



GreenBytes Solution Brief

GreenBytes' GB-X Series Storage Appliances and VMware

GB-X Series of high-performance inline deduplication storage appliances enhance virtualization and networking solutions from VMware.



Overview

The power of VMware ESX and GreenBytes' unique combination of inline deduplication and high IO performance marks a significant leap forward in storage technology for virtualized server and VDI environments.

GreenBytes' GB-X Series is an ideal fit for virtual desktop infrastructure (VDI) storage, enabling fast and efficient provisioning for machine images. Users can rapidly deploy VDIs with a 90% or more reduction in storage requirements versus non-intelligent arrays, and scale to thousands of concurrent users with the only iSCSI array to combine inline deduplication and multi-tier, highly scalable IOPS caches.

Features

Consolidate with Inline Deduplication

Regardless of your underlying VM/VDI deployment technology, virtual desktop images can be one of the most inefficient data objects to store. In large part, operating system images are nearly identical and can benefit greatly from high-speed, inline deduplication from GreenBytes. By utilizing GreenBytes' block-level deduplication over ubiquitous iSCSI or NFS storage protocols, customers can consolidate storage for desktop images by 50-to-1 or more.

Save Time Using Your Virtual Management Environment

Coupled with VMware virtualization software, GreenBytes can reduce the time spent on creating and administering storage for desktops and other virtual applications. With the Storage Manager graphical user interface, administrators can quickly produce thin-provisioned volumes for boot images, with almost no storage overhead for nearly identical image types.

High-Performance, Non-Blocking VM/VDI Performance

GreenBytes' groundbreaking SSD accelerated cache architecture provides the performance necessary for large departmental VDI needs. Operationally, because of GreenBytes' SSD-accelerated architecture, VDIs stored on GreenBytes GB-X Series appliances are highly responsive. Unlike traditional 'spindle-count = performance' storage architectures, the GB-X SSD cache acceleration provides ample IOPS to withstand the stresses of IO boot-storms with minimal footprint versus conventional magnetic disk drives. GreenBytes combines ease of administration with efficient footprint and the IOPS of ten or more ordinary arrays in a single appliance.

GB-X Series appliances dramatically boost storage and deduplication performance by incorporating native inline deduplication into the enterprise-scale GreenBytes File System (GBFS) to permit real-time, line speed deduplication of file blocks as they are stored. The GB-X Series' GB-1000, GB-2000 and GB-4000 appliances are easily scalable, with the GB-2000 ranging from 12 TB up to 33 TB; GB-4000 offering a 24 TB base that can be scaled up to 108 TB; and the GB-1000 offering 4 TB with further scalability via enhanced disk drive densities.

