



# Migrating from NT4 to Windows 2003



2 Hudson Place – suite 700  
Hoboken, NJ 07030

Powered by  **Double-Take**

800-674-9495  
[www.nsisoftware.com](http://www.nsisoftware.com)

No part of this document may be reproduced or transmitted in any form or by any means, electronic, or mechanical, for any reason, without the express written permission of NSI Software. The information in this document is subject to change without notice.  
Companies, names and data used in examples herein are hypothetical and/or fictitious unless otherwise stated.

Although we try to provide quality information, NSI makes no claims, promises or guarantees about the accuracy, completeness, or adequacy of the information contained in this document.



# “Sorry dear, I will be working all weekend. We’re upgrading some servers.”

If you have ever been involved in a server upgrade to a new O/S or hardware platform, then you have probably said those words.

As of mid-2003, it is estimated that over 2 Million servers still run Windows® NT 4.0, even though Microsoft® has officially announced an end to support of that platform for most customers by June 2004.

Past the compelling argument of supportability, the long list of features in Win2003 (some of which from Win2000) is finally making most of the NT4 procrastinators take notice.

The purpose of this document is to highlight the primary considerations of migrating “across the wire” from an NT4 platform to Windows 2003.

- The traditional server migration
- Summary of advocated solution
- How do I get started?
- What data can I move?
- How will the data get moved?
- How will security be affected?
- Where do I go now?

## The Traditional Migration

Most enterprise environments have come to an understanding that “in-place upgrades” from one O/S to another is more problematic than beneficial. This is particularly true when skipping a generation, such as moving from Windows NT4 to Windows Server 2003 (without going “through” Windows 2000”). Today, the primary method of server migrations is “over the wire”.

Most “over the wire” migrations resemble the following weekend timeline:

6PM Friday night	Users forced off and Backup began
Later Friday night	Begin moving data from old platform to new platform
All day Saturday	Data moving with no user access allowed
Some time on Sunday	“Point of No Return” where migration should look optimistic or rollback should begin
Sunday night	Users begin returning to system



For most server migrations, updates and consolidations ... the technical team will give up a weekend and perhaps even a holiday or two, because of two assumptions of the migration project:

Assumption 1 = Users cannot be on the production server while the data is being migrated to the new platform, because the files must be dormant to ensure everything is moved.

Assumption 2 = A “Point of No Return” is required, so that if the migration is not going well, a recovery window is still available to ensure the users do not lose weekday productivity.

Combined, these two assumptions force I/T departments to sacrifice their weekends, often causing morale decay, team burnout, and perhaps incurring overtime costs. In addition, because most enterprises are spread across multiple time zones, the window is constantly shrinking. This results in lost productivity by users and therefore lost profitability by the company.

The challenge for NSI Software, Inc. becomes, “how can NSI® help customers take advantage of the new features of Windows Server 2003 and thereby ensure supportability without incurring the pain associated with traditional migration/consolidation efforts?”

### **Summary of Advocated Solution**

Double-Take® is the leader in replication technology for Windows servers.

Double-Take runs as a Microsoft Windows-based service on any Windows server platform, including NT4, 2000, Windows-Powered NAS, Windows Server 2003 – including the newest release, Windows Storage Server 2003. Over the past seven years, the replication engine in Double-Take has been installed in more than 20,000 licenses and is independently certified for the Windows server families.

