HP StorageWorks XP24000/XP20000 Disk Arrays

Provides bullet-proof storage for large enterprises requiring constant access to vital data while allowing continued operations in the event of a disaster

Do you require constant data availability without risk for your business?

The HP StorageWorks XP24000/XP20000 Disk Arrays are large enterprise-class storage systems designed for organizations that simply cannot afford any downtime. The XP combines a fully redundant hardware platform with unique data replication capabilities that are integrated with clustering solutions for complete business continuity.

The XP software decreases the complexities of data management. Through thin provisioning, organizations can improve storage utilization. Virtualization simplifies the management of diverse systems. Dynamic partitioning allows for the distribution of storage resources. And consolidation becomes a reality by managing open systems, mainframe, and HP NonStop applications all on a single XP. With the XP array, organizations can confidently manage mission-critical IT.

Key features and benefits

Mitigate risk with constant data availability

Bulletproof design to protect against failure
Operating a business demands constant uptime, with the risk of data loss or downtime is always at the forefront. The HP StorageWorks XP24000/XP20000 Disk Arrays mitigate that risk. All components are redundant, hot-swappable, and can be upgraded online

Disaster proof solutions for complete protection
With a large-scale disaster, you not only need to have high levels of data protection but also business continuance. The XP24000/XP20000 Disk Arrays clustering solutions allow remote mirroring to be integrated with high availability server clustering to provide multi-site server/storage disaster recovery.

Protect against data loss
Your data is protected even if power goes out as the XP24000/XP20000 Disk Arrays batteries continue to operate and write cache data to disk. RAID 6 adds fault tolerance. Continuous Track checks your XP for unseen issues and the end-to-end checksum confirms data integrity from port to disk and back.

Enhanced data protection and security
Decrease your exposure to data loss with the security features of XP Array Manager software. You will be able to reduce the risk of unauthorized access, prevent unauthorized modification, and protect your information at the end of its lifecycle by completely deleting data on a specified volume.

Lower costs through efficient data management

Power and cooling cost savings
Reduce costs, accelerate your ROI, and reduce the environmental impact of your XP24000/XP20000 Disk Arrays. Thin provisioning can lower power costs by supplying storage capacity to applications from a virtualized pool and reduce unused storage that consumes power, requires cooling, and takes up space.

Simplify complex management through virtualization
Simplify data management in a complex, multi-vendor environment. Virtualization enables important functions such as migration, array repurposing, and tiering. XP External Storage virtualizes heterogeneous arrays so that hosts see the capacity, but not the physical attributes of the external devices.

Deliver quality of service through array partitioning
Make sure your critical applications have the resources they demand with partitioning. The dynamic partitioning solution prevents inadvertent administrator errors from affecting the entire array and allows storage consolidation, even when you have applications that cannot tolerate performance loss.

Simplify storage management through consolidation
Simplify your operations and reduce costs by consolidating multiple applications onto a single XP array. By having multiple hosts running diverse operating systems connected to an XP, you can better manage the environment and simplify the implementation of backups and disaster recovery solutions.

Accelerate business growth with swift adaptability

React quickly to new business demands
Thin provisioning also provides the flexibility you need to respond quickly to new demands. You can now configure all the capacity you may need for the future, but only buy what you need today. XP Thin Provisioning will automatically allocate capacity, as applications need it.

Grow business seamlessly
The dilemma of overbuying capacity today or planning for a costly "forklift" upgrade tomorrow is now history. The XP24000/XP20000 Disk Arrays scale seamlessly. Main components can be added or replaced without shutting down critical operations. Simply buy what you need now and grow as your needs change.

High-end performance
Get the ultimate performance for your 24/7 demands to deliver your critical data at break-neck speed.

Customize the configuration of your environment
The XP24000/XP20000 Disk Arrays offer the flexibility you need to meet your performance and availability objectives.

