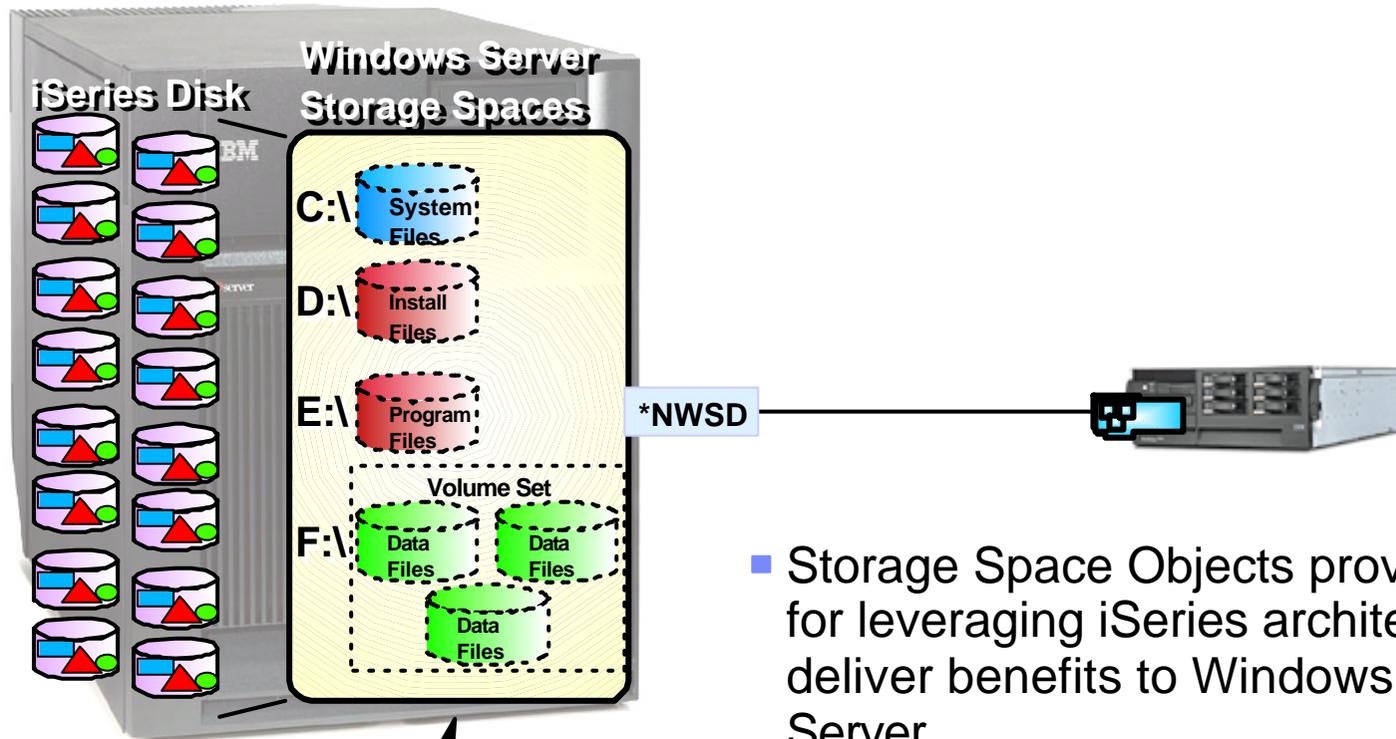


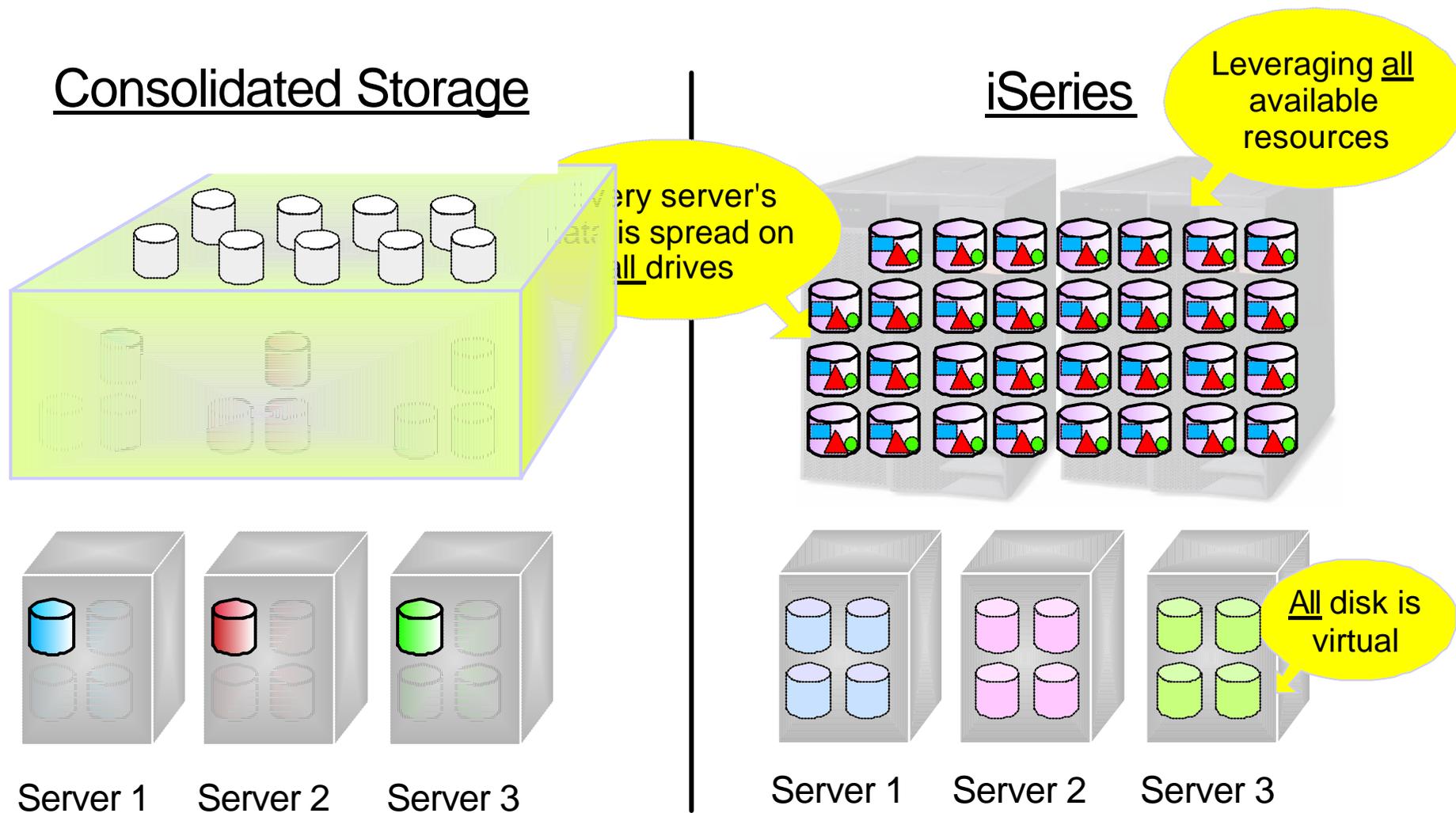
# iSeries Storage Virtualization for Windows 2000 Server



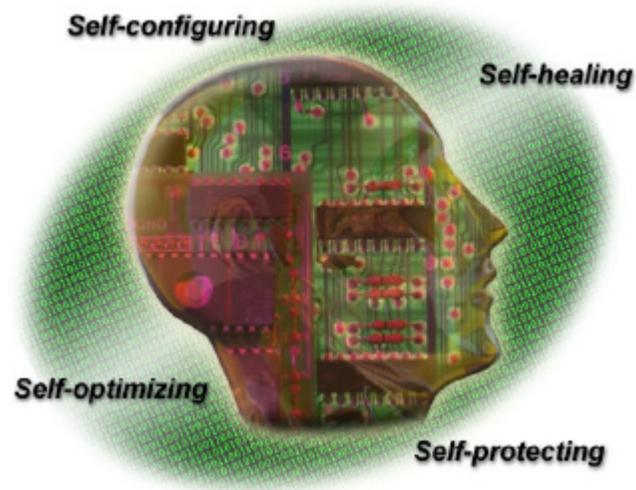
**Add disk storage to a Windows 2000 Server dynamically**