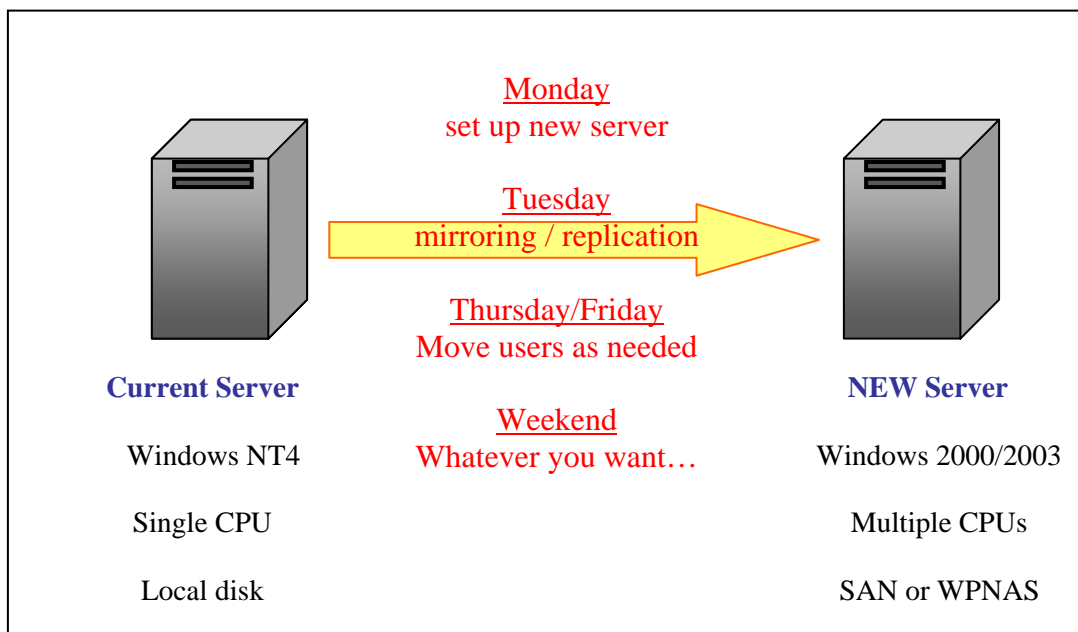
Typically, our software is used by NSI customers who desire Disaster Recovery or Centralized Backup. This is due to Double-Take software’s ability to replicate data from server to server at a byte-level. As small portions of files are changed at one location, those actual bytes are transmitted to a remote server and reapplied to a redundant copy of the data. This has brought Business Continuity and data protection to the masses for NSI customers. However, the same technology can be leveraged to achieve migration between servers.

Double-Take does not require that the source and target platforms be similar - neither by Windows version (NT4 or 2000 or 2003) or hardware architecture. The storage hardware can vary from internal IDE/SCSI disk, external JBOD, or a SAN partition. This allows customers of legacy servers (or even those from differing manufacturers) to easily migrate to more advanced platforms. The only requirement is that the older platform and new platform each run a Windows server O/S.

One of the core strengths of Double-Take is that even the initial baseline mirror of the data can be done while the users are still accessing the data. The baseline and all real-time initial changes are accomplished without concern for open files or locks.

Instead of the weekend schedule described earlier, with Double-Take replication, consider the following weekday schedule.

Monday morning	Bring up new server and install NSI Double-Take
Monday afternoon	Begin mirroring and replication – with Double-Take throttling enabled, to ensure that the production environment is not hindered. The initial mirror might take slightly longer, but allows for the files to be sent during the business day.
Tuesday / Wednesday	Mirroring is complete and real-time replication continues so both servers maintain current data.
Wednesday	Allow for test users to check new data.
Thursday/Friday	If data is good, move rest of users.



Now, consider the two assumptions that force I/T managers to give up their weekends.

(False) Assumption #1 – Users cannot be on the system while populating the new platform.

In reality, because Double-Take is not impacted by open files, users can remain on the existing system while the new server is populated with data. And because of the real-time replication within Double-Take, as soon as the initial mirror is completed, everything is current.

(False) Assumption #2 – Migration projects require a “Point of No Return”,



so that the original environment can be recovered after an unsuccessful upgrade.

In reality, the new platform operates side-by-side the existing platform. Instead of trusting that the upgrade is going well over a weekend, test users can be asked (during the business day) to confirm the validity of the migrated data. If everything looks good, the remaining users can be systematically re-pointed. If something looks suspicious, the original platform is unchanged. The test users can simply be returned to the existing server, which has never even been powered off.

