

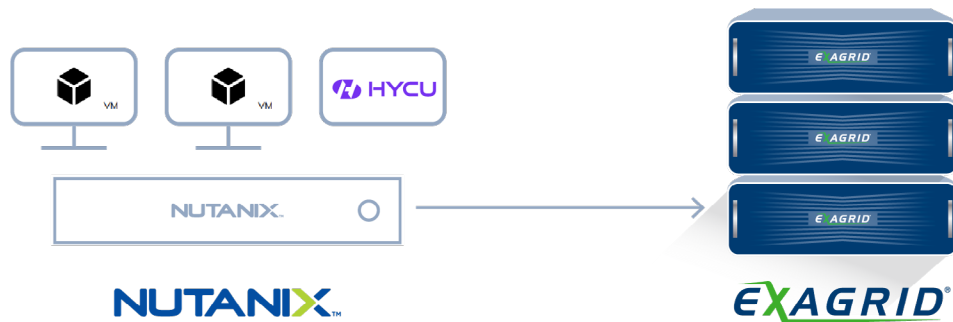


### ExaGrid Tiered Backup Storage

- Fastest Backups
- Fastest Recoveries
- Unparalleled, Cost-effective Scale-out
- Comprehensive Security and Ransomware Recovery

## ExaGrid and HYCU Backing Up and Recovering Data

As IT data centers move to hyper-converged infrastructure, new and innovative backup approaches are required to be able to recover from any failure within minutes



### Treating HCIS Like Traditional Infrastructure

Virtualized infrastructures include intelligent systems that have extremely efficient snapshots, clones, replications, deduplication, and compression. This intelligence is one of the major reasons you invested in Virtualization. But traditional data protection solutions treat virtual environment like standard dumb disks.

To truly capitalize on your investment, HYCU allows you to leverage HCIS' capabilities.

### Acting Like VMs are Black Boxes

Today's solutions are singularly focused on VMs without regard to applications, essentially treated as black boxes. There is no easy way of knowing which applications are running on which VMs. Customers are given the wrong perception that generic VM-level snapshots are always enough. The truth is, they don't work for all applications, and oftentimes you don't find out that your backup fell short until it is time to recover.

The HYCU solution comes built-in with Application Awareness, Application Consistent Backup and Application Aware Recovery

### Moving Beyond Legacy Complexity

The core value proposition of virtualization is its simplicity, but when you use today's complex data protection systems, you can't realize its full potential. HCIS solutions can be deployed in 30 minutes, yet most current data protection solutions require multi-day professional services to deploy them. The lack of native integration between most data protection products and hyper-converged environments makes it much more difficult for administrators to rapidly get up to speed and become instantly productive.

The ideal data protection solution should tightly integrate with the VMWare, Nutanix and others to create a closed-loop process. HYCU is highly integrated and can be installed and up in running in minutes.

## Focusing on Backup, Not Recovery

When people think of data protection, they tend to focus on the backup. In actuality, backup is the simpler task and recovery is the challenging one. HYCU offers stress-free recovery, application context, ease of use, self-service, and error-proof tools.

## Using HYCU, Purpose-built Data Protection for Virtualized Environments

Runs as a Virtual Appliance

- Dynamic discovery of VMs to be backed up – application-level awareness of what is running on each VM
- Intelligent incrementals forever; does full backups at specified data change threshold

## Using ExaGrid Tiered Backup Storage Designed for Virtualized Environments

ExaGrid's unique Landing Zone approach to backup storage delivers the fastest backups, restores, and VM boots as well as the only fixed-length backup window as data grows with its scale-out architecture. In addition, ExaGrid's scale-out architecture and various size appliances allow 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 product obsolescence and protecting the IT investment up front and over time.

## Shortening the Backup Window with the Fastest Backups

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 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 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. This unique combination of a Landing Zone with adaptive deduplication provides for the fastest backup performance, resulting in the shortest backup window as well as a strong disaster recovery point (RPO).

## Ensuring the Fastest Restore Requests, 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, so keeping 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 when done using deduplicated data. Since ExaGrid writes directly to the disk Landing Zone, the most recent backups are kept in their full undeduplicated, native form. All restores, VM boots, and offsite tape copies are fast because the overhead of the data rehydration process is avoided. As an example, ExaGrid can provide data for a VM boot in seconds to single-digit minutes versus hours for inline 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.

## Maintaining a 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 commensurately. 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 grows, so does the time it takes to deduplicate the data until the backup window is 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. ExaGrid provides full appliances in a scale-out system. Each appliance has landing zone storage, deduplicated repository storage, processor, memory, and network ports. As data volumes double, triple, etc.,

ExaGrid doubles, triples, etc. 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, etc. Expensive forklift upgrades are avoided, and the aggravation of chasing a growing backup window is eliminated.

## Comprehensive security

ExaGrid offers comprehensive security including a non-network-facing Repository Tier with delayed deletes and immutable data objects in order to recovery after a ransomware attack.

## ExaGrid and HYCU: Providing Fastest Backups, Restores, and Best Scalability for Virtualized Environments

- Landing zone for fast backups
- Landing zone for fast restores
- Long-term storage efficiency with aggressive data deduplication
- Scale-out backup storage system – backup window stays fixed in length as data grows
- Non-network-facing tier with delayed deletes and immutable data objects for recovery after a ransomware attack
- Scales to a one petabyte full backup in a single system

The combination of HYCU and ExaGrid provides for the fastest backups, fastest restores, best scalability, and best overall up front and long-term costs for Nutanix environments.