- Storage Space Objects provide basis for leveraging iSeries architecture to deliver benefits to Windows 2000 Server
  - ▶ Performance
  - ▶ Consolidated Backup
  - ▶ Hot Spare
  - ▶ Testing

# iSeries Storage Consolidation Advantages



# Autonomic Computing



# Integrated Backup

## Problem

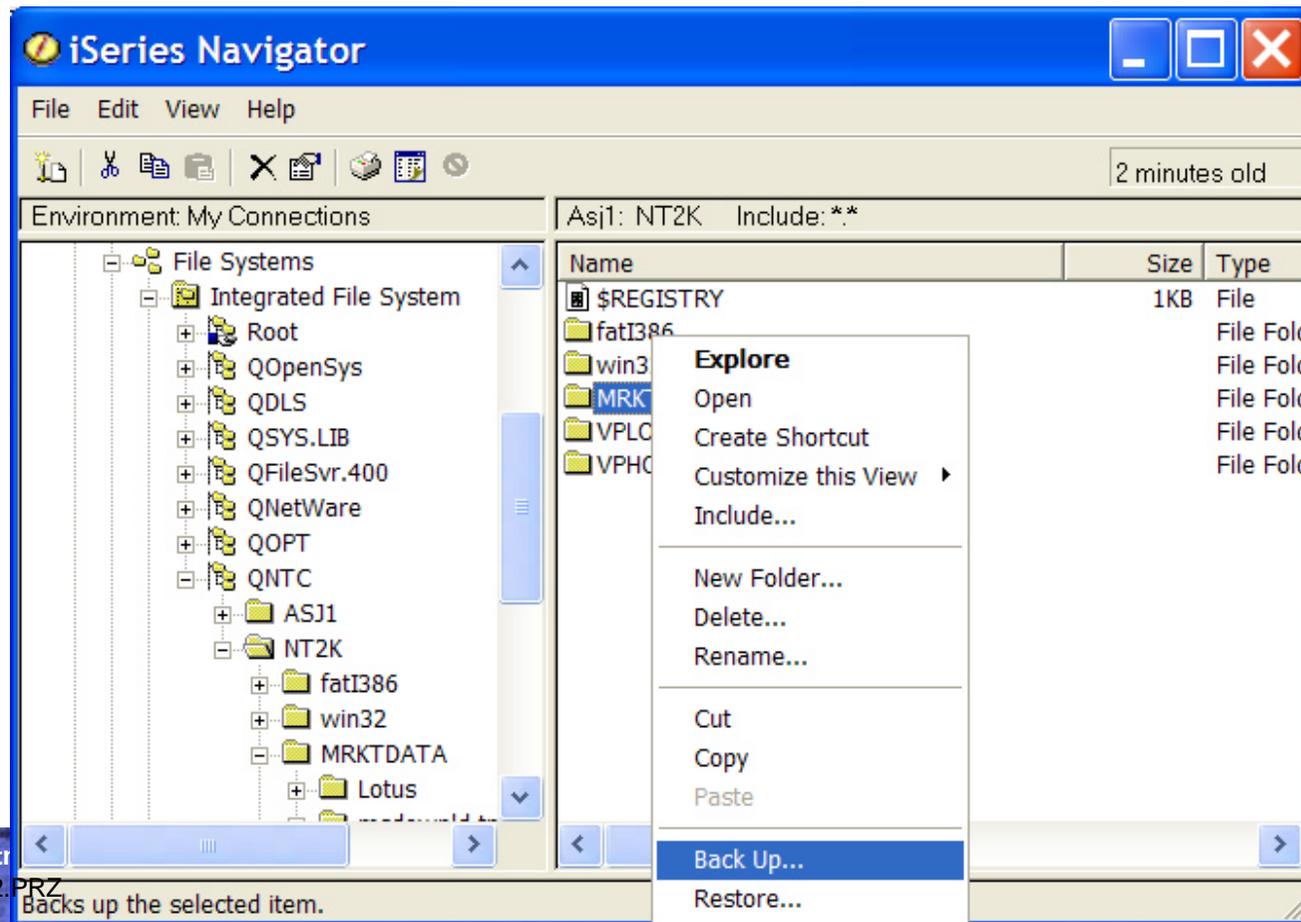
- ▶ Managing and automating heterogeneous backups

