

# *iSeries and OS/400 Technical Refresh*

如何有效整合管理 **xSeries** 與 **iSeries**



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## Agenda

- IXS/IXA設計架構
- PC Server Customer Pain
- xSeries與 iSeries 整合的好處

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## Integrated xSeries Adapter

**2x increase in IXA support on Models 820, 830, 840**

Attaches the latest xSeries Servers\*

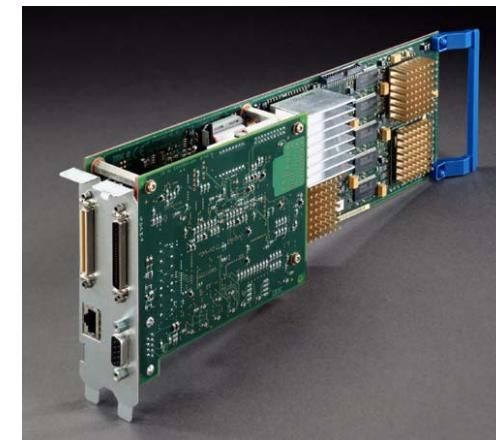
- x440 (2-8 way)

- x360 (2-4 way)

- x255 (1-4 way)

- x235 (1-2 way)

iSeries Model	# of IXA
270	2
820	4 ➔ 8
830	8 ➔ 16
840	16 ➔ 32
890	



OS/400 V5R1 or V5R2

Share iSeries disk, tape, DVD, and CD-ROM

### Windows Support

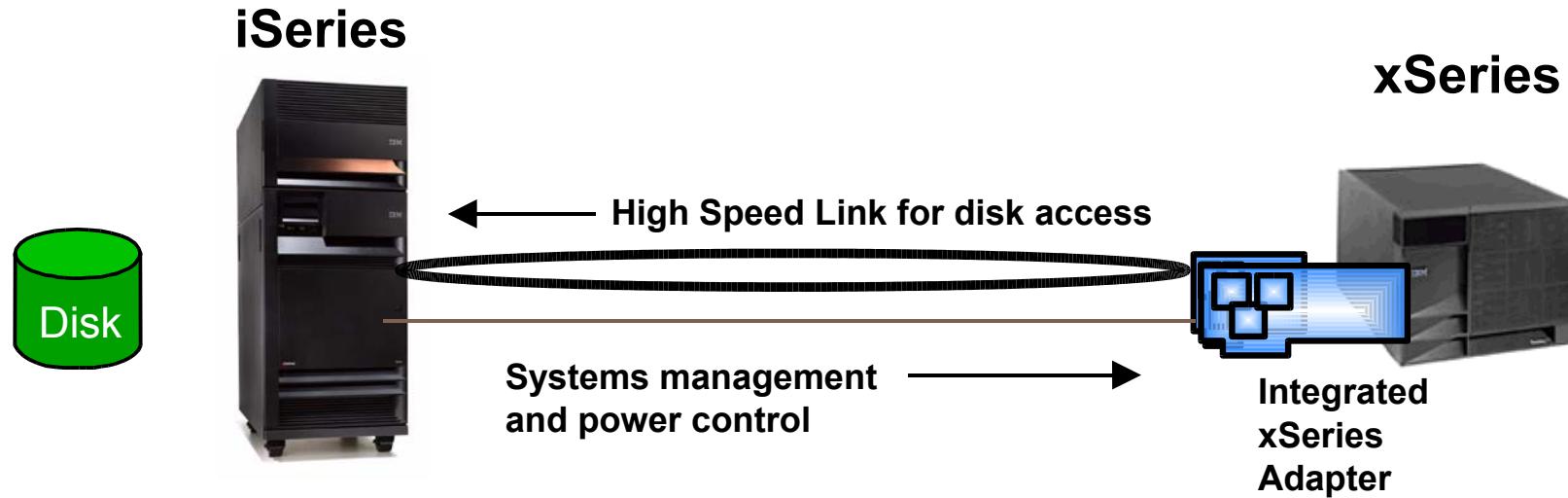
- Windows 2000 Server
- Windows 2000 Advanced Server
- Microsoft .Net\*\*

\*

\* Selected Open Bay models of x235, x255, x360, and x440

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

## *Integrated xSeries Adapter*



**IXA attaches n-way IBM xSeries server to iSeries 8xx and 270**

**Retains features and value of Integrated xSeries Server**

Uses OS/400 storage consolidation and systems management

xSeries Server has processors, memory, ServerProven adapters but no disks

**Complementary Application Support**

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**Server Consolidation**

## **Integrated xSeries Solution Positioning**

### **1 GHz Integrated xSeries Server (IXS)**

- Customers implementing on NT 4.0
- Customers implementing on OS/400 V5R1
- Customers who do not need extra processing power and/or 1 GB memory

### **1.6 GHz Integrated xSeries Server (IXS)**

- Customers on or moving to Windows 2000 Server and OS/400 V5R2

### **Integrated xSeries Adapter (IXA) and xSeries Servers**

- Customers who need 2-8 way Intel processing power
- Customers who need flexibility to add additional PCI cards in their Intel servers
- Customers with no remaining slots in CEC or expansion towers for IXS
- One Integrated xSeries Adapter per xSeries server attached

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## PC Server Customer Pain



中毒了！

駭客入侵！



這麼多台Server要怎麼備份？

5台Server備份5次, 跑5處地點, 換5次帶子, 備份之後又做5台回復測試 restore)

分散各地的Server要怎麼管理？

購買5套系統管理軟體...

\*

Server 又當機了！

到機房重開機吧！

每週必須對5台Server重開機5次,  
跑5處地點, 之後又檢測5台Server

RAM/硬碟空間不夠了(ex: volume切不夠),  
彼此多的資源又無法分享... 造成投資浪費

最近計劃要升級(NT->WIN2000->XP, 防毒軟體,  
備份軟體,  
硬體...), 到底要花多少人力, 時間及預算?