Technical specifications

	HP StorageWorks XP24000 Disk Array	HP StorageWorks XP20000 Disk Array
Number of Drives	1,152	240
Minimum Frames (Cabinets)	1	1
Maximum Frames (Cabinets)	5	2
Capacity (Raw)	1.13 PB	236 TB
Capacity (Useable)	851 TB	177 TB
External Storage Capacity	247 PB	96 PB
Maximum Shared Memory	24 GB	14 GB
Interface	(224) 4 Gb Fibre Channel (112) 1 Gb ESCON (112) 4 Gb FICON	(48) 4 Gb Fibre Channel (24) 1 Gb ESCON (24) 4 Gb FICON
Disk Drive Types (Capacity, Port Type, Speed, Form Factor, Technology)	146 GB FC 15K rpm 300 GB FC 15K rpm 400 GB FC 10K rpm 450 GB FC 15K rpm 1 TB SATA 7.2K rpm 73 GB SSD 146 GB SSD Note: All drives are dual-ported, 4 Gb/s Fibre Channel Arbitrated Loop (FC-AL)	146 GB FC 15K rpm 300 GB FC 15K rpm 400 GB FC 10K rpm 450 GB FC 15K rpm 1 TB SATA 7.2K rpm 73 GB SSD 146 GB SSD Note: All drives are dual-ported, 4 Gb/s Fibre Channel Arbitrated Loop (FC-AL)
Cache	512 GB	128 GB
Supported Operating Systems	HP-UX HP Tru64 HP OpenVMS HP NonStop Sun Solaris IBM AIX Microsoft Windows Linux Mainframe VMware	HP-UX HP Tru64 HP OpenVMS HP NonStop Sun Solaris IBM AIX Microsoft Windows Linux Mainframe VMware
RAID Support	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P) RAID 5 (14D + 2P) RAID 5 (28D + 4P) RAID 6 (6D + 2P)	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P) RAID 5 (14D + 2P) RAID 5 (28D + 4P) RAID 6 (6D + 2P)
Warranty (parts-labor-onsite)	2/2/2	2/2/2

For QuickSpecs, visit: **http://h18000.www1.hp.com/products/quickspecs/12711_div/12711_div.pdf**

The Total Package—Solution value statements

HP Mission Critical Partnership (MCP)	HP MCP is a flexible level of Mission Critical Support available from HP. MCP is designed to enable an IT department meet its most demanding commitments, and support key mission-critical applications or critical IT services. It is perfect for customers who need to deliver IT service excellence, show value to their organization, continually improve IT service delivery, and are striving to customize their resources. As a MCP customer, you get a service solution tailored to your business needs. MCP is based on industry-recognized IT service management (ITSM) principles to confirm that IT is effective and efficient in its use of people, process, and technology. An HP service relationship manager (SRM) leads a team of HP support personnel required to help you deliver quality IT services. MCP can be combined with HP Proactive 24 (P24) or HP Critical Service (CS). For more information, visit: **http://www.hp.com/hps/storage**	Opt.
SAN solution	The SAN Solution Service has three different levels to help you plan, design, and deploy your Storage Area Networks whether they be: • **Basic SAN deployments:** This level focuses on entry-level SAN solutions • **Heterogeneous SAN integrations:** This level focuses on integrating your SAN into a complex, heterogeneous storage environment • **Integrations of Key Business Applications:** In addition to integrating your SAN into a complex, heterogeneous environment, this level smoothly and efficiently integrations key business applications such as SAP, Oracle, or Exchange For more information about this service, visit: **http://www.hp.com/hps/storage/**	Opt.
Data replication	There are two HP Data Replication Solution Services that provide implementation of the HP StorageWorks Business Copy (BC) feature of the XP storage array or implementation of the Continuous Access (CA) feature of the XP storage array respectively. These services provides the analysis, design, implementation, and testing services necessary to better deploy the XP Disk Array functionality of local snapshots as well as real-time data mirroring between a local and a remote XP storage array. Our storage specialist performs an initial discovery and assessment of your application and provides the business-specific consideration required to improve and customize the overall availability of your data during implementation and long-term operation. Our experienced storage specialist collaborates with your designated IT storage administrator to plan, design, and help improve your configuration. For more information, visit: **http://www.hp.com/hps/storage/**	Opt.
Data migration	Migrating your company's mission-critical data to new storage technology or a new location can be a complex, time-consuming, and risky undertaking. You know you have to avoid interrupting the company's day-to-day business operations at all costs. Yet you find yourself dealing with an enormous volume of information, a disparity between the layout of your new arrays versus your old ones, and a sense of confusion as to which of the many migration methods can be safest and most cost-effective for your IT infrastructure. The HP Data Migration Service takes the burden of migration off your shoulders and puts it in the capable hands of HP migration experts. HP has moved more than 150 terabytes of data worldwide—from open systems to mainframes—and we have the experience and proven methodology to deal with whatever complexities your particular migration may present. For more information about this service, visit: **http://www.hp.com/hps/storage/**	Opt.
Performance Analysis for the StorageWorks XP/EVA Disk Arrays	The Performance Analysis for the StorageWorks XP/EVA Disk Arrays service provides automated data collection, detailed I/O analysis, and expert recommendations for throughput enhancement. It offers a quick, convenient way to: • Increase XP performance, stability, and availability by identifying potential bottlenecks and effective solutions for avoiding them • Establish a baseline for future performance analysis and change management • Make sound proactive decisions on XP disk array system capacity planning • Reduce the need for costly reactive upgrades • Transfer HP knowledge and skills to your storage management staff For more information about this service, visit: **http://www.hp.com/hps/storage/**	Opt.