## iSeries Solution

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

## Benefit

- ▶ Can reduce costs by leveraging iSeries resources and skills



# Reliability

## Problem

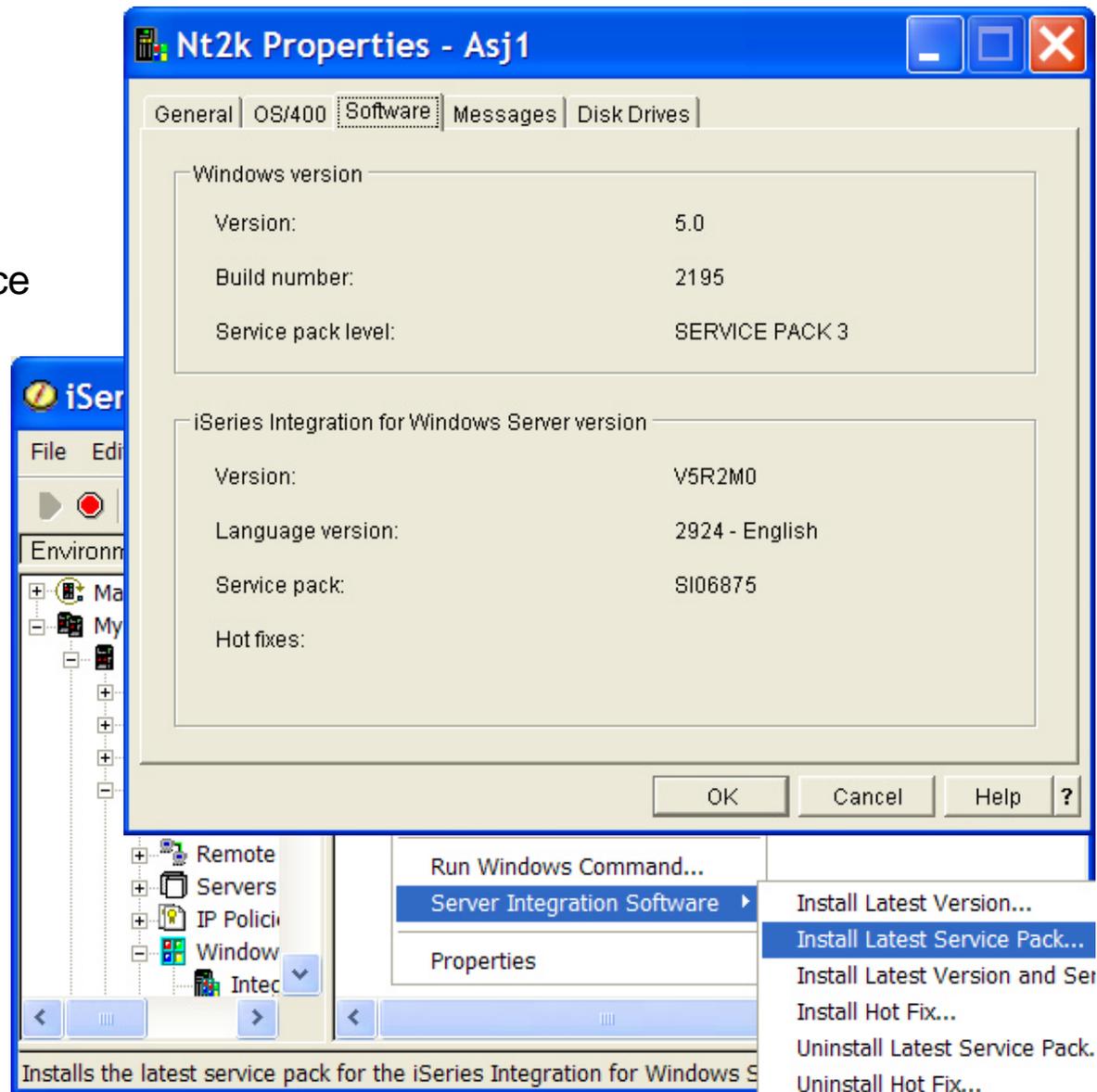
- ▶ Different hardware and device drivers can cause server instability