# xSeries 與 iSeries 整合的好處

使用者管理

網路

磁碟管理

備份

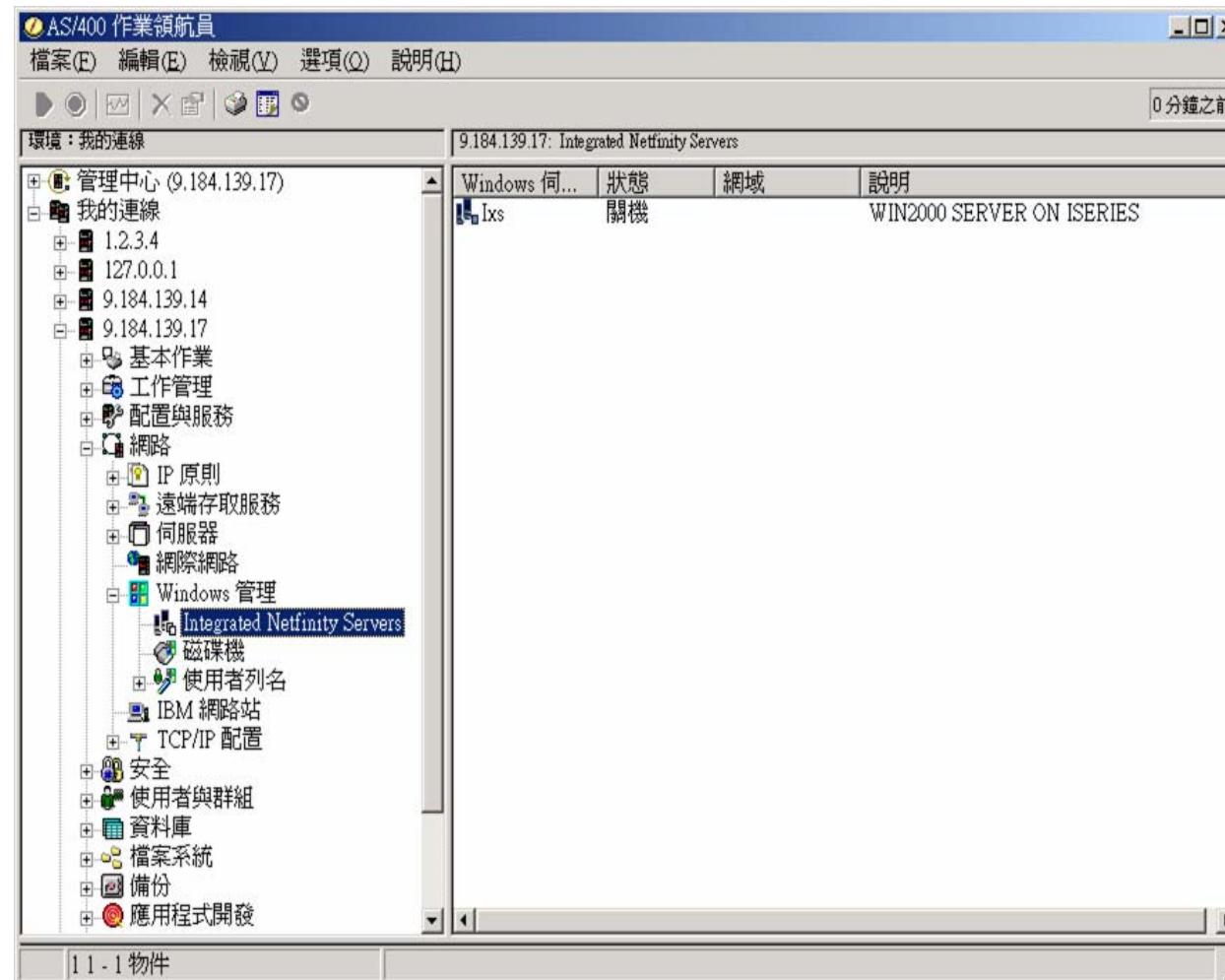
測試

更可靠

更有效率

遠端作業管理

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# 使用者管理

## Problem

- Multiple system user management

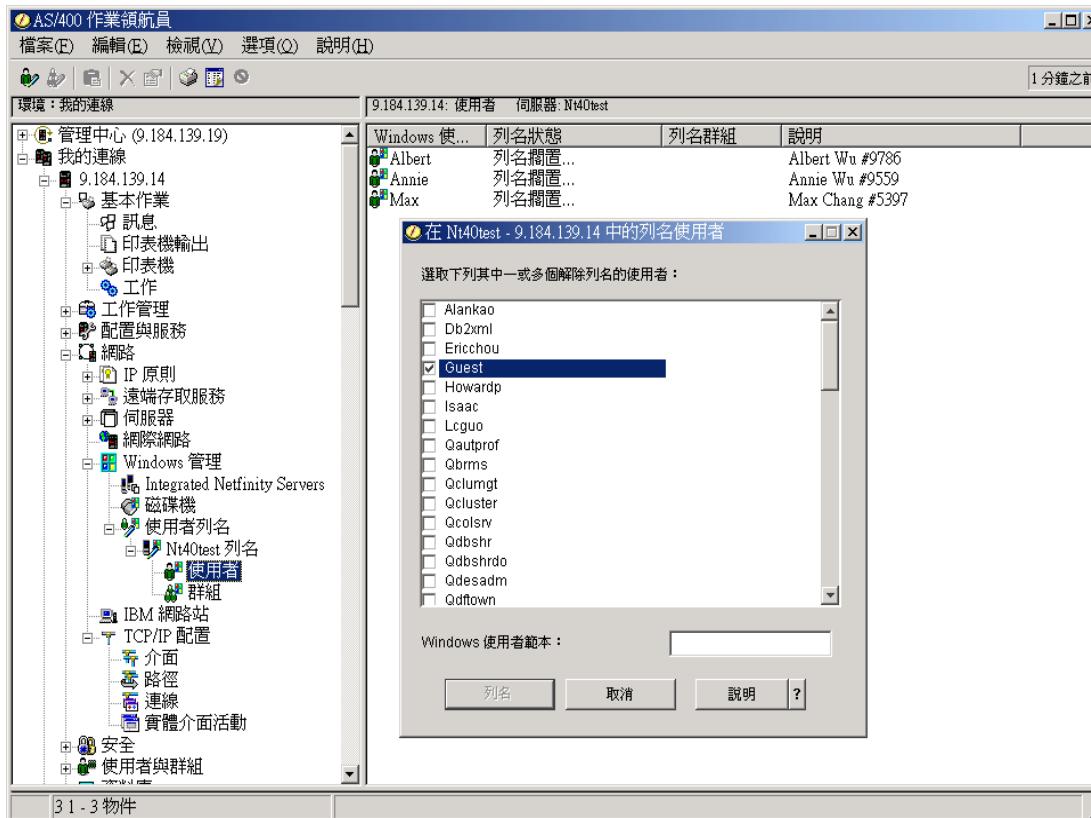
## iSeries Solution

- Adding OS/400 Users and Groups to Windows 2000 Server Domains and Synchronizing Passwords

## Benefit

- 在iSeries上安裝Windows系統可以方便的把iSeries上的User直接建到Windows系統，不必再重新把使用者帳號全部重新輸入。
- 提供圖形的管理工具，方便學習與操作。

