Bring IBM i Reliability to Windows Network by Integrating BladeCenter® and System x™

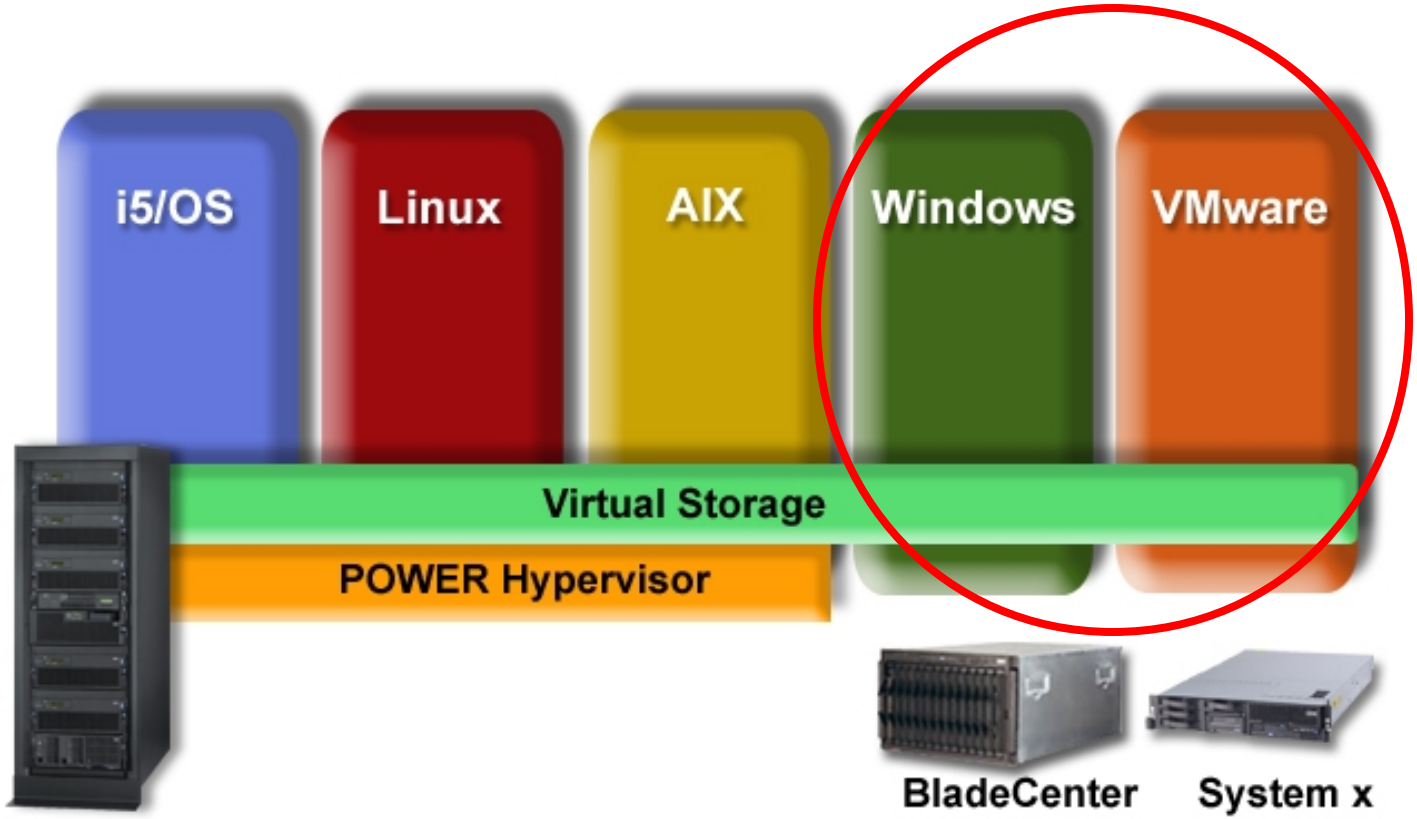
Simplify with IBM i

IBM i enables your business applications to run faster, more reliably and be managed more easily than running them on a collection of individual servers

- Reduces complexity and cost through its integrated design, ease of use and legendary reliability
- Delivers the freedom to run the best mix of applications for your business in a single system infrastructure
- Designed to pool resources and optimize their use across a variety of operating systems
- Enables clients to centralize storage and server management to be more effective and responsive

