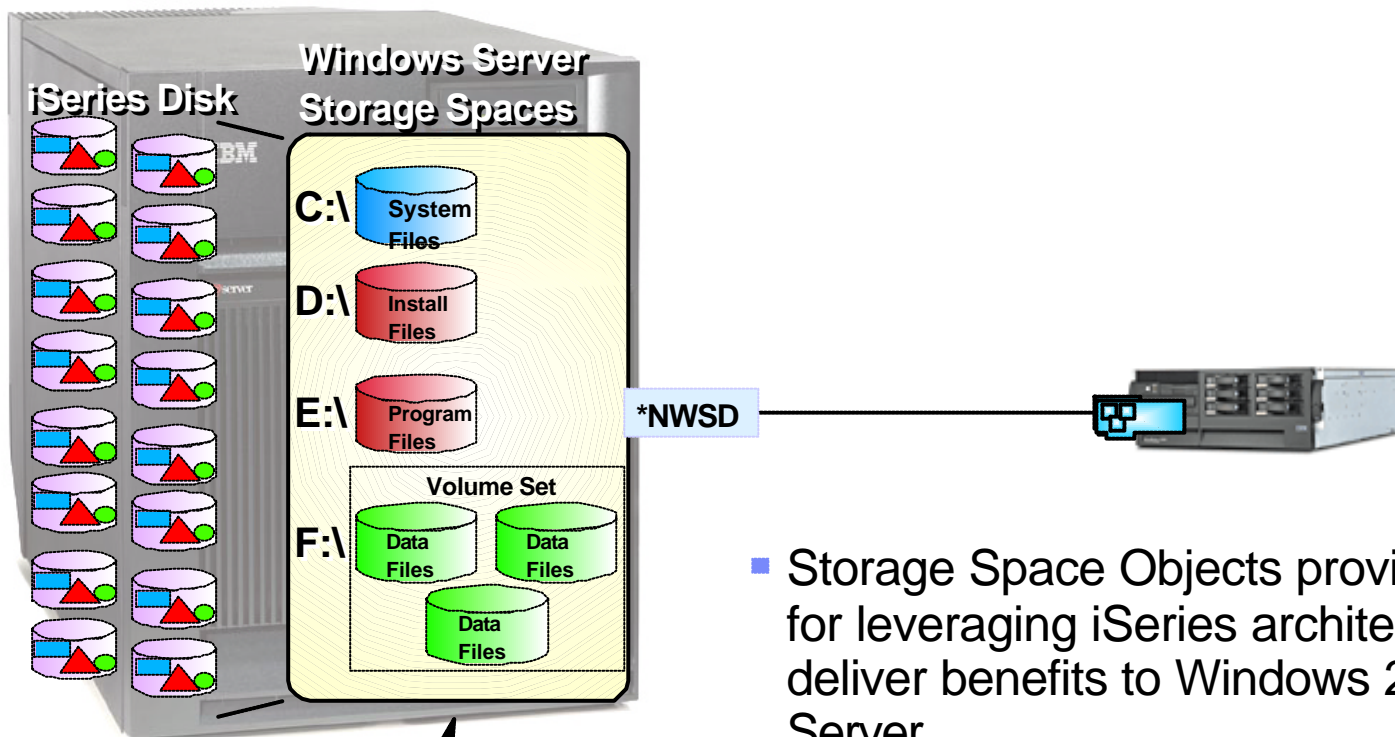


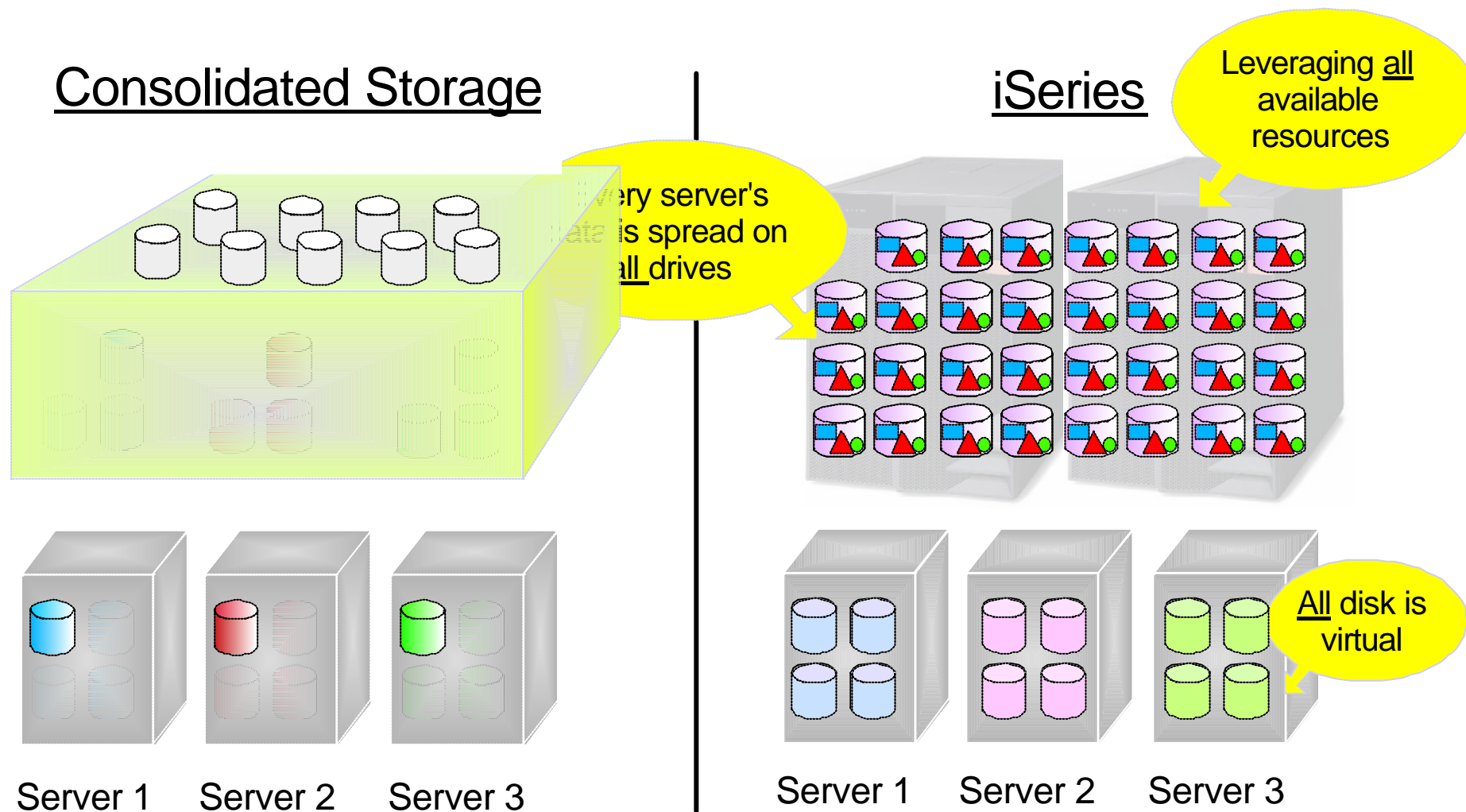
iSeries Storage Virtualization for Windows 2000 Server



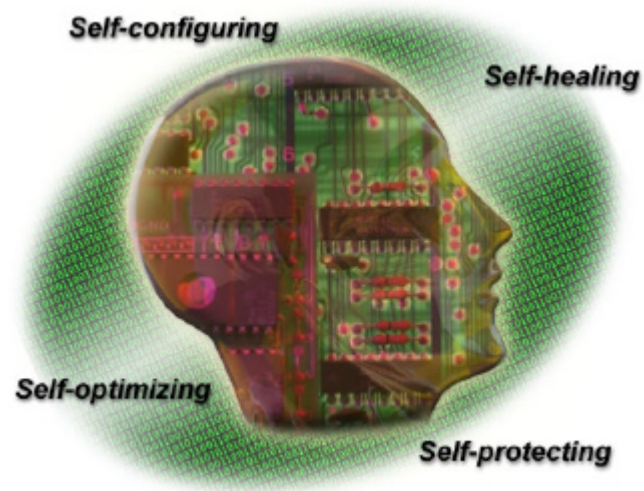
Add disk storage to a Windows 2000 Server dynamically

