

Leverages the power and flexibility  
of a SAN for IP clients



## IBM TotalStorage Network Attached Storage 300G Models G01 and G26



IBM Network Attached Storage 300G (dual-engine configuration)

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### Highlights

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- **Increased access**—IP clients and servers can access storage area network (SAN) devices without each server or client being directly connected by Fibre Channel.
- **Manageable**—Integrated system diagnostics and management tools help minimize downtime.
- **Scalable**—Non-disruptive capacity for growth provides up to 22TB<sup>1</sup> of SAN-attached storage.
- **High performance**—Tivoli® SANergy™ software for Fibre Channel speed over IP, combined with the latest Intel® Pentium® III processors, helps keep productivity high, even during peak periods.
- **Secure**—Multiple RAID levels, fault-tolerant dual-engine design and advanced software support data protection for business continuance.
- **Consolidation**—Centralized data management helps increase efficiency of scarce IT resources.
- **Flexible**—Cross-platform file sharing (CIFS [Microsoft Windows®], NFS [UNIX®], HTTP, FTP, AppleTalk® and NetWare®) helps reduce network complexity and expense, and allows data to be used across the organization.
- **Simple**—A setup tutorial is designed to provide simple installation.
- **Easy to use**—Intuitive design helps simplify installation and administration.

### IBM, NAS and storage networking

The IBM TotalStorage™ Network Attached Storage 300G series is part of the overall IBM Storage Networking offering of hardware, software and services. IBM network attached storage (NAS) products provide you with additional building blocks to increase the flexibility, efficiency and effectiveness of your storage networking solutions.

### High-performance, dedicated NAS appliance bridging LAN and SAN

Cost-effective and innovative, the IBM NAS 300G acts as the gateway between the Fibre Channel and IP networks. It allows IP clients to access data on the SAN, gain access to SAN-based applications and leverage its storage capacity. In either dual- or single-engine configurations, the IBM NAS 300G is a powerful addition to an existing or planned SAN installation. In addition, the IBM NAS 300G can help reduce the amount of direct Fibre Channel connections to servers and clients that require SAN access, resulting in potential cost savings. For increasing efficiency and access to existing SAN storage, the IBM NAS 300G series provides an effective solution.

### Flexible configurations

The IBM NAS 300G is compatible with several SAN storage appliances, which makes it well suited for providing storage access to IP users. Depending on the amount of I/O network traffic, the

<b>Feature</b>	<b>Potential Benefits</b>
Windows Powered OS	Preconfigured and tuned for storage-specific tasks, it is designed to maximize compatibility with other Windows systems and enhance performance.
High availability	Fault-tolerant design helps provide failover protection for increased uptime and continuous access to data.
Scalability	Storage capacity can grow as storage needs grow.
Affordability	Network storage can be deployed in an existing SAN environment with low initial investment and low total cost of ownership.
Integrated data protection	Columbia Data Products Persistent Storage Manager provides data protection for business continuance.
Multiple protocol support	CIFS, NFS, HTTP, FTP, AppleTalk and NetWare support streamlines the network environment, eliminating the need for separate servers to support each operating system.
Performance	Windows users obtain excellent performance, and mixed platform environments achieve exceptional overall performance.
Simplified installation	Storage can be delivered quickly, without tying up valuable IT resources.

IBM NAS 300G can support over 1000 IP-based clients per unit.<sup>2</sup> To provide enough storage capacity for each user, up to 22TB of storage can be allocated for use with the IBM NAS 300G. An administrator can reallocate storage to fit the growing needs of the organization. When requirements for storage increase, the IBM NAS 300G can access multiple SAN devices to provide additional storage.

Compatible storage includes the IBM Enterprise Storage Server™ (ESS), FASTT200, FASTT500, FASTT700 and other vendors' devices. Because of its flexibility, the IBM NAS 300G series provides administrators with the necessary tools to manage storage resources more efficiently, creating a more cost-effective storage system and reducing total cost of ownership. By deploying the IBM NAS 300G series, access to existing SAN storage is a possible solution to the increasing demands for additional storage.

The IBM NAS 300G is preloaded with Tivoli SANergy software, which lets users access storage on the SAN at file, volume and byte levels with increased

throughput and lower overhead. The resulting high-performance link between the IP clients and the SAN helps fully utilize the existing investments in both networks.

