

# **iSeries. mySeries.**

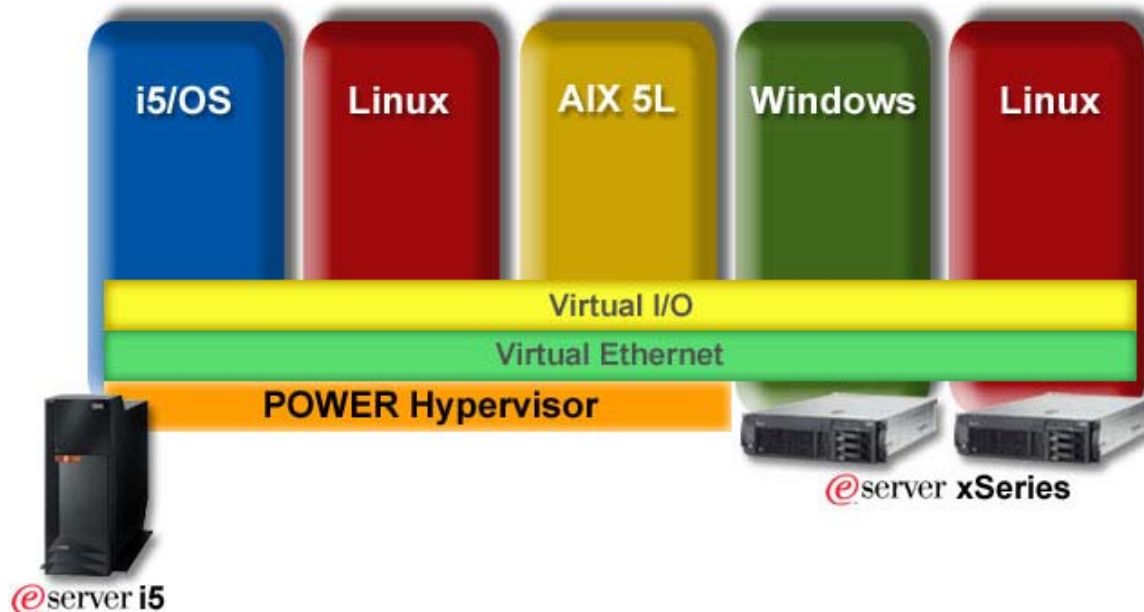
## **Integrated xSeries Solutions Overview & Update**

George Gaylord

[ggaylord@us.ibm.com](mailto:ggaylord@us.ibm.com)

iSeries Product Marketing

# IBM eServer i5 On Demand Operating Environment



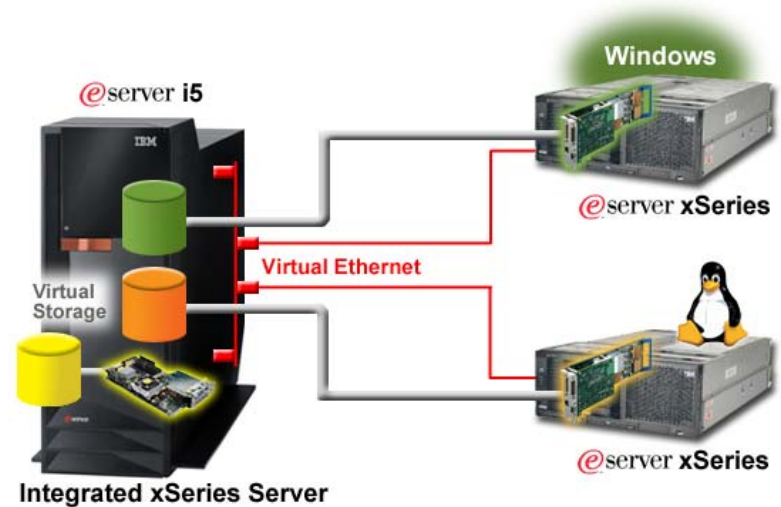
- POWER Hypervisor™ supports i5/OS, AIX 5L, Linux
- Improve server utilization rates across multiple workloads with automatic processor balancing with uncapped partitions

*“As well as consolidating physical servers, the iSeries provides an easy way to integrate multiple environments. iSeries is the ultimate server for integration, and it has delivered immediate and significant advantages.”*

Jan van de Straat, Director of R&D  
Gemeente Harlem

# Integrated xSeries Solutions

- **Simplify your Infrastructure**
  - Consolidate aging Intel servers
  - Extend i5/OS with complementary Windows applications
  
- **Optimize your Investments**
  - Exploit i5/OS Virtual Storage and Virtual Ethernet
  - Integrate i5/OS and Windows backup
  - Leverage Resources, Skills and Best Practices
  
- **Offerings**
  - Integrated xSeries Server
  - xSeries attached via Integrated xSeries Adapter
  
- **Preview: Linux support\***
  - Deliver support for Intel-based Linux applications
  - Provide a path to Linux on POWER



\*Planned availability 3Q, 2004 This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

# Integrated xSeries Server

- **Low-voltage, 2.0 Ghz Xeon Processor**
  - With Hyperthreading technology
  - Up to 4 GB Memory
- **Integrated 10/100 Mbps Ethernet Adapter**
- **Leverages iSeries resources**
  - Virtual disk storage - up to 31 TB on i5/OS
  - Virtual 1 Gbps Ethernet connections
  - Shared Tape, DVD and CD-ROM
- **Supported on iSeries Models\*\***
  - OS/400 V5R2 or i5/OS V5R3
- **Hot spare supported with 1.6 Ghz Integrated xSeries Server**
- **Windows Server 2003® support**
  - Standard, Enterprise & Web Editions
- **Windows 2000 Server® support**
  - Windows 2000 Server
  - Windows 2000 Advanced Server



*Integrated operations and server management*

\*\* iSeries 270, 8xx; Not supported on iSeries Model 250

# New POWER5 Flexibility – “Hot Add” xSeries / IXA

- xSeries with Integrated xSeries Adapters may be added concurrently to an eServer i5 HSL loop without an IPL
- Planned Availability 3Q 2004\*



\*Planned availability 3Q 2004. This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

## Preview: Integrated xSeries Server for eServer i5

- IBM intends to provide a new Integrated xSeries Server, based on Intel Pentium M processor technology, for installation in the system unit of eServer i5
  - Planned Availability : 2<sup>nd</sup> Half 2004\*
- The current Integrated xSeries Server based upon 2.0 GHz Intel Xeon processors is supported within selected iSeries I/O towers attached to the IBM eServer i5