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# 網路

## Problem

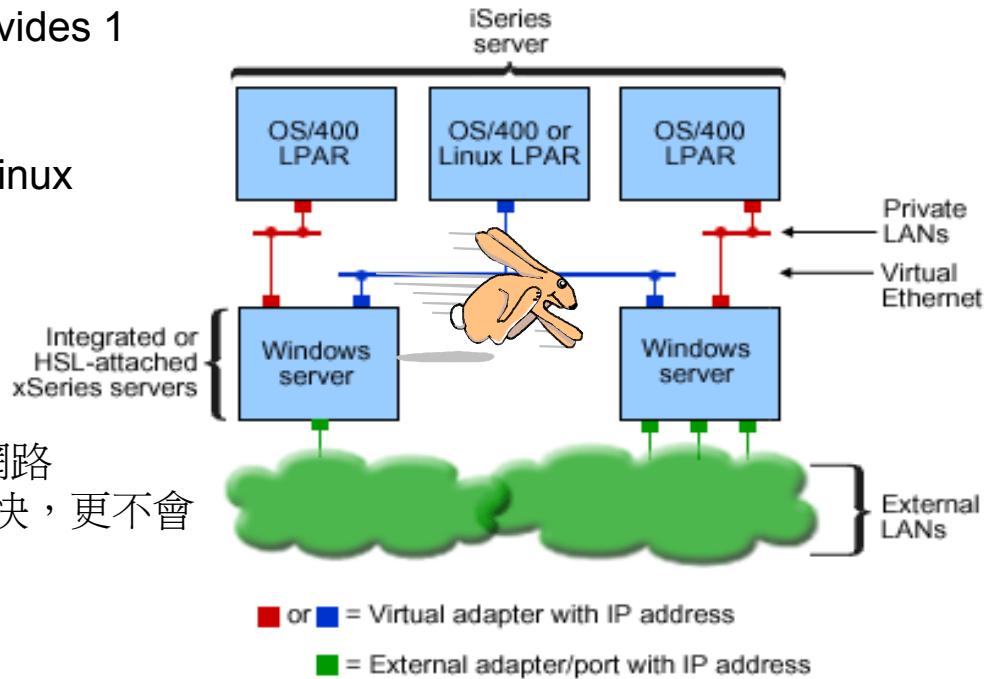
- Upgrading network infrastructure to support high-speed application communication is expensive in terms of time, resources and equipment

## iSeries Solution

- Virtual Ethernet at OS/400 V5R2 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

Windows Server與資料之間利用虛擬網路  
(Virtual LAN)來做資料存取，不但速度快，更不會造成因為傳遞大量檔案造成網路壅塞。



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## 磁碟管理

### Problem

- Storage management across the server farm

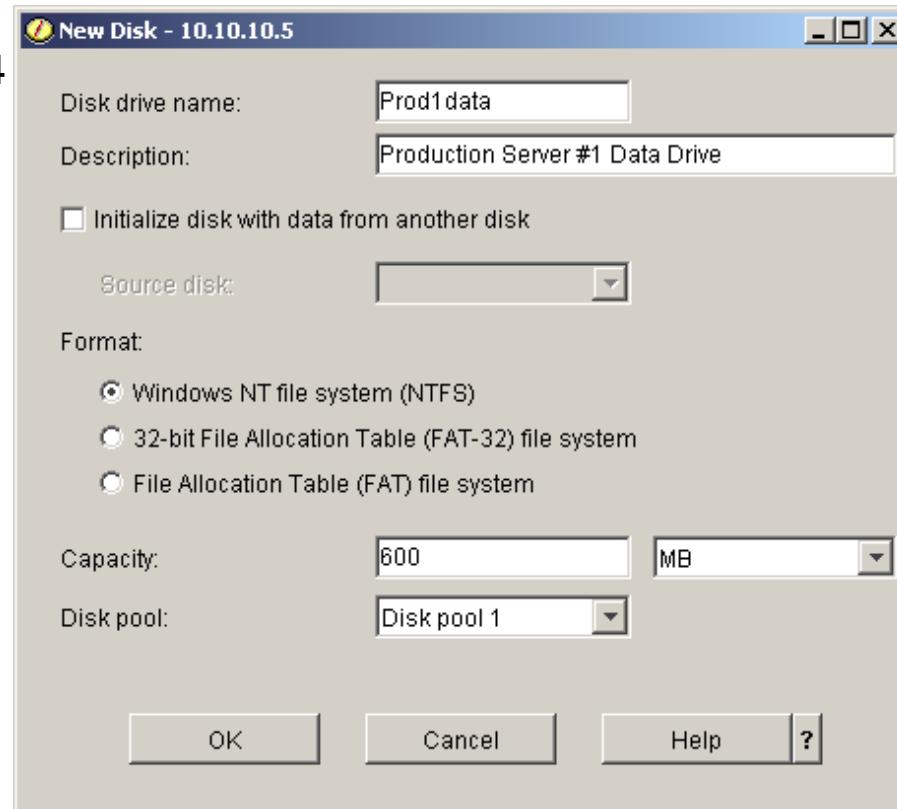
### iSeries Solution

- Flexible Virtual Disks from 1 MB to 64 GB.
- Up to 2 TB per Windows server
- Hot add of iSeries Storage Space to Windows 2000 Server

### Benefit

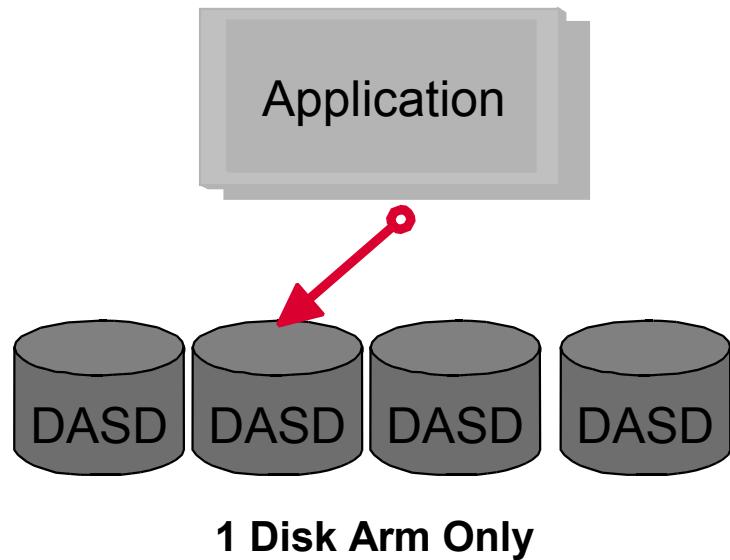
- 將資料放在iSeries上可以享有iSeries特有的 Single Level Storage特性，同時有多個硬碟讀寫臂在同時讀取資料，是在處理大量資料最不可或缺的功能。

