

IBM TotalStorage™ Network Attached Storage (NAS) Interoperability Matrix

For

NAS 100 (5190-R12)
NAS 200 (5194-201 and 5194-226) with software release 2.5
NAS 300 (5195-326) with software release 2.5
NAS 300G (5196-G01 and 5196-G26) with software release 2.5
NAS 200 (5194-25T and software release 2.7)
NAS 300G (5196-G27 and 5196-G02)

Table of Contents

Table of Contents.....	2
Introduction	3
Purpose	3
Support with non-IBM Products.....	3
Suggestions for non-IBM Products.....	4
Special considerations for clustered NAS configurations.....	4
Connectivity Diagram	6
Adapters Matrix	7
Tape Storage Matrix.....	8
Disk Subsystem Matrix.....	9
SAN Fabric Matrix	10
Software Matrix	10
Software Matrix Details	12
IBM Director® System Management.....	12
IBM DB2® Universal Database	12
IBM Lotus Domino R5 Mail Server	12
IBM Tivoli SANergy™.....	13
IBM Tivoli® Storage Manager	13
IBM WebSphere® Application Server	13
BMC Patrol	14
Legato NetWorker® for Windows® 2000/NT	14
Microsoft Exchange Server™	14
Microsoft® SQL Server 2000™.....	14
Microsoft Windows Media Services™	15
NSI Software Double-Take®.....	15
Oracle® 9i Database	15
OTG DiskXtender (D ^x 2000).....	15
Symantec Norton™ AntiVirus.....	16
Trend Micro™ ServerProtect™	16
VERITAS Backup Exec™ for Windows NT and Windows 2000 Advanced Server	16
VERITAS NetBackup DataCenter™	17
VERITAS NetBackup Storage Migrator™ for Microsoft Exchange.....	17
VERITAS Volume Manager™ for Windows NT and 2000	17
Precise/WQuinn StorageCentral® SRM Standard Edition.....	18
Disclaimer	19

Introduction

Purpose

The IBM TotalStorage NAS Interoperability Matrix is a source of information for customers to help select the best combination of integrated storage technologies to reduce expenses, increase efficiency and expedite storage infrastructure implementation.

The information in this matrix is intended to aid in the design of high quality solutions on leading storage platforms. It is also intended to help reduce solution design time by identifying tested combinations of Network Attached Storage (NAS), tape drives and libraries, RAID arrays, Storage Area Network (SAN) fabric and storage management, middleware and virus protection software.

Support with non-IBM Hardware

By including a non-IBM hardware product below, this means that IBM has tested an IBM NAS product in a configuration which includes the non-IBM hardware product. It means we tested the product in a given configuration, and it met the requirements in an approved test plan. It does not mean that the non-IBM hardware will work with the IBM NAS product in any configuration but only that we tested it with the product listed. This means that not every product within a vendor's product line was tested and that not every possible configuration was tested either. It is also highly possible that a product not listed or a configuration not identified will interoperate correctly with these NAS products. Neither IBM nor the vendors exhaustively test these products individually or in combinations, and IBM does not warrant interoperability functionality or problem resolution of any listed product or of an unlisted product.

IBM does not prohibit other vendor products from being used with IBM's NAS products. However, during problem debug and resolution, removal of those hardware additions may be required for IBM NAS Product Support to provide problem determination and resolution on the IBM-supplied hardware.

See the suggestions and considerations recommended in the sections below.

Support with non-IBM Software

IBM strives to reduce customer's total cost of ownership by designing, testing and tuning its NAS appliances specifically for a network attached storage environment -- a substantial enhancement compared to a general file server product. Also, help to reduce customer setup and installation efforts, IBM's NAS products provide several preloaded functions and applications including NTbackup, TSM backup client, Storage Resource Management, Persistent Storage Manager, IBM Director Client, and remote management functions.

Supporting an open-system concept, IBM recognizes that customers have valid business reasons to interoperate with non-IBM products and to install a NAS-related software utility program beyond what IBM ships with its NAS Products. Because the NAS operating system is a derivative of Windows 2000 Advanced Server, many software products will often work just as it would on an identically configured Windows 2000 Advanced Server.

The information below describes those software configurations that were successfully tested by IBM and/or vendors. This means that not every product within a vendor's product line was tested and that not every possible configuration was tested either. It is also highly possible that a product not listed here or a configuration not identified will interoperate correctly with these NAS products. Neither IBM nor the vendors exhaustively test these products individually or in combinations, and IBM does not warrant interoperability functionality or problem resolution of any listed product or of an unlisted product.

To provide a stable and robust NAS platform, IBM has invested substantial effort in tuning and testing these NAS products along with a selection of preloaded agents and applications. IBM does not prohibit other vendor products from being used with IBM's NAS products. However, during problem debug and resolution, removal of those software additions may be required for IBM NAS Product Support to provide problem determination and resolution on the IBM-supplied software.

IBM NAS Product Support does not provide service or support for non-IBM products -- instead, customers should contact the non-IBM manufacturer. Regardless of whether or not a software program is listed below, IBM does not support other vendor's software -- therefore, IBM NAS Product Support cannot provide telephone, on-site, or development lab support for vendor's software for either initial problem determination or in-depth analysis. Likewise, IBM NAS Product Support does not provide a single vendor interface for problem isolation and resolution for other vendors. Should problems require joint IBM/vendor efforts, IBM NAS Product Support may work with other ISV vendors on problem isolation.