THE NEW POWER EQUATION

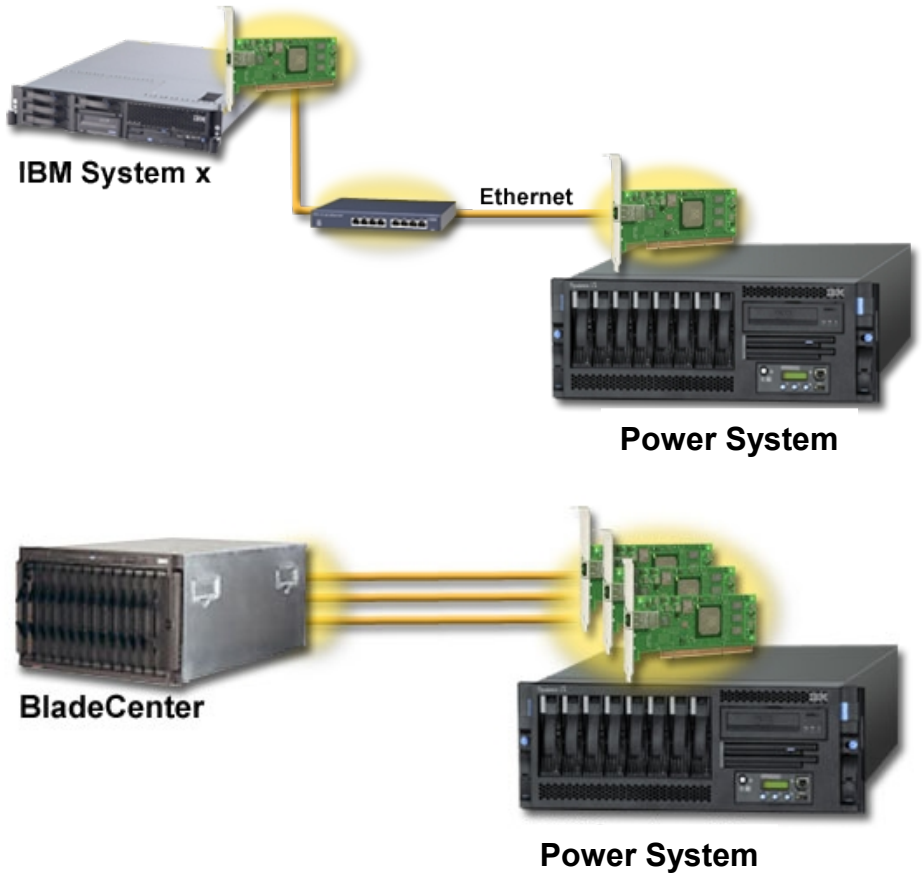
IBM i Innovative Technology



The New Power Equation

IBM i Integration with BladeCenter and System x

iSCSI connection between IBM i and BladeCenter System x using iSCSI HBAs (Host Bus Adapters), standard ethernet cables and switches.

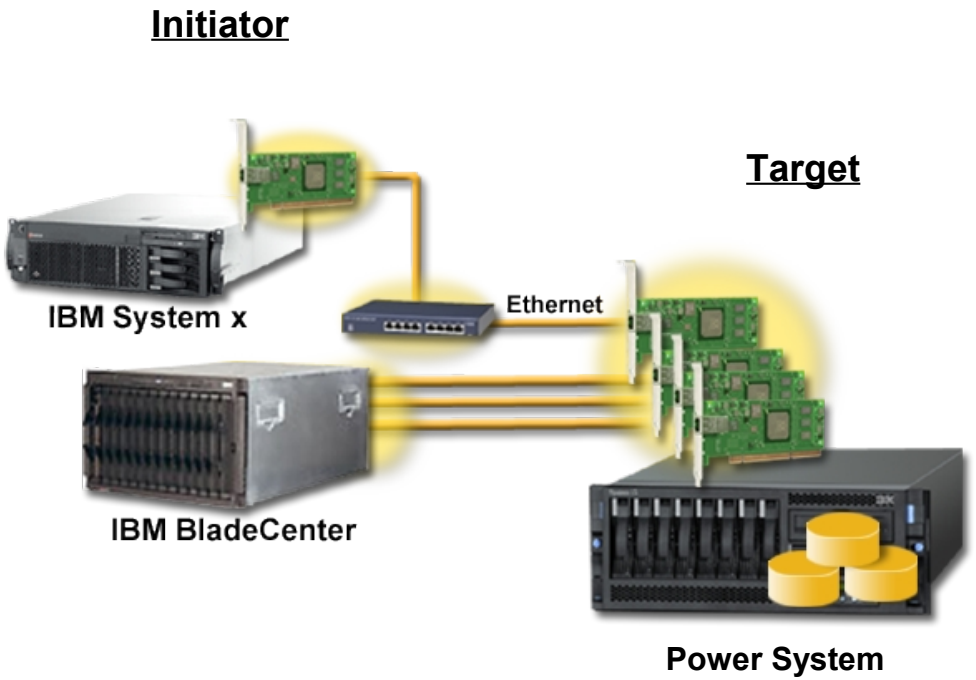


What is iSCSI?

iSCSI - internet SCSI (Small Computer System Interface), SCSI commands sent across a network in TCP/IP packets. It was developed as a storage networking standard for linking data storage facilities

Initiator - system making the iSCSI requests for data

Target - system receiving the iSCSI requests for data

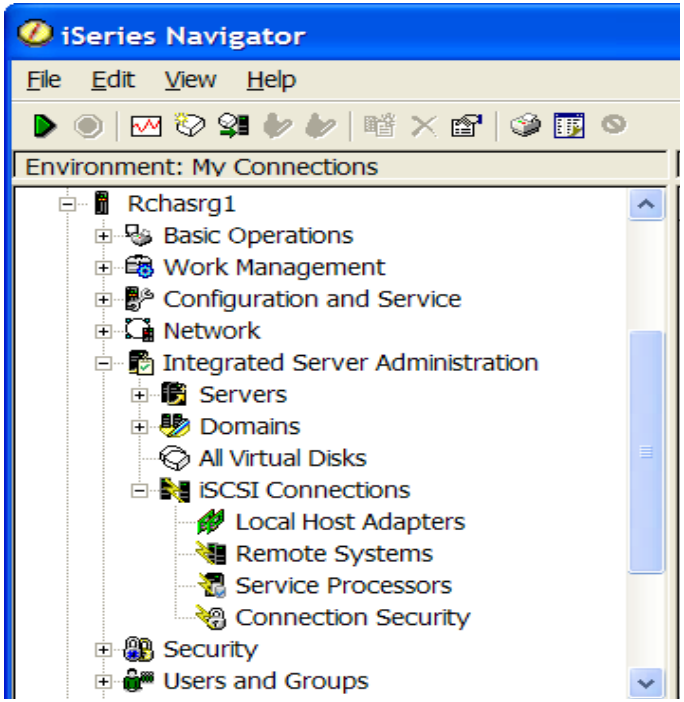


IBM i Integration Benefits

- Server Management
- Storage Management
- Server Availability
- Test
- Backup/Restore
- Disaster Recovery
- Application Communication