- 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

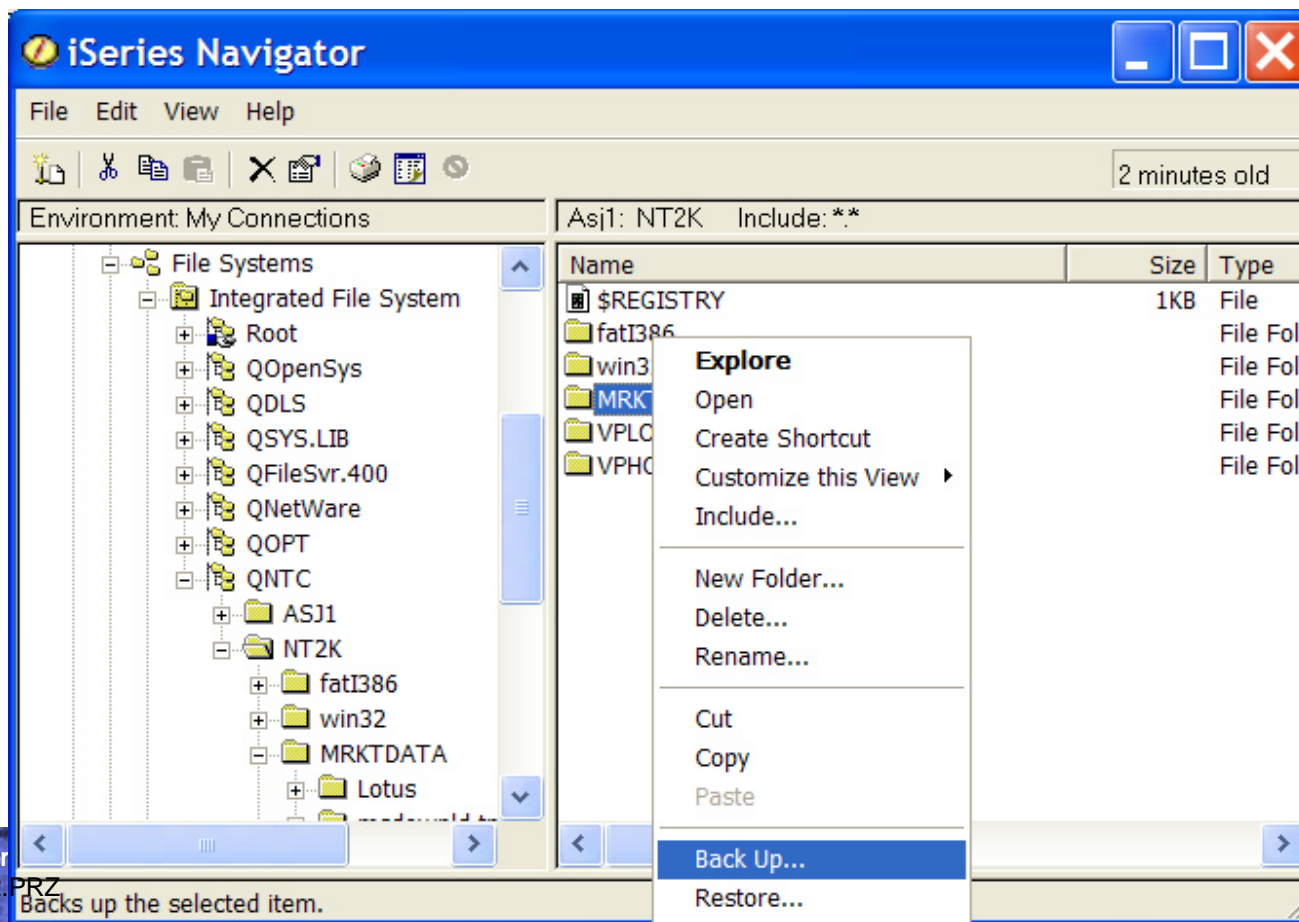
- ▶ Managing and automating heterogeneous backups

