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ExaGrid Tiered Backup Storage

Fastest Backups

Fastest Recoveries

Unparalleled, Cost-effective Scale-out

Comprehensive Security and Ransomware Recovery

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Supported Backup Applications and Utilities

Customer environments are made up of many backup approaches, backup applications, and utilities. Each disk-based backup approach supports them in different ways. Customers may have any number of backups occurring in their environment, including traditional backup applications for physical server backups, VMware, Nutanix,Hyper-V, direct-to-disk SQL dumps, Oracle RMAN direct backups, and specific UNIX utilities such as UNIX TAR.

Backup Applications

VERITAS, veeam, COMMVAULT, IBM, DELL EMC, Bacula Systems, MICRO FOCUS, StorageCraft, Zerto, HYCU, BridgeHead, arcserve, Acronis

Applications Direct

Microsoft SQL, ORACLE Oracle Dump RMAN Dump, redgate, IBM, IDERA

Linux/UNIX Direct TAR

Linux, Red Hat, ORACLE Solaris

ExaGrid's unique approach to backup storage delivers the fastest backups, restores, VM boots, and offsite tape copies as well as the only fixed-length backup window as data grows. In addition, ExaGrid's scale-out architecture and various 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, eliminating planned product obsolescence and protecting their IT investment up front and over time. ExaGrid's non-networking-facing Repository Tier (tiered air gap) with delayed deletes and immutable data objects ensure that data is read 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 disk 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 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, uses advanced transport protocols and job concurrency 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

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. Keeping the most the most recent backup in only deduplicated form will require a compute-intensive, time-consuming data "rehydration" process that will slow down restore requests. VM boots can take hours from deduplicated data. Since ExaGrid writes directly to the disk-cache Landing Zone, 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. As an example, ExaGrid can provide the data for a VM boot in seconds to single-digit minutes versus hours for inline data deduplication 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 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. Similarly, deduplication that is built into the backup software is far less aggressive, uses a larger amount of disk, and is much slower for backups and restores.

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 retention repository offers the lowest cost for long-term retention. ExaGrid's scale-out architecture includes full appliances and ensures a fixed-length backup window as data grows, eliminating expensive forklift upgrades and planned 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.
- 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, tape copy, copy job and AUX copy performance from from the most recent backup kept in its whole form. No reassembly from small blocks and large hash tables is required.
- Fast VM boots for instant recoveries from a high-speed disk-cache Landing Zone, which maintains a non-deduplicated copy of the most recent backup. This approach avoids the time-consuming data rehydration required when using solutions that only store deduplicated data.

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.
- Multiple appliances allow full backups per appliance of 10TB, 18TB, 27TB, 36TB, 54TB, 84TB, and 189TB. 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 product obsolescence. With 32 x 189TB appliances, a single system can support 12PB of usable storage and can ingest a 6PB full backup.
- At least 50% lower total system cost up front vs. competing systems. Over time, the total system cost is also at least 50% lower because the costly "forklift" upgrades associated with a first-generation front-end controller/ disk shelf architecture are eliminated.

Comprehensive Security

- Separate roles for backup staff versus security staff
- Non-network-facing Repository Tier with delayed deletes and immutable data objects to recover from ransomware attacks and other security events
- Two-factor authentication
- Dozens of other security feature outlines on the ExaGrid Comprehensive Security **web page**

Advanced Features

- Scale-out architecture allows for cost-effective growth, eliminates product obsolescence, and maintains a fixed-length backup window as data grows
- 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
- 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. 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
- 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
- Management software notifies via SNMP or email that the system is reaching capacity thresholds
- RAID6 guards against up to two simultaneous disk failures
- Self-Encrypting Drive (SED) technology (encrypted models only) ensures that data at rest is always protected
- WAN encryption for secure data transfer
- Support of S3 object storage with object locking
- Support of the Veeam Data Mover and Veeam Fast Clone for fast synthetic fulls
- 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 Veritas NetBackup OST, Accelerator, Auto Image Replication (AIR), Veritas Analytics, Veritas Single Target Storage Pool and many other integrations
- Commvault compression and deduplication can be enabled and ExaGrid deduplicates further (from 5:1 to 15:1) – a 3X improvement
- Support of Commvault Spill and Fill
- Support of HYCU for Nutanix AHV and ESXi as well as HYCU scale-out
- Support of Oracle RMAN Channels for multi-hundred terabyte databases with automated performance load balancing and failover
- A comprehensive list of over 25 supported backup apps and utilities can be found **here**

United States 100 Campus Drive / Marlborough, MA 01752 / (800) 868-6985
United Kingdom 200 Brook Drive / Green Park, Reading, Berkshire RG2 6UB / +44 (0) 1189 497 051
Singapore 1 Raffles Place, #20-61 / One Raffles Place Tower 2 / 048616 / +65 6808 5574

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