Server Management

- Challenge
  - Duplicate processes, monitoring and resources to manage multiple server platforms
- Solution
  - IBM i provides centralized administration and management
- Benefit
  - Reduce cost and complexity by leveraging IBM i operations and resources to monitor and manage integrated servers



Storage Management

- Challenge
  - Managing storage on each server
- Solution
  - Windows servers use IBM i storage
- Benefits
  - Reduce costs by extending IBM i storage resources and management software
  - Improve productivity by using IBM i capabilities and skills

Bank Negara Indonesia

The Challenge

Support rapid business growth by boosting capacity and performance of key systems; improve response times for data queries, to drive faster decision making; enhance disaster recovery options to reflect growing value of data

The Solution

Worked with IBM Premier Business Partner Triangle to implement an IBM System i5 520 platform; consolidated six stand-alone servers to an iSCSI-linked IBM BladeCenter, enabling Microsoft Windows systems to exploit the storage and backup facilities of the i520 platform

The Benefits

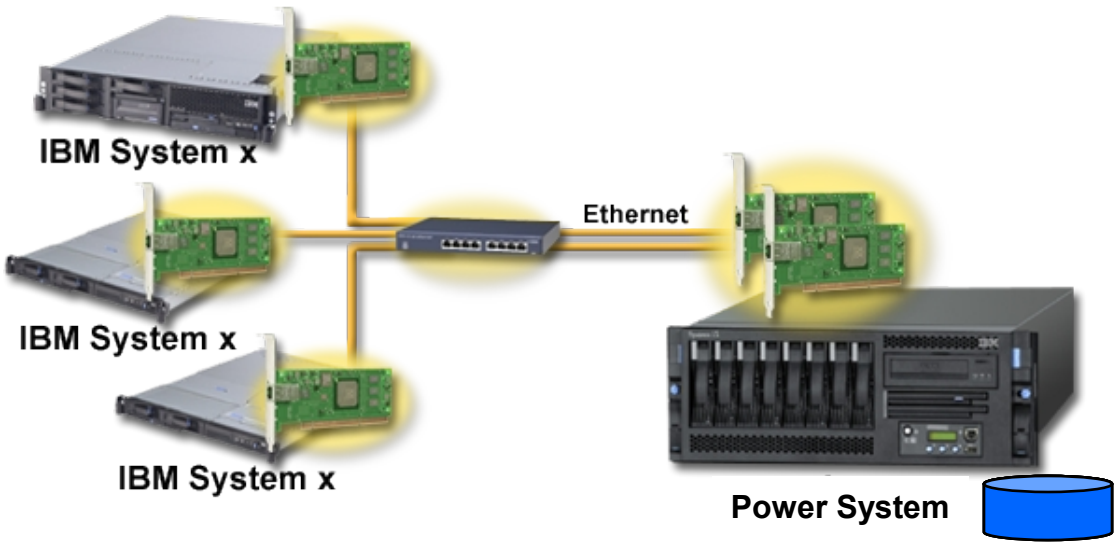
Ability to back up entire environment to a single tape in 20 minutes, enabling tapes to be moved offsite by daily close-of-business and facilitating restore operations; increased performance cuts query times from 30 seconds to less than 0.5 seconds; infrastructure able to scale easily as demands rise in future

"With iSCSI, our Intel servers now effectively use the i520 as a SAN, which increases stability and uptime while reducing the complexity of backups"

