ExaGrid Tiered Backup Storage
Product Overview

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ExaGrid Tiered Backup Storage

Fastest Backups

Fastest Recoveries

Unparalleled, Cost-effective Scale-out

Comprehensive Security and AI-Powered Ransomware Recovery

ExaGrid Tiered Backup Storage works with over 25 backup applications and utilities such as Veeam, Commvault, Rubrik, NetBackup, Cohesity, and many others listed on the ExaGrid website. ExaGrid's unique approach to backup storage delivers the fastest backups, restores, VM boots, offsite tape copies, copy jobs, and AUX copies.

Due to its scale-out architecture, ExaGrid offers a fixed-length backup window as data grows ExaGrid's two tier approach offers a front-end Landing Zone tier for the fastest backups and restores and also a Repository Tier for long-term deduplicated retention data and for air gap ransomware recovery.

ExaGrid's scale-out architecture and various capacity size appliances allows customers to buy what they need as they need it, avoiding disruptive and costly forklift upgrades. Customers are able to mix older and newer appliances in the same scale-out system, offering planned product obsolescence versus forced product obsolescence in order to protect IT investments up front and over time.

ExaGrid's AI-Powered Retention Time-Lock (RTL) includes a non-networking-facing Repository Tier (tiered air gap), Auto Detect & Guard for automatic detection of anomalous deletes, delayed deletes and immutable data objects—all to ensure that data is ready to be restored after a ransomware attack or other security event.

Fastest Backups for the Shortest Backup Window

ExaGrid provides advanced and aggressive data deduplication, matching the high deduplication ratios in the industry of 10:1 to as high as 50:1 data reduction, with an average of 20:1, depending on retention periods and data types. However, ExaGrid understands that data deduplication is highly compute-intensive and should not be performed during the backup window as the deduplication will slow down ingest performance and, as a result, will lengthen the backup window.

ExaGrid provides a unique disk-cache Landing Zone in each appliance where backups are written directly to the storage so that the compute-intensive data deduplication process doesn't impact ingest speed. This approach provides the fastest backup ingest rate of any other deduplication solution. ExaGrid uses Adaptive Deduplication to deduplicate and replicate data into the Repository Tier and to replicate to the disaster recovery (DR) site during the backup window (in parallel with the backups) but not inline between the backup application and the disk.

In addition, ExaGrid is optimized for large backup jobs, using advanced transport protocols, job concurrency, integration to the backup application for automatic job management and front-end load balancing, as well as performing encryption at rest at the drive level in nanoseconds to further accelerate backup performance.

This unique combination of a Landing Zone with Adaptive Deduplication, along with other performance features and functionality, provides for the fastest backup performance. This results in the shortest backup window as well as a strong disaster recovery point (RPO).

Fastest Restores, VM Boots, and Offsite Tape Copies

ExaGrid offers a full Landing Zone for HDD systems for fast backups and restores. For SSD systems, ExaGrid offers a partial Landing Zone with optimized software and high-speed SSD for fast restores direct from the Repository Tier.

Ninety-five percent or more of the total volume of restores, VM boots, and offsite tape copies come from the most recent backup to keep users productive. ExaGrid keeps the most the most recent backup in an undeduplicated form allowing for fast restores, versus deduplication appliances that store data as only deduplicated data resulting in a lengthy data rehydration process. ExaGrid will be about the same performance as standard disk for restores but will be up to 20 times faster compared to inline deduplication appliances.

Since ExaGrid writes directly to the disk-cache Landing Zone for the HDD system, the most recent backups are kept in their full, undeduplicated, native form. All restores, VM boots, and offsite tape copies are fast since the overhead of the data rehydration process is avoided. For the SSD system, the software and SSD are optimized to utilize a smaller Landing Zone for fast backups and also the ability to accelerate restores from the Repository Tier for fast restores.

As an example, ExaGrid can provide the data for a VM boot in seconds to single-digit minutes versus hours for inline data deduplication HDD backup storage appliances that only store deduplicated data. ExaGrid maintains all long-term retention (weeks, months, years) in a deduplicated format for storage efficiency.

Fixed-Length Backup Window

Since data deduplication uses a lot of processor and memory resources, as data grows, the amount of data deduplication to be performed grows as well. The first generation of deduplication storage appliances (inline deduplication) utilize a "scale-up" storage approach with a fixed resource front-end controller and disk shelves. As data grows, they only add storage capacity. Because the compute, processor, and memory are all fixed, as data continues to grow, so does the time it takes to deduplicate the data. The backup window becomes so long that the front-end controller has to be upgraded (called a "forklift" upgrade) to a larger/ faster controller, which is disruptive and costly or alternatively you can upgrade the front-end controller is to add additional stand-alone controller as storage silos which creates management to break up backup jobs across many siloed controllers. Both of these are costly and disruptive.

ExaGrid provides Tiered Backup Storage with a unique disk-cache Landing Zone, long-term retention repository, and scale-out architecture. ExaGrid's Landing Zone provides for the fastest backups, restores, and instant VM recoveries. The non-network-facing Repository Tier offers the lowest cost for long-term retention. ExaGrid's scale-out architecture includes full appliances with processor, memory, networking and storage, resulting in adding compute with capacity which ensures a fixed-length backup window as data grows, eliminating expensive forklift upgrades and forced product obsolescence.

Highest Performance for Backups

- Fastest backup performance for the shortest backup window by writing directly to a disk-cache Landing Zone, avoiding compute-intensive inline data deduplication.
- Uses advanced protocols, job concurrency, optimization for large backup jobs, encryption at the drive level, and other functionality for improved performance over any standard disk. Backup windows kept permanently short as data grows by adding full servers (with processor, memory, disk, and bandwidth) in a single scale-out system.