Collectively, without a “quiet period” where data is being moved and without a “point of no return” – there is no need for file server migrations to occur on weekends.

### **How do I get Started?**

NSI Double-Take runs on your existing Windows servers – and is available through your preferred NSI channel partner, as well as through a direct relationship with one of our Enterprise Account teams. Simply acquire licenses of the Double-Take product and install them to the production servers, as well as the new machines. Whitepapers are available to assist you with the details of your migration at [www.nsisoftware.com](http://www.nsisoftware.com).

### **How will the Data get Moved?**

After installing Double-Take replication software on the production servers, one simply identifies the files, directories or drives that have data to be migrated. Optionally, file masks can be used to include or exclude file types, such as excluding \*.MP3 or \*.JPG files.

Mirroring (the initial base-line of whole files) will begin and progressively work through the entire file structure that you have identified. Simultaneously, replication of the real-time changes is also enabled. Thus, as users change files throughout the data mirror, those changes are also reflected on the target. And once the mirror is complete, the new machine is current. Testing and moving the users is all that is left to do.

### **How will Security be Affected?**

As long as the source (existing) and target (new) servers are in the same domain, Double-Take uses the native security attributes of the files. So, the permissions to the new copy of the files will be the same as the permissions to the original files. For both copies of the data, the domain controller provides the keys for authentication.



## What else should I know about Windows 2003?

When migrating to Windows 2003, there are two types of server solutions. Both are based on the newest and most robust server operating system from Microsoft. Both take advantage of new storage technologies like Volume Shadow Copy (VSS) and Automatic Server Recovery (ASR).

Server / Enterprise / Data Center are “generic” operating system editions, allowing any Windows application or service to be installed. The three stratifications support different amounts of memory, additional CPU’s, and some supplemental services. These O/S variations provide for flexibility in deployment and are available through traditional Microsoft channels.

Storage Server is an “optimized” Windows file server. While it uses the same base technology, most applications and services are not intended to run on this file sharing platform. By not allowing the wide range of applications, the core O/S can be leveraged for higher file I/O performance. Storage Server is available through Microsoft hardware OEM partners, like HP® or Dell®.

NSI offers Double-Take licenses for Server, Enterprise, Data Center and Storage Server editions.

## Where do I go now?

Double-Take is available in multiple sku’s through the NSI partner channel, as well as from various NSI hardware partners. Double-Take is licensed per server and stratified by the level of the server O/S edition deployed – standard, advanced/enterprise, and data center.

After the migration is complete and all parties are satisfied that the new server is ready for production, then the original server makes a great target for disaster recovery. Many NSI customers have found that if the original server hardware was good enough to do the job before the migration, it is capable of standing in during a crisis. Those customers simply re-implemented the hardware as a new Windows Server 2003 at the remote disaster recovery site and configure Double-Take on the new server to replicate to the redeployed server. This breathes new time into the useful lifespan of the original server, thereby increasing the ROI of the original hardware.



## Frequently Asked Questions (FAQ's)

### Can Double-Take help me migrate to/from a cluster?

Yes, Double-Take can replicate the files to/from nodes of a cluster. This allows you to migrate from a production server to a newly-deployed cluster. Or perhaps from one form of disk within a cluster (e.g. older SAN) to another storage solution (e.g. GeoCluster® enabled storage). In fact, migrating from local-disk to managed-storage (e.g. NAS or SAN) is almost as common today as migrating from NT4 to Windows 2000/2003.

### Can Double-Take help me migrate from SQL7 on NT4 to SQL7 on Win2000?

Yes, Double-Take can replicate the files. Because the data isn't actually changing (i.e. same version of application), your DBA or other application expert should be able to simply mount the data on the new platform.

### Can Double-Take help me migrate from Exchange 5.5 to 2000/2003?

Double-Take is a file replication solution. One would want to use the traditional Exchange® methodology of bringing up new the new Exchange server and moving the mailboxes or doing an "in-place upgrade" on the existing 5.5 server.