Sébastien Biju - *Senior IT Technician at BNI*

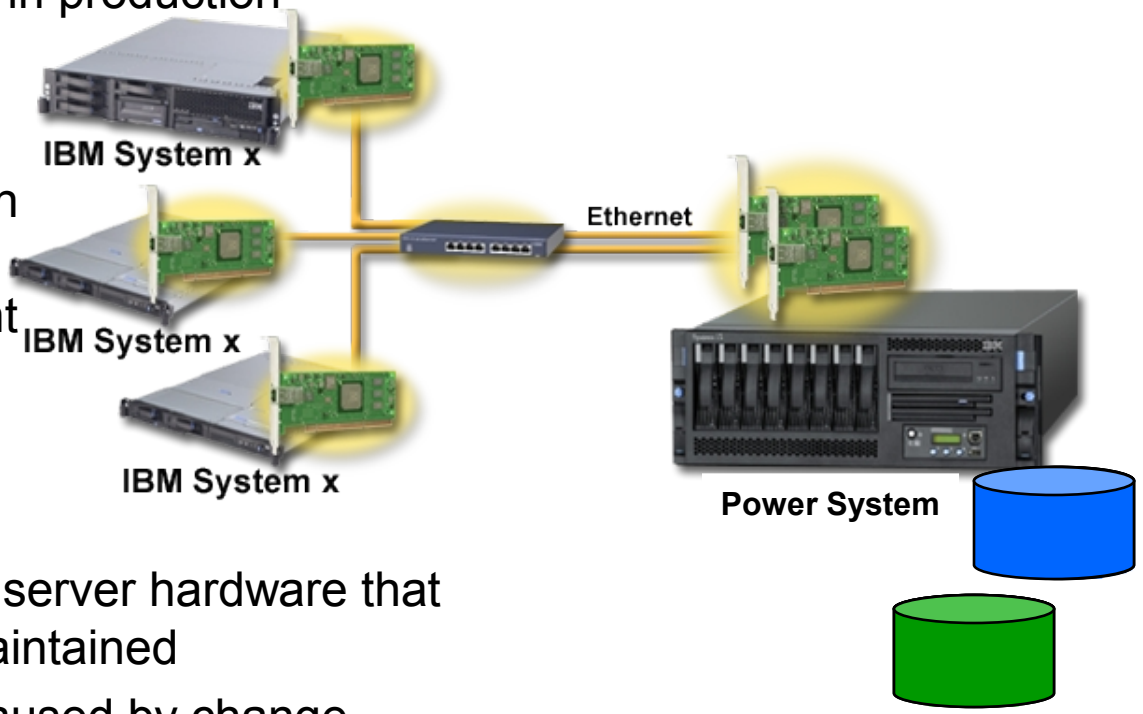
Server Availability

- One blade or System x server can provide a “Hot Spare” for other like servers
  - Because all disks are virtual, if you have a planned or unplanned outage you can move the work load to another server to run
  - Server can be back up in the time it takes Windows to reboot
  - Notes:
    - restricted by hardware abstraction layer.
    - number of processors and amount of memory doesn’t matter
    - manual effort



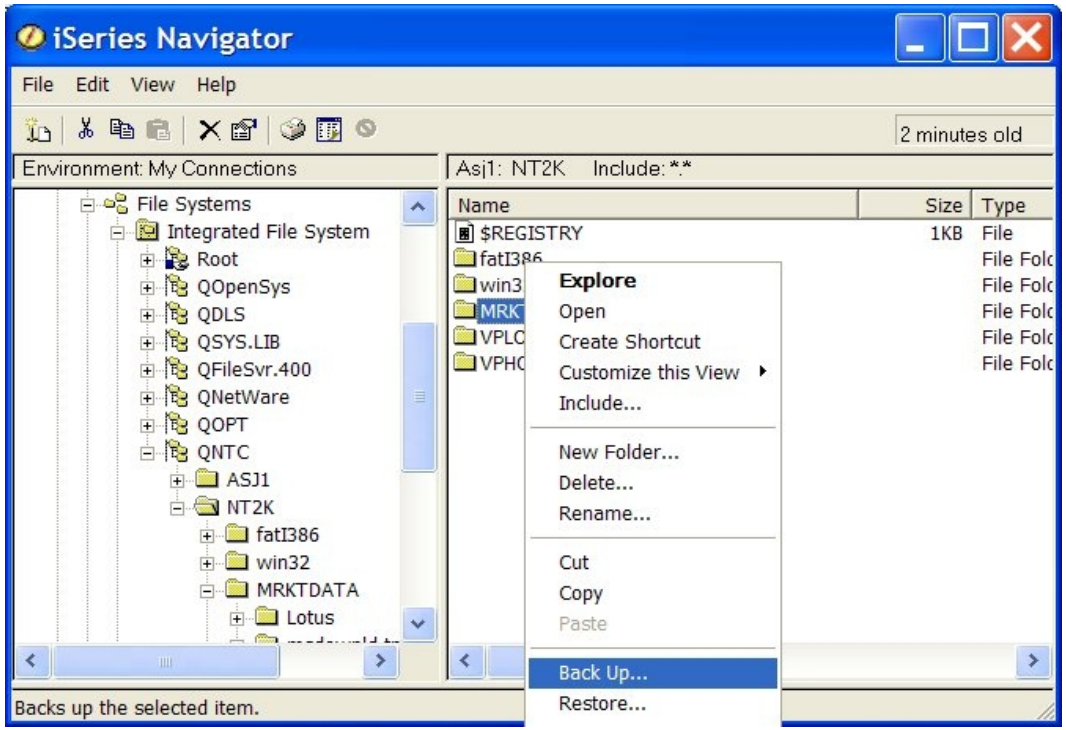
Testing

- Challenge
  - Testing Microsoft Service packs, Application Fixes, device drivers before they are placed in production
- Solution
  - Testing can be done on an exact copy of the production environment
- Benefits
  - Reduce the amount of server hardware that must be acquired & maintained
  - Reduce the outages caused by change



Backup/Restore

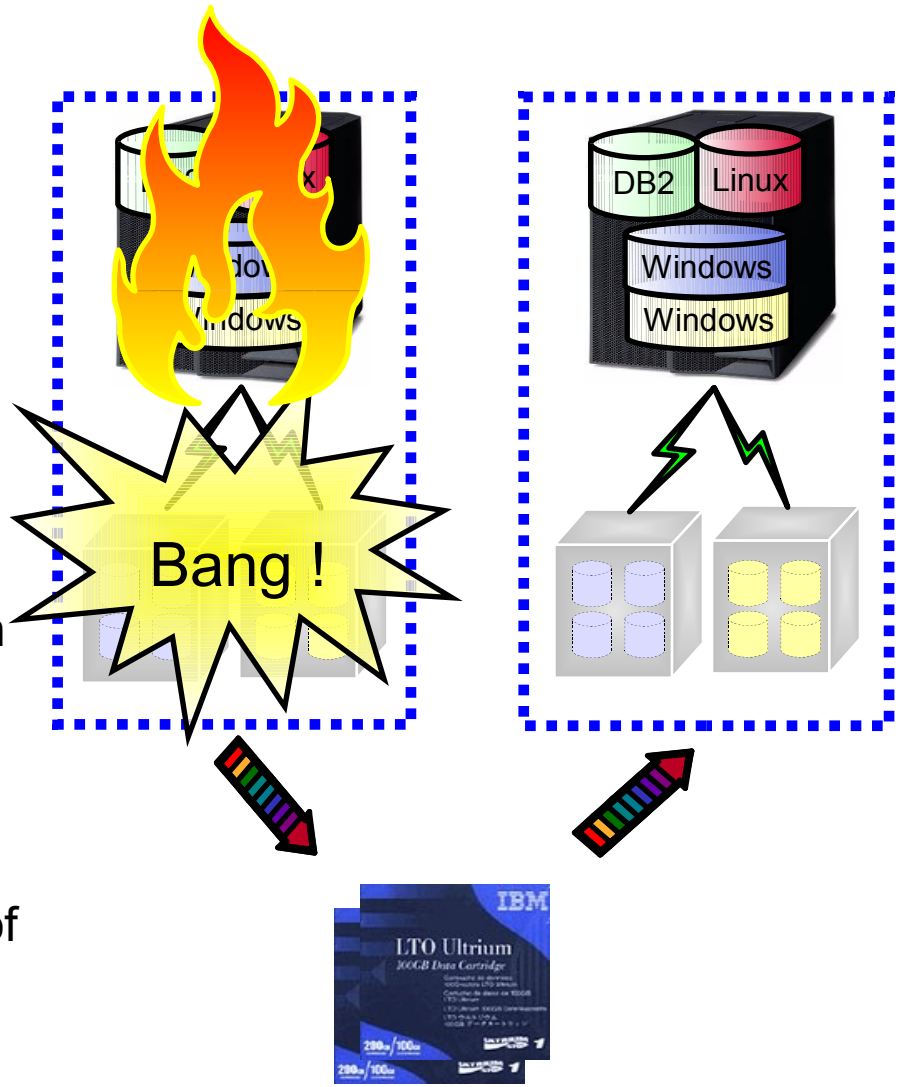
- IBM i Solution
  - Save IBM i and Windows storage spaces to IBM i tape drive
  - Restorability at various levels
    - Snapshot any virtual drive while server running*
    - Complete server
    - Any virtual drive
    - Individual Files



