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ExaGrid Tiered Backup Storage

Fastest Backups.

Fastest Recoveries.

Unparalleled, Cost-effective Scale-out.

ExaGrid and Veritas NetBackup

Tiered Backup Storage

Veritas NetBackup Customers Can Add ExaGrid to Improve the Storage Economics of their Backup Environments

Tiered backup storage requires close integration between the backup software and the backup storage. Together, Veritas NetBackup (NBU) and ExaGrid backup storage provide a cost-effective backup solution that scales to meet the needs of demanding enterprise environments.

Veritas has certified ExaGrid backup storage on three levels: 1) as a target sitting behind NBU appliances, 2) for use with NBU Accelerator, and 3) for OST support. Customers deploying ExaGrid disk backup along with their NBU software can get 3x faster backups and 20x faster restores, dramatically reduced backup windows, and can significantly lower cost of storage.

ExaGrid is certified as supporting NBU OpenStorage Technology (OST), Optimized Deduplication, NBU A.I.R. and NBU Accelerator OST features. This deep integration along with ExaGrid's disk-cache Landing Zone and scale-out architecture enables:

- 3x the ingest rate resulting in the shortest backup windows.
- Additional backup performance with OST integration as well as unbalanced rentention onsite and offsite.
- 20x faster recoveries from ExaGrid's disk-cache Landing Zone, the performance tier.
- Automated and accelerated disaster recovery and unbalanced onsite and offsite retention through OST.
- 3x greater deduplication ratio resulting in 1/3 the storage required for lower cost.

Joint ExaGrid/NBU customers are able to monitor the status of their onsite and offsite backups and facilitate disaster recovery through the NBU console.

Why NetBackup Needs ExaGrid Tiered Backup Storage

The combination of NBU and ExaGrid's appliances in a scale-out system creates a tightly integrated end-to-end backup solution that allows backup administrators to leverage the advantages of a scale-out approach in both the backup application as well as the backup storage.

There are two traditional approaches to NBU deduplication. The first is performing deduplication in the NBU media server bundled as an NBU 5200/5300 appliance. The second is performing inline deduplication in a front-end controller before writing to disk, such as Dell EMC Data Domain. Both of these have inherent challenges:

- Inline deduplication – whether in the NBU appliance media server software or using the inline appliance – uses a lot of compute resources, which slows backups down.
- All data is written to disk in a deduplicated format and needs to be rehydrated for every restore, VM recovery, tape copy, etc. resulting in slow restore times.
- As data grows, the server or controller architecture does not, and as a result the backup window gets increasingly longer.
- The hardware architectural approach leads to forklift upgrades and product obsolescence.

Drawbacks of Inline Deduplication on Backup Performance

Deduplication is compute-intensive and inherently slows backups, resulting in a longer backup window. Some vendors put software on the backup servers (such as DD Boost) in order to use additional compute to help keep up, but this steals compute from the backup environment. If you calculate the published ingest performance and rate that against the specified full backup size, the products with inline deduplication cannot keep up with themselves. All of the deduplication in the backup applications are inline, and all the large-brand deduplication appliances also use the inline approach. All of these products slow down backups, resulting in a longer backup window.

Why Restore Performance for Deduplicated Data is a Common Challenge

When deduplication occurs inline, all data stored is deduplicated and needs to be put back together, or "rehydrated," for every request. This means that local restores, instant VM recoveries, audit copies, tape copies, and all other requests will take hours to days. Most environments need VM boot times of single-digit minutes; however, with a pool of deduplicated data, a VM boot can take hours due to the time it takes to rehydrate the data. All deduplication performed in the backup applications as well as the large-brand deduplication appliances store only deduplicated data. All of these products are very slow for restores, offsite tape copies, and VM boots.

How ExaGrid Addresses Backup and Restore Performance for NetBackup

When using ExaGrid, backup data is written directly to the appliance's disk-cache Landing Zone versus being deduplicated on the way to the disk. This avoids inserting the compute-intensive process in the backup thus eliminating costly slowdown. As a result, ExaGrid achieves backup performance of up to 488TB per hour for a 2.69PB full backup. This is 3x faster than any traditional inline data deduplication solution, including deduplication performed in backup applications or target-side deduplication appliances.

ExaGrid Customers Never Need a Forklift Upgrade

ExaGrid appliances are simply added to a scale-out system for easy backup storage growth as data grows. Because each ExaGrid appliance includes all compute, networking, and storage, all resources are extended with the addition of each new appliance—as data grows, the backup window remains fixed in length.

Traditional deduplication storage appliances utilize a "scale-up" storage approach with a fixed-resource media server or 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 grows, so does the time it takes to deduplicate the growing data until the backup window is so long that the media server or front-end controller has to be upgraded (called a "forklift" upgrade) to a larger/faster server or controller, which is disruptive and costly. If new servers or controllers are released, users are forced to replace what they have. Typically, vendors discontinue what you have and increase the cost for maintenance and support. With ExaGrid, there is no product obsolescence.

ExaGrid provides full appliances in a scale-out system. Each appliance has Landing Zone storage in the performance tier, long-term retention in a deduplicated format in a repository, the retention tier, as well as processor, memory, and network ports. All data is automatically load balanced and globally deduplicated across all appliances for full storage efficiency. The net is that as data volumes double, triple or more, ExaGrid appliances provide all required resources to maintain a fixed-length backup window. If the backups are six hours at 100TB, they are six hours at 300TB, 500TB, 800TB, up to multiple petabytes – with global deduplication.

With ExaGrid, expensive forklift upgrades are avoided, and the aggravation of chasing a growing backup window is eliminated.

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