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

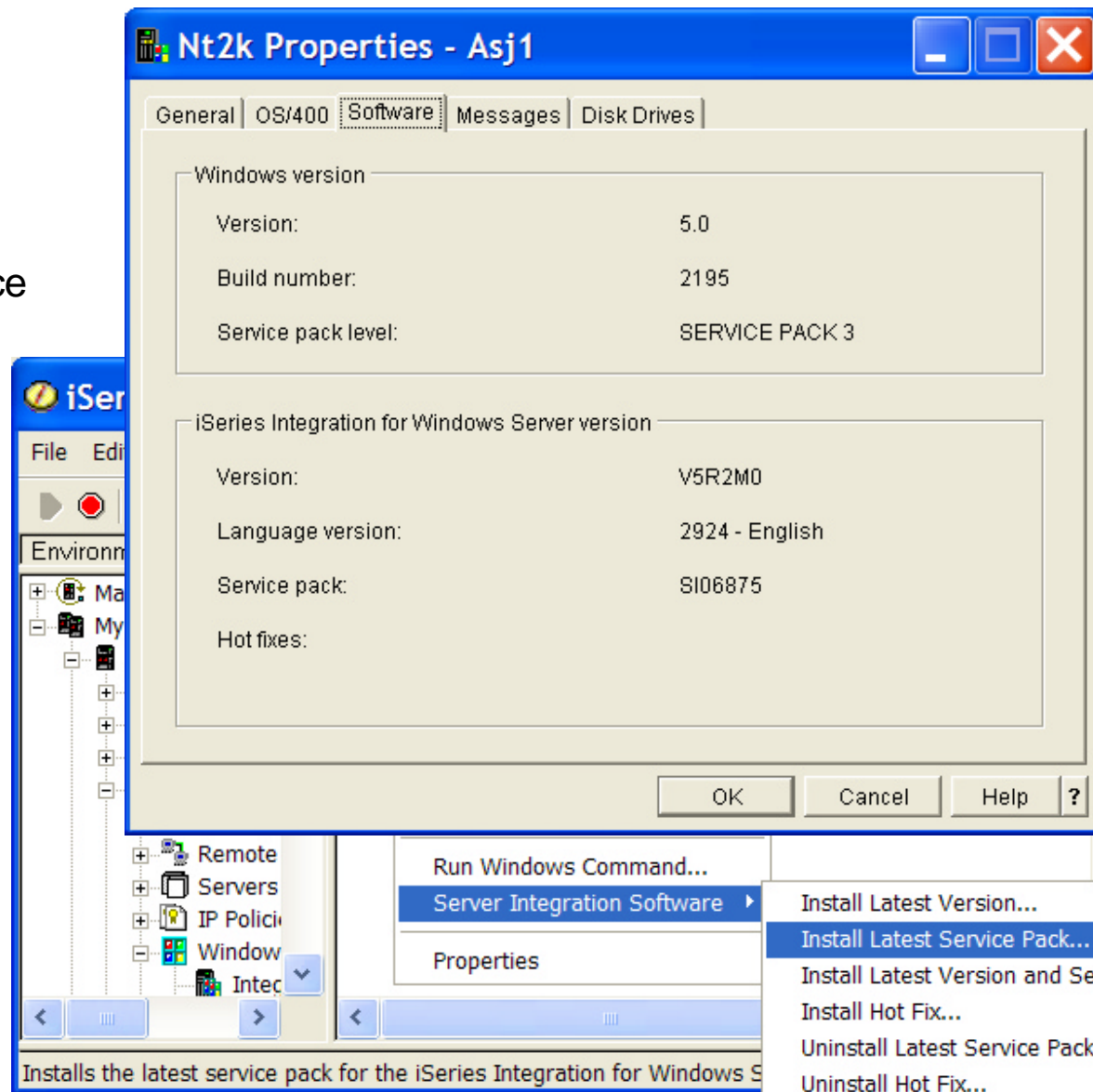
- ▶ Different hardware and device drivers can cause server instability