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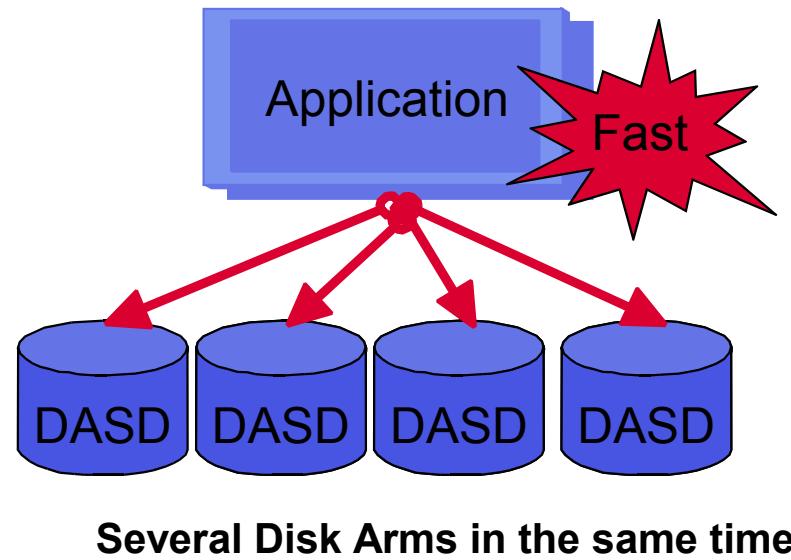


# 磁碟管理

**Windows system / Unix System  
Stand-Alone Disks Device**



**Windows system on IBM iSeries  
iSeries Internal Disks**

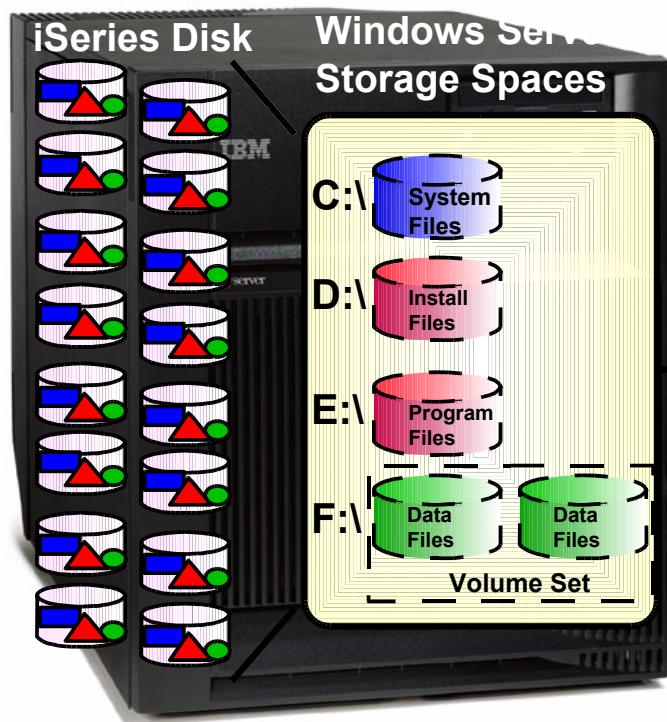


同時有多個硬碟讀寫臂在同時讀取資料，  
資料存取速度快

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## iSeries Storage Virtualization for Windows 2000 Server