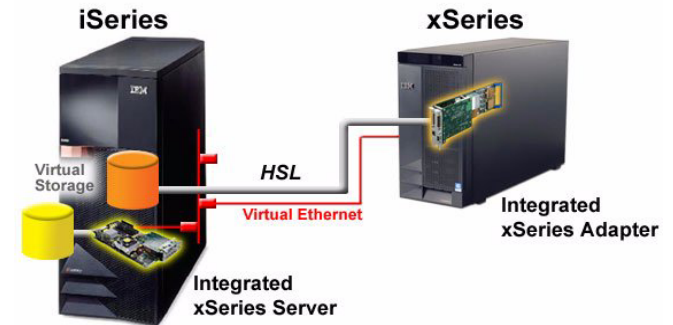
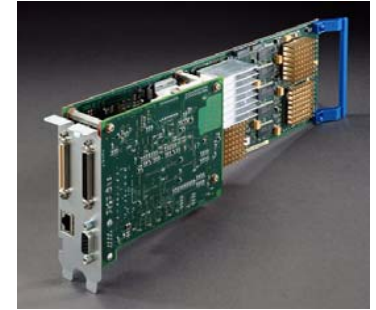


*Integrated operations and server management*

# Integrated xSeries Adapter

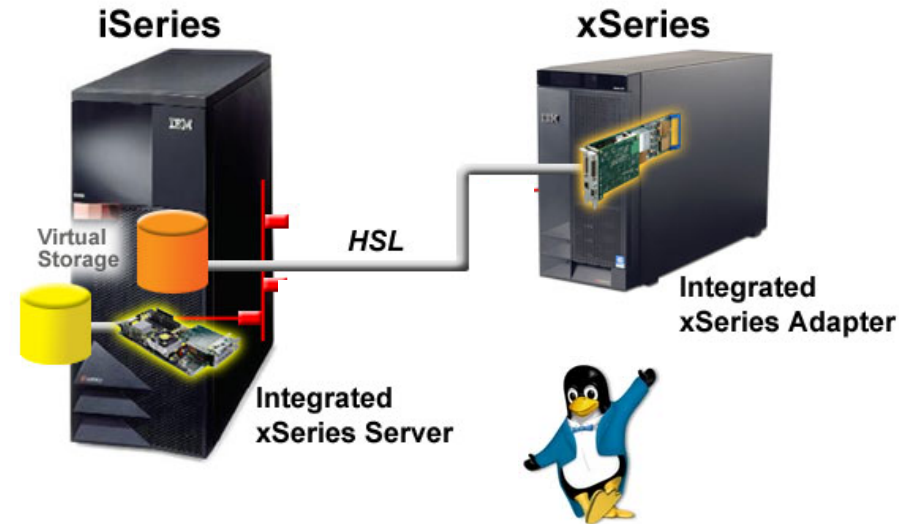
Enterprise X-Architecture™

- **Attaches the latest 2, 4, 8-way xSeries Servers\***
  - 1 Gbps High-Speed Link
  - x235 (1-2w), x255 (1-4w), x365 (1-4w), x445 (2-8w)
  - [ibm.com/eserver/iseries/windowsintegration/xseriesmodels](http://ibm.com/eserver/iseries/windowsintegration/xseriesmodels)
- **Retains features and value of Integrated xSeries Server**
  - Virtual disk storage
  - Virtual 1 Gbps Ethernet connections
  - Shared Tape, DVD & CD-ROM
- **Supported on iSeries Models\*\***
  - OS/400 V5R1 later
- **Windows Server Support**
  - Windows 2000 Server and Windows 2000 Advanced Server
  - Windows Server 2003 Standard, Enterprise & Web Editions



# Preview: Linux on Integrated xSeries Solutions

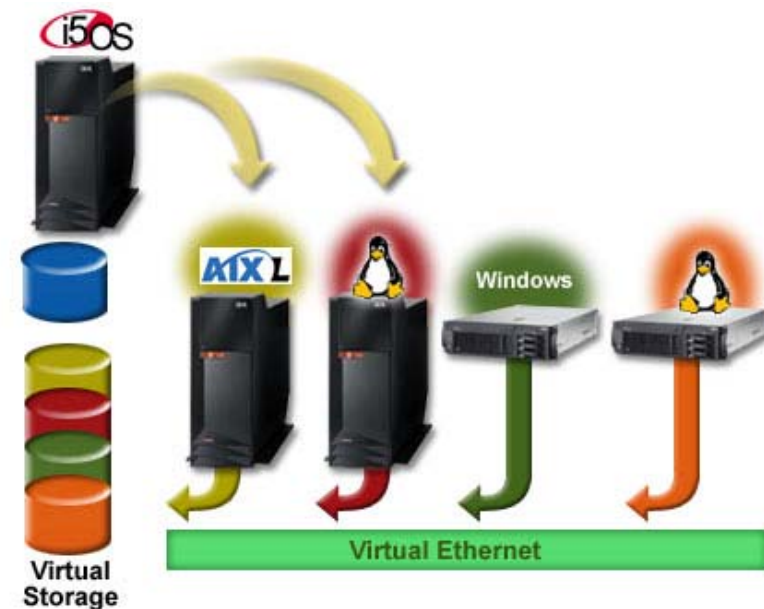
- **IBM intends to provide support for Linux on selected Integrated xSeries Servers and xSeries attached via Integrated xSeries Adapters**
  - Planned Availability : 3Q 2004\*
- **Optimize your Investments**
  - Exploit i5/OS Virtual Storage
  - Integrate i5/OS and Windows backup
  - Leverage Resources, Skills and Best Practices
- **Deliver support for Intel-based Linux applications**
- **Provide a path to Linux on POWER**





# Integrated xSeries Solution Benefits

- **Simplify Your Infrastructure**
  - Virtual Storage
  - Virtual Ethernet
- **Integrate to Innovate**
  - Server Management
  - Backup
  - User Administration
- **Deliver Without Disruption**
  - Consistent set of drivers
  - Flexibility for Test & Development
  - Affordable Availability