### Can Double-Take help me migrate O/S registry settings?

Double-Take is a file replication solution. For non O/S related registry hives, there are third party freeware utilities, like REGDUMP, that can grab whole hives and then replay them to the new server.

### Can NSI help me with the the hands-on part of my Migration?

Yes, NSI Professional Services can be engaged to ensure that your migration project is successful and leverages all of our best-practice experience. NSI maintains several O/S and Application specialists and partnerships that can be engaged. Please contact your NSI account manager for further details.

### What if I don't need my Double-Take licenses after the migration is over?

Many NSI customers will initially purchase Double-Take licenses for use on a migration project, but later redeploy them throughout their organization. As an example, after one has migrated from a lesser-powered Windows NT 4 server to a newer Windows 2003 server, the older hardware can often be redeployed as a Disaster Recovery server. While the machine may not be quite as powerful for normal use, many can serve adequately during a crisis situation. Other clients will reallocate the older platform (and its Double-Take license) to a regional or branch office. In addition, Double-Take licenses are transferable between servers within the same company. So, one might use a redeploy the software after the migration to a more critical server for High Availability.

Moreover, the fact is that migrations are routine. One might be migrating from NT4 to Windows 2003 this quarter, but be planning on migrating from local-disk to managed-storage (NAS or SAN) in the future. Double-Take migrations tend to pay for themselves in saved downtime within one project, but are usable for the duration of the software agreement. Please contact an NSI Account Manager for more details and ideas on leveraging Double-Take.

## **Additional Solutions achievable through Replication**

1. NAS to SAN storage migration
2. Branch office stranded server storage to centralized data centers
3. Small office Server to Server protection
4. Offload or move backup operations to centralized storage area
5. Multiple site replication – Fan-Out or Fan-In

Example 1 – NAS to SAN storage migration. As more environments move from local-storage based servers to NAS/SAN, the question of how the actual migration will occur becomes more frequent. Using the same techniques outlined above, one can migrate from local storage to a NAS, a server utilizing a SAN, or even a NAS-gateway to the SAN. In all cases, the fundamental requirement is that the data is moving from one Windows platform (with local storage) to another Windows platform (with more manageable storage), like that of a Windows-Powered NAS or Storage Server.

Example 2 – Branch office server to Centralized Data Center. Even in the enterprises where protecting the corporate data has become a standard, branch offices tend to still be isolated to tape solutions. This forces non-I/T personnel to be responsible for tape rotations and cleanings and the result is higher manpower costs and lower restore reliability. By efficiently replicating the byte-level changes within the data using Double-Take, one can bring the branches' data back to a centralized data center. This provides disaster recovery for the branches, and allows back ups to be done at the centralized facility, by I/T personnel and using more advanced tape technologies.

Example 3 – Small office Server-to-Server Protection. Whereas large enterprises may have multiple data centers and a myriad of server technologies, the small office relies heavily on its perhaps one or few server resources with limited I/T resources or personnel. When the primary server fails, the office productivity can grind to a halt. Double-Take provides a simple and cost-effective way to “fail over” to a second machine in the same office, a remote location, or even at an employee's home. The result is rapid recovery of the server – and the small office continues doing business.

Example 4 – Consolidate Backup Operations. Today's corporations are increasing their business day, as geographic and national boundaries no longer limit effective commerce. Unfortunately, this results in an ever shrinking backup window. However, the redundant copies of the files on Double-Take target servers can be backed up, even when the original copy of data is in use. Without expensive and application-specific backup agents, the second copy of the data can be protected using existing tape technology attached to the redundant server. And perhaps even better, the backup can be done at local disk/tape speeds, instead of a media server backing up multiple application servers.

