraries, library names

Support for switching database and other objects between servers

- Switch disk for scheduled maintenance and upgrades
- Improved availability for unscheduled outages

Independent disk pools

System disk pool

Payroll data   Order entry data   Company 1   Company 2   Company 3

System disk pool

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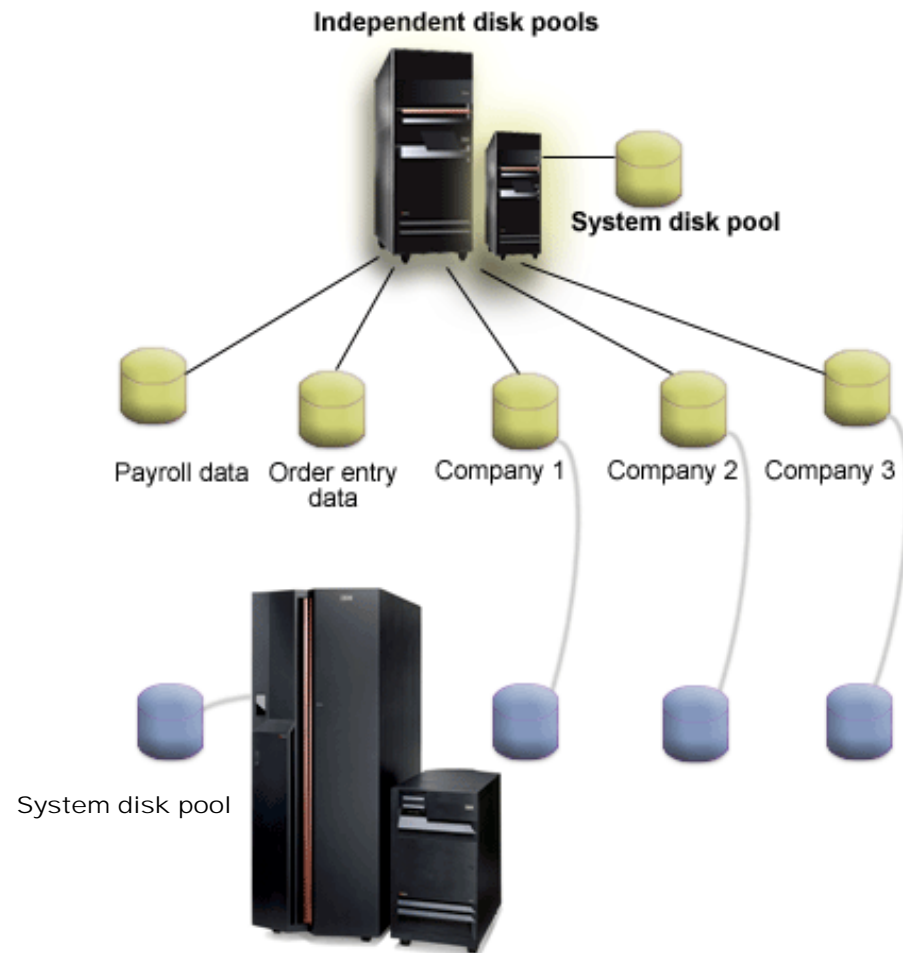
Enterprise High Availability Management

Safeguard OS/400 software upgrades with virtual media installation

Simplified enterprise backup and media management with iSeries Navigator tools

Journal standby mode improves availability with faster restart of clustered system