The Total Package Software

HP StorageWorks XP Thin Provisioning Software	HP StorageWorks XP Thin Provisioning Software allows you to supply disk storage capacity to your applications from a pool of virtualized storage. By enabling you to allocate your anticipated future storage capacity needs from virtual disk storage, HP XP Thin Provisioning Software reduces the amount of physical disk capacity initially required. As utilization of physical disk space increases over time, you can purchase more disk capacity as it is needed, and install it without affecting your applications. By removing the guessing from capacity planning, HP XP Thin Provisioning reduces the cost of volume management.	Opt.
HP StorageWorks XP Array Manager	HP StorageWorks XP Array Manager Software provides Web-based access control, volume management, performance control, and data security for your XP24000/XP20000. Configure, manage, and provide enhanced security to all host access to the XP24000/XP20000 so that you have efficient access to your data. Configure and manage data volumes for most effective use of your XP24000/XP20000. Partition array resources to isolate applications and reserve cache memory for your most frequently accessed data. Create read-only volumes for archiving and data retention, and safely delete your data when necessary. HP StorageWorks XP Array Manager Software for the XP24000/XP20000 combines the familiar functionality of LUN Configuration and Security Manager XP Software with the added functionality of Performance Control XP Software, XP Disk/Cache Partition Software, XP Data Shredder Software, RAID Manager XP Software, and the CLI/SMI-S functionality from HP StorageWorks XP Command View AE Software all in one product.	Req.
HP StorageWorks XP External Storage Software	HP StorageWorks XP External Storage Software decreases the stress and reduces the cost of owning heterogeneous data storage by simplifying and centralizing common SAN management tasks though storage virtualization. In addition, it simplifies movement of data between dissimilar arrays. HP XP External Storage Software provides these benefits by giving storage administrators the ability to access, monitor, and manage data residing on a variety of different disk arrays as if all of the data were residing on the XP24000/XP20000.	Opt.
HP StorageWorks XP Command View Advanced Edition and Plug-in Applications for XP Command View AE	HP StorageWorks XP Command View Advanced Edition Software is the full featured XP disk array device manager, incorporating XP disk array management, configuration, and monitoring. It supports the HP Storage Essentials suite of products. Command View XP Advanced Edition monitors storage resources quickly and easily. It automates storage management processes, delivering more efficient utilization and control across distributed enterprise storage. Easy access is provided to the XP Remote Web Console, which can be launched from the GUI. XP Command View AE Plug-ins: XP Tiered Storage Manager transparently migrates XP data (including internal and externally connected) among storage tiers, seamlessly, and without down time. XP Replication Monitor provides a centralized Web based user management tool integrated as a plug-in with XP CV AE. XP Provisioning Manager is a plug-in application for XP CV AE that simplifies the addition of new array storage for use by attached host servers.	Opt.
HP StorageWorks XP Business Copy Software	HP StorageWorks XP Business Copy Software is a local replication solution that provides data copies within a single XP24000/XP20000, or in storage systems attached to an XP24000/XP20000 as external storage. HP XP Business Copy Software uses array-based mirror and snapshot technologies that do not interfere with host-level operations, allowing you to spend your time conducting business rather than worrying about how backup and testing operations can impact your systems.	Opt.
HP StorageWorks XP Continuous Access Software	HP StorageWorks XP Continuous Access Software products are high availability data and disaster recovery solutions that deliver host-independent, real-time, remote data mirroring between HP StorageWorks XP Disk Arrays. With seamless integration into a full spectrum of remote mirroring based solutions, these products can be deployed in solutions ranging from data migration to high availability server clustering.	Opt.
HP StorageWorks XP Performance Advisor Software	HP StorageWorks XP Performance Advisor Software is a Web-based application for collecting, monitoring, and displaying the real-time performance of your XP24000/XP20000. With XP Performance Advisor, you choose the time and duration of performance data collection—so you can pinpoint activities that have a significant impact on your disk array and tune the array accordingly. You can easily monitor storage performance and display usage statistics for your XP24000/XP20000 storage system at any level, from a complete system overview down to individual components. With its advanced reporting and charting capability, and its ability to collect up to 32GB of historical data, XP Performance Advisor gives you the ability to analyze performance data easily and also do detailed trend analysis.	Opt.
HP StorageWorks XP Auto LUN Software	HP StorageWorks XP Auto LUN Software provides automatic monitoring and load balancing for your XP24000/XP20000. Make the most efficient use of your disk arrays by moving high-priority tasks to underutilized volumes. You set performance goals and limits, and HP XP Auto LUN Software does the rest. It proposes a migration plan and estimates how much your storage performance can improve when it is done. HP XP Auto LUN Software lets you evaluate disk array usage and determine whether resources are overloaded or out of balance. Use up to 90 days of stored historical data to spot trends and create up-to-the-minute reports. If resources are overloaded, HP XP Auto LUN Software creates a plan to move volumes, and then stands by for your approval to make changes.	Opt.
HP StorageWorks XP Cluster Extension	HP StorageWorks XP Cluster Extension offers disaster tolerance against application downtime from fault, failure, or site disaster by extending clusters between data centers. It resurrects your critical applications at a remote site within minutes after an event. HP StorageWorks XP Cluster Extension works seamlessly with your open-system clustering software, HP StorageWorks XP Continuous Access and your XP storage system to automate fail-over and fail-back between sites making your business Disaster Proof.	Opt.
HP Metrocluster with XP Continuous Access and HP Continentalclusters	HP Metroclusters with XP Continuous Access seamlessly integrates XP24000/XP20000 remote replication capabilities with HP Serviceguard on HP-UX. It provides automatic and bi-directional failover/failback of business critical data and applications between data centers. HP Continentalclusters software provides the highest levels of disaster tolerance by eliminating the cluster itself as a single point of failure. It uses data replication technologies to provide application recovery across multiple widely separated HP-UX Serviceguard clusters. The Continentalclusters product provides the ability to monitor a Serviceguard cluster and recover mission critical applications to a remote Serviceguard cluster, should the monitored cluster become unavailable or if there is a disaster at the cluster site.	Opt.