# Reliability

## Problem

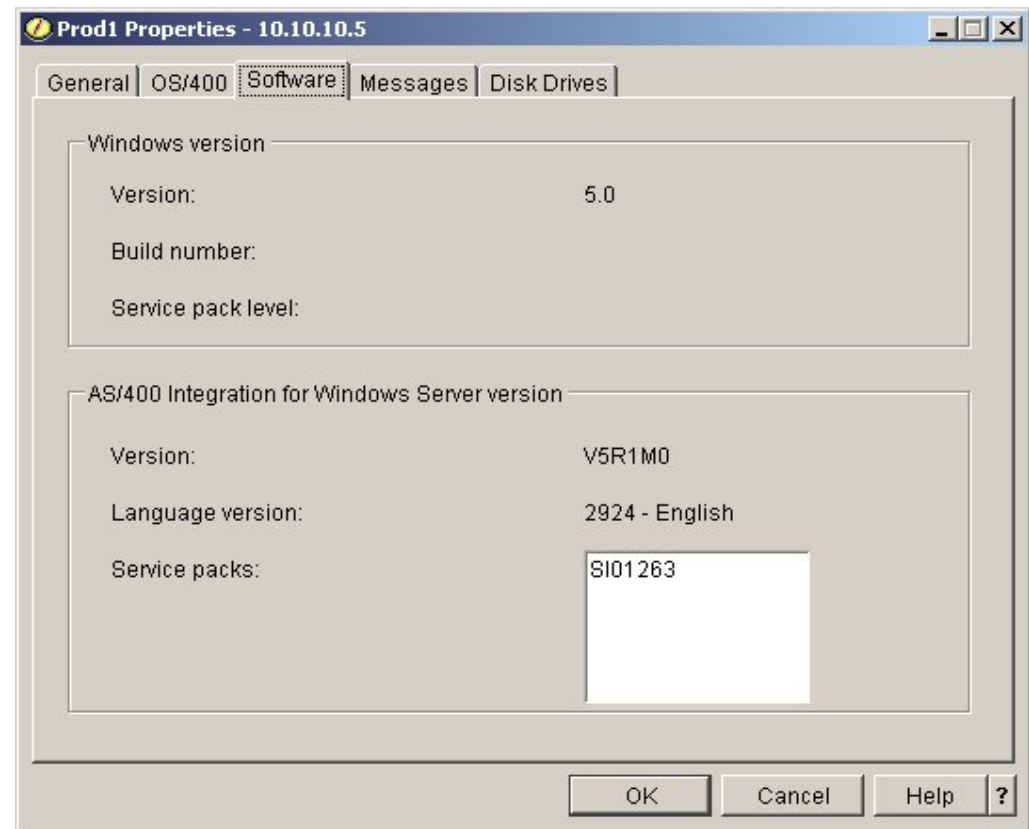
- ▶ Different hardware and device drivers can cause server instability

## iSeries Solution

- ▶ IBM provides a consistent set of disk, tape, CD, and LAN hardware and device drivers that are tested to work together

## Benefit

- ▶ Greater consistency can lead to better reliability



# Server Management

## Problem

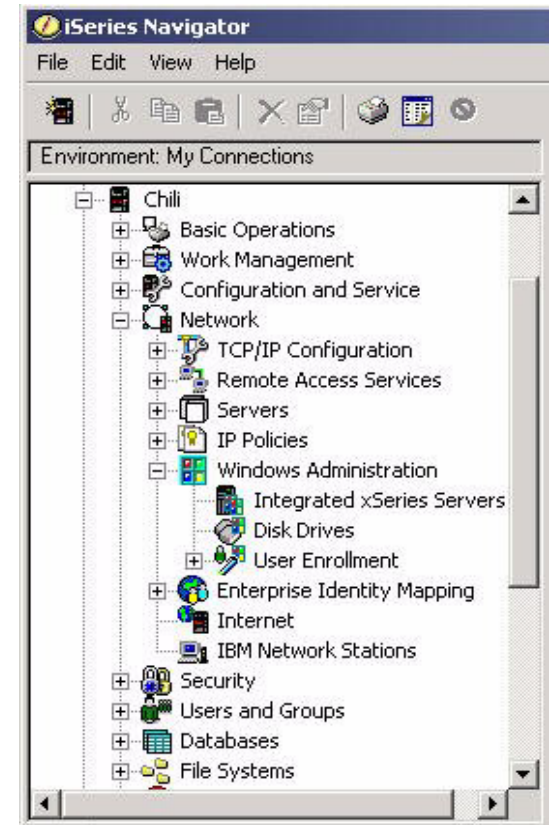
- Duplicate processes, monitoring and resources to manage multiple server platforms

## iSeries Solution

- iSeries Navigator provides centralized administration and management of multiple environments from a single interface
- Enabled for Wireless, PDA & Web Browser

## Benefit

- Enables customers to reduce cost and complexity by leveraging iSeries operations and resources to monitor and manage integrated xSeries servers



[www.ibm.com/eserver/iseries/navigator](http://www.ibm.com/eserver/iseries/navigator)

