



# IBM TotalStorage Network Attached Storage (NAS) Gateway 500 Interoperability Matrix

**Covering:**            **NAS Gateway 500 System Hardware**            **(5198-001)**  
                         **NAS Gateway 500 System Software**            **(5729-NS1)**

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IBM Storage Products Division  
<http://www.storage.ibm.com>

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## Introduction

The IBM® TotalStorage® NAS Interoperability Matrix is a source of information for customers to help select the best combination of integrated storage technologies. It is intended to help enable customers to reduce expenses, increase efficiency and expedite storage infrastructure implementation for IBM's Network Attached Storage (NAS) Gateway 500. The NAS Gateway 500 is designed to be utilized with an intelligent disk storage subsystem. The back-end disk storage subsystem is separate from the NAS Gateway 500 and provides data storage.

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

IBM's commitment to interoperability is visible through its ongoing work with standards organizations including the vendor-neutral Storage Network Industry Association (SNIA) group and the Storage Solutions Forum (SSF), furthering storage networking technology through collaborative innovation. As one of the founding members of the SSF, IBM has played a leadership role in the development of interoperable SAN and storage hardware and software solutions that provide customers with interoperable multi-vendor storage networking options designed to have high value and help solve real-world business problems.

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## Interoperability Support for Hardware Attached to NAS Gateway 500

The information in this matrix identifies products that are supported to interoperate with the NAS Gateway 500. This means simply IBM has tested the products in configurations as described in an approved test plan. It does not indicate that the subject products will work with the NAS Gateway 500 in every possible configuration. IBM plans to update the interoperability matrix covering support for non-IBM hardware as interoperability testing is completed.

### ***Storage Pre-Configuration Issues before Attaching to NAS Gateway 500***

Storage must be pre-configured before attaching to the NAS Gateway 500. In general, you should follow the documentation supplied with the storage to perform this configuration. If the storage documentation does not specifically reference the NAS Gateway 500, then follow the instructions for an IBM pSeries® server with AIX® 5.2. If the documentation references a single port Fibre Channel HBA, then the installer may also use the dual port Fibre Channel HBA.

For disk subsystems, follow the storage supplier's instructions up to the point where the host file system is configured, then use the NAS Gateway 500 Administrator's Guide to complete the configuration.

The RDAC multi-path driver required for IBM FAStT products is pre-installed on the NAS Gateway 500.

The MPIO PCM multi-path driver for attachment to the IBM Enterprise Storage Server includes pre-defines for this storage and is also pre-installed on the NAS Gateway 500. This driver can only be used in non-clustered configurations.

The SDD multi-path driver is not pre-installed. To use SDD or a later version of RDAC or MPIO PCM, please refer directly to the specific storage subsystem installation instructions.

### ***Tape Drives and Robotic Tape Libraries Matrix***

Model	Product Description
3580-L11 3580-L13	IBM 3580 (Gen 1) External Tape Drive (LVD SCSI)
3580-L23	IBM 3580 2 (Gen 2) External Tape Drive (LVD SCSI)
3590-E11 3590-H11 3590-J1A	IBM 3590 and IBM 3592 Tape Drives (LVD SCSI and FC)
3581-L13 3581-L17 3581-L23	IBM 3581 Autoloader including either Gen 1 and Gen 2 tape drives (LVD SCSI)
3582-L23	IBM 3582 Tape Library with fibre-attached Gen 2 tape drives (LVD SCSI and FC)
3583-L18 3583-L36 3583-L72	IBM 3583 Scalable Library including either Gen 1 and Gen 2 tape drives (LVD SCSI and FC)
3584-L32 3584-D32	IBM 3584 UltraScalable Library including either Gen 1 and Gen 2 tape drives (LVD SCSI and FC)
3494	IBM Tape Library

## Disk Storage Subsystems Matrix

IBM TotalStorage SAN Volume Controller 2145	(see note 1, 2)
IBM SAN Integration Server 2146	
IBM SAN Volume Controller Storage Software for Cisco MDS 9000	
IBM Enterprise Storage Server (ESS) F10	(see note 3)
IBM Enterprise Storage Server (ESS) F20	(see note 3)
IBM Enterprise Storage Server (ESS) 800	(see note 3)
IBM Enterprise Storage Server (ESS) 800 Turbo	(see note 3)
IBM DS4000 EXP100 Enclosure (Serial ATA)	(see note 7, 8)
IBM FAStT200 HA Storage Server 3542-2RU	(see note, 7)
IBM FAStT500 Storage Server 3552-1RU	(see note 7)
IBM DS4300 (FAStT600 Storage Server) 1722-60U	(see note 4, 7)
IBM DS4300 (FAStT600 Turbo Storage Server) 1722-60U	(see note 5, 7)
IBM DS4400 (FAStT700 Storage Server) 1742-1RU	(see note 7)
IBM DS4500 (FAStT900 Storage Server) 1724-90U	(see note 6, 7)