* Requires V6R1

Disaster Recovery

- Challenge
  - Recover from a site outage
- Solution
  - Backup and restore complete Windows environments along with IBM i
- Benefits
  - Reduce the time and complexity of a datacenter restore
  - Reduce the impact a disaster or other outage



Application Integration

- Challenge
  - Provide fast, secure, and reliable communication between applications
- Solution
  - Virtual Ethernet networking connects operating environments
- Benefits
  - Enables high-performance, secure, reliable communication between applications
  - Built-in solution with no additional LAN hardware requirements

intergreen

The Challenge

With the business growing at 15% per year, intergreen was faced running a diverse set of applications. Their availability requirement was increasing and their system maintenance becoming complex and time consuming. Every change was disruptive for their end users

The Solution

Worked with Imtech ICT Brocom to consolidate to nine IBM System x servers integrated to two IBM System i 520s using Mimix replication software for IBM i and Windows and VMware GSX virtualization for small non critical windows applications.

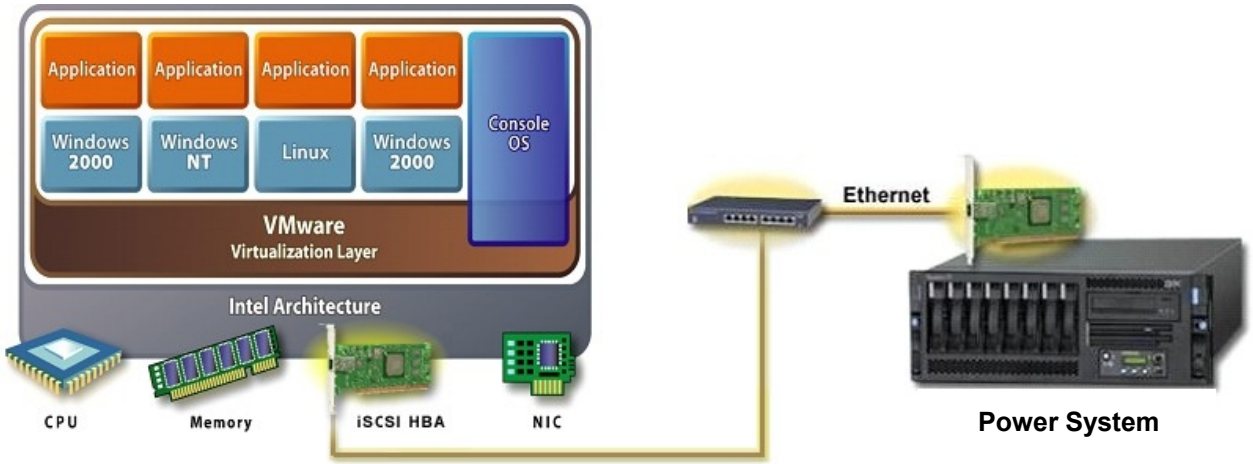
The Benefits

Provides a system that is easy to maintain in an uniform way and yet will scale to meet the aggressive growth that is happening at intergreen. The solution delivers the freedom to run the best mix of applications for their business in a single system while meeting the ever increasing availability requirements.

"The stable integrated environment with System i provided for an implementation that went smoothly for all end users and gives intergreen the flexibility to grow independent from the necessary operating system. Our it-staff has more time for supporting our business. – Jan Paul Rijke, commercial director, intergreen

VMware on IBM i Integration with BladeCenter

- VMware ESX is a leading virtualization solution for x86 servers
  - Virtualization supports multiple Windows, Linux, and Netware environments on a single server
  - Enables the reduction of the number of physical servers
- IBM i integration with BladeCenter and System x via iSCSI supports VMware ESX
  - IBM i provides virtual storage support for VMware ESX servers
  - Extends the value of advanced IBM i storage management



http://www-03.ibm.com/systems/i/bladecenter/

ROI of Infrastructure Simplification

- IDC studied 12 companies in the that deployed iSeries systems to run IBM i, AIX 5L, Linux & Windows