For problems in the software that IBM ships preloaded on the NAS products, IBM may work with IBM's hardware and software suppliers (such as Microsoft and others). However, IBM does not guarantee that all problems will be resolved. Also; IBM does not guarantee to resolve all problems in IBM-supplied products that only appear when other (bug-free) non-IBM hardware or software is also used.

Customers should contact the corresponding vendor for related pre-sales and post-sales support issues, as NAS Product Support can only assist on NAS specific items. Customers who desire a turnkey multi-vendor support should investigate an IBM Global Services multi-vendor support contract.

Suggestions for non-IBM Hardware and Software

When the customer installs additional products IBM recommends the following:

- The software provided with these NAS appliances is licensed only to be used as a Network Attached Storage device. Please read the End User License Agreement shipped with the product on any restrictions on product use before installing additional software.
- Check both the vendor and IBM support web sites for any related tips, downloads, or known restrictions. The software provided with these NAS appliances is licensed only to be used as a Network Attached Storage device. Please read the End User License Agreement shipped with the product on any restrictions on product use before installing additional software.
- Backup each NAS engine before making any additions or changes, to allow easy removal of those changes. Consider using the PSM Disaster Recovery function or the included NTbackup program to ensure that the complete NAS operating system files are correctly backed-up.
- Some vendor software should be installed using a directly attached keyboard/display rather than using Windows Terminal Services for the initial installation.
- Fiber channel equipment is sensitive to specific manufacturer, adapter and device driver details, and deserves extra attention.
- Clustered NAS configurations provide sophisticated fail-over functionality, but they also deserve extra attention.

Special considerations for clustered NAS configurations

Clustered NAS configurations provide sophisticated fail-over functionality, but they also deserve extra attention

For clustered configurations using CIFS, when a node failover occurs, the existing CIFS connections from the NAS clients to the NAS are lost and must be re-established. For many "desktop" NAS client applications, this retry may appear transparent to the desktop user (or it may require a manual retry). For some NAS

client applications (for example, databases), if the application is not designed to automatically retry the failed I/O, the NAS client application must be brought down and back up (either manually or by configuring automatic restart).

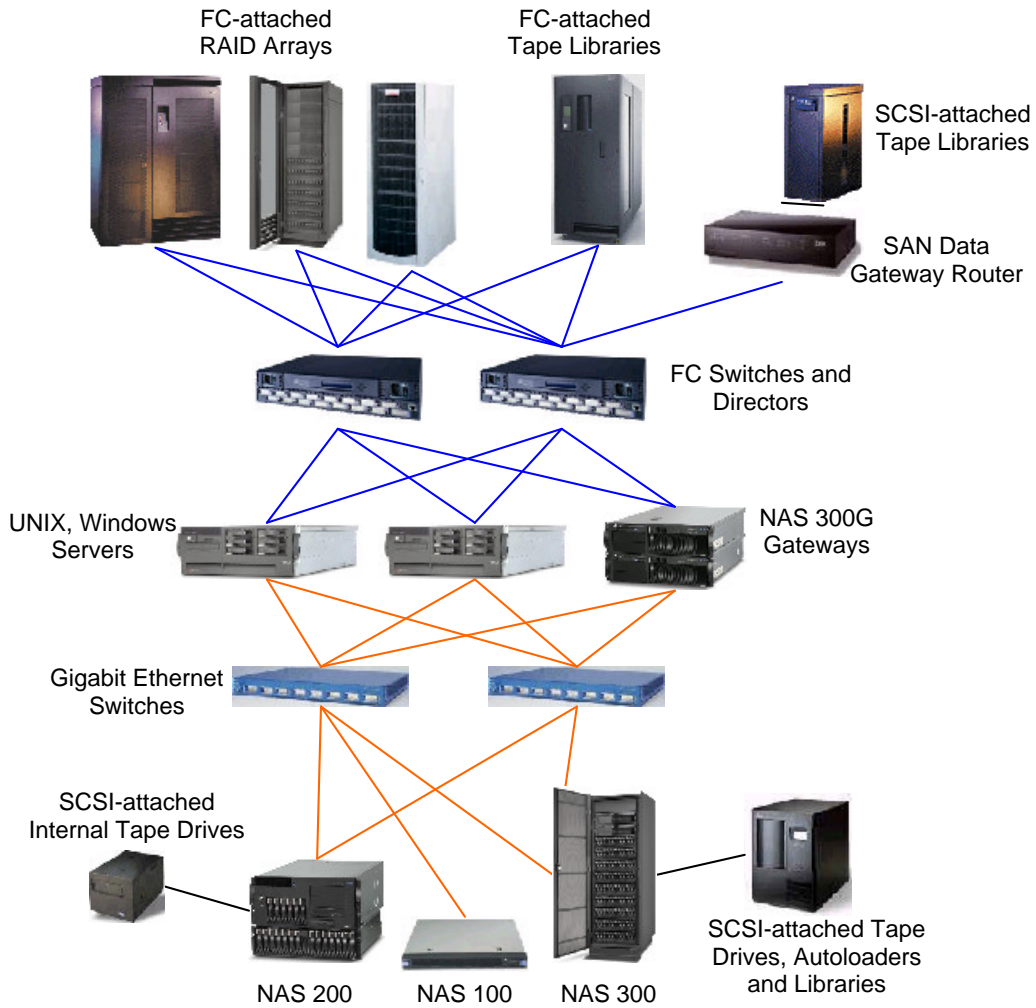
For clustered configurations using NFS, the above concerns may also exist -- but they are probably less likely, as the NFS protocol is "connectionless". Therefore, if the NAS client application can be configured to not timeout during the NAS failover interval (estimated to be approximately 10-30 seconds), then the NAS failover may appear transparent to the NAS client application (except for this delay during the failover).