### Notes:

1. There is special interoperability support when the IBM Network Attached Storage Gateway 500 is interconnected with IBM SAN Volume Controller Version 1 Release 1.2.0 and supports all storage subsystems that reside behind the SAN Volume Controller. For a list of supported SAN Volume Controller attached subsystems, refer to the following website:

<http://www-1.ibm.com/support/docview.wss?rs=591&uid=ssg1S1002248>

2. The correct License Code level (LIC) for SAN Volume Controller (SVC) is 1.5.0.0 or greater

3. The correct License Code level (LIC) for Enterprise Storage Server (ESS) is 1.4.0.5 or greater

4. FC 7711 (AIX host kit) for the DS4300 (FAStT600) (1722-60U) is a required feature code providing licenses and support when attaching a FAStT600 to a NAS Gateway 500.

5. DS4300 (FAStT600) Turbo has larger cache size than FAStT without Turbo which will result in increased performance over FAStT600 without the Turbo feature.

6. FC 7111 (AIX host kit) for the DS4500 (FAStT900) (1724-90U) is a required feature code providing licenses and support when attaching a DS4500 (FAStT900) to a NAS Gateway 500.

7. DS4000 (FAStT) Storage Manager 8.21 or higher is required when interconnecting to the NAS Gateway 500.

8. The DS4100 (FAStT100) should not be confused with the DS4000 EXP100 Enclosure Unit. The DS41000 has not been tested for interoperability with the NAS Gateway 500.

## **Storage Area Network (SAN) Switches, Ethernet Switches, FC Directors**

<b>Model</b>	<b>Product Name</b>
2032-140	McDATA Intrepid 6140 Enterprise Fibre Channel Director
2032-064	McDATA Intrepid 6064 Enterprise Fibre Channel Director
2031-216 2031-232 2031-224 2034-232	McDATA Sphereon 3216, 3232, 4500 and 4300 Fabric Switches
2062-D07 2062-T07 2062-D04 2062-T04	Cisco MDS 9506 and Cisco MDS9509 MultiLayer Directors
2061-020 2061-040	Cisco MDS 9100 Multilayer Intelligent Fabric Switch
2062-D01	Cisco MDS 9216 MultiLayer Fabric Switch
2042-001 2042-128 2042-256	CNT FC/9000 Fibre Channel Directors
	Cisco SN 5428 (with Fibre Channel)
2109-F16 2109-F32 2109-M12 3534-F08	IBM TotalStorage SAN Switches
	Brocade Silkworm 2400 Brocade Silkworm 2800 Brocade Silkworm 3200 with full-fabric switch upgrade Brocade Silkworm 3800 Brocade Silkworm 3900 Brocade 12000 Brocade Silkworm 2010 with full-fabric switch upgrade

**Note : iSCSI not supported**

## **Uninterruptible Power Supply (UPS)**

<b>Model</b>	<b>Product Name</b>
UPS9910-P18	P18 Powerware 5125 1500va Rackmount
UPS9910-M15	M15 MGE Pulsar Evolution 1500va Rackmount
UPS9910-M30	M30 MGE Pulsar Evolution 3000va Rackmount
UPS9910-P33	P33 Powerware 3000va Rackmount
UPS9910-A30	A30 American Power Conversion (APC) SmartUPS 5000va Rackmount
UPS9910-P60	P60 Powerware 6000va Rackmount

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## Interoperability Support for Software that can be Attached to NAS Gateway 500

### ***IBM DB2® Universal Database***

- **Tested Version**
  - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) tested with DB2 8.1 on— Contact IBM NAS Support for latest status
- **Support**
  - IBM Corporation web site <http://www.ibm.com/support/us/>
- **Notes**
  - Goal of interoperability testing was to demonstrate general functionality of IBM DB2 on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.

### ***Oracle® 8i, Oracle 9i Database***

- **Tested Version**
  - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1)
  - Oracle 9i on Microsoft Windows NT 4.0 with SP 6
- **Support**
  - Oracle Corporation web site <http://www.oracle.com/support/index.html>
- **Notes**
  - Test results indicated that the basic functionality of Oracle 9i worked with NAS Gateway 500 when the NAS Gateway 500 was used as networked data storage.
  - IBM conducted testing with Oracle 9i. IBM does not intend to specifically test interoperability with Oracle 8i.