Example 5 – Site Replication. Many replication needs are not based around data protection or availability. Like the discussed Migration solutions, some business goals simply need to get the data to an alternate location. Double-Take can provide a corporation with a master-content server and then ensure that all regional locations and branch offices receive the replicated files – regardless of whether it is a custom application, or simply the Human Resources directory for vacation forms and business card requests.

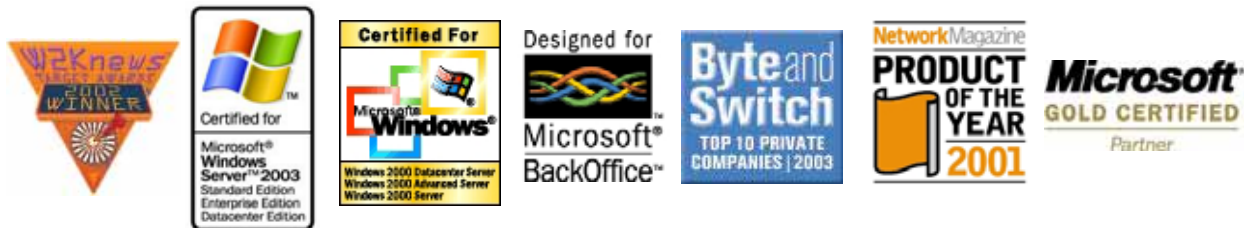


When considering the range of examples listed above, the key to remember is that Double-Take provides the most efficient, byte-level replication of files within a Microsoft Windows server environment. Whatever the business goal (migration, protection, availability or distribution), it starts with having multiple copies of your files. So it starts with Double-Take by NSI Software.

Please visit [www.nsisoftware.com](http://www.nsisoftware.com) for more information on Double-Take, including information on how to migrate your existing servers, how to replicate data for business continuity, and how to improve and centralize one's backups.

All of these solutions are based around the NSI fundamental philosophy that all business continuity efforts start with protecting the data. From there, it is simply a matter of what you want to do with it.

**NSI Software** knows how to protect applications running on Windows file systems. "Business Continuity through Replication" is the single focus of every person in our company. That focus, and the quality of our products, has helped NSI forge relationships with NSI®, IBM®, Dell®, SunGard®, Microsoft® and probably your preferred reseller-integrator.



For over 10 years, NSI has been providing the products, services, and support to help you be successful in protecting your most critical applications...

We'd like the chance to prove it to you.

© 2004 NSI Software, Inc. All rights reserved.

Double-Take®, NSI® and GeoCluster® are registered trademarks of NSI Software, Inc., Balance™ is a trademark of NSI Software, Inc.. and all are used with permission of the trademark owner. All other trademarks are properties of their respective companies.

Microsoft, Windows Powered, Windows, Exchange, and SQL Server, are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Our Vision

*To be the leading provider of data protection & high availability software solutions for 24x7 business operations*

Our Offer to You

*We would like to become your partner in ensuring the continuous operations of your business.*

*Please allow us the opportunity to talk to you about your specific data protection needs and to discuss our products and services that may apply.*

*Products that Protect your Data*

*Services that Ensure your Success*

For more information on NSI products and services, please contact NSI.

NSI Software, Inc. - Corporate Office

Two Hudson Plaza, Suite 700  
Hoboken, NJ 07030  
800-775-4674 or 201-656-2121  
Fax: 201-656-2727

NSI Software, Inc. – Inside Sales

8470 Allison Pointe Blvd. Suite 300  
Indianapolis, IN 46250  
800-674-9495  
Fax: 317-598-0187



Or visit us on the web at [WWW.NSISOFTWARE.COM](http://WWW.NSISOFTWARE.COM)

No part of this document may be reproduced or transmitted in any form or by any means, electronic, or mechanical, for any reason, without the express written permission of NSI Software. The information in this document is subject to change without notice.  
Companies, names and data used in examples herein are hypothetical and/or fictitious unless otherwise stated.

Although we try to provide quality information, NSI makes no claims, promises or guarantees about the accuracy, completeness, or adequacy of the information contained in this document.