

PREVAIL

Reduce mid-range array sprawl
by purchasing 50% fewer arrays

HP 3PAR F-Class Storage Systems: A mid-range storage revolution for lean times

Solution brief

The benefits

- Buy 50% fewer arrays
- Reduce capacity, power, cooling, and floor space by up to 75%
- Reduce storage administration time by 90%

HP 3PAR® F-Class Storage Systems bring the utility storage revolution to the mid-range with a quad-controller architecture that offers superior scalability and availability at a price that fits mid-sized budgets.

Customers looking for mid-range storage solutions have been conditioned to compromise scalability and availability to meet shrinking IT budgets. At the same time, more and more applications are being consolidated onto virtualized infrastructures, making the platforms on which they reside mission-critical.

Historically, the only alternative to these mid-range storage limitations has been to purchase premium-priced monolithic arrays to do the same job. However, in the current economy, this is no longer a viable option for most organizations.

Now you can reduce mid-range array sprawl by purchasing 50% fewer arrays. Eliminate up to 75% of the capacity, power, cooling, and floor space required to store your data, and spend 90% less time managing your storage. No more choosing between mid-range limitations and monolithic price tags. No more sacrificing high-end features to fit shrinking IT budgets.



HP 3PAR F-Class Storage Systems offer the same pioneering HP 3PAR Architecture, Mesh-Active controller technology, and industry-leading, high-end features as the T-Class—the world’s most powerful virtualized storage array—but in a scaled-down, quad-controller capable system. Both product families share the same HP 3PAR InForm® Operating System Software and HP 3PAR Management Console, so F-Class systems support all the same advanced software as the T-Class—including HP 3PAR Thin Provisioning Software, HP 3PAR Virtual Domains Software, HP 3PAR Dynamic Optimization Software, HP 3PAR Virtual Copy Software, and HP 3PAR Remote Copy Software.

Buy 50% fewer arrays

F-Class systems enable you to purchase and deploy 50% fewer arrays than required by traditional mid-range storage platforms.

Mesh-Active controller technology autonomically distributes volumes across a total of up to four Controller Nodes, with all controllers active on each volume. By concurrently applying all node resources to each LUN, F-Class systems deliver far more headroom and load-balanced performance than dual-controller arrays. As mixed workloads are generated by storage consolidation, the HP 3PAR Gen3 ASIC ensures that data and metadata are reprocessed independently.

This eliminates the large impact that sequential workloads (like data mining or backups) can have on transactional workloads such as database operations.

How F-Class systems reduces array sprawl by 50%

Key attribute	HP 3PAR F-Class Storage Systems	Traditional mid-range storage
Scale past 2 controllers Quad-controller architecture with Mesh-Active technology	YES	NO
Mixed transactional and sequential workloads ASIC-based metadata processing and data movement	YES	NO
Security for shared storage HP 3PAR Virtual Domains storage hypervisor	YES	NO

By offering secure multi-tenancy, F-Class systems also eliminate the security problems that can arise when applications are consolidated onto a single platform. Storage administrators, application developers, and database administrators from different teams or departments need access to the management tools for their critical resources—without compromising the security or integrity of data belonging to other user groups. HP 3PAR Virtual Domains Software, the first and only storage hypervisor-like technology on the market, enables the creation of secure management domains for different users so they can each manage their own logical volumes safely and securely while still leveraging the performance and capacity resources of the entire array.

Reduce capacity, power, cooling, and floor space by up to 75%

Like the T-Class systems, HP 3PAR F-Class Storage Systems feature the HP 3PAR Gen3 ASIC with Thin Built In™. This makes the F-Class the first family of mid-range storage systems to offer hardware-based zero-detection capability to enable wirespeed “fat-to-thin” conversions. The revolutionary HP 3PAR Gen3 ASIC is the only processor that provides an efficient, silicon-based mechanism for converting traditional “fat” volumes from other platforms to more efficient “thin” volumes on HP 3PAR Utility Storage.

This unique capability complements other pioneering thin storage technologies that eliminate low utilization rates. For example, HP 3PAR Thin Provisioning Software uses a dedicate-on-write approach to eliminate capacity waste by allowing you to purchase only the disk capacity you actually need, only as you actually need it. 3PAR Virtual Copy Software is a reservationless, copy-on-write thin technology that reduces the cost of frequent disk-based snapshots and creates virtual copies that can be mounted and used instantly.