### ***IBM Lotus Domino R6 Mail Service***

- **Tested Version**
    - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1)
    - Tested with Lotus Domino R6 Mail Server, Domino Client, and NotesBench.
  - **Support**
    - IBM Corporation web site <http://www.ibm.com/support/us/>
    - 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.
  - **Notes**
    - Test results indicated that the basic mail functionality of Domino v6.0 worked with the NAS Gateway 500 when the NAS Gateway 500 is used as networked data storage.
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## ***Veritas NetBackup Datacenter v 4.5, 5.0, 5.1***

- **Tested Version**
  - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) and Veritas NetBackup Datacenter for Windows NT/2000 v5.1
- **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/TivoliSANergy.html>
- **Notes**
  - Interoperability test results were based on the pSeries branded hardware configuration. NetBackup is Server Proven® on pSeries machines.
  - Veritas NetBackup DataCenter is used to manage tape devices and provide backup functionality.
  - Veritas NetBackup, similar to various other backup software packages, offers an Open Transaction Manager (OTM) option. This option helps maintain protection and backup of files on the network even when files are open. Testing demonstrated compatibility of the OTM option and the snap shot on the NAS Gateway 500.
  - The goal of IBM interoperability testing was to demonstrate general functionality such as backup, restore and tape management of Veritas NetBackup DataCenter 5.1, when the NAS Gateway 500 is used as networked data storage.
  - There are no other specific features or functions in Veritas NetBackup 4.5, 5.0 or 5.1 that affect IBM support for this configuration.

## ***Legato NetWorker 7®***

- **Tested Version**
  - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) tested with NetWorker 7
- **Support**
  - Legato Corporation web site <http://www.legato.com/>
  - Legato Compatibility Guides <http://www.legato.com/resources/compatibility/>
- **Notes**
  - The goal of IBM interoperability testing was to demonstrate general functionality of Legato NetWorker7 on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.

## ***Sophos Antivirus***

- **Tested Version**
    - NAS Gateway 500 (5198-001) and Sophos Antivirus software
  - **Support**
    - Sophos Corporation web site <http://www.sophos.com>
  - **Notes**
    - When installed on the NAS Gateway 500, Sophos is designed to be able to scan both Unix and Windows data.
    - 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.
    - Goal of interoperability testing was to demonstrate general functionality for Sophos Antivirus on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.
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## ***Symantec Norton Anti-Virus 8.0***

- **Tested Version**
  - Norton Anti-Virus Corporate Edition 8.0
- **Support**
  - Symantec Corporation web site <http://www.symantec.com>
- **Notes**
  - Install on server. Symantec can only be installed on the external Windows Server. It cannot be installed on the NAS Gateway 500.
  - 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.
  - Goal of interoperability testing was to demonstrate general functionality for Symantec Norton Antivirus 8.0 on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.
  - When installed on an IBM server, Symantec is designed to be able to scan both Unix and Windows data.

## ***Rational Clearcase 2002***

- **Tested Version**
  - Rational Clearcase v2003.06
- **Support Notes**
  - Unix Environment Only

## ***IBM Tivoli® Enterprise Console v3.8***

- **Tested Version**
  - Tivoli Enterprise Console v3.8
- **Support Notes**
  - Goal of interoperability testing was to demonstrate general functionality for Tivoli Enterprise Console on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.
  - Contact IBM NAS Support for latest status.

# **Interoperability Support for Software that is Preinstalled on the NAS Gateway 500**

## ***IBM Tivoli Storage Manager***

- **Tested Version**
    - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) and Tivoli Storage Manager
  - **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 is pre-installed on NAS Gateway 500. 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>
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- YOU MUST HAVE SUFFICIENT PROOF OF ENTITLEMENT BEFORE YOU ARE AUTHORIZED TO USE THE IBM TIVOLI STORAGE MANAGER IN ACCORDANCE WITH THE LICENSE PROVIDED WITH THE PROGRAM.
- To acquire a proof of entitlement for IBM Tivoli Storage Manager server or client, contact IBM Tivoli (call 1-877-TIVOLI1 within the U.S. and Canada; or 1-512-286-0000 outside the U.S. and Canada) or see <https://www6.software.ibm.com/reg/tivrep/tivrep-r>
- Goal of interoperability testing was general functionality for Tivoli Storage Manager on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage.