在iSeries上的Windows享有和iSeries同級的硬碟保護，不管採用Mirror或Raid-5都可，不必在花大錢替新的主機準備Raid卡來做硬碟保護。



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

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# 備份

## Problem

- Managing heterogeneous backups

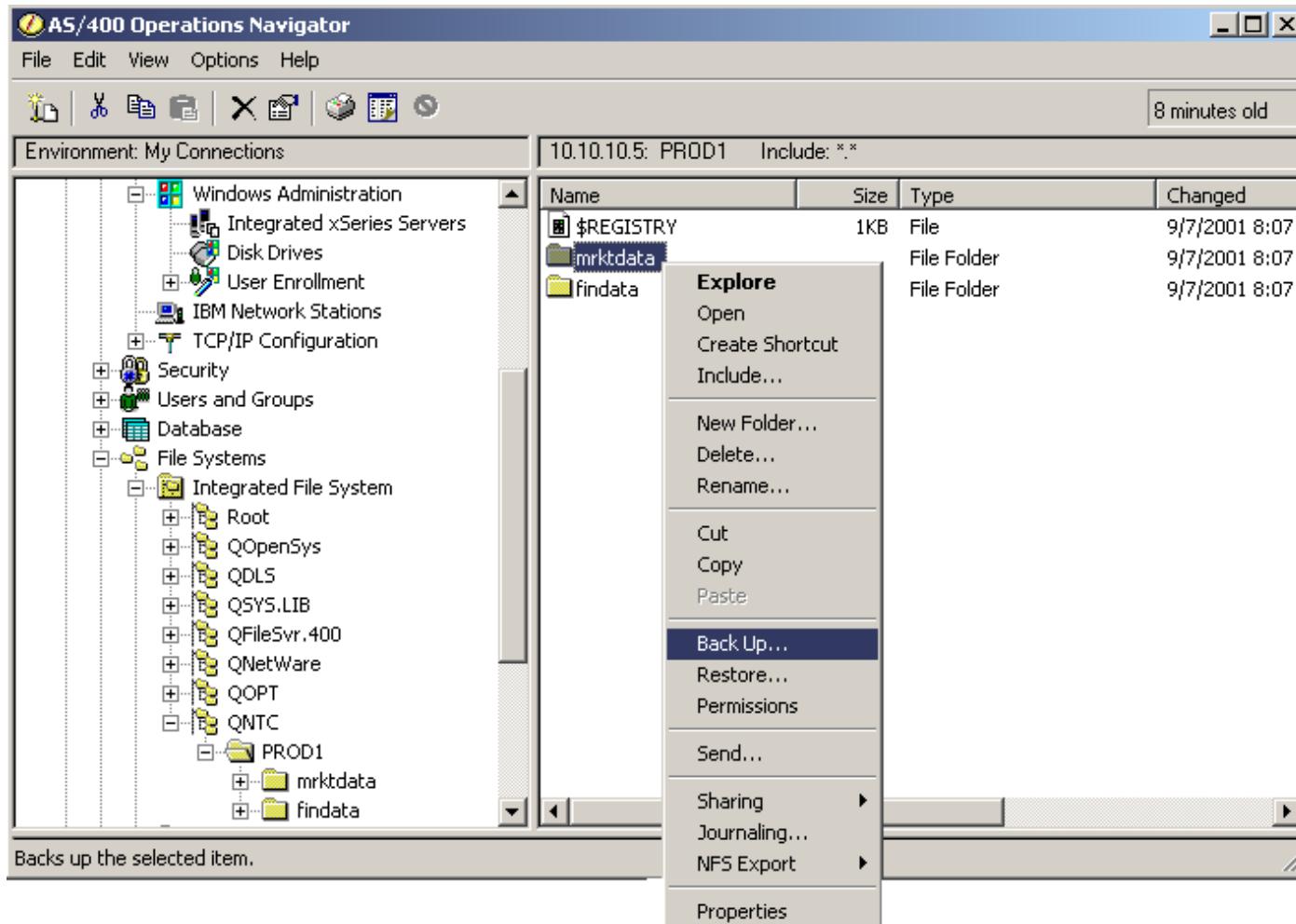
## iSeries Solution

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

## Benefit

在iSeries上的  
Windows可以共享  
iSeries上的磁帶機，  
以節省先前的投資。

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測試

## Problem

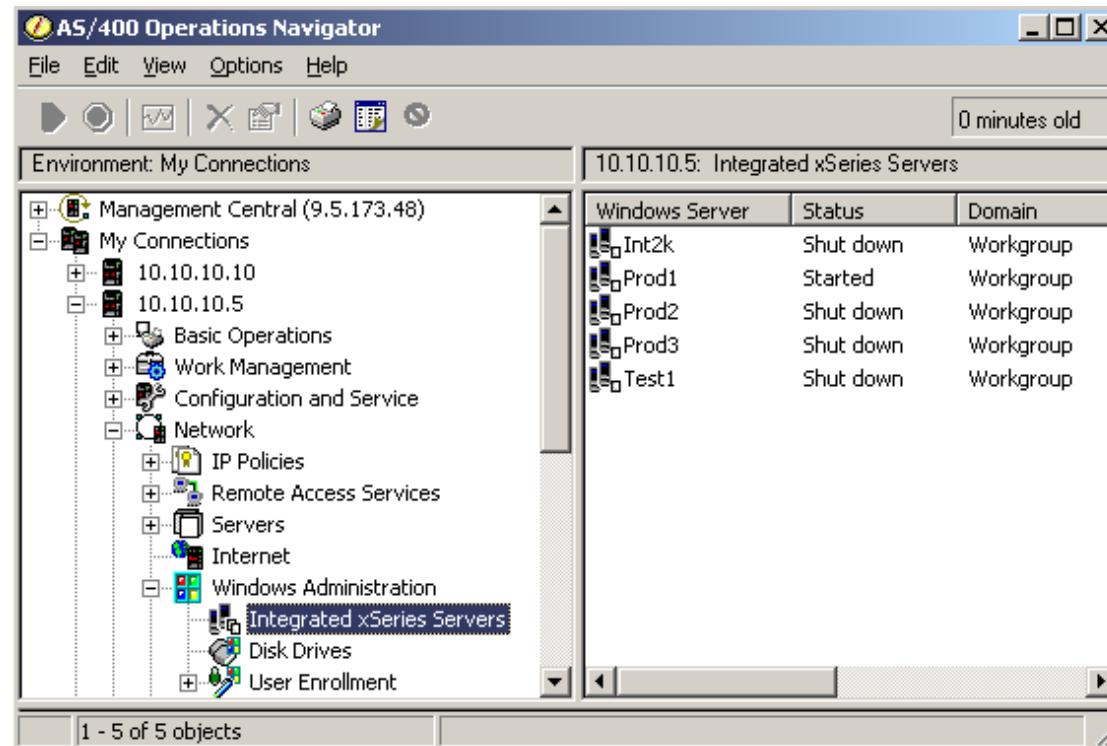
- Adequately testing Microsoft Service Packs, Application Fixes, device drivers before they are placed in production

## iSeries Solution

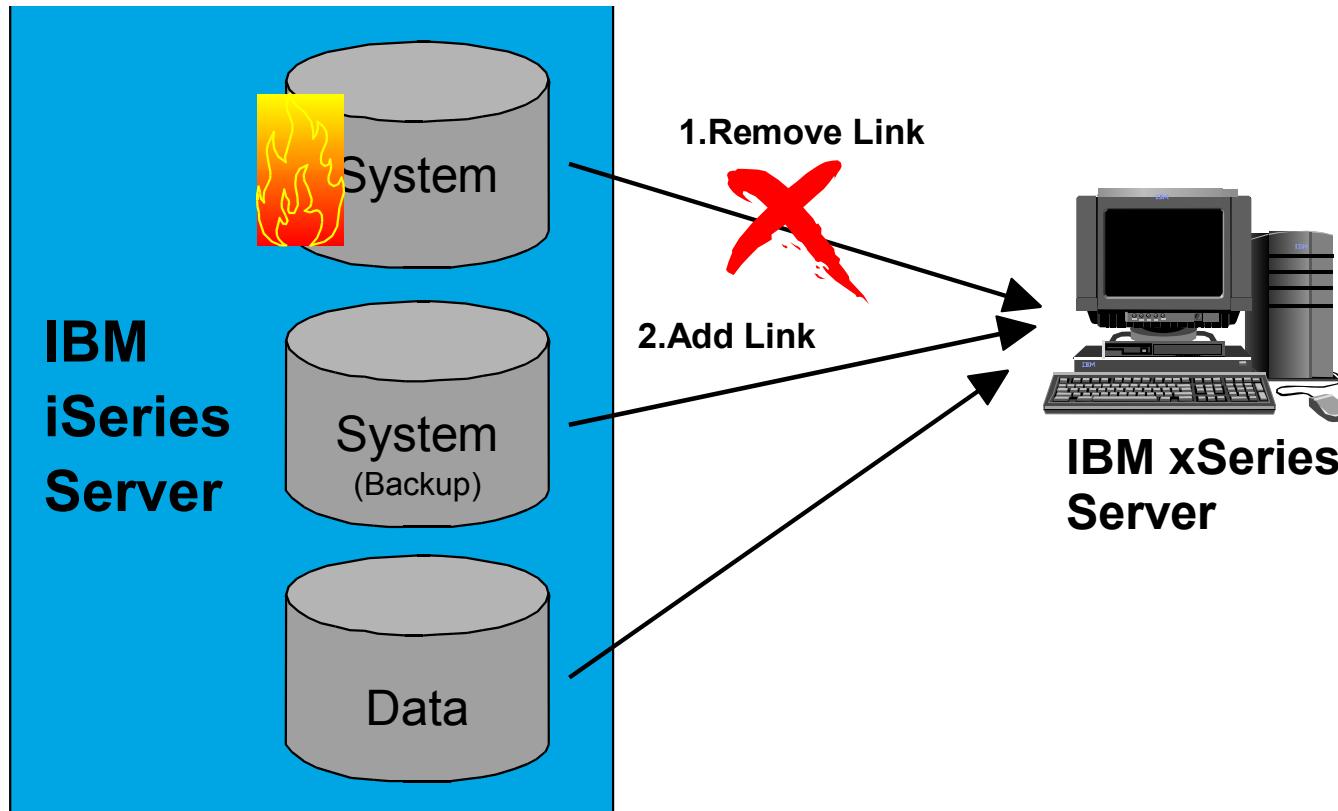
- Logical Servers allows testing with the production image and hardware

