



## Xiotech launches Hybrid ISE solid-state drives system

By Dave Raffo, Senior News Director  
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[Xiotech](#) Corp. is adding [solid-state drives \(SSDs\)](#) to its ISE self-healing architecture with [Hybrid ISE](#) blades, which put a new spin on how to deliver SSDs and manage data on them in enterprise data storage systems.

While just about every storage vendor already offers [SSDs](#) as an option, Xiotech is claiming a fresh approach. Instead of selling individual SSD drives to plug into storage arrays, Xiotech incorporates a set amount of SSD capacity in its ISE bricks. The goal is to improve performance to keep pace with growing capacity requirements and I/O storms caused by applications such as virtual servers and [virtual desktop infrastructures \(VDIs\)](#).

Xiotech will officially launch Hybrid ISE and its Continuous Adaptive Data Placement (CADP) automated tiering on Monday, but has been selling the systems for several weeks.

Hybrid ISE is a 3U system that includes two Data Packs, each with 10 hard drives and 10 SSDs. The 20 hard drives and 20 SSDs provide 14.4 TB of usable capacity in a RAID 1 configuration. The system is powered by multi-core Intel Jasper Forest chips, and has eight 8 GB Fibre Channel front-end ports and 8 GB of memory.

Xiotech claims each Hybrid ISE blade delivers 64,000 IOPS, and can scale to more than 900,000 IOPS in a rack. Each Hybrid ISE costs approximately \$100,000 for 14.4 TB of usable capacity. The data placement capability is included in the price of the system.

The Hybrid ISE uses [multi-level cell \(MLC\) SSDs](#) from Smart Modular Technologies Inc. and 6 Gbps SAS drives.

Xiotech said customers can run Hybrid ISE alongside their existing ISE systems. Like other ISE systems that Xiotech launched three years ago, the Hybrid ISE has a five-year warranty.

### SSD as part of storage pool, not separate tier

Steve Sicola, Xiotech's chief technology officer, said Hybrid ISE works as a fusion of hard drives

and SSDs rather than separate storage tiers.

"ISE is already a fusion of disk and array," he said. "Now we're making it a hybrid brick of SSDs and hard drives."

### **It's really about the automated tiering**

Storage analysts say the most impressive part of Xiotech's SSD strategy is its Continuous Adaptive Data Placement. Xiotech executives say CADP operates in a different fashion than [automated tiering](#) applications such as EMC FAST, IBM Easy Tier, Compellent Data Progression, Hewlett-Packard 3PAR's Adaptive Optimization and Hitachi Data Systems Dynamic Tiering. Jim McDonald, Xiotech's chief strategy officer, said CADP makes decisions based on more than just how frequently or when data is accessed.

Xiotech says CADP monitors and analyzes applications and I/O patterns, and determines what data to place on SSDs and hard drives. It creates one hybrid storage pool with both types of media, and customers create volumes in that pool. CADP compares the benefits of moving data from hard drives to SSDs and the costs of that movement, and moves the data when expected performance benefit exceeds the cost by a suitable margin.

"We don't expect users to know their applications," McDonald said. "We'll monitor data and we'll move it around. We'll keep things optimized."

Noemi Greyzdorf, a research manager with IDC's Storage Software, said the way CADP works minimizes [garbage collection](#), the process of erasing blocks of storage space before writing data. Garbage collection usually adds time to the write cycle.

"The significant difference is they're not going to automatically move the data from an SSD to spinning media once it cools off," she said. "They wait until the SSD is full, and that minimizes the garbage collection they have to do. Once the drive is full, they do the swap. That reduces impact on SSDs in terms of garbage collection, and how many writes you do on the SSD."

Mark Peters, a senior analyst at Enterprise Strategy Group, said data placement is the key to optimized [SSD performance](#).

"The main thing is moving data around efficiently and putting it in the right place at the right time," Peters said. "Anyone who doesn't start moving down this route over the next 12 to 18 months will have a big challenge. One of the factors slowing down server virtualization or VDI is that when people consolidate everything, they find it causes a problem with storage. They grow capacity because it's easy to provision, but they stretch the capacity and performance of their storage. The proper use of solid state will help make server virtualization and VDI more efficient."