# User Administration

## Problem

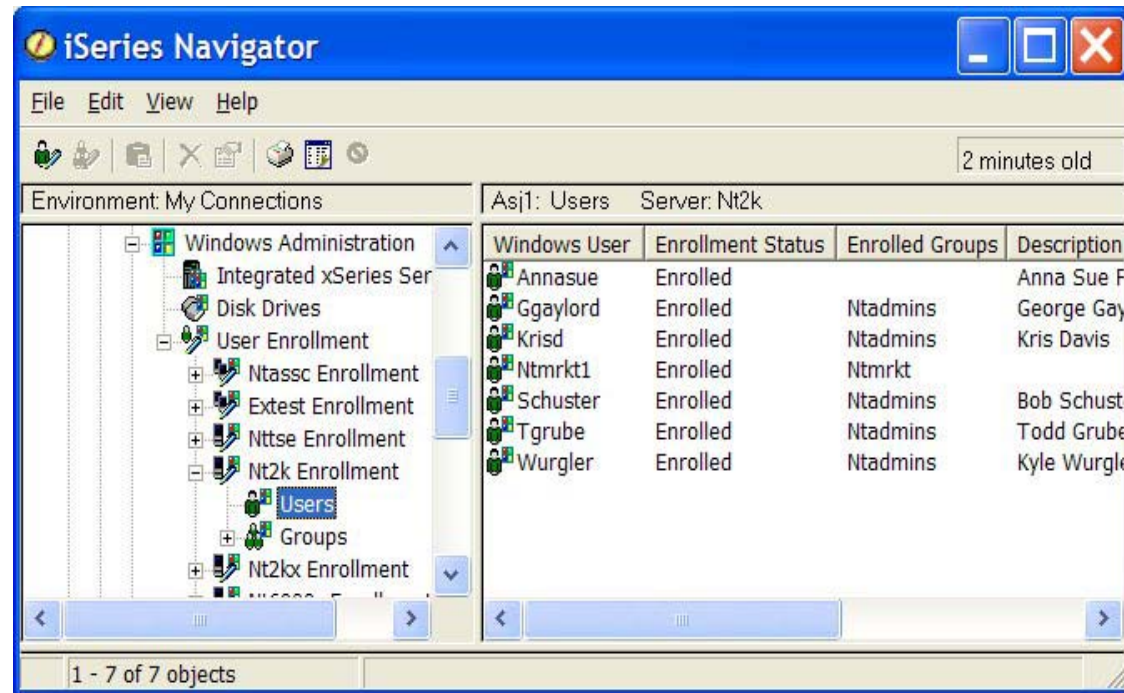
- Multiple system user management

## iSeries Solution

- Adding OS/400 Users and Groups to Windows Server Domains and Synchronizing Passwords

## Benefit

- Can reduce costs with integrated user management



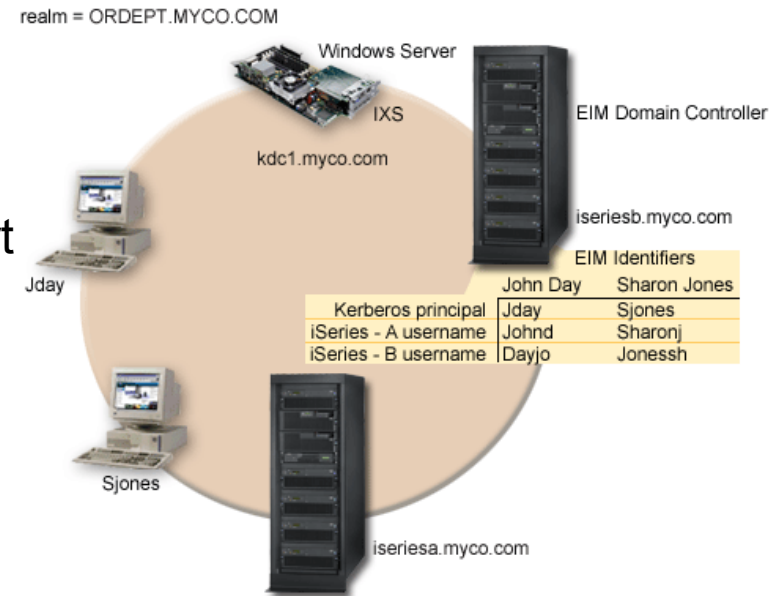
# Enhanced EIM User Integration with Windows Server

OS/400 & Integrated xSeries Solutions support:

1. Automated enrollment of OS/400 users to Windows
2. User Password updates to Windows from OS4/00

i5/OS V5R3, Integrated xSeries Solutions & Enterprise Identity Mapping (EIM) now support

1. Single sign-on
2. Automated EIM user configuration
3. Windows user profiles can be different from i5/OS user profiles
4. A single password for both i5/OS & Windows, managed from Windows



# Virtual Ethernet

## Problem

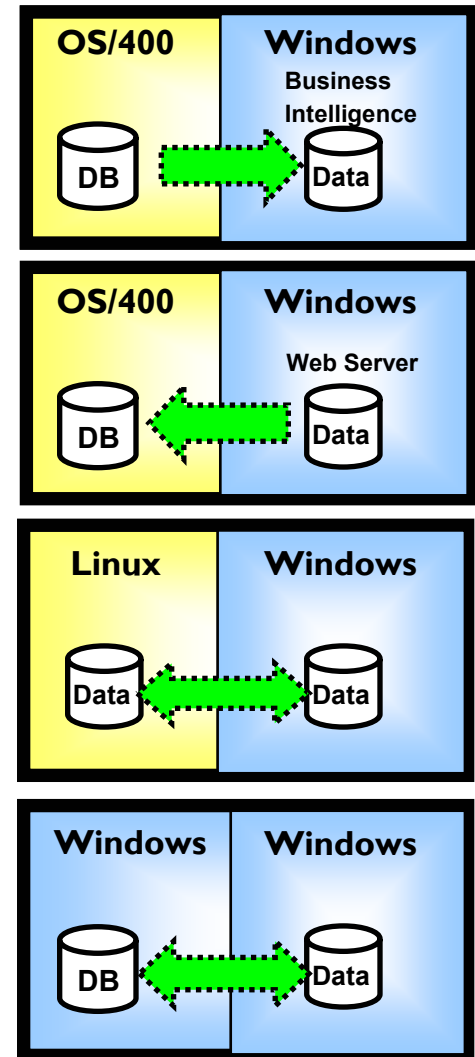
- ▶ Upgrading network infrastructure to support high-speed private networks for server-to-server communication is expensive in terms of time, resources and equipment

## iSeries Solution

- ▶ Virtual Ethernet at OS/400 V5R2 or later provides 1 Gb Connections with no LAN Adapters/Switches
- ▶ Windows to Windows to OS/400 to Linux
- ▶ Up to 5 connections per IXS / IXA

## Benefit

- ▶ Extremely secure and reliable server communication over high-performance connections
- ▶ Can reduce network traffic and exposure to "sniffing"



# Virtual Storage

## Problem

- Storage management across the server farm

## iSeries Solution

- Flexible Virtual Disks from 1 MB to 1 TB
- Up to 32 Storage Spaces per Windows server
- Hot add of iSeries Storage Space to an xSeries Server