Additionally, the NAS client application (or database) may have other restart requirements that are unique to that specific application. For example, during failover, file locks may be freed and have to be re-established, and applications, and application-unique housekeeping may have to be performed before the application can continue.

In many cases, a NAS node failover may appear transparent to end users using NFS or CIFS. Listing of a program or database in this document does not imply that all failover scenarios with that application are transparent to all end users, as the impact of failover is dependent on CIFS/NFS protocol and architecture, application or database design, and customer configuration and environment.

Connectivity Diagram

The following diagram illustrates one of the many ways that IBM NAS may be connected.



Adapters Matrix

NAS 100 (519-R12)								
NAS 200 (5194-201) with NAS software release 2.5							<div style="border: 1px solid black; background-color: yellow; padding: 2px;"> O not applicable S Standard </div>	
NAS 200 (5194-226) with NAS software release 2.5								
NAS 300 (5195-326) with NAS software release 2.5								
NAS 300G (5196-G01 and 5196-G26) with NAS software release 2.5								
NAS 200 (5194-25T)								
NAS 300G (5196-G27 and 5196-G02)								
Feature Code							PCD Part Number	SCSI Adapters for Tape Storage
O	3701	3701	0001	0001	O	O	02K3454	Fast/Wide Ultra SCSI Adapter SCSI SE
O	3702	3702	0013	0013	3702	0013	19K4646	Ultra160 Adapter LVDS
O	3704	3704	0019	0019	O	O	08L6517	3570 Tape Library Adapter Card Kit SCSI HVD
Network Adapters								
O	3301	3301	0005	0005	O	O	06P3601	10/100 Ethernet Adapter 1-Port
O	3302	3302	0006	0006	3302	0006	06P3701	Gigabit Ethernet SX Adapter 1-Port
O	3303	3303	0018	0018	3303	0018	22P6801	10/100/1000 Copper Ethernet Adapter 1-Port
O	O	O	O	O	3305	3305	2000-100007.	10/100/1000 Copper Ethernet Accelerated Adapter 1-Port
O	3304	3304	0015	0015	3304	0015	2000-100000	10/100 Ethernet Accelerated Adapter 4-Port
SAN Adapters								
O	O	3703	0002	0002	O	O	00N6881	FC Host Bus Adapter 1 Gb 1-Port
O	O	O	0011	0011	O	O	(b) QLA2202F	FC Host Bus Adapter 1 Gb 2-Ports
O	O	O	O	O	3705	3705	(b) QLA2340	FC Host Bus Adapter 2 Gb 1-Port
O	O	O	O	O	O	3706	(b) QLA2342	FC Host Bus Adapter 2 Gb 2-Port
SCSI Adapters for Disk Storage								
3705	O	O	O	O	O	O	(none)	PCI Low-Profile SCSI Adapter
O	S	O	0012	0012	O	O	06P5740	ServeRAID 4Lx Ultra160 Controller LVDS
O	3901	O	O	O	3901	O	06P5736	ServeRAID 4Mx Ultra160 Controller LVDS
O	O	S	O	O	3902	O	37L6889	ServeRAID 4H Ultra160 Controller LVDS
O	O	O	O	O	3903	O	25P3492	ServeRAID 5i LVDS
Management Adapters								
O	3821	3821	0010	0010	3821	0010	09N7585	Remote Supervisor Adapter

Notes:

- (a) Alacritech®, Inc. part number
- (b) QLogic®, Corp. part number
- *Feature Code* represents an IBM Storage Systems Group identifier
- *Part Number* represents an IBM Server Group identifier
- Fibre channel attached disk and tape cannot share the same fibre channel port
- Fibre channel attached tape devices have only been tested with the 1-port fibre channel cards, and are not recommended with the 2-port fibre channel cards.
- Each engine in a clustered configurations requires identical hardware, except for the Remote Supervisor Adapter