## 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



# Testing

## Problem

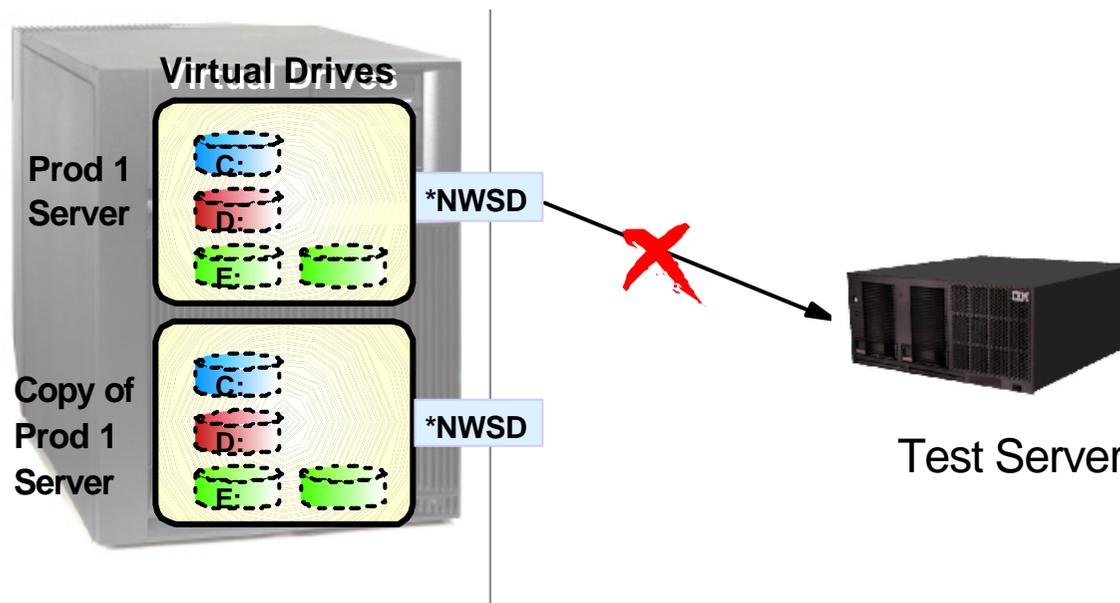
- ▶ Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production

## iSeries Solution

- ▶ Logical Servers allows testing with the production image and hardware

## Benefit

- ▶ Can reduce the outages caused by change



# Testing

## Problem

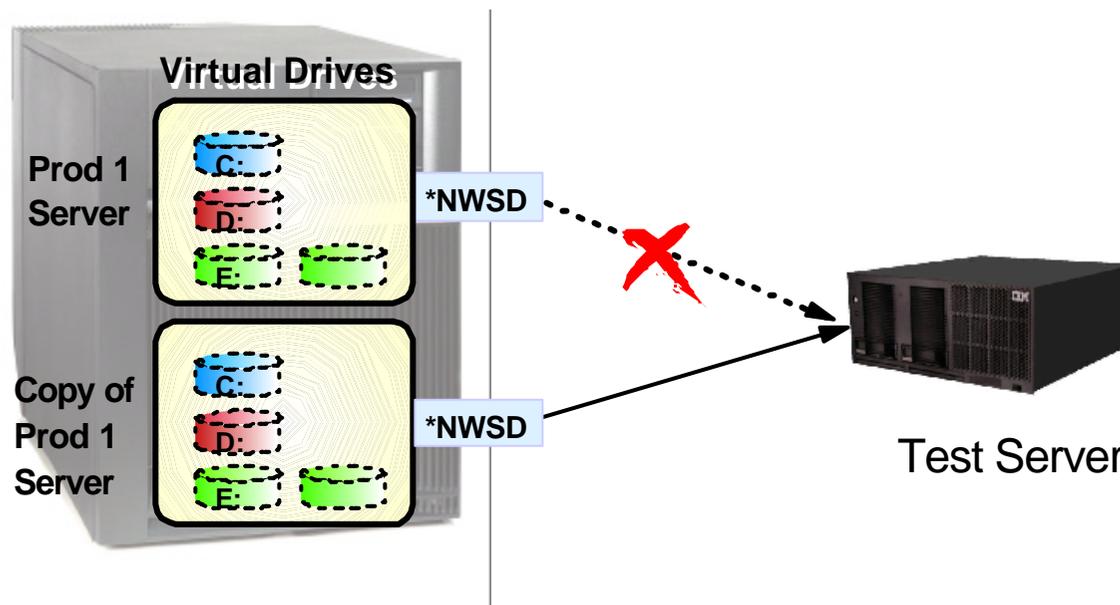
- ▶ Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production