## ***IBM Tivoli SAN Manager***

- **Tested Version**
  - NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) and Tivoli Storage Area Network Manager
- **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>
  - Tivoli SAN Manager FAQs: <http://gwareview.boulder.ibm.com/software/tivoli/library/faqs/faq-san-manager.html>  
<http://publib-b.boulder.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246848.html?Open>
- **Notes**
  - IBM Tivoli SAN Manager agent is pre-installed on NAS Gateway 500.
  - Goal of interoperability testing was to demonstrate general functionality for IBM Tivoli SAN Manager on the NAS Gateway 500 platform when the NAS Gateway 500 is used as networked data storage
  - YOU MUST HAVE SUFFICIENT PROOF OF ENTITLEMENT BEFORE YOU ARE AUTHORIZED TO USE THE IBM TIVOLI SAN MANAGER AGENT IN ACCORDANCE WITH THE LICENSE PROVIDED WITH THE PROGRAM.
  - To acquire a proof of entitlement for IBM Tivoli SAN Manager, contact IBM Tivoli (call 1-877-TIVOLI1 within the U.S. and Canada; or 1-512-286-0000 outside the U.S. and Canada) or see <https://www6.software.ibm.com/reg/tivrep/tivrep-r>

## ***IBM Tivoli Storage Resource Manager***

- **Tested Version** -- NAS Gateway 500 (5198-001) with NAS Gateway 500 Software (5729-NS1) tested with Tivoli Storage Resource Manager
  - **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>
    - Tivoli SAN Manager FAQs <http://gwareview.boulder.ibm.com/software/tivoli/library/faqs/faq-san-manager.html> and Redbook <http://publib-b.boulder.ibm.com/Redbooks.nsf/RedbookAbstracts/sg246848.html?Open>
  - **Notes**
    - IBM Tivoli Storage Resource Manager agent is pre-installed on IBM NAS Gateway 500, but it is disabled until it is configured and started from SMIT, WebSM, or the Command Line Interface.
    - YOU MUST HAVE SUFFICIENT PROOF OF ENTITLEMENT BEFORE YOU ARE AUTHORIZED TO USE THE IBM TIVOLI STORAGE RESOURCE MANAGER AGENT IN ACCORDANCE WITH THE LICENSE PROVIDED WITH THE PROGRAM.
    - To acquire a proof of entitlement for IBM Tivoli Storage Resource Manager, contact IBM Tivoli (call 1-877-TIVOLI1 within the U.S. and Canada; or 1-512-286-0000 outside the U.S. and Canada) or see <https://www6.software.ibm.com/reg/tivrep/tivrep-r>
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- The TSRM solution (server and agent) currently does not have the ability to manage the NFS filesystem directly; it is designed to have the ability to report about collected NFS info and usersids on a particular machine, notifying administrators of exceeded thresholds or triggers.

## Planning for Installing Other Software on NAS Gateway 500

- The software load shipped with the NAS Gateway 500 is licensed only to be used on the NAS Gateway 500 hardware. Please read the License Agreements shipped with the product concerning any restrictions on product use before installing additional software.
- CLI, SMIT, and WebSM interfaces are published today on the pSeries platform. These same interfaces can be made available in support of the NAS Gateway 500 platform.
- Check both the vendor and IBM support web sites for any related tips, downloads, or known restrictions.
- Backup each NAS engine before making any additions or changes, to allow easy removal of those changes. Consider using one of the pre-installed backup software products such as Tivoli Storage Manager (TSM) client or one of the other backup utilities to help promote the correct back up of the complete NAS operating system files.

### ***Additional Information about Support with Non-IBM Software***

IBM strives to help reduce the customer's total cost of ownership by designing, testing and tuning the NAS Gateway 500 specifically for a network attached storage environment -- a substantial enhancement compared to a general file server product. This can also help reduce customer setup and installation efforts.

Supporting an open-system concept, IBM recognizes that customers have valid business reasons to interoperate with non-IBM products and to install a NAS Gateway 500-related software utility program beyond what IBM ships with the product. Because the NAS Gateway 500 hardware is a derivative of IBM's pServer platform and IBM's AIX 5L hardware, many software products will often function as they would on an identically configured pServer platform. The information in this document describes those software configurations that were successfully tested by IBM and/or vendors. Not every product within a vendor's product line was tested and not every possible configuration was tested.

It is also probable that a product not listed or a configuration not identified will interoperate correctly. Neither IBM nor the vendors exhaustively test these products individually or in combinations. 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. Removal of these software additions may be required for IBM NAS Product Support to provide problem determination and resolution. Regardless of whether a software program is listed in this document, IBM does not support other vendors' software -- therefore, IBM NAS Product Support cannot provide telephone, on-site, or development lab support for vendors' software. Likewise, IBM NAS Product Support does not provide a single vendor interface for problem isolation and resolution for other vendors.

For problems in the software that IBM ships pre-installed on the NAS Gateway 500, IBM may work with IBM's software suppliers. 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 Gateway 500-specific items. Customers who desire a turnkey multi-vendor support solution should investigate an IBM Global Services multi-vendor support contract.

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January 15, 2004

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