Enhanced performance and recovery options for DB2 UDB access path protection

Reduced disk upgrade downtime through new disk migrate while active

Tivoli[7] Storage Manager V5

Cluster Services

Application Resiliency

Data Resiliency

OS/400 Availability Management Tools

iSeries Hardware Infrastructure
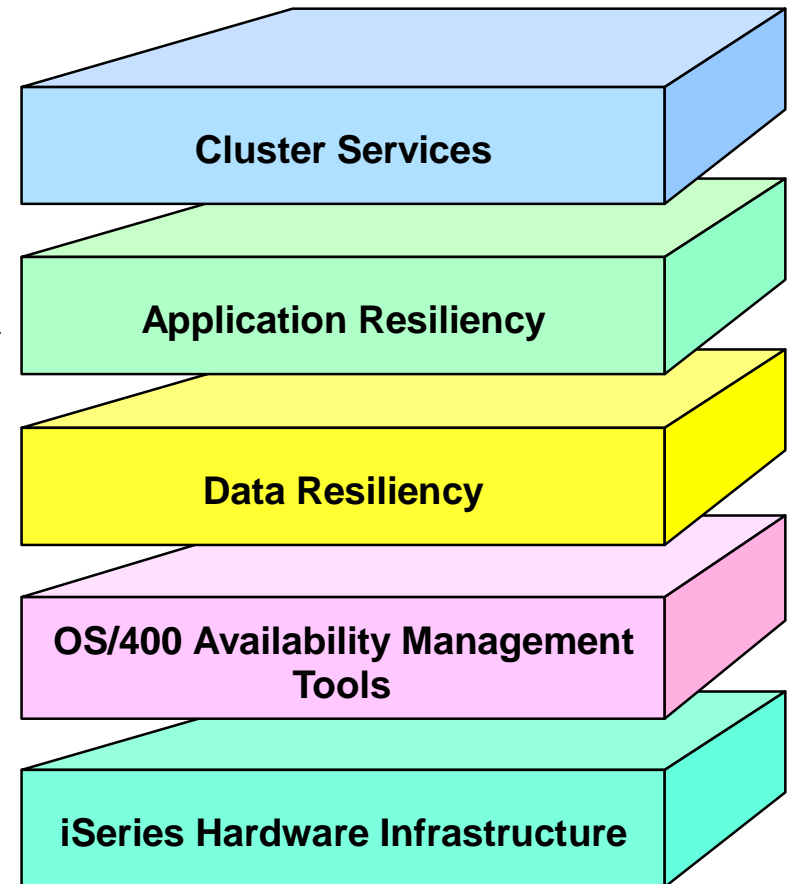
Self-Configuring Disk Management

Create, manage and monitor storage virtualization on iSeries

Self-guided configuration wizards

Simplification of complex disk management tasks

- RAID-5 and Mirroring

SAN-like storage management for Windows Servers through IXA/IXS

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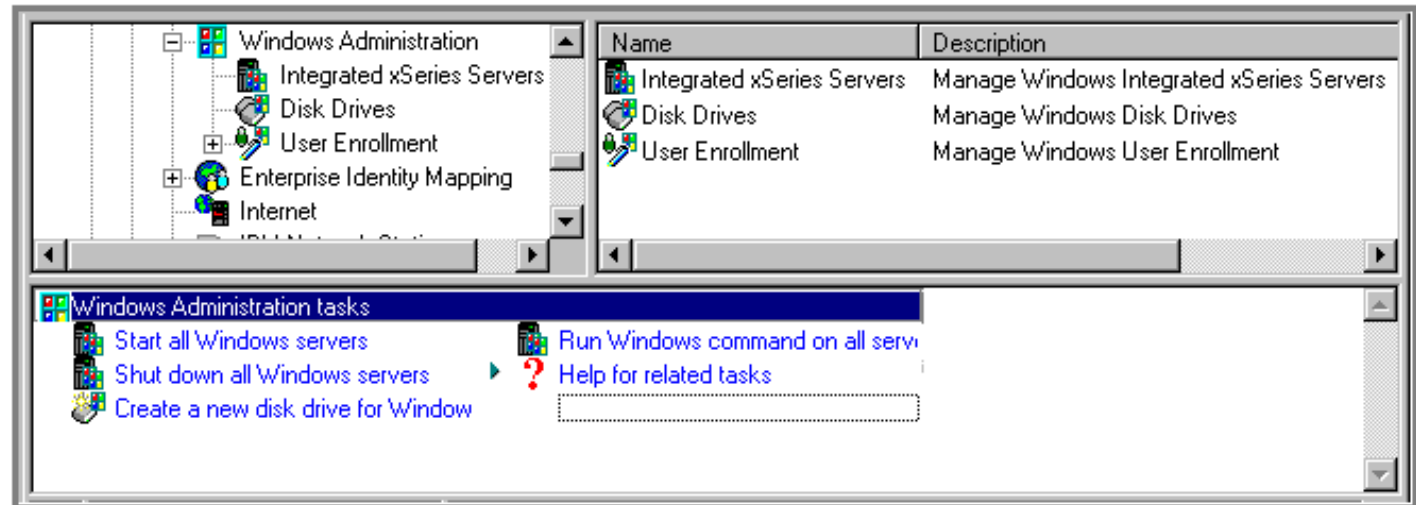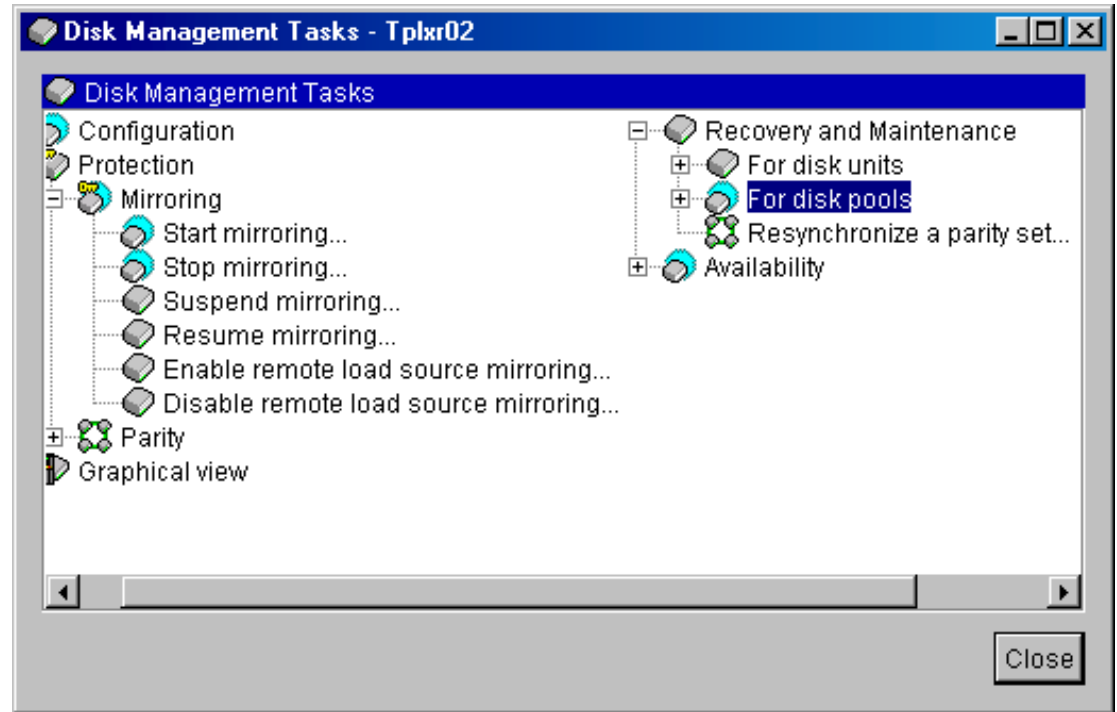
Windows Server Management