## iSeries Solution

- ▶ Logical Servers allows testing with the production image and hardware

## Benefit

- ▶ Can reduce the outages caused by change



## Huhtamaki

*“Before consolidating on the iSeries and xSeries we required at least three dedicated administrators to run our servers...now because of its ease of use, we need only two administrators to run the new system.”*



[www.huhtamaki.com](http://www.huhtamaki.com)

Brendan Carlton  
Systems Administrator,

Huhtamaki

*“One of the things I enjoy most about the IBM iSeries and xSeries integration is that I have been able to take a painstaking process of building a brand new Wintel server from scratch and getting it deployed from approximately a three to four day procedure down to 20 minutes.”*

# Availability

## Problem

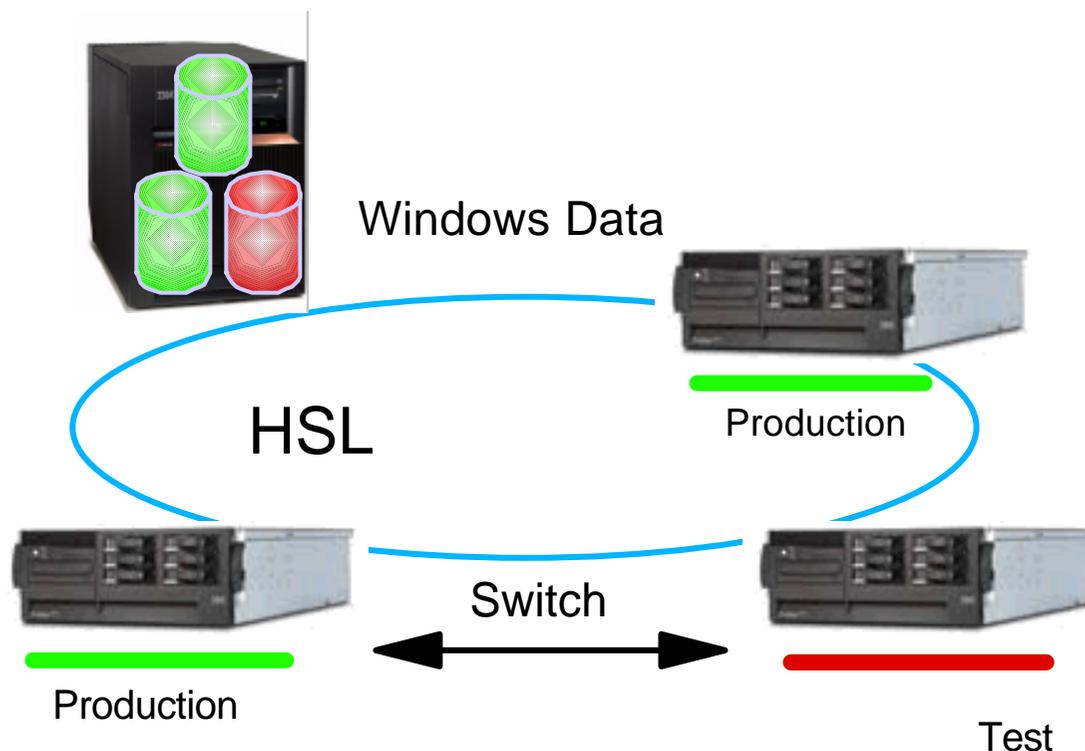
- ▶ Providing an effective and efficient availability solution