## Benefit

- Can reduce costs with flexible, centralized storage management

**New Disk - Asj1**

Disk drive name: Proddata1

Description: Data Drive for Prod1 Server

Initialize disk with data from another disk

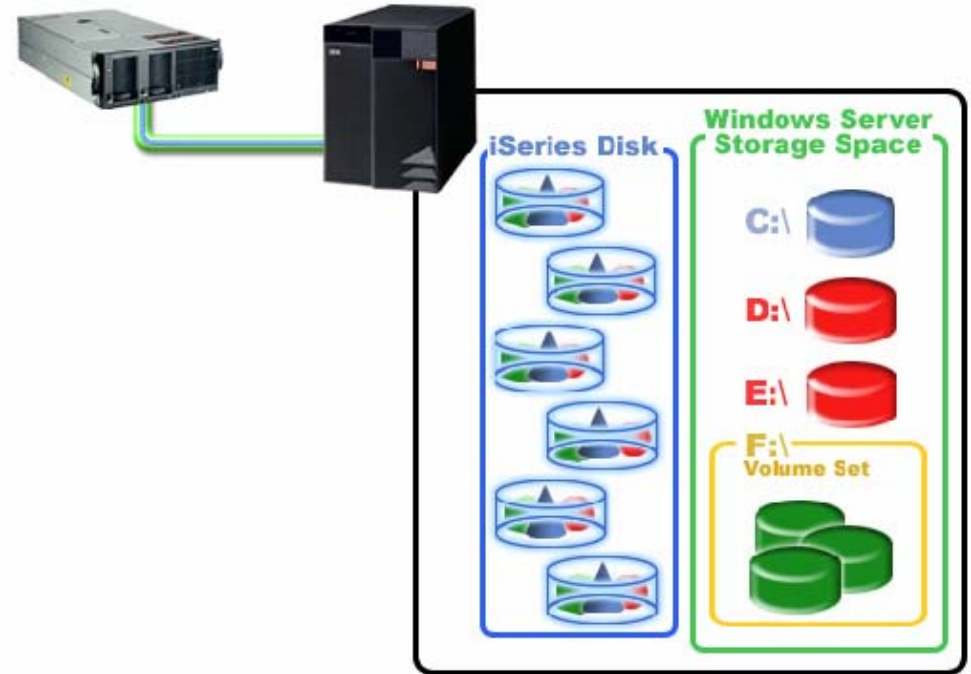
Source disk: [Dropdown]

Capacity: 500 MB

Disk pool: Disk pool 1

OK Cancel Help ?

# i5/OS Storage Management for Integrated xSeries



- Files in each virtual storage space are spread across all physical disks
- Physical disk utilization and capacity are dynamically managed by i5/OS



# Integrated Backup

## Problem

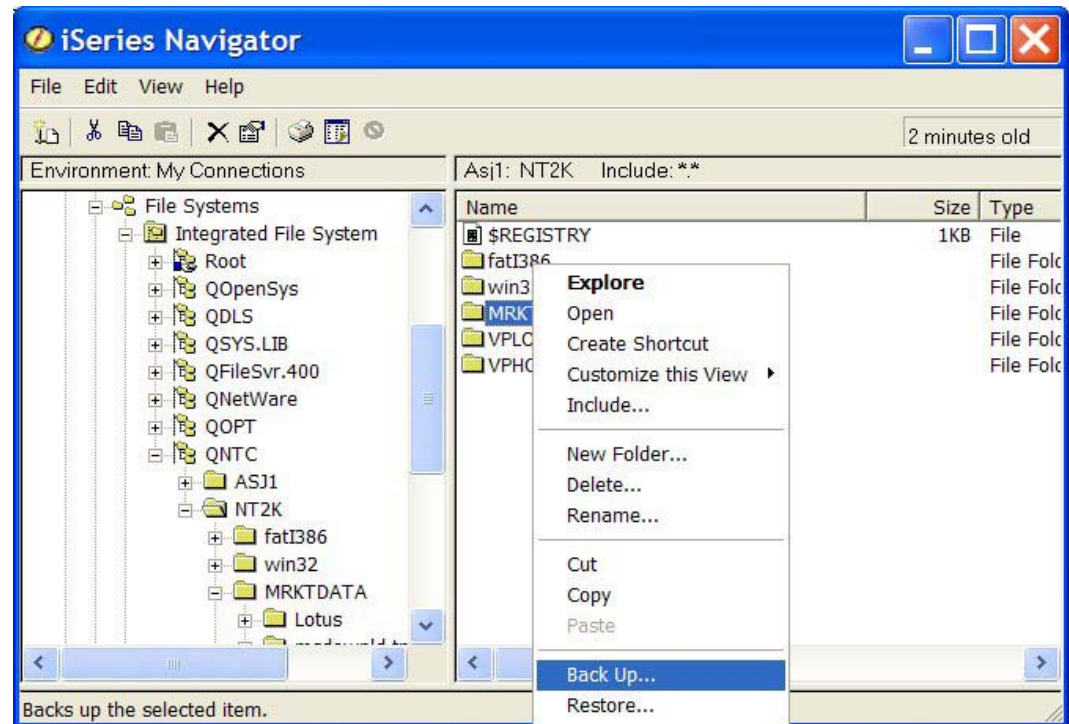
- Managing and automating heterogeneous backups

## iSeries Solution

- Save OS/400 and Windows storage spaces to iSeries tape drives

## Benefit

- Can reduce costs by leveraging iSeries resources and skills
- Can reduce the time and complexity of an infrastructure restore



# Asian Art Museum, San Francisco

- Largest Asian Art Collection in US
  - ▶ New 40,000 square-foot facility in San Francisco Civic Center
  - ▶ Asia Cafe & Museum Store
- Wide variety of Asian Art
  - ▶ Over 15,000 treasures spanning 6,000 years of history
- Deployed iSeries Integrated xSeries Solutions to reduce storage costs, downtime and improve backup & recovery time



*"It [iSeries with IXS] has great stability. And now backups take only two hours for 150 GB instead of 12 hours for 72 GB with the old system. And finally, we didn't have to add staff. The whole thing is run by me and one other person."*

-- Jim Horio, IT Director, Asian Art Museum\*\*\*

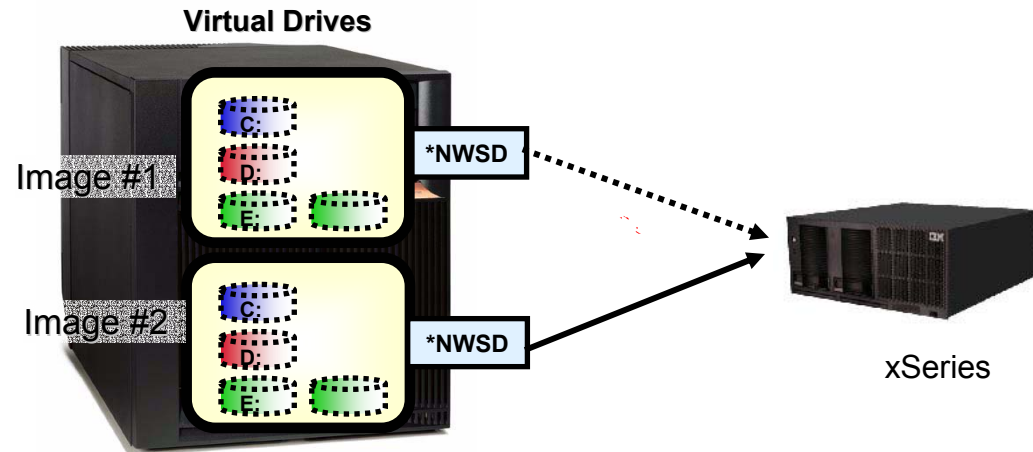
# Test & Development

## Problems

- Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production
- Too many test & development servers

