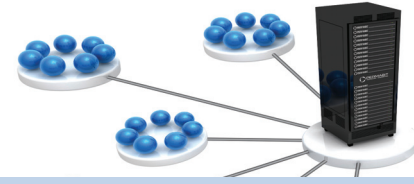


## Virtualized Server Image Storage Efficiently Manage VM Sprawl



*Virtualization is a critical tool to improve server efficiencies and reduce costs. The success of server virtualization, however, has created an undesired side effect — rampant storage consumption. As virtualization usage accelerates, data centers are faced with magnified storage challenges: increased capacity, management, floor space, and power/cooling. Permabit offers a solution that helps contain storage management requirements and costly disk utilization while dramatically reducing storage costs.*

### The VM Image Challenge

Using products such as VMWare, administrators can rapidly deploy massive application server environments by creating centralized application images and then deploy these virtual machines into the physical server environment on an as-needed basis. In addition, this same virtualization technology can be used to archive the complete state of a given machine at any point in time, providing a very complete virtual image solution to meet corporate requirements for rapid disaster recovery and for compliance.

As the use of server virtualization proliferates, maintaining the images created to manage and preserve the environment over extended periods becomes a challenge. For example, there are backup copies, disaster recovery copies, and compliance copies to mention just a few. Typically there are multiple copies of each and, as a result, they can consume massive amounts of storage. If kept on primary storage — the most expensive storage in IT environments — it yields the most costly deployment possible. As multiple copies are kept, this practice becomes an excessive consumer of primary storage and the costs escalate as each additional copy is added.

The best approach to retaining virtual images is to keep only the most recent image on primary storage for production use, moving the iterative copies to a less-costly disk-based storage tier. Further savings are delivered through high deduplication rates, as the OS and applications are typically redundant from image to image. This provides a very effective application of deduplication technology which dramatically reduces the storage space requirements and costs.

A solution for managing virtual server images must provide:

- **Massive Scalability** to address the high capacity and volume of the virtual machine images needed for backup, gold copy storage, compliance snapshots, etc.
- **Highly efficient space savings** to minimize the cost of retaining these multiple copies, driven by effective deduplication and compression technologies.
- **Always-on availability** so images are easily accessible when needed.
- **Secure protection** to ensure that virtual machine images are unchanged and there when you need them.

### Permabit Solution: Efficient, Secure Storage for Virtual Images

Permabit's Value Tier Storage solution efficiently manages the long-term retention of virtual machine images, while reducing costs and streamlining management and access. First, images are easily moved from expensive primary storage to Permabit's highly cost-efficient storage tier, freeing up volumes of primary storage. Second, Permabit's patented, built-in Scalable Data Reduction™ (SDR) technology applies data deduplication and compression to these highly repetitive images to produce a dramatic decrease in the total storage footprint. Third, Permabit's leading RAIN-EC data protection assures images are free from corruption so they are ready and available when needed. Lastly, Permabit scales to meet even the most extensive VM applications, providing up to 4.6 PB of data for less than \$1/GB.

*"Disk archive technologies like Permabit's have the ability to scale to multiple PBs in size. Combined with the storage efficiencies of deduplication and compression, means there is minimal concern of not being able to scale to meet the growing demands of rapid information growth that would end up in an archive and also the entire backup process."*

—George Crump  
Storage Switzerland

### Critical Functionality:

- **Massive Scalability** to 4.6 PB of raw storage
- **Advanced Data Deduplication** built-in
- **WORM Retention locks down data** and ensures images are unchanged
- **Reliable Data Protection** with RAIN-EC technology
- **Replication** delivers protection locally or in remote sites
- **High Availability** assures seamless access to all stored images

### Meaningful Benefits:

- **Frees up expensive primary Storage**
- **Reduces storage footprint**
- **Allows rapid deployment of virtual environments**
- **Ensures the long-term safety and security of virtual images**
- **Delivers fast ROI**