Tape Storage Matrix

Important note: The NAS operating system is a derivative of Windows 2000 Advanced Server. As a result, IBM anticipates that tape units and backup software capable of operating under identical configurations with Windows 2000 Advanced Server can also interoperate with the NAS operating system. This information describes hardware and software configurations successfully tested by IBM. Not all vendor products have been tested, and additional unlisted products may interoperate correctly with these NAS products. Customers should contact the corresponding vendor for related pre-sales and post-sales support issues, and to determine which tape units they support with their software.																																																		
Note: IBM 3580 and 3584 models include both the Ultrium 1 and Ultrium 2 models. Customers should contact the backup software vendor to determine their support and any restrictions with the new Ultrium 2 models. 3582 was not tested but support for it will be considered under RPQ																																																		
NAS 100 (5190-R12): tested with the following tape devices using SCSI adapter Feature Code 3705 <ul style="list-style-type: none"> • Legato NetWorker: IBM 3502, 3580 and 3581 • Microsoft NT Backup: IBM 3502, 3580 and 3581; Quantum DLT 7000, 8000 • VERITAS Backup Exec: IBM 3502, 3580 and 3581 • VERITAS NetBackup: IBM 3502, 3580 and 3581 																																																		
NAS 200 (5194-201 and 5194-226) with NAS software release 2.5, NAS 300 (5195-326) with NAS software release 2.5, and NAS 300G (5196-G01 and 5196-G26) with NAS software release 2.5:																																																		
Tivoli Storage Manager																																																		
<table border="1"> <tr> <td colspan="10">Legato NetWorker</td> </tr> <tr> <td colspan="10">Microsoft NT Backup</td> </tr> <tr> <td colspan="10">VERITAS Backup Exec</td> </tr> <tr> <td colspan="10">VERITAS NetBackup</td> </tr> </table>										Legato NetWorker										Microsoft NT Backup										VERITAS Backup Exec										VERITAS NetBackup										S attached via CSI adapter F attached via FC HBA f attached via 2108 Router O not tested
Legato NetWorker																																																		
Microsoft NT Backup																																																		
VERITAS Backup Exec																																																		
VERITAS NetBackup																																																		
										Part Number	Tape Automation																																							
S	f	O	O	S	O	S	f	O	O		IBM 3502 DLT Library																																							
S	f	O	O	O	O	S	f	O	O		IBM 3570 Magstar Tape Library																																							
S	f	O	O	O	O	S	f	O	O		IBM 3575 Magstar MP Tape Library																																							
S	f	S	f	S	f	S	f	O	O		IBM 3581 Ultrium LTO Autoloader																																							
S	F	S	F	S	F	S	F	O	O		IBM 3583 Ultrium Scalable LTO Library																																							
S	F	S	F	S	F	S	F	O	O		IBM 3584 Ultrium UltraScalable LTO Library																																							
S	f	S	f	O	O	S	f	O	O		IBM 3590B Enterprise Tape System																																							
O	F	O	F	O	O	O	F	O	O		IBM 3590E Enterprise Tape System																																							
S	f	O	O	S	O	S	f	O	O		ATL 1000 DLT Library																																							
										Tape Drives																																								
S	F	S	f	S	f	S	f	S	F		IBM 3580 Ultrium LTO External Tape Drive																																							
S	O	S	O	S	O	S	O	S	O	00N8016	100/200GB LTO FH Internal Tape Drive																																							
S	O	S	O	S	O	S	O	S	O	24P2396	100/200GB LTO HH Internal Tape Drive																																							
S	O	S	O	S	O	S	O	O	O	00N7990	40/80GB DLT Internal Tape Drive																																							
S	O	S	O	S	O	S	O	S	O	00N8075	110/220GB SDLT Internal Tape Drive																																							
S	f	S	f	S	f	S	f	O	O		Quantum DLT 7000 Tape Drive																																							
S	f	S	f	S	f	S	f	S	O		Quantum DLT 8000 Tape Drive																																							
S	F	S	F	S	F	S	F	O	O		StorageTek 9840 Tape Drive																																							
NAS 300G 5196-G27, 5196-G02, and NAS200 5194-25T: <ul style="list-style-type: none"> • Tivoli Storage Manager: IBM 3583 (fibre channel), IBM 3584 (SCSI, fibre channel) • Legato NetWorker: V6.1.1 IBM 3850 (SCSI), IBM 3583 (fibre channel) • Microsoft NT Backup: IBM 3580 (SCSI) • VERITAS Backup Exec: V8.6 3580 (SCSI), 3583 (SCSI) • VERITAS NetBackup: DataCenter V4.5 3580 (SCSI), 3583 (SCSI) 																																																		

IBM web sites with additional tape device information

- IBM TotalStorage Technical Support -- <http://www-1.ibm.com/servers/storage/support/nas/index.html>
- IBM OEM LTO Support (<http://www.storage.ibm.com/hardsoft/tape/lto/oem/support/index.htm>)
- IBM xSeries Servers Tape Backup Overview Matrix --http://www.pc.ibm.com/qtechinfo/MIGR-4DRM86.html?lang=en_US&brand=IBM+Options&doctype=Online+publications&subtype=Cat&up=unknownuse

Disk Subsystem Matrix

NAS 100 (5190-R12) with NAS software release 2.5						T tested O not tested
NAS 200 (5194-201 and 5194-226) with NAS software release 2.5						
NAS 300 (5195-326) with NAS software release 2.5						
NAS 300G (5196-G01 and 5196-G26) with NAS software release 2.5						
NAS 200 (5194-25T)						
NAS 300G (5196-G27 and 5196-G02)						
RAID Arrays						
O	O	O	T	O	T	IBM 2105 Enterprise Storage Server with SDD
O	O	T	T	O	T	IBM FAST 200 Storage Unit with RDAC
O	O	O	T	O	T	IBM FAST 500 Storage Unit with RDAC
O	O	O	T	O	T	IBM FAST 700 Storage Unit with RDAC
O	O	O	O	O	T	IBM FastT 600 Storage Unit with RDAC
O	O	O	O	O	T	IBM FAST 900 Storage Unit with RDAC
O	O	O	O	O	T	HDS 9200 with Hitachi Dynamic Link Manager (HDLM)

