RECLAIM

Free up unused capacity for ongoing savings

HP 3PAR Thin Persistence Software

Solution brief

The introduction of HP 3PAR® Thin Provisioning Software in 2002 revolutionized data storage by giving organizations the ability to meet Green IT goals, reduce capacity purchases, decrease administration time, and address the significant problem of allocated but unused capacity. With HP 3PAR Thin Persistence Software, HP 3PAR Utility Storage customers can now leverage next-generation space reclamation technology to minimize storage total cost of ownership (TCO) and maintain the environmental responsibility targets they have worked so hard to achieve.

The benefits

HP 3PAR Thin Persistence Software reduces CAPEX by:

- Eliminating storage capacity inefficiencies resulting from file deletions
- Deferring disk expenditures necessary to accommodate new data growth
- Reducing SAN ports and storage software fees (physical TB licensing)

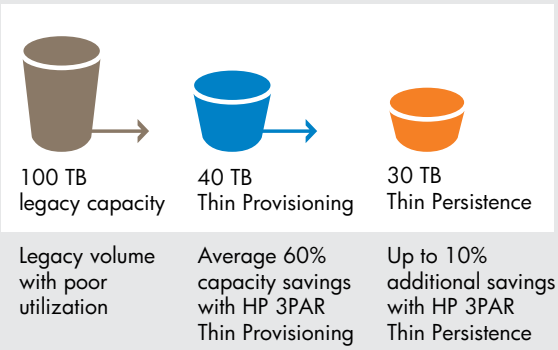
HP 3PAR Thin Persistence Software lowers OPEX by:

- Reducing power, cooling, and floor space costs by eliminating unnecessary capacity
- Providing a simple, quick, and efficient mechanism for "thinning" volumes

HP 3PAR Thin Persistence Software improves ROI by:

- Permitting more application deployments and data growth with fewer capacity assets
- Speeding reclamation of space in minutes versus days or weeks

Thin Provisioning + Thin Persistence: average 70% capacity savings



The challenge: hidden utilization penalties add up over time

Writing and deleting large amounts of data can leave unused space within thin volumes. Even lots of small writes and deletions can eventually reduce the efficiency of thin volumes. This logical deletion of data without actually freeing up unused space creates a hidden utilization penalty that can really add up over time.

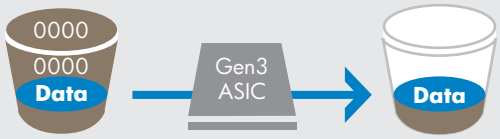
The solution: reclaim unused space simply, quickly, and without disruption

An industry first, HP 3PAR Thin Persistence Software augments the benefits of HP 3PAR Thin Provisioning Software and HP 3PAR Thin Conversion Software by ensuring that thin volumes on the HP 3PAR Storage System stay as lean and efficient as possible. HP 3PAR Thin Persistence Software leverages the unique Thin Built In™ hardware capabilities of the HP 3PAR Gen3 ASIC to drive the ongoing, inline "thinning" of volumes at wire speeds while preserving service levels and preventing disruption to production workloads.

Thin Persistence achieves this by using the zero-detection capability embedded in the HP 3PAR Gen3 ASIC to reclaim unused space associated with data deleted from a storage volume.

The increased efficiency made possible by Thin Persistence produces significant savings on both capital and operating costs and helps clients defer the cost of purchasing raw capacity to handle new data growth. Thin Persistence further minimizes costs by eliminating the requirement for special host software and professional services. It also helps clients achieve sustainability targets by minimizing data center power and cooling requirements as a result of eliminating unnecessary capacity.

Thin Persistence:
fast and simple space reclamation



Before Fast After

- Use standard file system tools/scripts to write zero blocks
- Zeros detected inline and mapped, not written

The thin ecosystem: maximize reclamation with partner solutions

HP 3PAR Utility Storage integrates with partner products for the purpose of building out a thin ecosystem and extending the benefits of thin technologies to other areas of the data center. This includes offering the industry's first database storage reclamation solution, currently available only with HP 3PAR Utility Storage. With this solution, Oracle Database 10g and 11g customers using Oracle Automatic Storage Management (ASM) and HP 3PAR Thin Provisioning Software can reclaim allocated but unused disk space using HP 3PAR Thin Persistence Software and the new Oracle ASM Storage Reclamation Utility (ASRU).

A Thin Reclamation API developed in conjunction with Symantec™ allows host file systems to intelligently communicate with HP 3PAR Storage Systems to reclaim space associated with file deletions. HP 3PAR Thin Reclamation Software for Veritas Storage Foundation is the first platform solution to take advantage of this API. As more file system vendors integrate this capability, which is presently driving the emerging T10 thin provisioning standard, not only will their file systems work with HP 3PAR Storage Systems to reclaim unused space, but datacenters will move closer to becoming "thin by design."

In VMware vSphere™ environments, HP 3PAR Thin Persistence Software ensures storage capacity efficiency by maintaining the thinness of all three vSphere virtual machine disk (VMDK) formats at the storage layer. In addition, Thin Persistence combined with the built-in zero-detection capability of the HP 3PAR Gen3 ASIC delivers performance benefits while eliminating the capacity tradeoffs associated with the highest-performing VMDK format, Eager Zeroed Thick.

For more information visit www.hp.com and www.hp.com/go/3PAR.

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