With HP 3PAR Thin Reclamation Software, F-Class arrays are ready for granular, automated, non-disruptive space reclamation. This pioneering thin reclamation technology marks the industry’s first automated use of filesystem-level intelligence to continually optimize storage utilization and increase infrastructure automation.

Another way that F-Class systems apply unique thin technologies is through support for Fast RAID 5 and RAID 6. For example, a Gen3 ASIC-based Fast RAID 5 boosts RAID 5 performance to within 9% of RAID 1 but with significantly less capacity. In fact, Fast RAID 5 is recommended by Oracle for use with Oracle Database deployments, where it has been demonstrated to reduce RAID capacity overhead by 66 to 88% as compared to traditional storage. With F-Class systems, improved utilization and reduced capacity do not mean lower performance. Support for the same wide striping technology used by all HP 3PAR arrays delivers high utilization without compromising performance.

How F-Class systems reduce capacity, power, cooling, and floor space by up to 75%

Key attribute	HP 3PAR F-Class Storage Systems	Traditional mid-range storage
Migration of stranded, fat volumes Thin Built In™ ASIC	YES	NO
Efficient provisioning of capacity for data volumes Industry-leading HP 3PAR Thin Provisioning Software	YES	NO
High disk utilization when operating at peak performance Wide striping technology	YES	NO
High-end performance without tradeoffs ASIC-assisted Fast RAID 5 and RAID 6	YES	NO
Efficient capacity reservations with copy-on-write snapshots Reservationless virtual copy	YES	NO

Reduce storage administration time by 90%

The HP 3PAR InForm Operating System eliminates tedious, manual capacity planning and delivers instant, application-tailored provisioning through the fine-grained virtualization of lower-level components. Provisioning is managed intelligently and autonomically. Traditional storage planning, change management, and array-specific professional services are eliminated.

Like all HP 3PAR arrays, F-Class systems offer industry-leading ease of use through a simple, unified HP 3PAR Management Console and an extremely powerful, scriptable Command Line Interface (CLI). With these tools, you can manage your entire utility storage deployment from a single window, including remote replication to disaster recovery sites. The Management Console is fully integrated with signature HP 3PAR applications such as HP 3PAR Thin Provisioning, Virtual Copy, Dynamic Optimization, Virtual Domains, and Remote Copy Software—so everything you need to optimize your storage environment is right at your fingertips.

How F-Class systems reduce administration time by 90%

Key attribute	HP 3PAR F-Class Storage Systems	Traditional mid-range storage
Simple tools to achieve high service levels Autonomic Rapid Provisioning	YES	NO
Simple volume rebalancing as resources are added HP 3PAR Dynamic Optimization Software	YES	NO
Compatibility between mid-range and high-end storage platforms 100% common software across all HP 3PAR arrays	YES	NO

Designed for server virtualization

Like the T-Class systems, HP 3PAR F-Class Storage Systems with Thin Built In™ are specifically designed to address the complex needs of virtualized environments and dramatically increase virtual datacenter ROI.

Exceptional I/O performance and the wide striping of data mitigate server memory and traditional storage constraints, so your VM-based applications perform as your users expect. In addition, you can increase the ROI of your server consolidation project with HP 3PAR Thin Provisioning Software and Thin Built In technology by reducing the up-front and ongoing capacity requirements of your virtualization platform.

- Reduce physical capacity needs by up to 75%
- Deliver increased VM-based application performance
- Achieve greater server consolidation by adding more VMs without performance penalties
- Disaster recovery protection with HP 3PAR Replication Adapter Software
- Virtual desktop support with HP 3PAR Thin Copy Desktop Software

This administrative simplicity, combined with optional applications such as HP 3PAR Autonomic Groups Software for extending autonomic management to clustered and virtual server environments, can increase administrative efficiency by up to 10x for a 90% reduction in storage administration time.

Forget mid-range storage limitations

Forget the days of having to choose between mid-range limitations and monolithic price tags, of being forced to give up high-end features to meet shrinking IT budgets. Designed to overcome the limitations of mid-range arrays, HP 3PAR F-Class Storage Systems offer the industry's first quad-controller arrays for resilient utility computing at a price that's just right for your mid-size deployment. It's exactly what you need in these challenging economic times: the only mid-range array with the resilience, agility, advanced features, and scalability you've been waiting for, all at the right price.



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