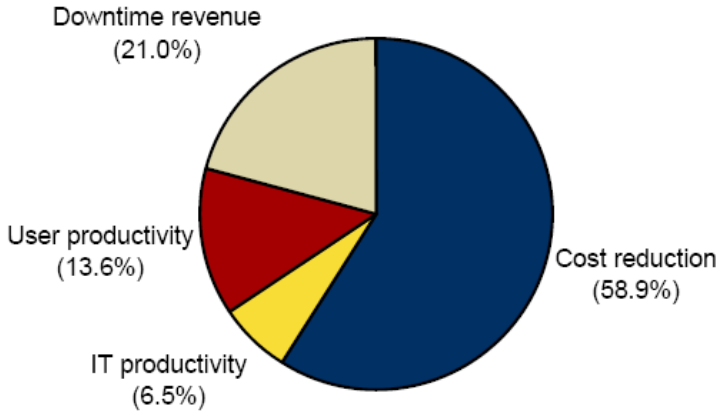
✓3-year ROI of 258% with payback under six months

✓Hard cost savings were generated almost immediately

✓Reduced downtime significantly, improving availability of applications to end users

✓Productivity improved in all areas
- 68% in operations
- 52% in server support

Total Three-Year Cost Savings Analysis (per 100 Users)



Source: IDC, 2005

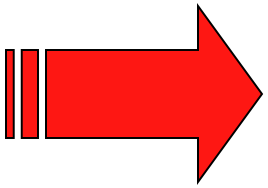
www.ibm.com/eserver/iseries/idcroi

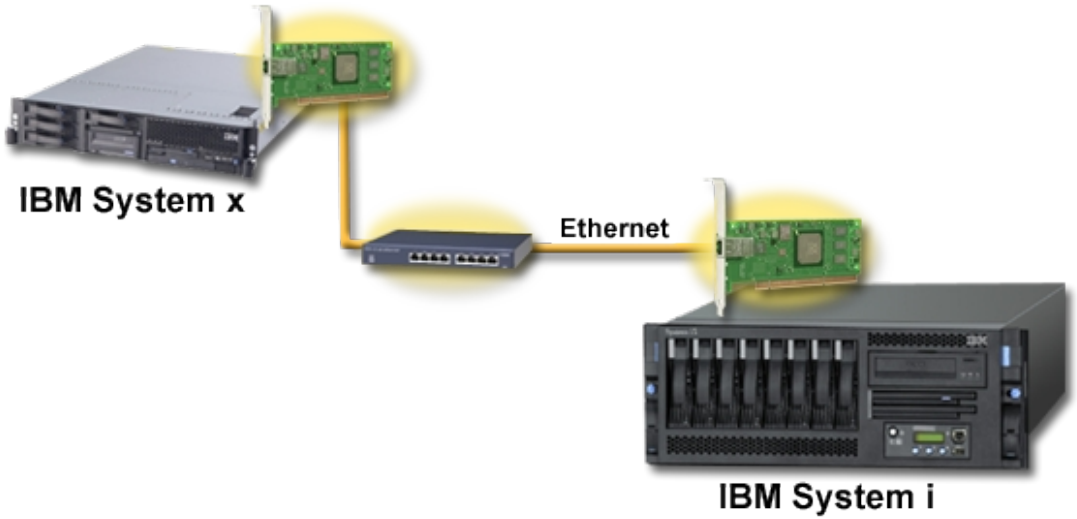
The New Power Equation

The New Power Equation

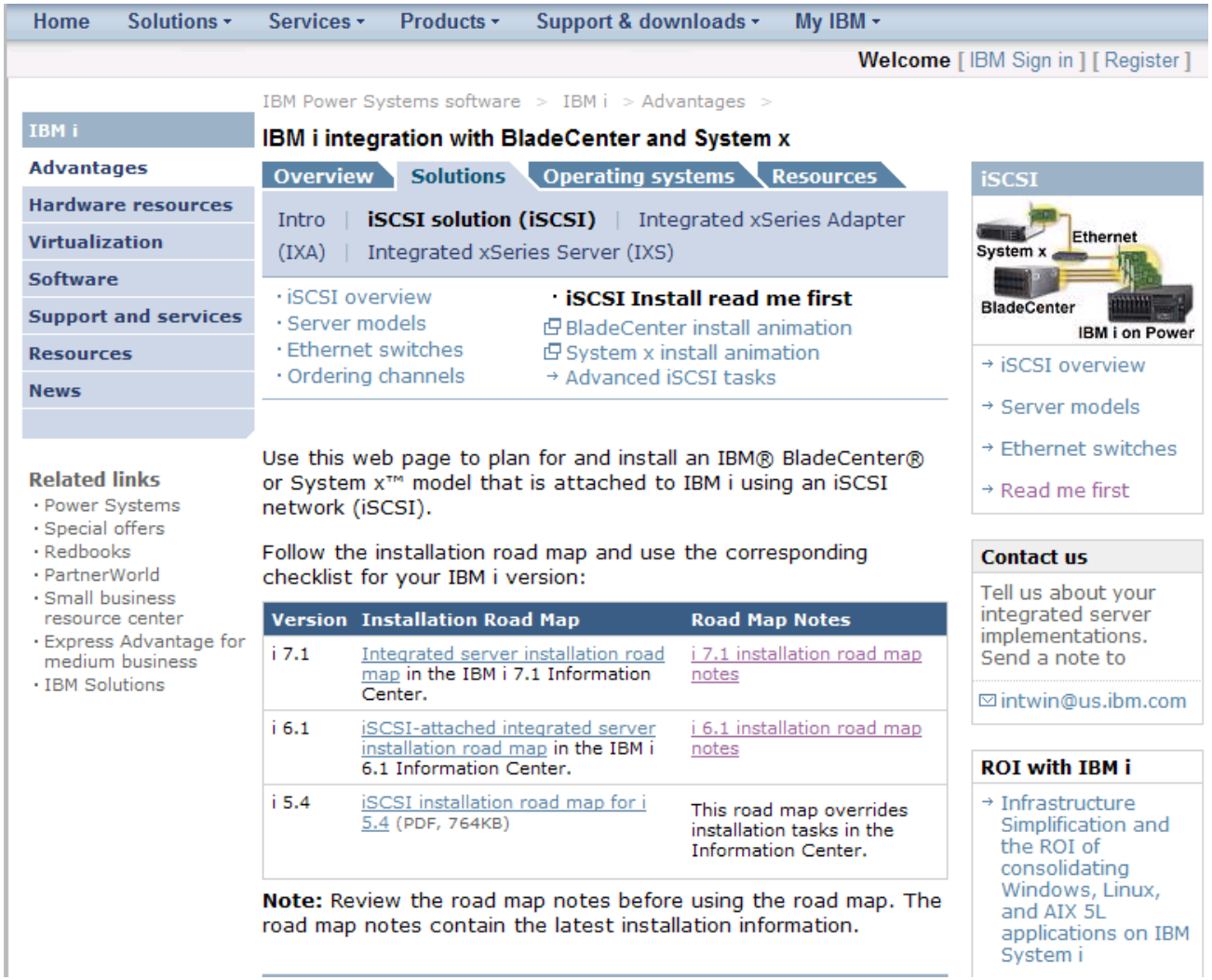
IXS/IXA Migration Service

IBM Power Lab Services has created an IXS/IXA Migration utility which takes Windows server installations on IXS or IXA integrated servers and converts them to run on an iSCSI attache integrated server. This is a for fee service per server. For more information contact: Kyle Wurgler - wurgler@us.ibm.com





Implementation….



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- Small business resource center
- Express Advantage for medium business
- IBM Solutions

IBM i integration with BladeCenter and System x

Overview | Solutions | Operating systems | Resources

Intro | **iSCSI solution (iSCSI)** | Integrated xSeries Adapter (IXA) | Integrated xSeries Server (IXS)

- iSCSI overview
- Server models