Notes:

- The IBM 2105 ESS configuration included the host-based IBM Subsystem Device Driver (SDD).
- The IBM FAST 500, 600 700, and 900 configurations included the host-based Redundant Disk Array Controller (RDAC) driver. The FAST900 was only tested on the G27
- Hitachi HDS 9200 with Main Code 055F/D (or higher) and Hitachi Dynamic Link Manager 4.0 (HDLM) has been successfully tested using the NAS 300G-G27 and 300G-G02 with the 1-port fibre channel HBA card (NAS feature code 3705, QLogic part QLA-2340) using QLogic HBA device driver 8.1.5.10. This specific HBA device driver is required, but it is not shipped with the NAS and must be downloaded from the web. After installing this device driver on the NAS, the NAS must only be used with the HDS-9200 disk subsystem (and not with the IBM ESS or FastT). Note: The 2-port fibre channel HBA card (NAS feature code 3706, QLogic QLA-2342) has not been tested and is not supported in this configuration by Hitachi or IBM.

SAN Fabric Matrix

NAS 100 (5190-R12) (Note: Does not support fibre channel attachment for tape backup)						T tested O not tested
NAS 200 (5194-201 and 5194-226) with NAS software release 2.5 (Note: fibre channel attachment is for tape backup only)						
NAS 300 (5195-326) with NAS software release 2.5						
NAS 300G (5196-G01 and 5196-G26) with NAS software release 2.5						
NAS 200 (5194-25T) (Note: fibre channel attachment is for tape backup only)						
NAS 300G (5196-G27 and 5196-G02)						
SAN Fabric						
O	O	O	T	O	T	IBM 2108-R03 SAN Data Gateway Router
O	O	O	T	O	T	IBM 2109 S08/S16 FC Switch
O	O	O	T	O	T	IBM 2109 F16 2Gbps FC Switch
O	O	O	T	O	T	IBM 2031 McData ES-3016 FC Switch
O	O	O	T	O	T	IBM 2032 McData ED-5000 FC Director
O	O	O	T	O	O	IBM 2042 Inrange FC9000 FC Director
O	T	T	T	O	T	IBM 3534 FC Managed Hub
O	O	O	T	O	O	Brocade SilkWorm 2200 FC Switch
O	O	O	T	O	O	SAN Controller for IBM 7133 Serial Disk
O	O	O	O	O	T	IBM 2062-D07 Cisco 9509 Director
O	O	O	O	O	T	IBM 2062-T07 Cisco 9509 Director
O	O	O	O	O	T	IBM 2062-D01 Cisco 9216 Fabric Switch

Notes:

- The Cisco tested configuration included using a mini NAS environment of 20 clients, LAN switch, and NAS 300G in the FASTT lab.

Software Matrix

Please use the chart below to understand which NAS models were used in the testing. See the Software Matrix Details on the following pages for more information

NAS 100 (5190-R12)						T tested A tested on non-clustered models only B tested on clustered models only O not tested ✓ TotalStorage Proven solution
NAS 200 (5194-201 and 5194-226) with NAS software release 2.5						
NAS 300 (5195-326) with NAS software release 2.5						
NAS 300G (5196-G01 and 5196-G26) with NAS software release 2.5						
NAS 200 (5194-25T)						
NAS 300G (5196-G27 and 5196-G02)						
Description						
T	T	T	T	T	T	✓ IBM DB2 Universal Database
T	T	T	T	T	T	IBM Director System Management
T	T	T	T	T	T	IBM Lotus Domino R5 Mail Server

O	O	O	T	O	T	IBM Tivoli SANergy
O	T	T	T	T	T	IBM Tivoli Storage Manager
T	T	T	T	T	T	✓ IBM WebSphere Application Server
T	T	T	T	T	T	BMC Patrol (NAS200, 300, and 300G are also TotalStorage Proven)
T	T	T	T	T	T	✓ Legato NetWorker Microsoft for Windows 2000/NT
T	T	T	T	T	T	Oracle 9i Database
O	T	T	T	T	T	✓ OTG DiskXtender (D*) 2000
T	T	T	T	T	T	Microsoft SQL Server 2000
T	T	O	A	T	A	Microsoft Exchange Server version 5.5
T	T	T	T	T	T	Microsoft Windows Media Services
T	T	T	T	T	T	✓ NSI Software Double-Take
T	T	T	T	T	T	Symantec Norton AntiVirus
T	T	T	T	T	T	✓ Trend Micro ServerProtect
T	T	T	T	T	T	✓ VERITAS Backup Exec for Windows NT and 2000
T	T	T	T	T	T	VERITAS NetBackup DataCenter
O	T	T	T	O	O	✓ VERITAS NetBackup Storage Migrator for Microsoft Exchange
O	O	T	B	O	B	VERITAS Volume Manager (dynamic disk and DMP)
O	T	T	T	T	T	✓ Precise/WQuinn StorageCentral SRM Standard Edition