Service and support

Factory Express

HP Factory Express is designed to help you get a better return from your IT investment by providing customization, integration, and deployment services along with your storage and server purchases. It provides predictable, trusted and tested IT solutions tailored to your business needs. We allow you to customize hardware to your exact specifications in the factory—helping to speed up deployment and free up internal resources. **www.hp.com/go/factoryexpress**

Customer technical training

Consider education as an integral part of your strategy to get the excellent return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to on-site training customized to your needs or online. For more information, visit **www.hp.com/learn/storage**

Financial services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, please contact your HP representative or visit **www.hp.com/go/hpfinancialservices**

HP Services

HP Technology Services offers trusted professionals to boost availability and avoid costly downtime, with your HP StorageWorks XP Disk Array Mainframe solutions.

Recommended services
- **HP Critical Service (CS):** When downtime is not an option, this comprehensive support solution is designed for businesses that run essential mission-critical applications.
- **HP Data Replication Solution Services:** To help you safeguard your critical business information, this service deploys and configures real-time data mirroring between local and remote arrays.

Related services
- **HP Data Migration Service:** To help you move data between technologies, this service transfers your information across a data center or around the globe.
- **HP SAN Solution Service:** For expertise when implementing a new or extending existing SAN, based on size and complexity, this solution offers three levels of service options.
- **HP Assessment Service for SANs:** For customized guidance, this service provides technical and operational assistance with HP storage subsystems and the interconnecting infrastructure.

For more information about HP Technology Services, contact your HP sales representative or HP-authorized Channel Partner or, visit **www.hp.com/hps/storage**

Technology for better business outcomes

To learn more, visit www.hp.com/go/storage/xparrays

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