The IBM NAS 300G series provides:

- *File server storage consolidation*
- *IP clients and servers with access to SAN storage*
- *IP clients with access to mission-critical data from the SAN*
- *IP clients with the ability to back up critical information to the SAN*

### **High system availability for business continuance**

The IBM NAS 300G series includes a single- and a dual-engine model. The single-engine model is a good value for those wishing to extend the reach of their SAN. Clustering and failover protection are available in the dual-engine model.

The IBM NAS 300G series incorporates a variety of high-reliability and availability features to support 24x7 operations. Both models house hot-swappable, redundant power supplies in each engine and optionally provide multipath failover

protection between the unit and its SAN-attached storage device. Each engine supports an optional second hard drive and RAID level 1 for creating mirrored system drives to further increase system availability.

### **IBM Director Agent**

The IBM Director Agent, with its Universal Manageability Services, works with the IBM Director Console to help manage systems intelligently. It functions as the client-side software for use with IBM Director, but can also be used independently of the IBM Director Console for added flexibility and remote management of both IBM and non-IBM systems. This client management application is designed to allow IT administrators to view, monitor and control systems from its easy-to-use Web interface.

To surface data and monitor status, the Director Agent communicates with physical (BIOS, LAN adapters or storage devices) and logical devices (networks, operating systems, registry and applications). Data updates and alerts are organized into specialized Common Information Model (CIM) providers with

objects that expose properties, events and methods. CIM properties and events can be translated into Simple Network Management Protocol (SNMP) variables and traps.

The Director Agent provides general information about the system, including the operating system, basic system hardware, memory, network devices and adapters. In addition, proactive systems management functions include power management, system shutdown (including Microsoft Windows NT®), AssetID and Alert on LAN configuration, event logs and system monitors.

To help obtain maximum uptime from a system, IBM Director provides an interface to the following Integrated Systems Management features:

- *Advanced Systems Management processor*
- *Light-Path Diagnostics for using LEDs to quickly determine a failed part*
- *Predictive Failure Analysis® monitoring of CPUs, memory, fans and power supplies with user-selectable alert levels*
- *Automated paging*
- *Optional Remote Supervisor Adapter PCI card for network alerts through IBM Director*

### **Integrated data protection**

The IBM NAS 300G series helps safeguard the most valuable asset of an organization—its data—by providing features such as:

- *Backup support using Tivoli Storage Manager and other third-party software packages*
- *Protection against accidental file deletions*
- *File restorations by clients and administrators*
- *Single-step volume and drive restorations by administrators*

The IBM NAS 300G supports a variety of backup methods, including popular backup software such as Tivoli® Storage Manager™ (TSM). The TSM agent and client are preinstalled on the product.

The IBM NAS 300G also offers on-disk data protection using Columbia Data Products® Persistent Storage Manager™ (PSM), which can create up to 250 True Image™ views of data. Administrators can schedule the creation of these point-in-time views, and with the proper permissions, users can typically restore previous file levels without administrator involvement.

Administrators can also usually restore entire drives and volumes in a single step, saving precious IT time by eliminating the need to drag and drop thousands of files back to the original location. By incorporating its own open file manager, PSM can enable safe and consistent backup of in-use files. The open file manager helps to reduce or eliminate system access issues during backup, supporting 24x7 availability to data.

### **Cross-platform file sharing through multiprotocol support**

The IBM NAS 300G can be used in an exclusively Windows environment or in a heterogeneous environment, such as a mixed Windows and UNIX situation. Multiple protocol support of CIFS (Windows), NFS (UNIX), HTTP, FTP, AppleTalk and NetWare makes the IBM NAS 300G series compatible with a variety of clients and servers. Heterogeneous access to data provides ease of use and allows concurrent file sharing between users of these different platforms, eliminating the need to have a separate server for each.

### **Investment protection**

The IBM NAS 300G series supports existing storage devices, such as the IBM Enterprise Storage Server and FAS/T product line. This support allows the NAS 300G to extend the life of the existing storage investment while providing pooled storage for IP users.