## iSeries Solution

- iSeries virtual storage enables storage spaces to be easily duplicated, providing the capability to test of an exact copy of the production image and hardware



## Benefits

- Can reduce the outages caused by change
- Can reduce the time it takes to build a test server
- Can reduce the amount of server hardware that must be acquired & maintained

# Availability

## Problem

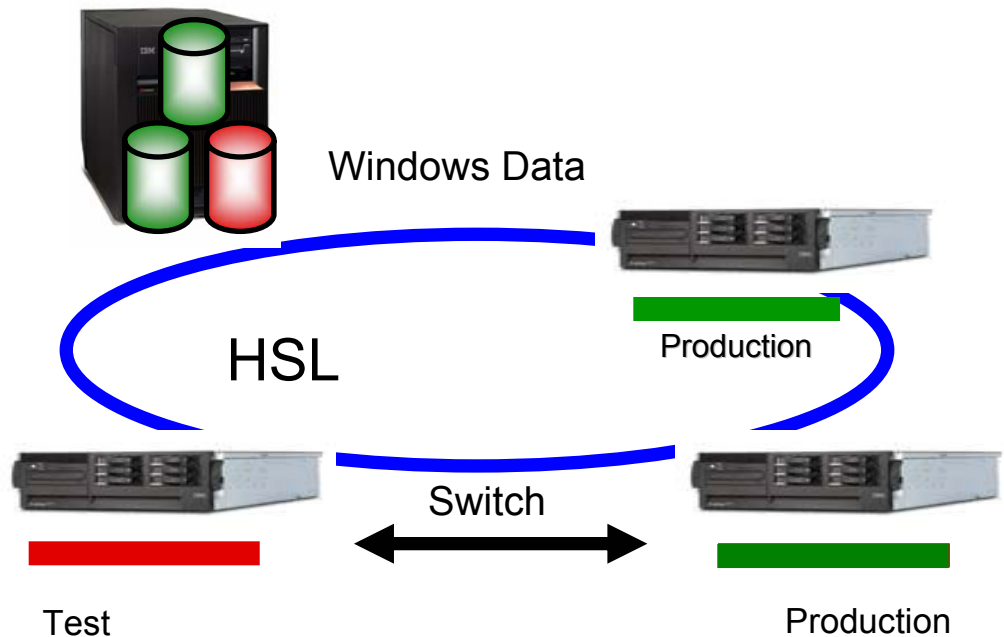
- Providing an effective and efficient availability solution

## iSeries Solution

- Hot Spare allows one xSeries server to provide a backup to several production servers

## Benefit

- Efficient availability solution for planned or unplanned server outages



# Microsoft Cluster Service (V5R2 or later)

## Switch Disk Cluster

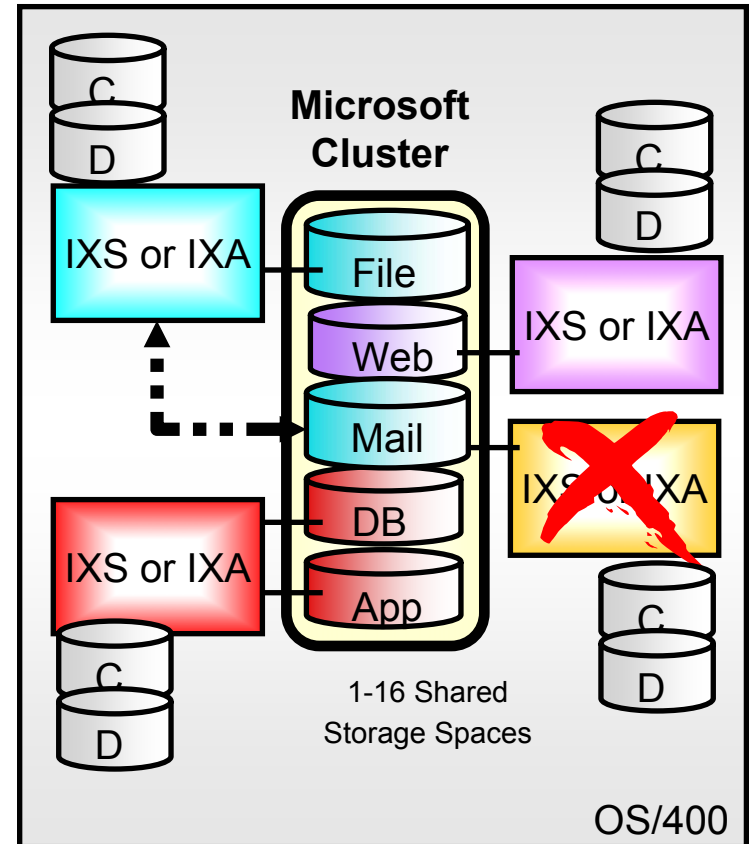
- Dynamically Switch Storage Spaces Between Windows Servers
- 16 New 1 MB to 1 TB Shared Storage Spaces

## Availability Improvements

- Planned or unplanned outages

## Requirements

- iSeries 270, 8xx or eServer i5
- OS/400 V5R2 or later
- Windows 2000 Advanced Server or Windows Server 2003 Enterprise Edition