## Benefit

- Can reduce the outages caused by change



更可靠



iSeries 平時即可被存一套硬碟，若系統出問題，  
可以立刻將原先受損的硬碟卸下來(Remove Link)，  
\*再將新的硬碟加上即可。 \*

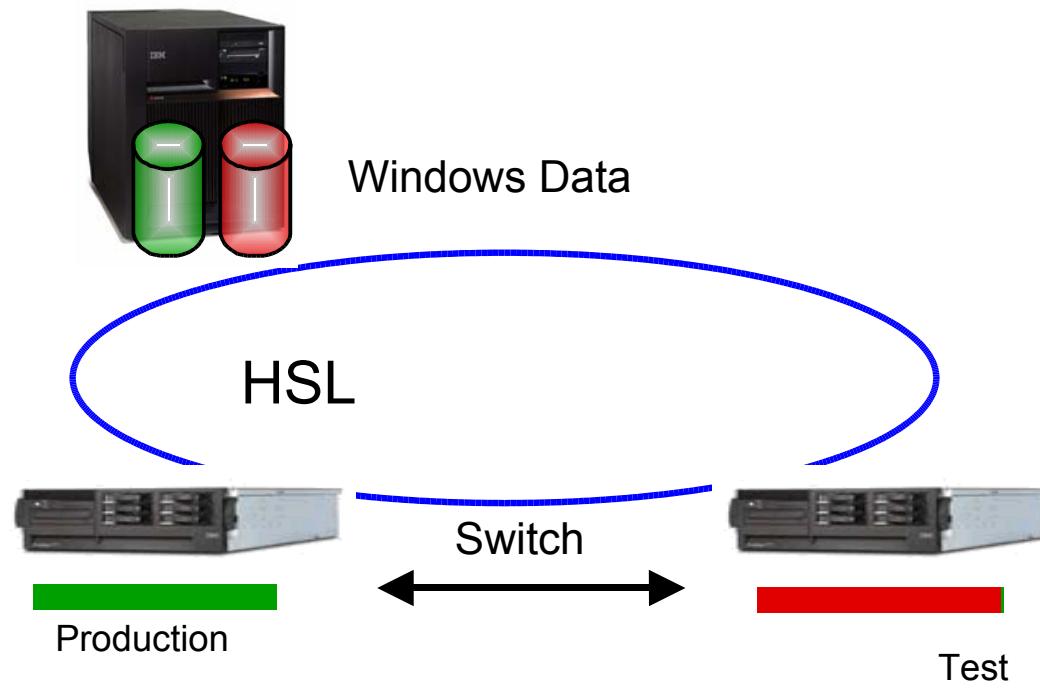
## 更有效率 - *One iSeries Server*

### 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

- 資料庫管理系統之間採用Clustering備援，若是其中一台系統出狀況時，其工作將會由另一台系統接手處理。

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## Availability - One Computer Room

### Problem

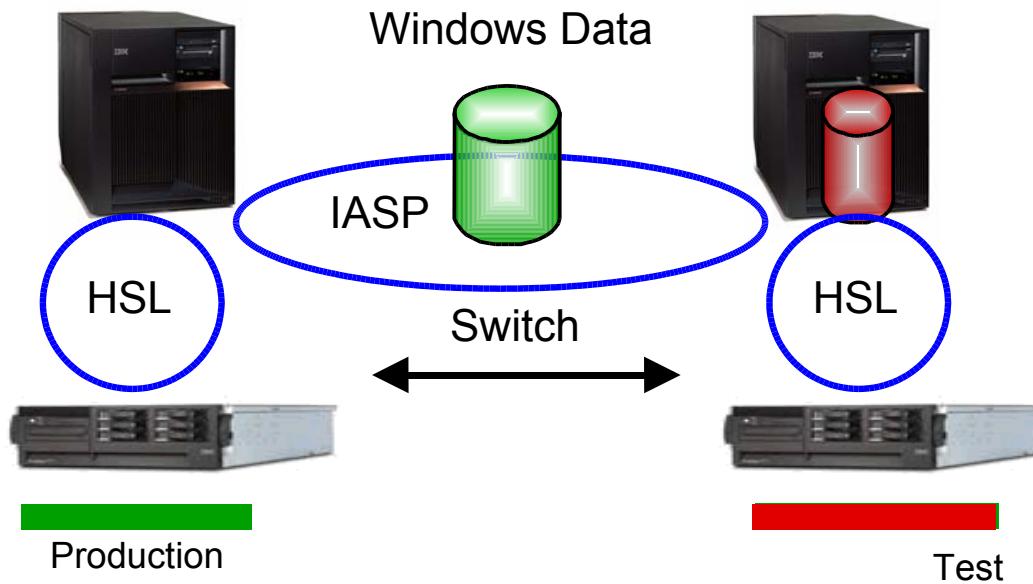
- Providing an effective and efficient availability solution

### Solution

- iSeries switch disk support with Independent ASP

### Benefit

- Solution for planned or unplanned server outages



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## 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