### **Preloaded system software for efficient management**

The high-performance engines of the IBM NAS 300G are preloaded with a tightly integrated software suite that includes a Windows Powered operating system tuned for storage. Because the software is preloaded on the engine's hard disk drive, it simplifies the installation, configuration and management of the IBM NAS 300G compared to other storage systems. Also provided on a backup CD-ROM copy, the software includes:

- *Microsoft Terminal Services and IBM Director Agent, with its Universal Manageability Services (Web-based GUI), supports centralized management via IBM Director Management Server software*
- *Microsoft Windows NT Backup*
- *IBM Integrated Appliance Configuration Utility for initial configuration*
- *IBM setup tutorial for ease of installation and configuration*
- *Tivoli Storage Manager agent and client for storage management and backups*
- *Tivoli SANergy for data acceleration*
- *Columbia Data Products Persistent Storage Manager for True Image data views of files, drives and volumes (backup enablement)*
- *WQuinn Storage Manager for SAK 2.0 for storage management including quota setting and quota enforcement*

## IBM Network Attached Storage 300G at a glance

	Single engine	Dual engine
<b>Product packaging</b>		
Form factor	Rack mount 3U	Rack mount 6U
Engine	Single	Dual
Power supply (per engine)	Two 270 W	Two 270 W
Tape backup	Optional through PCI SCSI SE, SCSI LVD/SE or SCSI HVD cards, or Fibre Channel adapter	
Physical dimensions	Engine: 414mm W x 660.4mm D x 133.4mm H (16.3 in. W x 26 in. D x 5.25 in. H) Min. 20.0 kg (44 lbs), max. 27.3 kg (60 lbs)	
<b>Operating environment</b>		
Temperature	10° to 35° C (50° to 95° F) at 0 to 914m (0 to 3000 ft) 10° to 32° C (50° to 90° F) at 914m to 2133m (3000 to 7000 ft)	
Relative humidity (non-condensing)	8% to 80%	
Maximum altitude	2133m (7000 ft)	
Electrical	100 – 240 Vac; 50 Hz – 60 Hz; 4.3 – 2.1 A (at min - max voltage)	
<b>Performance</b>		
Processor (per engine)	Dual 1.13GHz <sup>3</sup> Pentium III with 133MHz front-side bus	Dual 1.13GHz <sup>3</sup> Pentium III with 133MHz front-side bus
Level 2 cache (per processor)	512KB (full speed)	512KB (full speed)
ECC SDRAM memory, standard (per engine)	1GB	1GB
ECC SDRAM memory, maximum (per engine)	2GB	2GB
File protocols supported	CIFS, NFS, HTTP, NetWare, AppleTalk, FTP	CIFS, NFS, HTTP, NetWare, AppleTalk, FTP
Integrated Systems Management	Yes	Yes
Performance (NetBench)	See <sup>4</sup>	See <sup>4</sup>
Performance (SPECsfs)	See <sup>4</sup>	See <sup>4</sup>
<b>Connectivity</b>		
PCI slots available (per engine)	5 (2x64-bit/33MHz, 2x64-bit/66MHz and 1x32-bit/33MHz)	5 (2x64-bit/33MHz, 2x64-bit/66MHz and 1x32-bit/33MHz)
Standard network connectivity	Single-port 10/100 Mbps Ethernet on planar	None
Optional network connectivity (per engine)	Up to 2 Gigabit PCI ports Up to 4 10/100Mbps PCI ports Up to 2 10/100/1000Mbps PCI ports	Up to 2 Gigabit PCI ports Up to 4 10/100Mbps PCI ports Up to 2 10/100/1000Mbps PCI ports
Maximum Ethernet connections (per engine)	7 (One planar + one 4-port 10/100Mbps + two 1-port Gigabit or one 4-port 10/100Mbps + two 10/100/1000Mbps ports)	6 (One 4-port 10/100Mbps + two 1-port Gigabit or one 4-port 10/100Mbps + two 10/100/1000Mbps ports)
Supported Fibre Channel devices	Brocade Silkworm 2800/2400 Compaq Fibre Channel Switches IBM 2031 McDATA Fabric Switches IBM 2032 McDATA Fibre Channel Directors IBM 2042 INRANGE FC/9000 Fibre Channel Director IBM 2109-S08 and -S16 FC Switch IBM 2108 SAN Data Gateway McDATA 3016 Fabric Switch IBM 3534 Managed Hub	
Supported storage devices	IBM 2105 Enterprise Storage Server, Models F10 and F20 IBM 2106 Modular Storage Server IBM 7133 Serial Storage Array (SSA) connected to the SAN via IBM 7139 VICOM Fibre Channel SLIC IBM FASTt700 Storage Server IBM FASTt500 Storage Server IBM FASTt200 Storage Server Compaq MA-8000 (G01 only)	