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

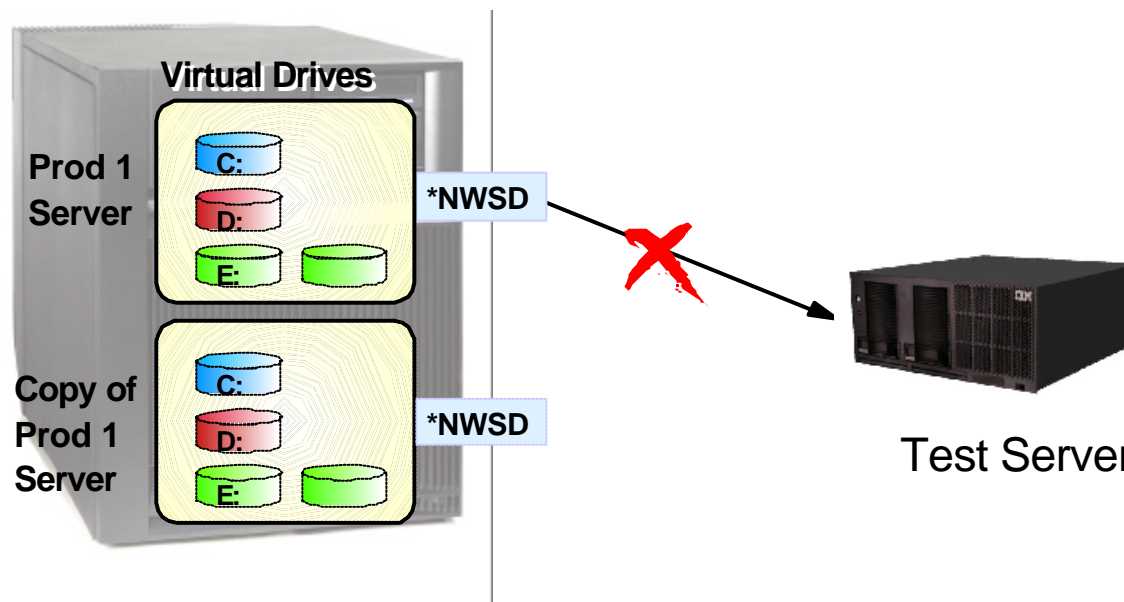
- ▶ Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production

iSeries Solution

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

Benefit

- ▶ Can reduce the outages caused by change



Testing

Problem

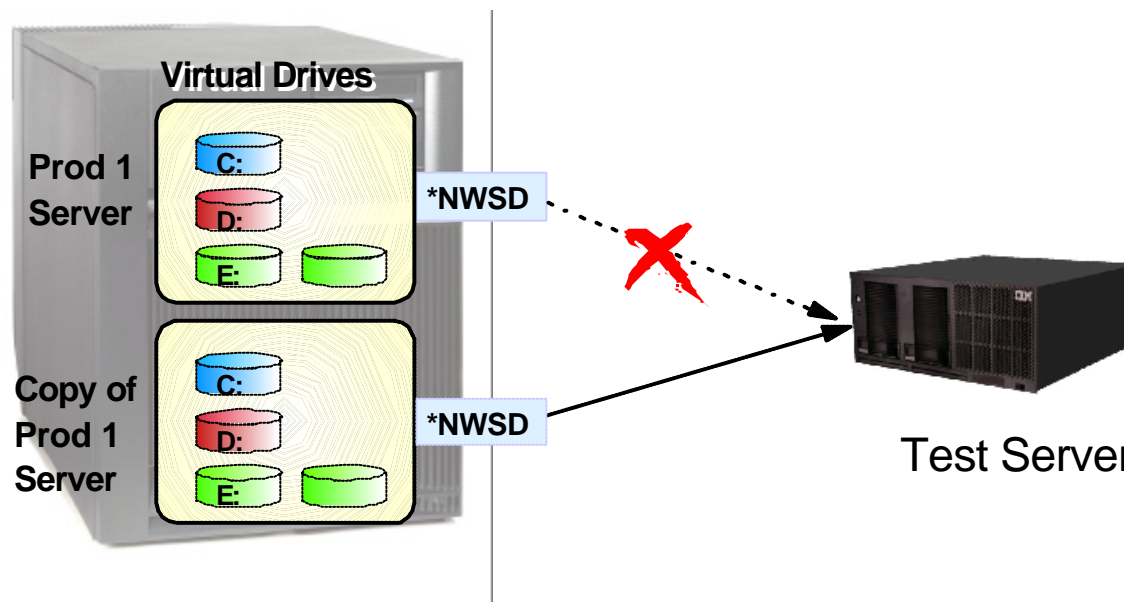
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iSeries Solution

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

Benefit

- ▶ Can reduce the outages caused by change



Huhtamaki



www.huhtamaki.com

“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.”