Microsoft Cluster Service

- Availability solution for planned and unplanned outages
- Dynamically switch storage spaces (disks) between Windows servers

xSeries™ servers

- IXA now supports latest x360 and x440 servers

Virtual Ethernet

- Higher performance for multi-tier apps and backup
- High-speed interconnect without external LAN
- Connects multiple Windows servers, Linux and OS/400 partitions

Microsoft Cluster

HSL

**xSeries
with
Integrated xSeries Adapter**
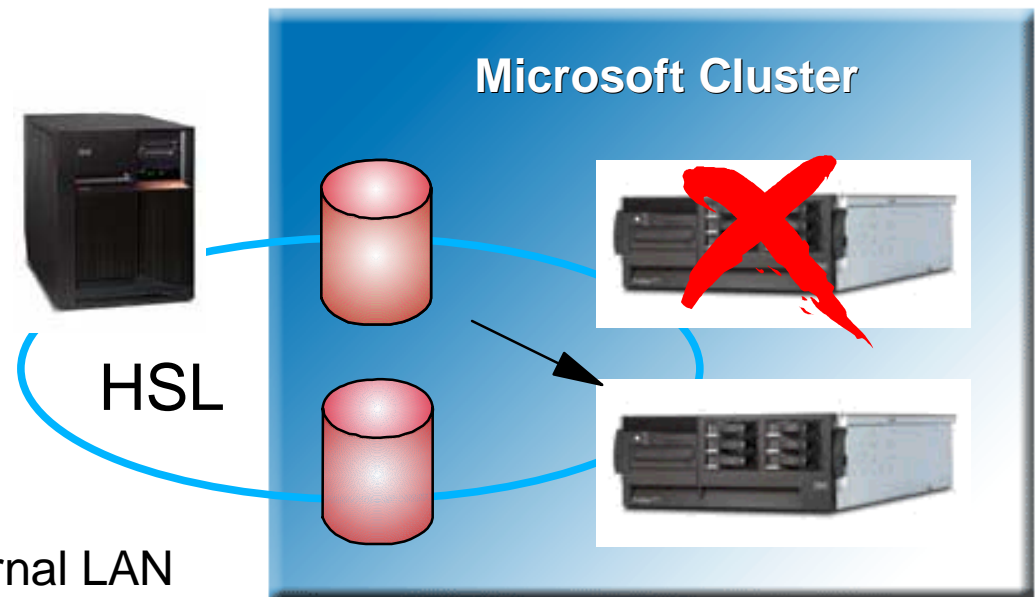
Flexible, Secure Management of e-business Infrastructure