Permabit Enterprise Archive offers:

- **Massive Scalability** — Up to petabytes of raw storage that grows seamlessly as your need for more storage expands.
- **Data Deduplication** — By leveraging Permabit's patented and built-in Scalable Data Reduction (SDR).
- **WORM Retention** — Built into Permabit solutions, lets you lock down data to ensure images are unchanged.
- **Flexible Retention Policies** — Retention periods can be uniquely specified or policy-driven based on file type, origin, or application.
- **Reliable Protection** — Leveraging industry-leading RAIN-EC technology that is more effective than any other data protection solution available today.
- **Replication** — For further protection of data locally or in remote sites.
- **High Availability** — To ensure you always have access to all stored images.

## Key Benefits

Implementing Permabit to manage your virtual images enables you to:

- **Reduce storage costs to less than \$1 per gigabyte**, lower than any other disk-based archive solution in the industry.
- **Free up expensive primary storage** to reduce or eliminate future purchases.
- **Retain and control complete images** of operating environments and applications, along with associated information.
- **Ensure long-term safety and security** of all virtual images.
- **Streamline systems management** to handle more storage with fewer resources.
- **Deliver rapid deployment of virtual environments** to new or changing infrastructures.
- **Save significant storage space** by deduplicating virtual images and reducing storage footprint.

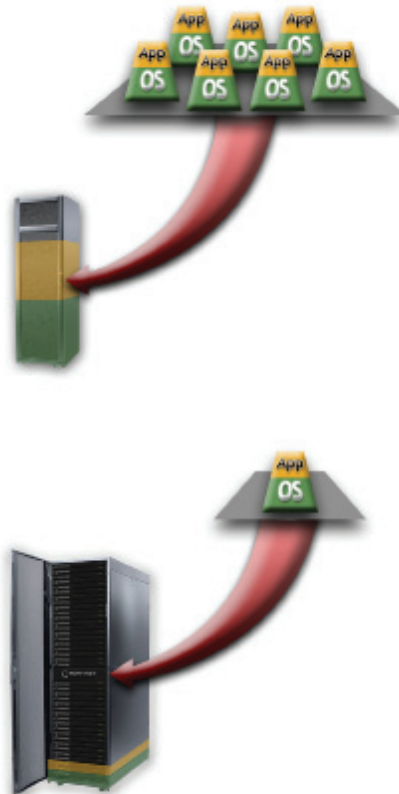
## Permabit Delivers Virtualization Savings

With Permabit's Value Tier Storage solution you can keep VM images on a much less costly and more efficient storage tier. And, with the application of our advanced deduplication and compression technology, Permabit further reduces the storage requirements and costs while protecting the images from corruption so they are always ready and available when needed. Permabit enables you to cope with constant technology changes and provides the ability to efficiently and cost-effectively manage the long-term retention of virtual images.

Permabit delivers the functionality required to manage VM images over the long term.

## Find out More

Contact Permabit today to discover how we can help you achieve greater efficiencies in your virtualized server environments. Call us at 617.252.9600, contact your local Permabit partner, or view our solutions at [www.permabit.com](http://www.permabit.com).



**Figure 1:** Permabit works to efficiently manage and reduce virtual images, while providing seamless user access.

*"75% of our static data, including document images, are archived to the Permabit Enterprise Archive, which has resulted in tremendous cost savings, and the ability to meet our green technology initiatives."*

—Jack McLaine  
VP/IT Manager  
VIST Financial Corporation

## About Permabit

Permabit delivers the industry's most advanced enterprise Value Tier storage solution. With patented data reduction and protection technology, the Permabit Enterprise Archive™ provides massively scalable disk-based storage at the lowest effective cost available. Permabit enables decades of secure, reliable, online information access with a rapid return on investment. Permabit is Gartner's 2009 "Cool Vendor of the Year" in Archiving. For more information, visit [www.permabit.com](http://www.permabit.com).



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