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

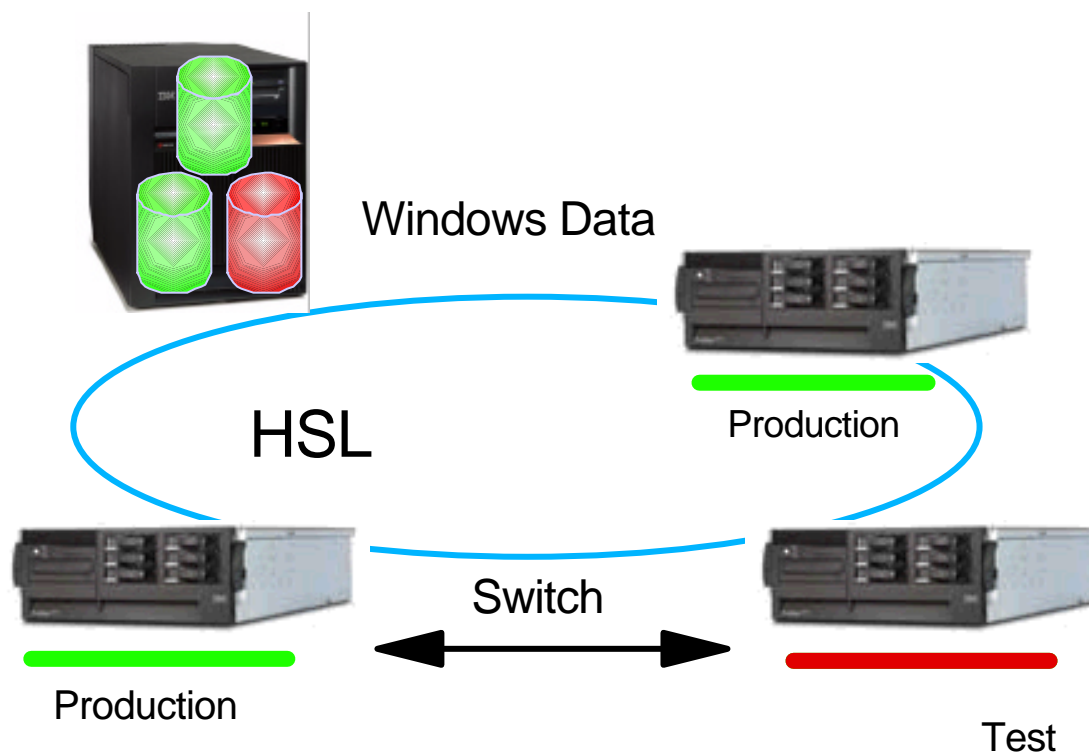
- ▶ Providing an effective and efficient availability solution