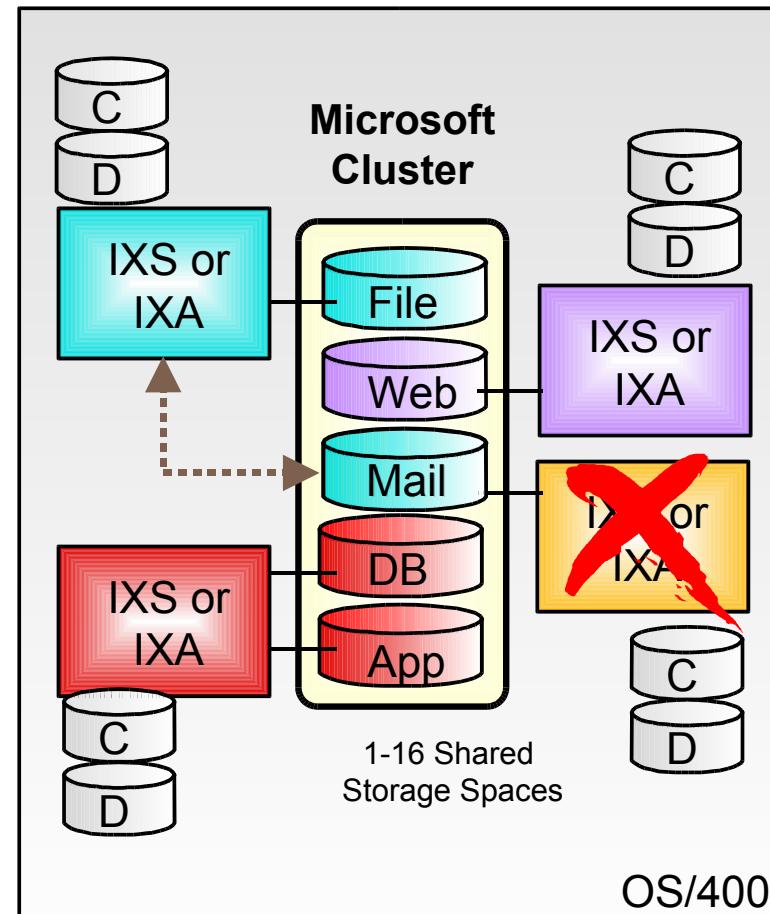
- Planned or unplanned outages

### 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\*

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\* Planned for 4th quarter 2002, dependent on Microsoft delivery

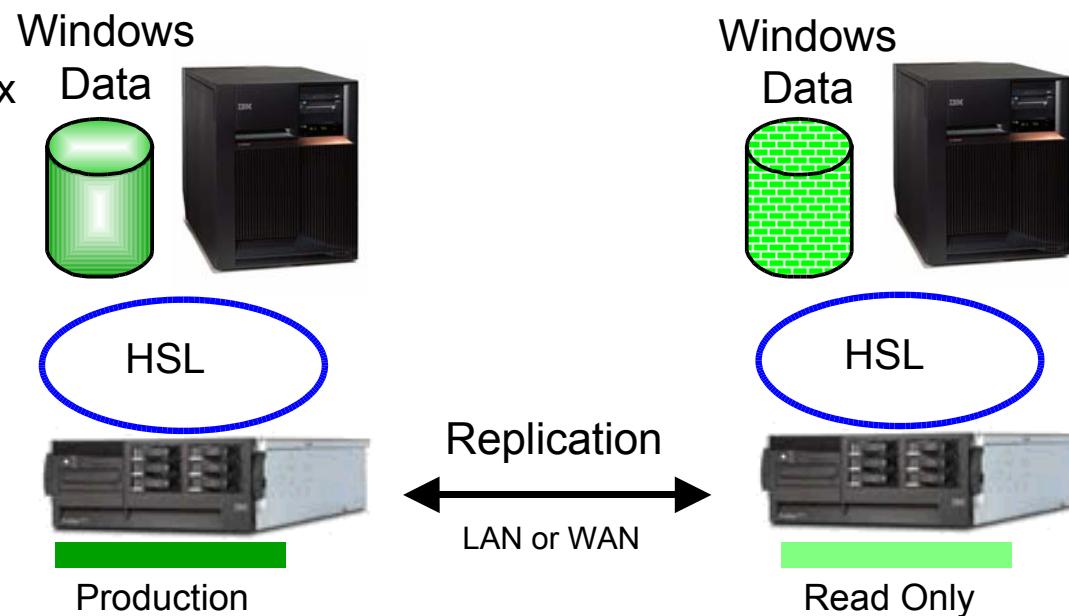
## Availability - Multiple Locations

### Problem

- Provide effective disaster recovery solution

### Solution

- Lakeview Technologies' Mimix for Windows



### Benefit

- Replication solution for planned or unplanned site outages

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# 遠端作業管理

## Problem

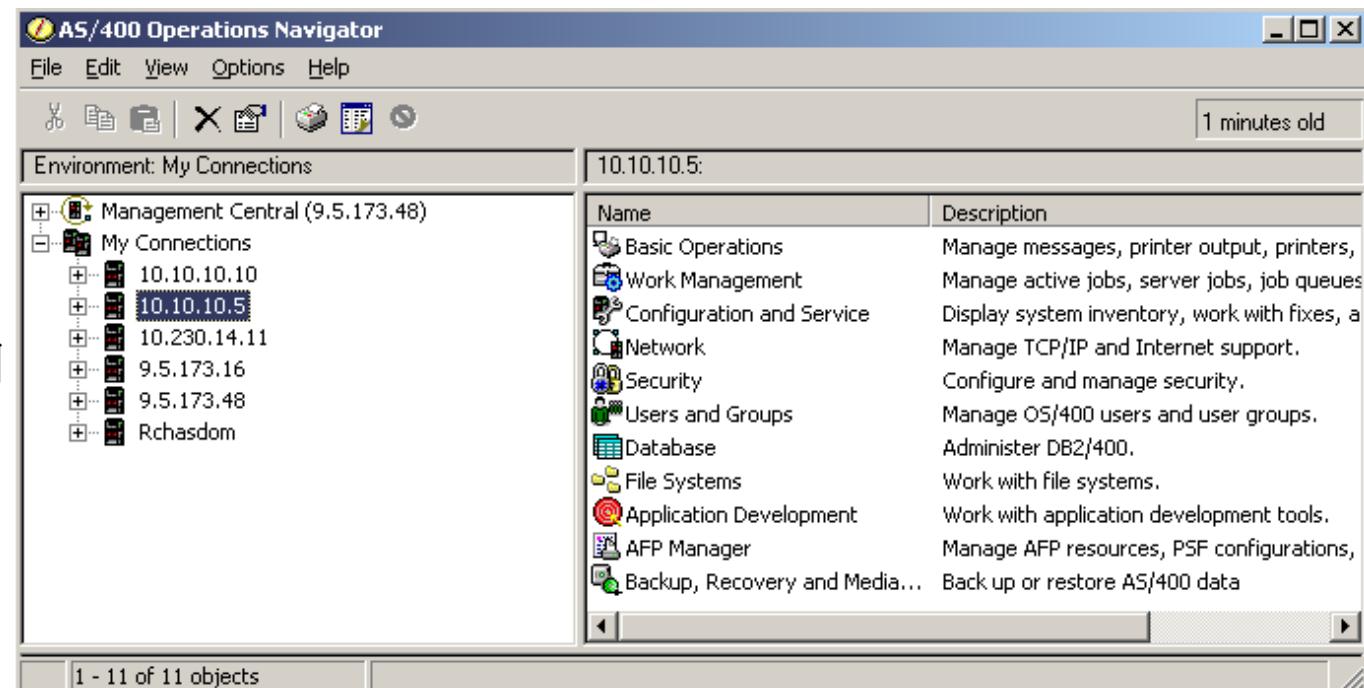
- Managing heterogeneous servers installed in remote offices