Fastest Restores and VM Boots for Instant Recovery

- Fastest restore, VM boots, and tape copy performance from the most recent backup kept in its whole form. For HDD systems, no reassembly from small blocks and large hash tables are required. For SSD systems, optimized software and fast SSD ensure extremely fast restores.
- Fast VM boots for instant recoveries from a high-speed Landing Zone, which maintains a non-deduplicated copy of the most recent backup for HDD systems and optimized software and SSD for fast restores in the SSD system. For HDD systems, the restores are fast as the most recent backups are stored in a non-deduplicated format in the Landing Zone. For SSD systems, the software and SSD as extremely fast for restoring directly from the Repository Tier.

Most Cost-Effective Solution with No "Forklift" Upgrades

- Scalable, next-generation architecture with full appliances provides plug-and-play expansion. To add an ExaGrid appliance, you simply plug it in and let ExaGrid's scale-out software virtualize the backup capacity pool.

Most Cost-Effective Solution with No "Forklift" Upgrades

- Multiple HDD appliances allow full backups per appliance of 10TB, 20TB, 36TB, 54TB, 81TB, 84TB, 135TB, and 189TB. With thirty-two EX189 appliances, a single system can support 12PB of usable storage and can ingest a 6PB full backup.
- For SSD, ExaGrid offers 4 models of SSD systems: 90TB, 135TB, 270TB and 540TB, which scale to a 17.3PB full backup.
- Appliances can be mixed and matched with up to 32 appliances in a single scale-out system, allowing you to pay as you grow. Newer appliances can be added to older appliances in the same system to eliminate forced product obsolescence.
- 50% lower total system cost up front vs. competing systems. Over time, the total system cost is also 50% lower because the costly "forklift" upgrades associated with a first-generation front-end controller/disk shelf architecture are eliminated.

Comprehensive Security

- AI-Powered Retention Time-Lock with Auto Detect & Guard uses AI to learn/train on delete patterns and identify a delete that is outside of the pattern suggesting a cyber attack. ExaGrid will notify IT and will automatically and indefinitely extend the delayed delete policy until the alert is cleared. Non-network-facing Repository Tier creates a tiered air gap that is not visible or accessible by threat actors.
- Delayed deletes to ensure operationally deleted data is not immediately deleted in the ExaGrid Repository Tier keeping that data for a specified amount of time, ensuring availability for a restore after an attack.
- Immutable data objects that cannot be changed, deleted or modified, ensuring availability for restore after an attack.
- Two-factor authentication (2FA)
- Two IT staff authentication: IT and Security
- Role-based Access Control (RBAC) with separate Backup Operator, Admin and Security Officer roles, which are fully compartmentalized
- Dozens of other security features, see **ExaGrid Security, Reliability, and Redundancy data sheet**.

Advanced Features

- Scale-out architecture allows for a cost-effective, pay-as-you-grow approach that eliminates forced product obsolescence, and maintains a fixed-length backup window as data grows.
- For HDD systems, unique Landing Zone reduces downtime by keeping a full copy of the most recent backup in complete form for instant recovery of VMs, full systems, and files. Competing solutions must rehydrate the most recent backup from millions or billions of deduplicated chunks causing much longer recovery time.
- For SSD systems, partial Landing Zone with optimized software and fast SSD allows extremely fast restores direct from the Repository Tier.
- AI-Powered Retention Time-Lock (RTL) with non-network-facing tier (tiered air gap), Auto Detect & Guard, delayed deletes, and immutable data objects to ensure recovery after a ransomware attack.
- Adaptive Deduplication performs deduplication and replication in parallel with backups while providing full system resources to the backups for the shortest backup window and an optimal recovery point (RPO) at the DR site.
- Plug and play expansion – various sized appliance models allow full backups of up to 189TB per appliance with a fastest ingest rate of 649.6TB/ hour. Combining up to 32 appliances in a single scale-out system allows for scalability up to a 6PB full backup (12PB usable storage). In addition, ExaGrid supports second-site repository storage of up to 12PB for DR and long-term retention. For SSD models, this 32 appliances scales to a full backup of 17.3PB (with EX540 appliances).
- Supports: CIFS, NFS, OST for NetBackup, Veeam Data Mover and S3 Object Store.
- ExaGrid includes replication to an offsite ExaGrid for disaster recovery, cross replication for multi-site DR, and supports offsite tape copy creation.
- Private, hybrid, and public cloud DR support including Amazon AWS and Microsoft Azure.
- Global deduplication across all appliances in a system.
- Bandwidth throttling for WAN efficiency.

Advanced Features

- Support of Oracle RMAN Channels for multi-hundred terabyte databases with automated performance load balancing and failover.

- Support of Veeam Data Mover and Veeam Fast Clone for synthetic fulls that are 30x faster.

- ExaGrid further deduplicates Veeam deduplicated data by 7x for an average 14:1 deduplication ratio, providing significant storage savings.

- ExaGrid supports Veeam writing to ExaGrid Tiered Backup Storage as an S3 object store target, as well as Veeam Backup for Microsoft 365 directly to ExaGrid.

- Support of Veeam SOBR for automated end-to-end scale-out backups to backup storage.

- Support of NetBackup OST, Single Target Pool, and many other NetBackup integrations.

- ExaGrid increases Commvault deduplication ratio by 3x for a dedupe ratio of 15:1 and allows for Commvault compression and deduplication to be enabled or disabled.

- ExaGrid increases Rubrik deduplication ratio by 5x for a dedupe ratio of 15:1, and allows for Rubrik compression and deduplication to be enabled or disabled.

- Support of Commvault DASH fulls and DASH copies.

- Support of HYCU for Nutanix AHV and ESXi as well as HYCU scale-out.

- A comprehensive list of over 25 supported backup apps and utilities can be found **here**.