

Nominee: ExaGrid

Nomination title: ExaGrid Hyper-converged Secondary Storage (HCSS) for Backup from Converged to Hyper-converged

ExaGrid provides hyper-converged secondary storage (HCSS) for backup with data deduplication with an integrated landing zone and scale-out architecture that integrates with all leading backup applications. The landing zone with adaptive deduplication provides for the fastest backups, restores, and instant VM recoveries. ExaGrid's scale-out architecture includes full appliances in a scale-out system, ensuring a fixed-length backup window as data grows, eliminating expensive forklift upgrades and product obsolescence while reducing costs up front and over time. ExaGrid scales to petabytes of data while maintaining ingest performance of 3X, and restore and VM boot speeds of 20X that of other solutions.

ExaGrid had already converged industry-leading backup applications, a front-end disk cache, compute with storage, and deduplicated backup storage as well as all required resources, including:

- Front-end disk cache (landing zone) maintains a full, undeduplicated copy along with a long-term deduplicated pool of storage
- Processor, memory, network ports, and disk are included in each appliance in a scale-out system
- Mix-and-match any size or age appliance enables customers to 'pay-as-you-grow'
 - o Eliminates expensive and disruptive front-end controller forklift upgrades
 - o Eliminates product obsolescence before a product's normal lifespan
 - o Provides aggressive, long-term deduplication storage
 - o Includes short-term undeduplicated storage pool for fastest backups and restores, and deduplicated storage repository for long-term backup data retention
- Integrated 'Adaptive Deduplication'
 - o Delivers high-performance ingest and avoids high overhead of 'inline deduplication'
 - o Deduplication occurs in parallel with backups as resources are available (not inline)
 - o Best of all worlds
- ☒ Fastest ingest for the shortest backup window
- ☒ Fastest restores and VM boots
- ☒ Strong offsite recovery point (RPO) for offsite DR

- **Seamless integration with industry leading backup applications, including:**
 - o **OST for Veritas NetBackup/Backup Exec**
 - o **Veeam Data Mover and SOBR**
 - o **Commvault client-side deduplication**
 - o **Oracle RMAN Channels**

ExaGrid's 5.0 release launched the EX Series of appliances forward from converged to hyper-converged secondary storage for backup.

- **Global deduplication across all appliances in a single system**
 - o **Ensures maximum deduplication**
- **Convergence of private and public cloud (Amazon AWS)**
 - o **Management under a single U.I. across all clouds**
 - o **Provides for private cloud security and controls to a public cloud for DR**
 - o **Integrated WAN encryption**
 - o **Bandwidth limit setting to only utilize provisioned bandwidth**
 - o **Encryption of data at rest in the public cloud**
 - o **Allows for DR data to be replicated to a private, hybrid, or public cloud**

ExaGrid's largest scale-out solution consists of 25 EX40000E appliances in a single system and handles a 1PB full backup at 200TB/hr. versus Dell EMC Data Domain's 9500 that takes in a 1PB full backup at 68TB/hr. using DD boost. ExaGrid delivers 3X the ingest with a shorter backup window. Since the most recent copy is kept in the front-end landing zone, ExaGrid performs restores, offsite tape copies, and VM boots up to 20X faster than Dell EMC. Competitive solutions use inline deduplication with a scale-up architecture or add deduplication to the backup application media server to disk, but weren't architected for the increased deduplication compute load as data grows or the need for fast restores.

Inline Data Deduplication

The traditional inline approach to deduplication deduplicates backups during the backup process, slowing backups and expanding backup windows. Data that is deduplicated inline and stored in a deduplicated-only format must be rehydrated for every restore request, taking hours to days. These solutions employ a scale-up architecture with a front-end controller that only adds disk

shelves as data grows, causing the backup window to expand and resulting in an expensive forklift upgrade.

Integrated Landing Zone and Adaptive Deduplication

Using ExaGrid's integrated landing zone, backups land straight to disk, resulting in fast backups and a short backup window. Because deduplication and offsite replication occur in parallel (but not inline) with backups, they never impede the backup process. Recent backups are available in unduplicated form, readily accessible for restores. Local restores, instant VM recoveries, and tape copies are as fast as disk, and restores and VM boots take seconds to minutes versus hours using the traditional inline approach.

Unique Scale-Out Architecture

ExaGrid provides full appliances in a scale-out system. Unlike other solutions that add only disk as data grows, ExaGrid adds all resources (bandwidth, processor, memory, and disk), ensuring a fixed-length backup window (regardless of data growth) and negating the need for expensive/disruptive forklift upgrades. ExaGrid is "pay as you grow" – simply add appliances as data increases.

Integrated Backup Applications and Heterogeneous Environments

Using ExaGrid allows customers to switch backup applications, protecting their investment. ExaGrid provides improved performance for Veritas Backup Exec GRT, Veritas NetBackup AIR, Veritas Backup Exec, Veritas NetBackup OST, Veeam's Data Mover, and support of Veeam SOBR, Commvault client-side deduplication, and Oracle RMAN Channels.

Advantages of ExaGrid's HCSS for Backup

ExaGrid's HCSS for backup provides the fastest backups, restores, recoveries, and tape copies; maintains a fixed backup window as data grows; eliminates forklift upgrades and product obsolescence; and allows customers to buy what they need as they need it.

ExaGrid scales to a 1PB full backup in a single system and allows for replication to a second DR site as well as cross-protection among multiple datacenters. All appliances and systems are managed by a single user interface. ExaGrid allows for multiple backup applications, utilities, and dumps within a single environment.

Disaster Recovery – Private / Hybrid / Public Cloud Options

- A second-site ExaGrid is housed at the customer's second datacenter or 3rd party data center; changed backup data is replicated daily from the primary site ExaGrid to the second-site ExaGrid
- Third-party cloud providers own, house, and operate the second-site ExaGrid that receives replicated data from the primary site ExaGrid; the provider charges the customer as a service (cloud) by the month

- Data is replicated from the primary site ExaGrid to an ExaGrid VM in AWS (public cloud)

Recognized Technological Innovation

With over 10,000 systems installed worldwide, ExaGrid is the largest independent vendor that provides HCSS for backup with data deduplication. ExaGrid is achieving double-digit growth year over year.

Why nominee should win

- ExaGrid is the only HCSS solution for backup, integrating a landing zone with a scale-out architecture while integrating with all leading backup applications, which allows customers to preserve their investment
- ExaGrid provides advanced backup integration features
- Integrations and strategic partnerships with scalable systems, including Nutanix, Pure Storage, and Veeam
- ExaGrid takes in up to a 1PB full backup at 200TB/hr. ingest
- ExaGrid offers
 - o Unique / integrated landing zone architecture
 - ☐ Fastest backups/ingest
 - ☐ Fastest restores/VM boots
 - ☐ Most recent copy maintained in unduplicated format
 - o Only scale-out approach to permanently fix backup window length regardless of data growth