Enterprise Identity Mapping

The industry's first Enterprise Identity Mapping implementation

Simplifies authentication process for users

Enables single signon

Reduces costs of user identity, password and network administration

Simplifies the development of multi-tier, multi-server applications

Project eLiza

Windows 2000 Server
kdc1.ordept.myco.com

EIM Domain Controller
iSeriesB.ordept.myco.com

Jsmith

Sjones

EIM Identifiers	John Smith	Sharon Jones
Kerberos principal	Jsmith	Sjones
iSeries - A username	Johns	Sharonj
iSeries - B username	Smithjo	Jonessh
zSeries - C username	Smithj	Joness2

realm = ORDEPT.MYCO.COM

zSeriesC.ordept.myco.com

iSeriesA.ordept.myco.com

Secure High Performance Apache Web Serving

Web Caching Accelerator

- Provides high performance, high volume Apache Web serving
- More than doubles the capacity for Web serving
- Self-activating, easy to setup
- Exploits caching techniques developed by IBM Research

Secure Sockets Accelerator

- Cryptography adapter delivers optimized performance for Internet security checking
- Secure Sockets Level (SSL) and Transport Layer Security (TLS) protocols
- Multiple accelerators per system enable ultra-high volume throughout

IPv6 with self-configuring wizards

- Simple network configuration using latest industry standards

Firewall-friendly VPN with UDP encapsulation

- Application-transparent security allow servers to remain behind firewall

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iSeries Desktop Solutions with iSeries Access

iSeries Access for Web

- Browser based access to iSeries resources

- Easily customizable front page

- Secure, central administration

- Includes 'My Personal Folder'

- Access to printers, database, 5250 applications, commands, jobs, messages, files

WebSphere Host Publisher 4.0

- Rapid Web-enablement of 5250 applications

- Fully translated, including DBCS languages

- Runs on WebSphere Application Server 4.0

- Supported on OS/400 V5R1 and V5R2

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Wireless-Web Ready Java 2 Micro Edition

Micro Edition drives growth of secure wireless Web access to enterprise data

Write customized wireless applications with power of iSeries

IBM Toolbox for Java 2 Micro Edition

- Micro Java classes and drivers optimized for pervasive device

- Includes JDBC Micro Edition for Java application access to iSeries database and applications

iSeries Access for Wireless

- Integrated package of wireless middleware

- Includes iSeries Navigator features for wireless systems management

Wireless Web

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WebSphere Development Studio for iSeries

WebSphere Development Studio will integrate the WebSphere Studio Workbench

WebSphere Studio Workbench is a superset of the open-source Eclipse Integrated Development Environment

- Open tooling infrastructure

- Integration platform for IBM and non-IBM tools

One-stop, integrated development environment

- Tools for everything from traditional to e-business development

Will be delivered as a no-charge upgrade with Software Subscription

50,000 copies shipped since May 23, 2001

*WebSphere Portal Server for iSeries**

WebSphere software

Enables secure access to dynamic information, application and people

- Single point of entry incorporating industry-leading Personalization technologies

Provides an open framework for creating multiple portal solutions

- Business-to-Employee (B2E)

- Business-to-Business (B2B)

- Business-to-Commerce (B2C)

- Ideal for application portlets, syndicated content and collaboration

Enables access anytime, anywhere

*General availability of WebSphere Portal Server 4.1 is planned for 4th quarter of 2002

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Domino[7] and Advanced Collaboration

Domino 6

- Major release with continued focus on ease-of-use and TCO

- Extends client mobility advantage

- Provides enriched application environment

- Simplifies deployment and management

Exploiting OS/400 V5R2 enterprise-class performance

- Highly scalable groupware options extended from i270 to i890

- Domino servers benefit from improved file system performance

- Domino Web serving integrated with OS/400 Digital Certificate Manager and SSL accelerator

IBM @server iSeries

[EXCHANGE YOUR EXCHANGE] iNOTES ACCESS FOR MICROSOFT OUTLOOK

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iSeries e-Output

InfoPrint Server for iSeries

- New PDF and e-mail capabilities

InfoPrint Designer for iSeries

- Enhanced graphical output design

e-Output server in OS/400

- PDF output distribution integrated with iSeries Access
- Standard API access to PDF and e-mail functions
- Internet Print Protocol (IPP)