# Recovery

## Problem

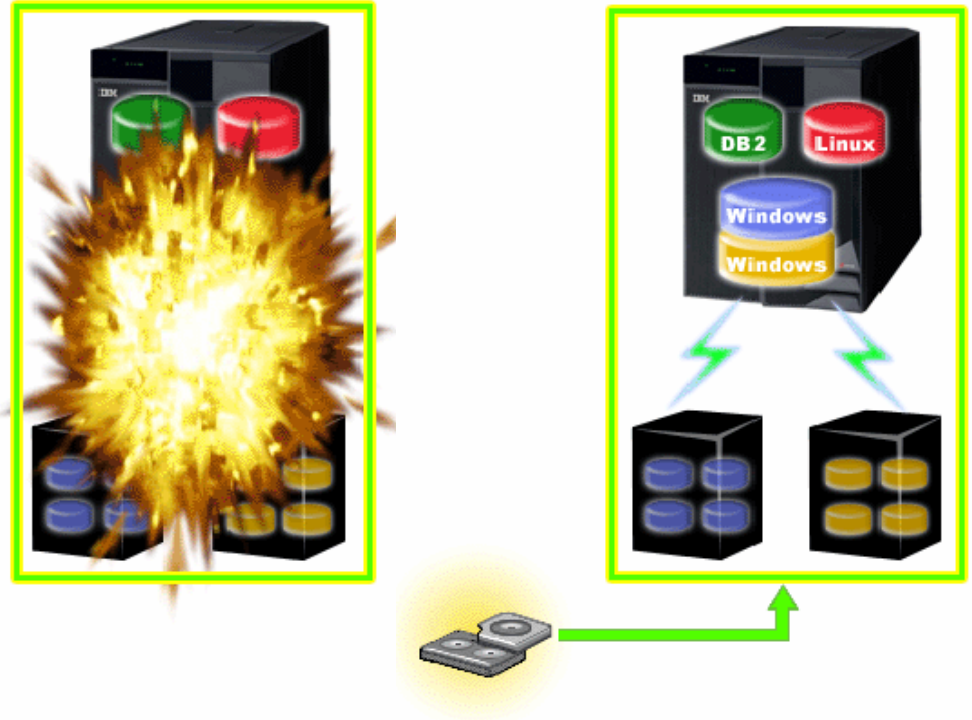
- ▶ Recovery is complex, prone to error and time consuming in a multi-tier application environment

## iSeries Solution

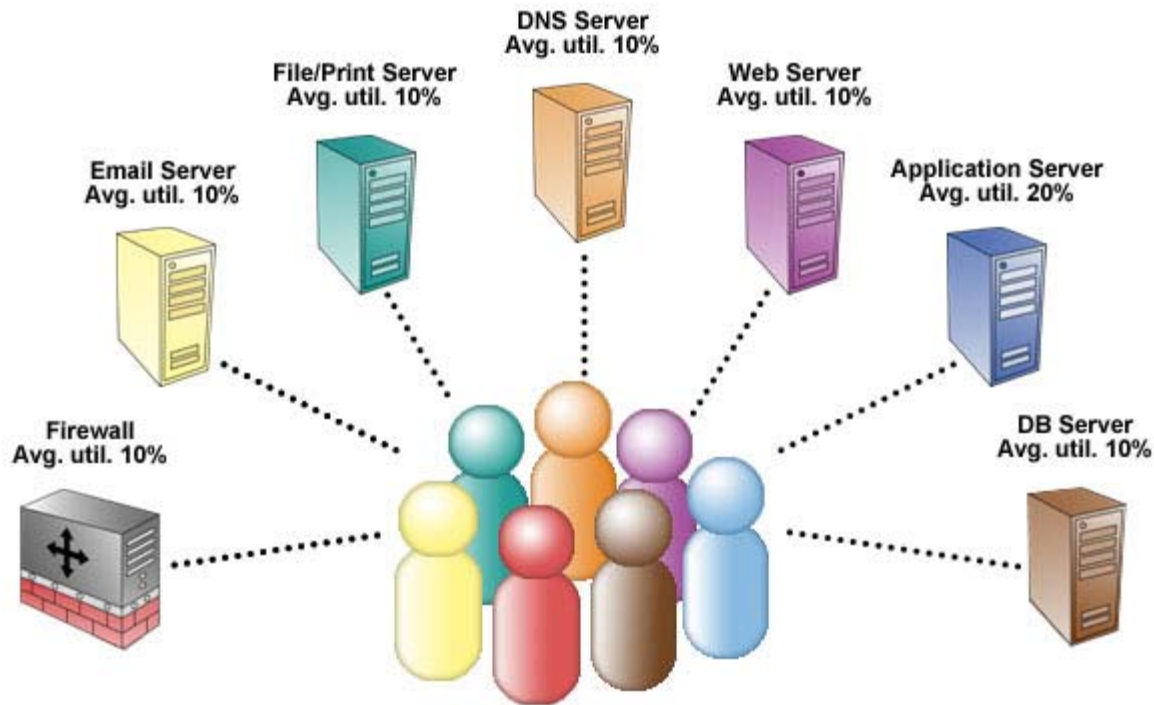
- ▶ iSeries' architecture and integration enables customers to build a complete infrastructure that is easily backed up and rapidly restored

## Benefit

- ▶ Can reduce the time and complexity of an infrastructure restore
- ▶ Can reduce the impact a disaster or other unplanned outages