Notes:

- Download software from IBM TotalStorage Proven IBM business partners by searching in the IBM Global Solutions Directory customized search web page:
 - From the IBM Network Attached Storage web page
<http://www.storage.ibm.com/snetwork/nas/index.html>
 - In the *Related Information* frame, click *Reference Information*
 - Then, navigate from the *IBM Solutions Resources* section
- The Independent Software Vendor Matrix provides compatibility information to assist in the implementation of compatible software, servers, and operating systems with IBM tape drives and libraries. The web site is <http://www.storage.ibm.com/hardsoft/tape/conntrix/index.html>

Software Matrix Details

IBM Director® System Management

- **Tested Version** -- NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - IBM Director 3.1
- **Tested Version** -- NAS 200 (5194-25T) and NAS 300G (5196-G27 & 5196-G02)
 - IBM Director 3.1.1
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
 - IBM Director Interoperability Matrix http://www.pc.ibm.com/ww/eserver/xseries/systems_management/nfdir/agent.html
- **Notes**
 - IBM Director Agent is preloaded on IBM NAS.
 - For some operations, the Director Agent requires a licensed IBM Director Server installed on a server in the network.
 - The Compatibility Documents for IBM Director 3.1 is available at http://www.pc.ibm.com/ww/eserver/xseries/systems_management/nfdir/agent.html

IBM DB2® Universal Database

- **Tested Version** -- NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - DB2 7.2, fix pack 6.0 on Microsoft Windows NT with SP 6
- **Tested Version** -- NAS 200 (5194-25T) and NAS 300G (5196-G27 & 5196-G02)
 - DB2 8.1 on Microsoft Windows 2000 – Contact IBM NAS Support for latest status
 - DB2 8.1 on Redhat 7.2 Linux – Contact IBM NAS Support for latest status
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
- **Notes**
 - Install only database files on a NAS.
 - For clustered configurations, see section “Special considerations for clustered NAS configurations” above.

IBM Lotus Domino R5 Mail Server

- **Tested Version**
 - Lotus Domino 5 on AIX 4.3.3 and Microsoft Windows 2000 with SP 2
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
- **Notes**
 - Install only database files on a NAS.
 - Connect the NAS to the Domino application server, as follows:
 - If Domino is running on the Microsoft Windows application server, the CIFS protocol is recommended.
 - If Domino is running on the IBM AIX operating system, it must be connected via the NFS protocol.
 - Lotus Proven test case "NotesBench 5.0.6" was used for the qualification.
 - IBM NAS 100 not tested with AIX server platforms
 - For clustered configurations, see section “Special considerations for clustered NAS configurations” above. For example, unless “Domino Clusters” are used, Domino may need to perform a “consistency scan” following failover, delaying its availability to Notes clients

IBM Tivoli SANergy™

- **Tested Version**
 - Tivoli SANergy 2.2
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
 - Tivoli Storage and SAN Product Family Technical Support
<http://www.ibm.com/software/sysmgmt/products/support/TivoliSANergy.html>
- **Notes**
 - SANergy Exec Agent is preloaded on IBM NAS 300G
 - Before using this SANergy function, licenses must be purchased for each machine using the SANergy function. To purchase SANergy server or client licenses contact IBM Tivoli (in the US call 1-800-284-8654, or 512-436-800) or see <https://www6.software.ibm.com/reg/tivrep/tivrep-r>

IBM Tivoli® Storage Manager

- **Tested Version**
 - Tivoli Storage Manager 4.2.2 and 5.1
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
 - Tivoli Storage and SAN Product Family Technical Support
<http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>
- **Notes**
 - IBM Tivoli Storage Manager Client and Storage Agent 4.2.2 are preloaded on IBM NAS software level 2.5 and 2.7. TSM 5.1 is not supported on the NAS 100.
 - The Storage Manager Server function must be installed and licensed on a non-NAS server on the network in order to use the Storage Manager client and LAN-Free Storage Agent function on the NAS 300.
 - Customers may upgrade the Tivoli Storage Manager Client and Storage Agent. Upgrades are available from <http://www-1.ibm.com/support/search.wss?rs=663&tc=SSGSG7&atr=Keywords&atr=ClientRequirements>. Before using this TSM function, licenses must be purchased for both the TSM Server and for each pre-loaded TSM client code. To purchase TSM server or client licenses contact IBM Tivoli (in the US call 1-800-284-8654, or 512-436-800) or see <https://www6.software.ibm.com/reg/tivrep/tivrep-r>

IBM WebSphere® Application Server

- **Tested Version**
 - WebSphere 4.02 on Microsoft Windows NT with SP 6
- **Support**
 - IBM Corporation web site <http://www.ibm.com/support/us/>
- **Notes**
 - Install only database files on a NAS.
 - For clustered configurations, see section “Special considerations for clustered NAS configurations” above.