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## IBM Network Attached Storage 300G at a glance

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### Software

Operating system	Microsoft Windows Powered OS
Backup software <sup>4</sup>	Microsoft Windows NT Backup Tivoli Storage Manager agent and client (v4.2)
Storage management software	WQuinn Storage Manager for SAK 2.0 Columbia Data Products Persistent Storage Manager (v2.2)
Systems management software	IBM Director Agent v3.1 SNMP v1, v2C and v3 CIM
Remote administration	IBM Universal Manageability Services (UMS) Microsoft Terminal Services
Configuration tools	IBM Advanced Appliance Configuration Utility
Performance enhancement	Tivoli SANergy Exec Agent (v2.2.3)

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### High availability

Dual engines (G26)  
Hot-swap, redundant power supplies  
IBM Director Agent with UMS  
Integrated Systems Management

- Advanced Systems Management processor
- Light-Path Diagnostics
- Predictive Failure Analysis
- Automated paging
- Optional Remote Supervisor Adapter PCI card

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### Standards

	MPS 1.4, PCI specification 2.1, ISO 9241 Part 3 SNMP v1, v2C and v3 CIM
MIBs supported	MIB-II

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### Approvals and safety

FCC Class A Part 15, Canada ICES-003 issue 3 Class A, UL 1950, CSA C22.2 No. 950, NOM-018

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### Support features

IBM Start Up Support  
IBM Global Services

- IBM Hardware Services—IBM installation and configuration services for IBM TotalStorage
- IBM Operational Support Services—Support Line
- IBM Storage Consulting Services

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### Backup interoperability

IBM has tested the IBM NAS 300G series for interoperability with a variety of backup devices and software; visit our Interoperability and TotalStorage Proven pages for the most current list of tested vendors

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### Options and accessories

1-port 10/100Mbps Ethernet adapter or 4-port  
10/100Mbps Ethernet adapter  
Gigabit Ethernet SX adapter  
1-port 10/100/1000TX Ethernet adapter  
Single-port 1Gigabit Fibre Channel adapter  
Dual-port 1Gigabit Fibre Channel adapter  
Upgradeable to total engine memory size of 2GB  
SCSI SE PCI card or SCSI LVD/SE PCI  
card or SCSI HVD PCI card  
Remote Supervisor Adapter  
IBM Global Services Storage Consulting Services  
OS mirroring feature:

- Second 18GB OS hard disk drive
- ServeRAID™ 4Lx Adapter

Spare 18GB OS hard disk drive

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## IBM Network Attached Storage 300G at a glance

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<b>Warranty</b>	3 year parts/1 year labor warranty (warranty upgrades available)
<b>National Language Support (operating system)</b>	English, French, German, Japanese, Spanish
<b>National Language Support (publications)</b>	English, Brazilian Portuguese, French, German, Japanese, Korean, Simplified Chinese Traditional Chinese, Spanish

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<sup>1</sup> 11TB is the maximum storage tested and recommended per engine. Customers might choose to allocate less storage depending on the data traffic driven across each engine.

<sup>2</sup> Based on CIFS throughput with an assumption of average client use in a two-engine configuration.

<sup>3</sup> GHz measures only microprocessor internal clock speed, not application performance.

<sup>4</sup> At the time of publication, determination of NetBench and SPECsfs performance was in progress.

Please check [ibm.com/storage/nas](http://ibm.com/storage/nas) for the current status.

## For more information

To find out more about the IBM TotalStorage Network Attached Storage 300G series and other high-performance IBM Storage Networking products, contact your IBM representative, IBM Business Partner or call IBM Direct at 1 800 IBM-CALL (1 800 426-2255) or visit [ibm.com/storage/nas](http://ibm.com/storage/nas)



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