Feature Highlights

Capacity Optimization

Array-based instant clones with inline deduplication and real-time compression

SSD-Based IOPS Acceleration

Scalable IOPS cache based on enterprise class SSD drives

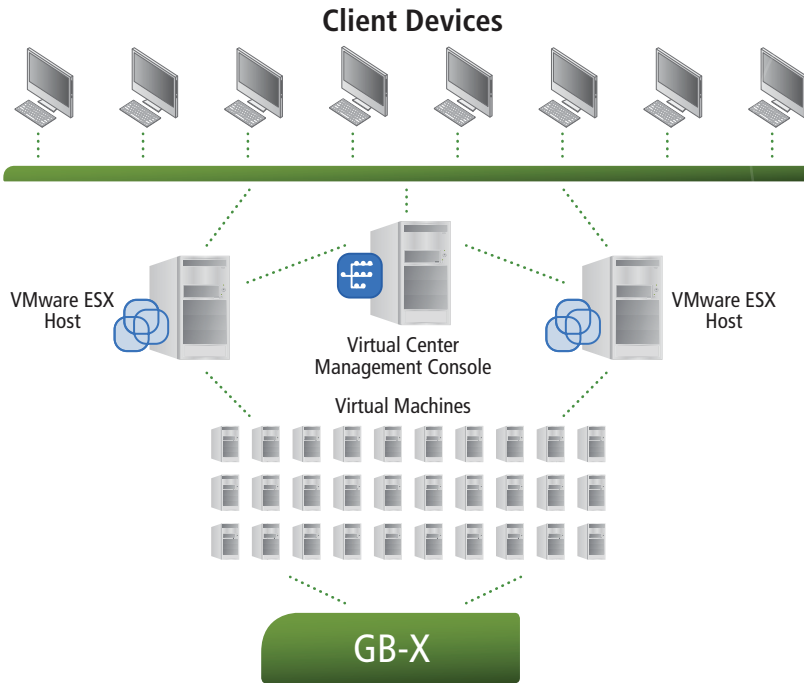
High-Performance Architecture

Multi-core CPU SAS2 10GbE iSCSI/NFS

Other GreenBytes features that benefit VMware virtualization software customers include:

- Cutting-edge inline deduplication technology avoids the need to over provision storage common to more mature post process deduplication solutions
- Tunable deduplication and compression technologies enabling individualized data set efficiencies
- Powerful and highly scalable IO performance, combined with a rich feature set, makes GreenBytes the right choice for both data protection and primary storage environments
- Feature set highlights include: SAN and NAS capability; MAID energy efficiency; asynchronous mirroring; space efficient snapshots; filesystem cloning; thin provisioning; virtualized storage pool; 10 GbE connectivity
- Easy to use, Windows MMC based interface for GreenBytes setup and usage monitoring

GreenBytes product is backed by a strong warranty and a world-class 7x24x365 customer support network.



GreenBytes Storage

- Optimized for high speed inline data reduction
- Solves "Concurrent Access" performance issues
- No wasted space and significantly more efficient in power and operational costs

Benefits



Optimize.

Optimize and consolidate storage with GB-X Series' real-time inline deduplication and compression operating system. Free up valuable data center space and associated energy cost with efficient storage.



Simplify.

Storage administrators enjoy the benefits of the GreenBytes Storage Manager that leverages the universally known interface of the Microsoft Management Console (MMC). Storage Manager makes initial configuration, monitoring and expansion activities common in most business environments a snap.



Save.

Save money on the acquisition, management, support and features of inline deduplicated storage with the GB-X Series.

GreenBytes GB-X Series Overview

High-Performance SSD Accelerated Inline Deduplicating SAN and NAS Appliances

GreenBytes' next-generation Hybrid Storage Architecture (HSA) combines high-performance solid state storage technology, energy efficient 2.5" SATA drives, high-performance inline data deduplication, simultaneous SAN and NAS connectivity, MAID (Massive Array of Idle Disks) disk power state management and 10 GbE connectivity to create a high-performance, highly flexible architecture that is also extremely power-efficient and affordably priced. While some competing deduplication technologies offer software-only solutions that require third party hardware integration, GreenBytes' GB-X Series features complete turnkey appliances that have been purpose-built to bring the efficiencies of deduplication beyond backup and data protection and into the primary storage market.

Leveraging its high throughput and tunable IO performance, in conjunction with the rich features of the GreenBytes File System (GBFS), GB-X appliances are ideal for the real-time performance challenges of primary storage and boast the data ingest, restore, and remote replication rates required for effective backup and data protection, all at a price point that makes the efficiencies of inline deduplication accessible to all companies, regardless of size.

GreenBytes File System (GBFS) Features

- Real-time tunable block level deduplication
- Wirespeed compression
- N to N Replication
- Microsoft VSS integration
- SNMP Messaging
- Unlimited CIFS/NFS File Systems
- Unlimited Snapshots: 1 min. granularity
- E-Mail/Phone Home capability for proactive maintenance
- Auto provisioning and home folder mirroring
- End user file restore capability
- Connection via iSCSI for block level performance
- Thin provisioning for additional storage efficiencies



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