

ADAPT

Deliver the right QoS to the right data at the right time

HP 3PAR Adaptive Optimization Software

Solution brief

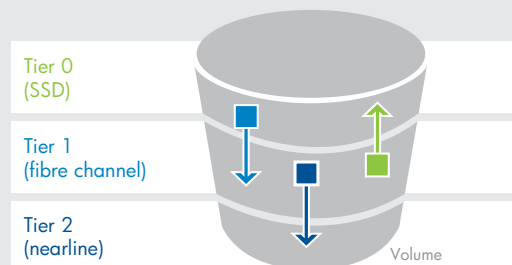
HP 3PAR® Adaptive Optimization Software is a granular, policy-driven, autonomic storage tiering software solution that delivers service level optimization for enterprises and cloud data centers to reduce cost while increasing agility and minimizing risk.

The HP 3PAR Utility Storage platform leads the industry in autonomic storage tiering for service level optimization. HP 3PAR Dynamic Optimization Software is widely deployed for non-disruptive workload rebalancing across HP 3PAR Storage Systems.

HP 3PAR Adaptive Optimization Software delivers the next generation in autonomic storage tiering by taking a fine-grained, highly automated approach to service level optimization. Using the massively parallel, widely striped, and highly granular HP 3PAR Architecture as a foundation, Adaptive Optimization leverages the proven sub-volume data movement engine built into the HP 3PAR InForm Operating System Software (InForm OS). The result is highly reliable, non-disruptive, cost-optimized sub-volume storage tiering that delivers the right Quality of Service (QoS) to the right data at the right time. Adaptive Optimization enables enterprise and cloud data centers to optimize service levels effortlessly, on a large scale, and for a lower total cost than other solutions.

Autonomic, sub-volume tiering

HP 3PAR Adaptive Optimization Software



The benefits

Reduce cost by:

- Delivering sub-volume level, bi-directional data optimization
- Enabling broad deployments with application-specific controls

Gain agility by:

- Offering application prioritization modes with QoS gradients
- Autonomically delivering policy-driven data optimization

Minimize risk by:

- Leveraging a proven, fine-grained data movement engine
- Controlling data movement timing

The challenge: scaling service level optimization without disruption

Now more than ever, IT managers are under pressure to deliver the service levels necessary for a wide variety of mission-critical applications at the lowest possible cost. The introduction of Solid State Drive (SSD) technology has created enormous demand for an optimization solution capable of leveraging this new drive class to improve service levels without raising costs. Traditional approaches to service level optimization have not been successful in meeting this need due to limitations such as:

- Prohibitive cost of placing entire volumes onto SSDs
- Inability to scale sub-volume optimization to accommodate large, mission-critical data centers
- Insufficient administrative controls and override mechanisms



- Inability to move data without impacting service levels
- Unproven technologies that introduce unnecessary risk

As a result, IT managers frequently forfeit service level optimization on traditional storage platforms, instead tolerating inflexible service levels delivered at too high a cost.

The solution: granular, policy-driven, autonomic storage tiering

HP 3PAR Adaptive Optimization Software is an autonomic storage tiering solution that enables IT managers to deploy service level optimization on a broad scale, at a lower cost, and without the limitations associated with traditional optimization approaches.

Reduce cost

With Adaptive Optimization, service level optimization—matching data to the most cost-efficient resource capable of delivering the needed service level—takes place at the sub-volume level, so the right QoS is delivered to the right data at the right time. Sub-volume level optimization allows organizations to meet even the most stringent performance targets with an extremely “lean” premium SSD tier, while highly economical, widely striped Nearline (enterprise SATA) drives meet broader capacity requirements for all but the most performance-intensive data. This approach enables data centers using HP 3PAR systems to meet enterprise and cloud performance demands within a smaller footprint and for up to a 30% lower storage equipment cost than by using Fibre Channel storage. This level of cost savings is made possible in part by application-specific thresholds and comprehensive support for “thin” and “fat” volumes as well as volume copies.

Gain agility

Adaptive Optimization enables IT managers to react swiftly to changing business needs while delivering service level optimization over the entire application

lifecycle—autonomically and non-disruptively. Using HP 3PAR System Reporter Software, an administrator can prioritize each application by configuring up to three storage tiers (each defined by drive type, RAID level, stripe width and/or radial placement of data). From this point on, Adaptive Optimization intelligently monitors sub-volume performance and applies the user-specified policies to autonomically and non-disruptively move data using QoS gradients to shift that data at a granular level toward the most appropriate resources according to changing QoS demands. Support for multiple Adaptive Optimization configurations and for the co-existence of tiered and non-tiered application volumes provides the flexibility to consolidate a wide range of applications onto a single array.

Minimize risk

Adaptive Optimization leverages the proven, fine-grained data movement engine built into the InForm OS. This data movement engine has been widely deployed by HP 3PAR clients for extremely reliable, non-disruptive rebalancing of storage volumes using HP 3PAR Dynamic Optimization Software. Adaptive Optimization also protects against user impact by incorporating a high degree of user control and several policy override mechanisms.

A flexible implementation allows data movement to be scheduled and resource usage limits and tier definitions to be varied by application. User-configurable analysis periods, collection of performance data after cache, and built-in stability mechanisms prevent data thrashing. With HP 3PAR Adaptive Optimization Software, gone are the days of accepting rigid service levels at less than optimal cost. With this highly autonomic technology, IT managers can now achieve non-disruptive, cost- and performance-optimized storage within even the largest and most demanding enterprise and cloud environments.

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

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