XP12000 - It's Bigger and Better

Hewlett-Packard has long believed that to be successful in the high-end disk arena a vendor must provide products that are above and beyond what others can provide in terms of features and advanced functionality.

HP and Hitachi Ltd first entered into a technology and OEM agreement for disk arrays in 1999; the two companies recently extended the contract through the year 2008. The agreement applies to Hitachi's high-end disk arrays upon which HP's StorageWorks XP family is based.

Both Hitachi Ltd's high-end array and mid-range array are also sold by their subsidiary Hitachi Data Systems (HDS) Limited and are commonly known as the Lightning and Thunder storage arrays. Sun Microsystems has an OEM agreement with HDS to sell the high-end array (branded StorEdge).

With this objective in mind, HP announced the HP StorageWorks XP 12000—a high-end disk array that is equipped with a variety of features that are not available on either the HDS or Sun-branded product.

What's New

Support for Other Disk Subsystems

HP StorageWorks XP 12000 is the largest disk array in the XP family, supporting as few as 9 to a maximum of 1,152 disk drives, which represents nearly 165 TB of raw capacity.

But that's only part of the story. The XP 12000 is a multi-faceted controller, which means the array can not only control its own internal disk drives but also non-XP controllers "behind" it. Fibre Channel ports (CHIPs) can be used to connect older XP storage or low-cost HP MSA 1000 with SCSI drives today. HP plans to support the MSA 1500 with SATA disks behind the XP 12000 in a later release.

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The ability to connect MSA disk drives is unique to HP. The XP 12000 can logically combine its storage with attached MSA and legacy XP array storage, presenting up to 14 PB of external capacity to the servers. All attached external storage appears to the server as an XP 12000 storage unit. Future plans call for support of up to 30 PB of external storage capacity.

Upgrading Microcode

The initial release of the XP 12000 has new dynamic microcode upgrade capabilities, which allows multiple microprocessors to be upgraded without removing paths from service.

Previous XP releases allowed microcode to be upgraded dynamically only when a server had multiple paths to the storage subsystem. If a server had only one path to the storage system, the path would have to be taken offline, the microcode upgraded, and then the path brought back on-line before the next microprocessor was upgraded.

Clustering Support

Cluster Extension XP is another unique HP feature. It allows administrators to extend local cluster solutions up to the distance limitations of the clustering software. Cluster Extension XP supports cluster software running on HP-UX, IBM AIX, Linux, Microsoft Windows and Sun Solaris ,The software integrates open-system clustering software and remote mirroring on XP arrays to enable automated fail-over and fail-back between primary and secondary disaster-recovery sites.

A Look Ahead

In the first quarter of 2005, HP will release the second version of its XP 12000. This product will include a variety of new features, including enhanced storage partitioning, caching partitioning, and advanced replication capabilities.

Storage Partition XP and Cache Partition XP will allow administrators to logically divide the XP 12000 into different subsystems. Cache, storage, and ports can be assigned to different servers and applications, ensuring that mission-critical applications receive consistent high levels of service.

This capability is not only a requirement for service providers but will also give administrators great flexibility in consolidating disparate storage resources.

HP currently offers Continuous Access XP for its XP arrays, enabling both synchronous and asynchronous remote mirroring. However, HP will improve on its asynchronous replication with a journaling capability early next year

Specifically, Continuous Access XP journal capability eliminates the need for administrators to make point-in-time (PIT) copies of data to ensure that data at the remote sites are always consistent.

The software works by collecting updates to the volumes at local sites to a journal file. The journal file is periodically copied to the remote controller and then the journal entries are applied to the remote volumes.

This provides a PIT solution without requiring any of the additional capacity, licensing fees, or high bandwidth associated with traditional PIT solutions.

More to Come

Don't expect HP to stop here. On the hardware front, look for the company to double storage capacity (to 336TB) and integrate 146 GB 15K rpm and 300 GB 10K rpm disk drives in future XP releases.

On the software side, look for the company to enhance its Business Copy XP software.

The current version only makes physical or clone copies of volumes (i.e., the entire contents of the volume are copied to a second volume). The next release will allow administrators to make snapshot or logical copies of volumes (i.e., only the changed content of the volume is stored), which will dramatically reduce overall storage requirements.

True. The XP12000 is HP's biggest and fastest StorageWorks' controller to date. But this story is not just about capacity and performance, it is also about advanced functionality and manageability. HP has covered all the bases.