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

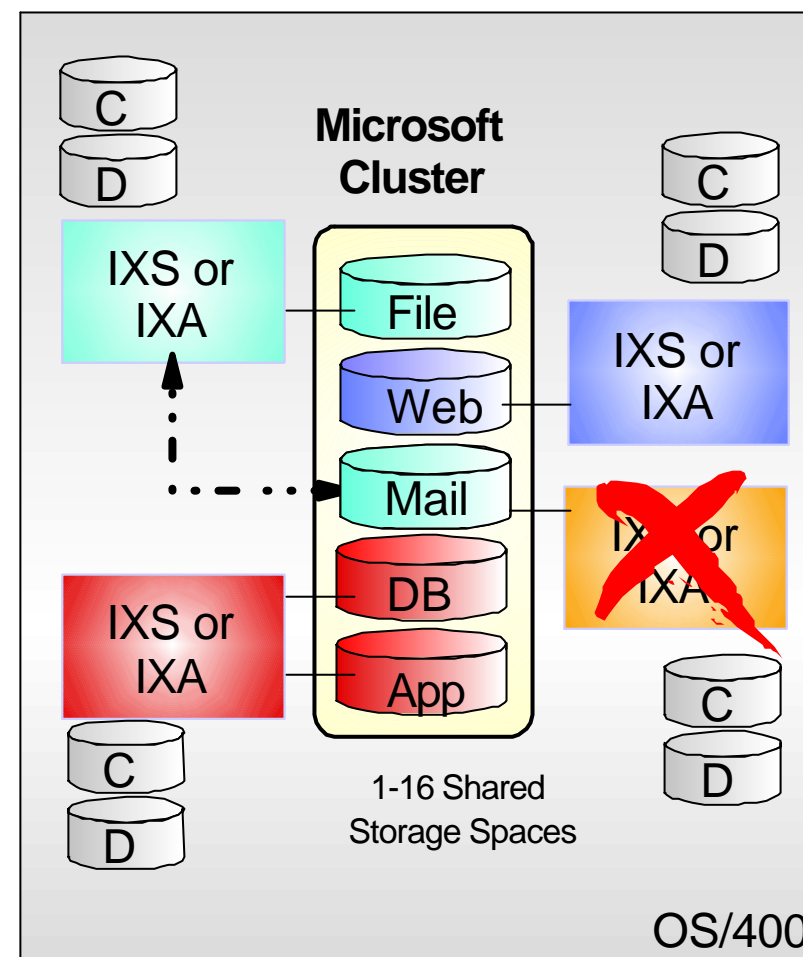
- ▶ Dynamically Switch Storage Spaces Between Windows Servers
- ▶ Up to 4 IXS or IXA Server Nodes per Cluster
- ▶ 16 New 1 MB to 64 GB Shared Storage Spaces

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

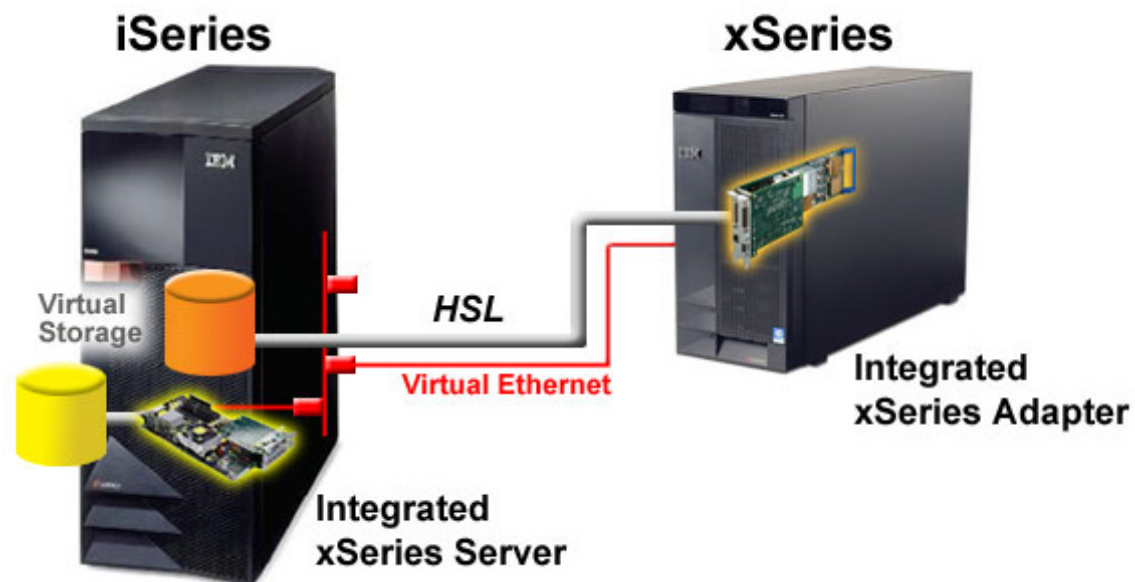


Virtualization



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

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

X-Architecture Technology

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

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)



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