- Ethernet switches
- Ordering channels

iSCSI Install read me first

- BladeCenter install animation
- System x install animation
- Advanced iSCSI tasks

Use this web page to plan for and install an IBM® BladeCenter® or System x™ model that is attached to IBM i using an iSCSI network (iSCSI).

Follow the installation road map and use the corresponding checklist for your IBM i version:

Version	Installation Road Map	Road Map Notes
i 7.1	Integrated server installation road map in the IBM i 7.1 Information Center.	i 7.1 installation road map notes
i 6.1	iSCSI-attached integrated server installation road map in the IBM i 6.1 Information Center.	i 6.1 installation road map notes
i 5.4	iSCSI installation road map for i 5.4 (PDF, 764KB)	This road map overrides installation tasks in the Information Center.

Note: Review the road map notes before using the road map. The road map notes contain the latest installation information.

iSCSI

- iSCSI overview
- Server models
- Ethernet switches
- Read me first

Contact us

Tell us about your integrated server implementations. Send a note to

intwin@us.ibm.com

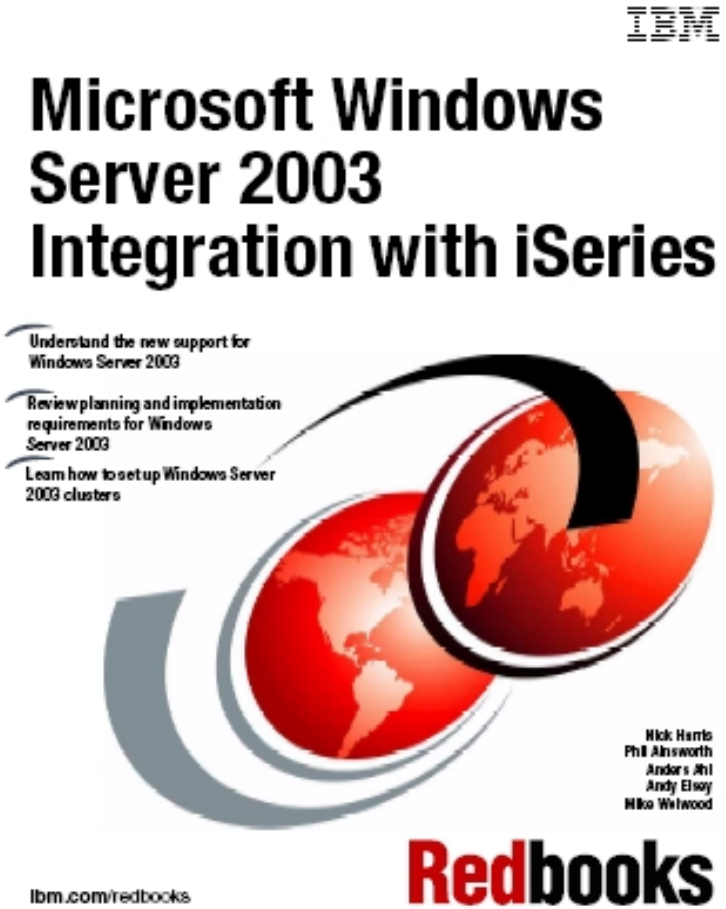
ROI with IBM i

- Infrastructure Simplification and the ROI of consolidating Windows, Linux, and AIX 5L applications on IBM System i

iSCSI install read me first - Place To Start!!!!!