BMC Patrol

- **Tested Version – NAS 200, NAS300, and NAS 300G**
 - See the TotalStorage Proven web pages for more details
<http://www.storage.ibm.com/proven/nas.htm>
- **Tested Version – NAS 100**
 - BMC Patrol Storage Manager V7
 - BMC Patrol for Microsoft Windows Server V7.1
- **Support**
 - BMC Software, Inc., web site <http://www.bmc.com/>
- **Notes**
 - none

Legato NetWorker® for Windows® 2000/NT

- **Tested Version**
 - NetWorker 6.1.1 on Microsoft Windows 2000 with SP 6 and IBM AIX 4.3.3
- **Support**
 - Legato Corporation web site <http://www.legato.com/>
 - Legato Compatibility Guides <http://www.legato.com/resources/compatibility/>
- **Notes**
 - Install Legato NetWorker Storage Node Client or Server for Backup Server on the NAS.

Microsoft Exchange Server™

- **Tested Version**
 - Exchange Server 5.5 Service Pack 3
 - Note: Exchange Server 2000 not supported all.
- **Support**
 - Microsoft Corporation, web site <http://support.microsoft.com/>
 - Microsoft Exchange web site <http://www.microsoft.com/exchange/default.asp>
 - Microsoft Hardware Compatibility List (HCL) lists the NAS 200 and NAS 300G gateway (search for TotalStorage) <http://www.microsoft.com/hcl/>
- **Notes**
 - Install only database files on a NAS.
 - Clustered NAS configurations cannot be used with Microsoft Exchange Server 5.5

Microsoft® SQL Server 2000™

- **Tested Version**
 - SQL Server 2000 with SP 1
- **Support**
 - Microsoft Corporation, web site <http://support.microsoft.com/>
 - Microsoft Hardware Compatibility List (HCL) lists the NAS 200 and NAS 300G gateway (search for TotalStorage) <http://www.microsoft.com/hcl/>
- **Notes**
 - Install only database files on a NAS.
 - Trace Flag 1807 must be on during the definition of the SQL databases on a NAS. See Microsoft KnowledgeBase article 304261 for further information and see IBM NAS Support tech tip "Configuring Microsoft SQL for use with IBM NAS Products"
 - For clustered configurations, see section "Special considerations for clustered NAS configurations" above.

Microsoft Windows Media Services™

- **Tested Version --**
 - Media Services 4.1 (Media Services is built into the Windows 2000 Server, Advanced Server and Windows Powered OS for NAS)
 - Media Player 7
- **Support**
 - Microsoft Corporation
 - Microsoft Windows Media Technologies
 - <http://www.microsoft.com/windows/windowsmedia/technologies.asp>
- **Notes**
 - Install multimedia and HTML file on a NAS.
 - Windows Media Services can be installed on the NAS itself, or can be installed on a general purpose server that accesses the media files on the NAS as a network drive.

NSI Software Double-Take®

- **Tested Version**
 - Double-Take 4.1
- **Support**
 - NSI Software web site <http://www.nsisw.com/>
- **Notes**
 - Install on NAS.
 - To purchase Double-Take contact NSI Software. In the US call 1-888-674-9495, or see <http://www.nsisw.com>

Oracle® 9i Database

- **Tested Version --** NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - Oracle 9i on Microsoft Windows NT 4.0 with SP 6
- **Tested Version --** NAS 200 (5194-25T) and NAS 300G (5196-G27 & 5196-G02)
 - Oracle 9i on Microsoft Windows 2000
- **Support**
 - Oracle Corporation web site <http://www.oracle.com/support/index.html>
- **Notes**
 - Install only database files on a NAS.
 - For clustered configurations, see section “Special considerations for clustered NAS configurations” above.

OTG DiskXtender (D^x 2000)

- **Tested Version**
 - DiskXtender Version 5.
- **Support**
 - OTG Software, a Legato Software company web site <http://www.otg.com>
- **Notes**
 - This software can be used in two different ways:
 - Install DiskXtender on general purpose server to migrate seldom-referenced files from that server to the NAS (which appears as a network drive to DiskXtender)
 - Install DiskXtender on the NAS to migrate seldom-referenced files from the NAS to tape (typically via Tivoli Storage Manager). Note: For this configuration, the NAS Administrator must not use the NAS Persistent Storage Manager (PSM) with the same volumes under DiskXtender control; else the NAS will blue-screen halt. PSM may be used on volumes not being migrated via DiskXtender.

Symantec Norton™ AntiVirus

- **Tested Version**
 - Norton AntiVirus Corporate Edition 7.6
- **Support**
 - Symantec Corporation web site <http://www.symantec.com>
- **Notes**
 - Install on server, or NAS.
 - Depending on configuration options, the application may use substantial CPU or disk resources. Therefore, customers should carefully select scanning options and the appropriate scanning schedule

Trend Micro™ ServerProtect™

- **Tested Version**
 - ServerProtect 5.3.1
- **Support**
 - Trend Micro, Inc. web site <http://www.antivirus.com/>
- **Notes**
 - Install on server, or NAS.
 - When installing on NAS, use directly attached keyboard, mouse and monitor, except NAS 100.
 - The component, Normal Server, may be installed as a standard Windows service on NAS, such as C: drive. When multiple nodes on NAS are available, install Normal Server into each node.
 - ServerProtect is available for a 30-day trial product offering by registering on the Trend Micro Web site <http://www.trendmicro.com/serverprotectibm/>
 - In Japan, please register at <http://www.trendmicro.co.jp/serverprotectibm/>