## 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)

## Switch Disk Cluster

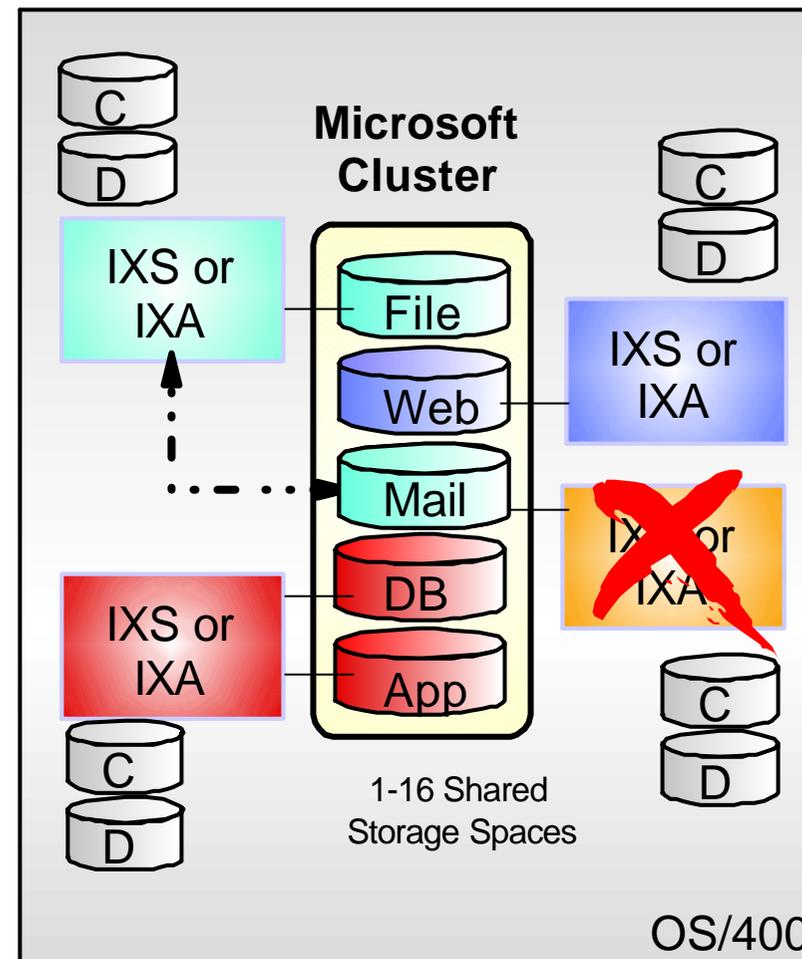
- ▶ Dynamically Switch Storage Spaces Between Windows Servers
- ▶ Up to 4 IXS or IXA Server Nodes per Cluster
- ▶ 16 New 1 MB to 64 GB Shared Storage Spaces

## Availability Improvements

- ▶ Planned or unplanned outages

## Requirements

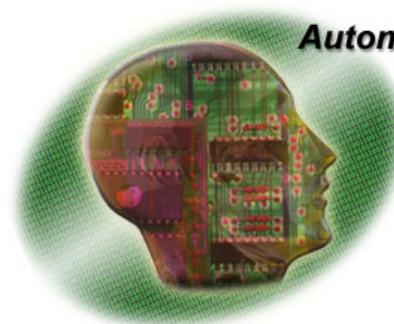
- ▶ iSeries 270, 820, 830, 840, or 890
- ▶ OS/400 V5R2
- ▶ Windows 2000 Advanced Server for 2 Node Support
- ▶ Microsoft .Net Enterprise for 4 Node Support\*



\* Planned for 1Q 2003, dependent on Microsoft delivery

## iSeries Adds Value to Windows 2000 Servers

- **User Administration**
- **Networking**
- **Disk Management**
- **Backup**
- **Reliability**
- **Testing**
- **Availability**
- **Remote Server Admin**