Infoprint 85 and 105 printers

- Supported with Print Services Facility for OS/400

LAN attached printer with internal or external network adapter

iSeries server with IPP Server

Client PC

Internet

Remote iSeries
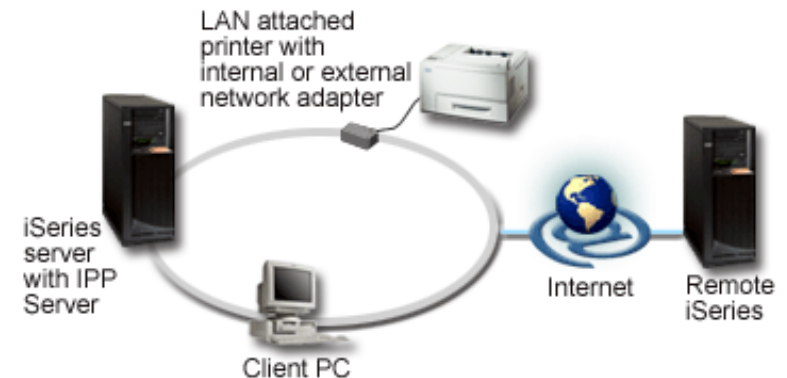
Project eLiza

OS/400 exploits IBM's blueprint for self-managing systems

- **Self-protecting**
  - Enterprise Identity Mapping
  - Digital signatures and intrusion detection

- **Self-optimizing**
  - Dynamic LPAR
  - Self-learning DB2 UDB Automatic Index Advisor

- **Self-healing**
  - Switched disk support for improved availability
  - Agent Building Learning Environment (ABLE) for problem management*

- **Self-configuring graphical wizards for managing**
  - Performance and multiple workloads
  - Switched disk clusters and high availability
  - Security and network
  - Storage and system backups

*NOTE: ABLE is a project out of IBM Research to reduce human intervention through using artificial intelligence when diagnosing hardware and software errors. ABLE will debut first with iSeries and OS/400 V5R2.

Summary

iSeries⌐ Announcement at A Glance

- **i890 32-way with POWER4 provides unmatched iSeries growth**

Unparalled Scalability

- **Enterprise IT Management Made Simple with OS/400 V5R2**

Everybody Wins !

- **Delivering outstanding flexibility for adding new workloads**

Consolidate Servers...Expand Business

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http://www.ibm.com/eserver/iseries/

Enterprise IT Management Made Simple

Capacity Upgrade on Demand

OS/400 V5R2

WebSphere Development Studio

64-Bit Linux

32-way, 64-Bit POWER4 i890

Enterprise Identity Mapping

Adaptive e-transaction Server

Innovative Technology

Application Flexibility

Apache Web Caching Accelerator

Lotus Domino 6

Virtual Ethernet

Switched Disk Clustering

iSeries Navigator

Microsoft^7 Cluster Service

SAN Switch Fabric

OS/400 PASE with AIX 5L

Secure Sockets Accelerator

Wireless-Web Micro Edition

LPAR Sub-capacity Pricing

New Tools for e-business

Project eLiza

Multiple DB2™ UDB Namespaces

WebSphere Portal Server

iSeries Access for Web

DB2 UDB Open SQL Standards

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Trademarks and Disclaimers

400	BRMS	Host Integration Series	JustMail	Payment Manager	Stylized @
ADSTAR	Client Series	Host on Demand	MQSeries	Payment Server	SystemView
Advanced Function Printing	ClusterProven	Host Publisher	MQSeries Integrator	PCOM	VisualAge for Java
AFP	CODE/400	HTTP Server for AS/400	Net.Commerce	PowerPC	VisualAge for RPG
AIX	DataGuide	IBM	Net.Data	PowerPC AS	WebSphere
AnyNet	DB2	IBM Logo	Netfinity	Print Service Facility	WebSphere Advanced Edition
Application Development	DB2 Extenders	IBM Network Station	NetView	pSeries	WebSphere Commerce Suite
APPN	DB2 UDB for AS/400	Information Warehouse	NUMA-Q	PSF	WebSphere Development Tools for AS/400
AS/400	DB2 Universal	Integrated Language Environment	OfficeVision	S/390	WebSphere Standard Edition
AS/400e	e-business logo	Intelligent Printer Data Stream	OS/2	SanFrancisco	Workpad
AT	e(logo) Server	IPDS	Operating System/400	Screen Publisher	xSeries
BrioQuery	Enterprise Storage Server	iSeries	OS/400	SmoothStart	