## iSeries Solution

- With Operations Navigator user, storage, backup administration for OS/400 and Windows servers can be done centrally
- Management Central Pervasive provides access from cell phones

## Benefit

- 在iSeries上安裝Windows系統，資訊人員可以不出門即可針對該台windows系統開機 / 關機、新增硬碟、監控系統狀況

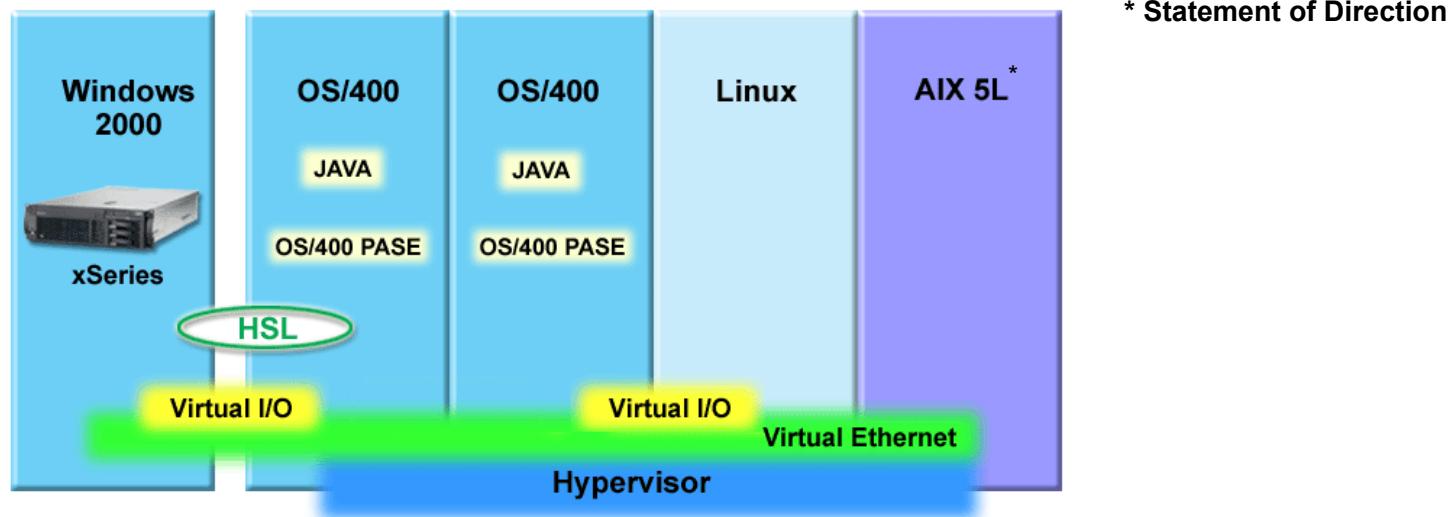


## Why use an iSeries Server to Manage Windows Servers

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

## iSeries Server Consolidation



**iSeries offers application flexibility**

**iSeries innovative technology can lower cost of management**

**iSeries provides enterprise IT management made simple**

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

## ***Windows Server Integration Summary***

**iSeries offerings for Windows server integration extended to n-way  
xSeries server**

**iSeries integration offers Storage Area Network, Server Management,  
and User Management for Windows servers**

**Integration opportunities include Branch Offices, Server  
Consolidation, and Complementary applications**

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

## 效益分析- Why iSeries + xSeries ?

	iSeries + IXA	一般PC Server	Unix Server
O.S.	Win 2000/NT	Win 2000/NT	AIX、Solaris...
導入時間	短	短	長
系統複雜度	低	低	高
系統備份	Share磁帶機	另購磁帶機	另購磁帶機
硬碟保護	Share	另購Raid卡	另購Raid卡
資料存取	多讀寫臂,快	單讀寫臂,慢	單讀寫臂,慢
災後復原	快	慢	慢
教育訓練	短	短	長
硬體維護	微幅增加	略為增加	增加
管理複雜度	微幅增加	微幅增加	增加
成本 *	中	* 低	高

# Direct Attached xSeries Servers ...

Easy to install

## ▪ Hardware

- Unpack and install xSeries server
- Install Integrated xSeries Adapter in xSeries server
- Connect cables

## ▪ Software

- 5722-WSV \*BASE Integration for Windows Server and 5722-WSV Option 2 Integration for Windows 2000 must be installed on the iSeries server
  - Apply the latest cumulative PTF package as well as any PTFs specific to 5722-WSV that are not in the cumulative package. The latest information on available PTFs for 5722-WSV can be found at the iSeries Integration for Windows web site:  
<http://www.iseries.ibm.com/windowsintegration>
    - Set up the Netserver on the iSeries
    - Windows 2000 Server CD in iSeries
    - Run INSWNTSVR Command to start installation
    - Configuration and user enrollment tasks

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## More Information

### Manual:

- "Windows server on iSeries" information available in the iSeries Information Center at <http://www.ibm.com/eserver/iseries/infocenter>. Select Networking, then Windows server on iSeries.
- iSeries PCI Card Installation Instructions  
<http://publib.boulder.ibm.com/iseries/v5r2/ic2924/info/rzame/eng47451.pdf>

### Redbooks:

- Redbooks at <http://www.redbooks.ibm.com>
- Direct Attach xSeries for the IBM iSeries Server: A Guide to Implementing xSeries Servers in iSeries (SG24-6222-00)
- Consolidating Windows 2000 Servers in iSeries: An Implementation Guide for the IBM Integrated xSeries Server for iSeries (SG24-6056-00)
- AS/400 - Implementing Windows NT on the Integrated Netfinity Server (SG24-2164-01)

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