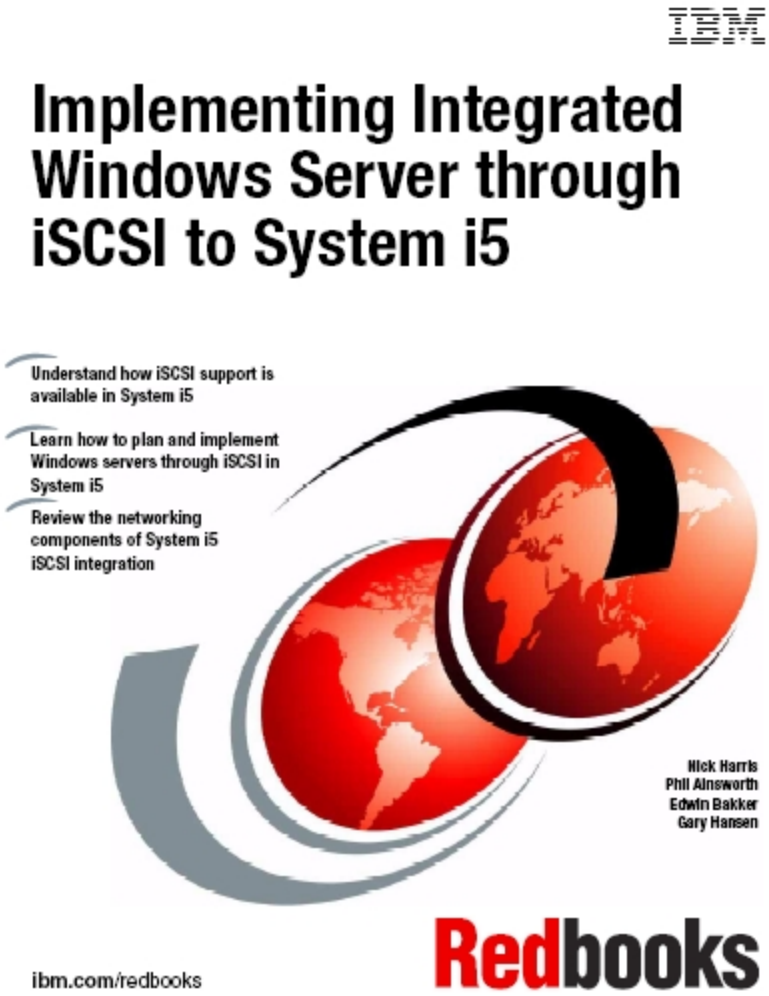
Integrated xSeries Solutions Redbook

- SG24-2969
- Available at *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.



Implementing Integrated Windows Server through iSCSI to System i5 Redbook

- SG24-7230
- Available at *redbooks.ibm.com*
- Includes:

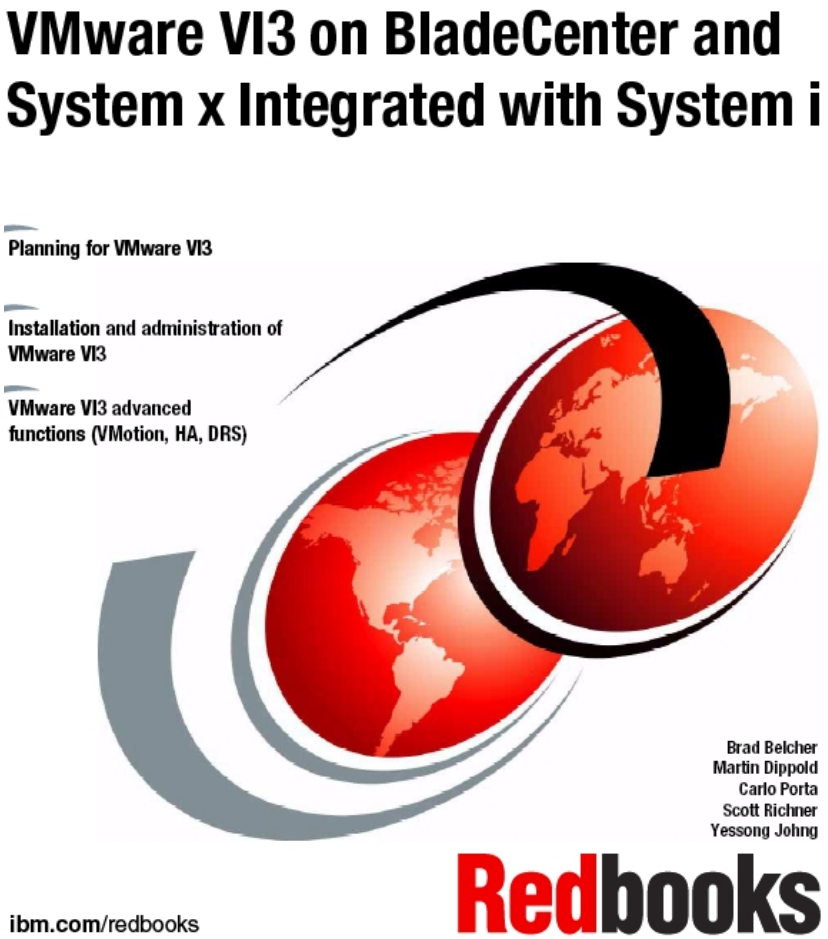


New VMware RedBook SG24-7408-00

- SG24-7408

Available at *redbooks.ibm.com*

Chapter 1. Introduction
Chapter 2. Planning and sizing
Chapter 3. Installation
Chapter 4. VMware Infrastructure 3 advanced capabilities with shared storage support of i5/OS
Chapter 5. Backup and recovery
Chapter 6. Managing integrated ESX Server
Chapter 7. Virtual Machine administration
Chapter 8. Migration



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THE NEW POWER EQUATION

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