*Autonomic*



*Integration*

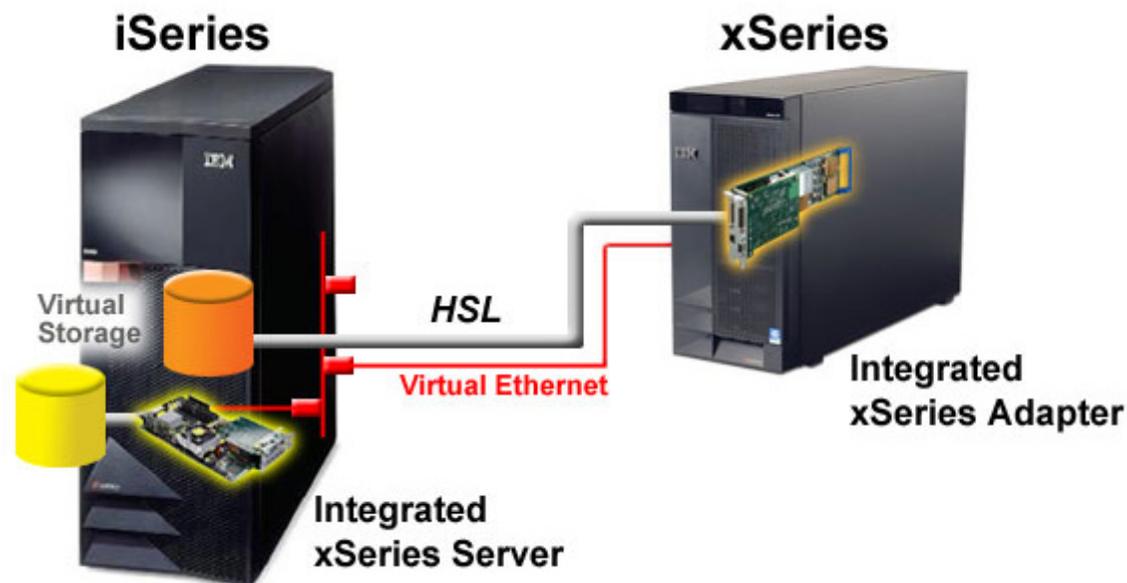


*Virtualization*



*Open Standards*

## iSeries Windows 2000 Server Integration Summary



- Integrate server management and user administration
- Leverage investment in iSeries resources and operations
- Simplify server test and deployment using Virtual Storage Spaces
- Communicate more securely over 1 Gbps Virtual Ethernet connections

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

# Backup

# Why use an iSeries Server to Manage Windows Servers

## What if IXS/IXA could:

- ✓ **Save one Windows server outage a year**
  - ▶ Customers implement a standard configuration that has been thoroughly tested
  - ▶ With virtual disk support, customers can test changes on exact copies of their production servers, reducing the impact of change
  - ▶ Storage space can be dynamically added to Windows 2000 Servers
- ✓ **Save one from doubling the numbers of servers to implement Clustering**
  - ▶ With hot spare support, one additional server can efficiently provide backup for multiple production servers
- ✓ **Save a user from spending the time changing, managing, finding two passwords**
  - ▶ Users added to OS/400 can be automatically added to Windows 2000 Server
  - ▶ OS/400 password changes can automatically be synchronized with Windows 2000 Server passwords
- ✓ **Save one from buying "extra" disk space on each standalone PC server**
  - ▶ All the disk resources are centralized on the iSeries. Each Windows server is given what they need.
- ✓ **Save one from buying tape drives for each standalone PC server**
  - ▶ Each of the Windows servers can utilize the high speed iSeries tape
  - ▶ Windows backups can be consolidated with OS/400 backups and policies
- ✓ **Save one from losing a file due to inconsistent backup policies**
  - ▶ OS/400 backup procedures can be extended to Windows servers
- ✓ **Save one from traveling to the Windows server to reboot it**
  - ▶ Operations Navigator can be used to restart the Windows server from any PC
- ✓ **Save one from rebuilding a server from scratch due to a virus hit**
  - ▶ Backup of Windows image can be restored and booted in minutes

# xSeries Servers Supported with IXA

## x360

- ▶ 1-4 way
- ▶ 2.0 GHz Xeon MP
- ▶ 3U Rack server



## x255

- ▶ 1-4 way
- ▶ 2.0 GHz Xeon MP
- ▶ Universal server (Tower or Rack server)



### Enterprise X-Architecture

- First servers with new Intel Xeon™MP™Processors
- Active™Memory (hot-swap and hot-add)
- Active™PCI-X
- XpandOnDemand™Scalability
- RXE-100 Remote Expansion Enclosure
- XcelL4™Server Accelerator Cache

## x440

- ▶ 2-8 way
- ▶ 2.0 GHz Xeon MP (2-8w)
- ▶ 2.4 GHz Xeon DP (2-4w)
- ▶ 4U Rack server



## x235

- ▶ 1-2 way
- ▶ 2.4 GHz Xeon
- ▶ Universal server (Tower or Rack server)



### X-Architecture Technology

- Chipkill™memory
- Active™PCI & PCI-X
- Light Path Diagnostics™
- Extensive Predictive Failure Analysis
- Redundant Components
- IBM Director

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