VERITAS Backup Exec™ for Windows NT and Windows 2000 Advanced Server

- **Tested Version** -- NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - Backup Exec 8.0 for Windows NT/Windows 2000 Advanced Server
- **Tested Version** -- NAS 200 (5194-25T) and NAS 300G (5196-G27 & 5196-G02)
 - Backup Exec 8.6 for Windows NT/Windows 2000 Advanced Server
- **Support**
 - VERITAS Software Corporation <http://www.veritas.com/>
- **Notes**
 - Install on server, or NAS.
 - When installing on NAS, use directly attached keyboard, mouse and monitor, except NAS 100.
 - VERITAS device drivers should be installed for tape devices instead of the manufacturer's drivers or Microsoft Windows drivers. Therefore, during the software installation, select VERITAS drivers instead of the OEM drivers.

VERITAS NetBackup DataCenter™

- **Tested Version** -- NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - NetBackup Datacenter version 3.4
- **Tested Version** -- NAS 200 (5194-25T) and NAS 300G (5196-G27 & 5196-G02)
 - NetBackup Datacenter version 4.5)
- **Support**
 - VERITAS Software Corporation <http://www.veritas.com/>
- **Notes**
 - Install on server, or NAS.
 - When installing on NAS, use directly attached keyboard, mouse and monitor, except NAS 100.
 - The optional barcode reader on the IBM 3581 LTO tape library cannot be used with NetBackup DataCenter 3.4.
 - For NAS 100, when installing NetBackup Master Server or Media Server on NAS via Terminal Services from a mapped drive, an error message is produced, *Internal Error 2755* . To resolve this issue, use the full Universal Naming Convention (UNC) path to the Setup.exe file instead of a mapped network drive, such as \\servername\sharename\PC_Cln\Win32\Setup.exe For additional information see Microsoft article Q2850587 on the Microsoft web site <http://www.microsoft.com>

VERITAS NetBackup Storage Migrator™ for Microsoft Exchange

- **Tested Version** -- NAS 100, NAS 200 (5194-201 & 5194-226), NAS 300 (5195-326), NAS 300G (5196-G01 & 5196-G26) with NAS software release 2.5
 - Storage Migrator 3.0
- **Support**
 - VERITAS Software Corporation <http://www.veritas.com/>
- **Notes**
 - Install NetBackup Storage Migrator on a general purpose server to migrate seldom-referenced email from that server to the NAS (which appears as a network drive to NetBackup Storage Migrator).

VERITAS Volume Manager™ for Windows NT and 2000

- **Tested Version**
 - Volume Manager 3.1 with latest VERITAS patches from VERITAS web site.
- **Support**
 - VERITAS Software Corporation <http://www.veritas.com/>
- **Notes**
 - Install on NAS300 or NAS300G (clustered models)
 - Important: Before installing this software, search for the latest tips and patches on VERITAS web site, and IBM NAS Support web site (<http://www.ibm.com/servers/storage/support/nas/index.html>)
 - When installing, use directly attached keyboard, mouse and monitor.
 - VERITAS dynamic disk successfully tested on clustered NAS300G or NAS300.
 - VERITAS Dynamic Multi-Pathing (DMP)
 - Tested successfully with IBM NAS 300G and IBM 2105 ESS configurations
 - Not available for IBM NAS 300 and FASiT 200, 500, 700 configurations
 - Other VERITAS Volume Manager functions (FlashSnap™, others) not tested

Precise/WQuinn StorageCentral® SRM Standard Edition

- **Tested Version**
 - Standard Edition 5.0.219
 - SRM for NAS 5.0.219
(Note: The “SRM for NAS” version is available for purchase from Precise/WQuinn, and is a different version than the WQuinn SRM for SAK that is preloaded on the NAS200, NAS300, and NAS300G).
- **Support**
 - W. Quinn, Inc., Precise Software Solutions Company web site <http://www.wquinn.com>
- **Notes**
 - Install on server, or NAS.
 - Install on NAS using directly attached keyboard, mouse and monitor, except NAS 100.
 - StorageCentral SRM may consume large disk space for the work area (2GB), thus it is recommended to be installed to user disk space rather than C: drive



Disclaimer

November, 2002

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

The inclusion of an IBM or non-IBM product on an interoperability list is not a guarantee that it will work with the designated IBM storage product. In addition, not all software and hardware combinations created from compatible components will necessarily function properly together. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

References to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

IBM, the IBM logo, Enterprise Storage Server, Magstar, SANergy and TotalStorage are trademarks of International Business Machines Corporation in the United States and/or other countries.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both. Tivoli is a trademark of Tivoli Systems, Inc. in the United States or other countries or both. Other company, product, and service names may be trademarks or service marks of other companies

Requests for technical information about IBM products should be made to your IBM reseller or IBM marketing representative.

No part of this publication may be reproduced or distributed in any form or by any means without prior permission in writing from the International Business Machines Corporation.

© Copyright International Business Machines Corporation 1999, 2000. All rights reserved.

Note to U.S. Government Users — Documentation related to restricted rights — Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.