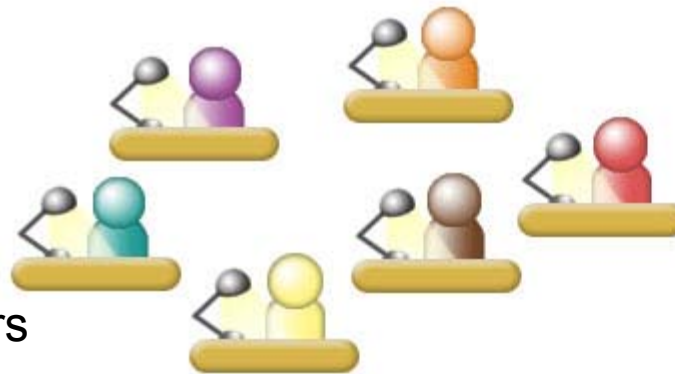


# Simplify Your Infrastructure



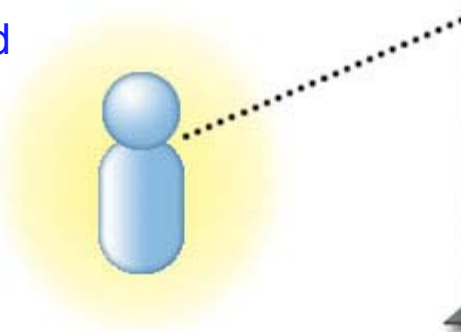
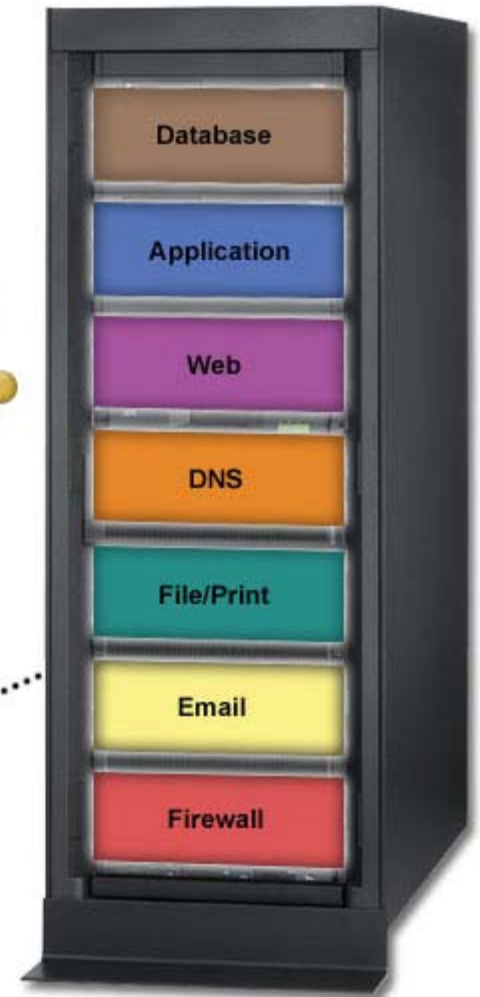
# Simplify Your Infrastructure

- Reduce costs by increasing asset utilization
- Redeploy talent to manage your business, not your infrastructure
- Rapidly provision new servers



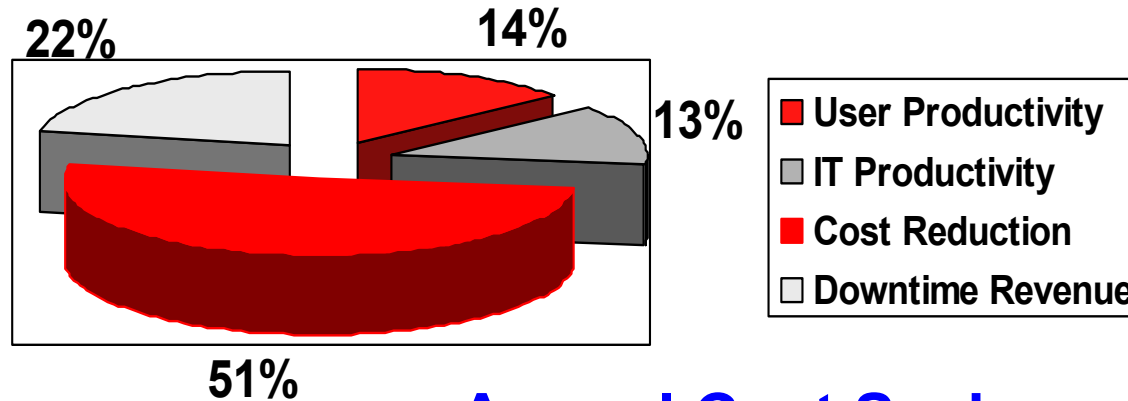
“We have taken major steps to simplify our infrastructure by leveraging virtualization technologies with POWER Linux and Integrated xSeries Solutions on the iSeries. Prior to our server consolidation we spent 95% of our time just keeping our systems and network running. Now we spend 5%.”

Nigel Fortlage, VP of Information Technology,  
GHY International





# Consolidation of Windows & Linux Servers on iSeries Pays Back in Under 1 Year



## Annual Cost Savings

- iSeries customer case studies of Windows & Linux server consolidation
  - Average ROI of 213% with payback in less than 1 year
  - Average monthly downtime was reduced by 90%

[http://www.ibm.com/servers/eserver/series/const/idc\\_roi](http://www.ibm.com/servers/eserver/series/const/idc_roi)

# Integrated xSeries Solutions Redbook



- SG24-2969
- Available at [www.redbooks.ibm.com](http://www.redbooks.ibm.com)
- Includes:
  - Chapter 1. Overview
  - Chapter 2. Planning
  - Chapter 3. Installation
  - Chapter 4. Operating Integrated xSeries Servers
  - Chapter 5. Disk Management
  - Chapter 6. User enrollment
  - Chapter 7. Backup and recovery
  - Chapter 8. Software maintenance
  - Chapter 9. HSL design considerations
  - Chapter 10. Terminal Services and Citrix MetaFrame
  - Chapter 11. xSeries clusters
  - Chapter 12. IXS and IXA migration
  - Chapter 13. iSeries NetServer
  - Appendix A. Save and restore performance tests
  - Appendix B. Active Directory
  - Appendix C. Cluster scripts.

## Microsoft Windows Server 2003 Integration with iSeries

Understand the new support for Windows Server 2003

Review planning and implementation requirements for Windows Server 2003

Learn how to setup Windows Server 2003 clusters



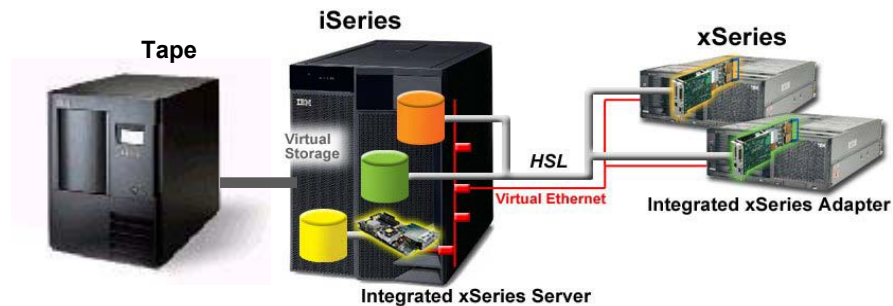
Nick Harris  
Phil Almsworth  
Anders Ahl  
Andy Elsey  
Mike Whitwood

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# iSeries Integrated xSeries Solutions Summary

- Leverage investment in iSeries resources and operations
- Deploy Linux infrastructure and applications
- Consolidate server management, backup and user administration
- Increase reliability and resiliency of critical Windows & Linux applications
- Communicate more securely over 1 Gbps Virtual Ethernet connections
- Reduce the complexity of recovering complete application infrastructure



[www.ibm.com/eserver/iseries/windowsintegration](http://www.ibm.com/eserver/iseries/windowsintegration)

i50s

*Thanks !*






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