A Storage Success Story

Aberdeen Helps Out The U.S. Army With Its Stirling Storage Solutions

Storage is an important facet of any data center, but when the data center in question belongs to the U.S. Army, finding a secure, reliable storage solution is even more vital. With the U.S. Army in need of a large, fast storage solution for hosting user data and providing disk-based backups, Jeff Dupere, network administrator of the AATD (Aviation Applied Technology Directorate), turned to Aberdeen. "We also needed a complete turnkey solution to begin leveraging a virtualized environment," Dupere says. "This included a storage-area network, hosts for running the virtual machines, and the Fibre Channel connectivity to tie the two together. Also, the entire solution needed to be VMware-certified."

The Right Stuff

Aberdeen's sales rep provided Dupere with the expertise of one of Aberdeen's engineers, who helped to determine the best solution for the U.S. Army's environment and needs. The solution included four Stirling 266 servers (2U SuperServers that support Intel's Nehalem processors), an XDAS D-Series SAN (a 4U, 24-bay Fibre 8G/SAS 6G DAS), and a Stirling X888 (an 8U storage server). "The Stirling 266s provided us with the hosts for running our VMs, the DAS gave us the backend storage for hosting the data for those VMs, and the X888 met the storage requirements for our user data and disk backups," Dupere says. The equipment offered all of the required features necessary for the job, such as full redundancy, high amounts of storage, and fast I/O.

Aberdeen's solution was evaluated against several well-known competitors. "In the end, the solution Aberdeen offered was well-supported, exceeded our performance requirements, and was significantly less expensive than the other offerings," Dupere says. "They are also one of the few companies I've seen to offer a full five-year warranty on virtually all of their equipment at no additional cost. Given our life cycle commonly exceeds three years on server hardware, this was a significant advantage."

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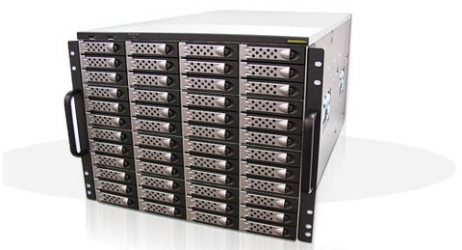
> *- AATD's Jeff Dupere*

Aberdeen Stirling 266

Stirling 266

With its dual LGA 1366 sockets, the Stirling 266 is a 2U SuperServer 6026T-TF that's capable of utilizing Intel's high-end Nehalem processors. There are also 12 DDR3 sockets that can support up to 192GB of Registered ECC DDR3 or up to 48GB of unbuffered memory with ECC. Helpful features include support for KVM over LAN and virtual media over LAN through the integrated IPMI 2.0 and Realtek dedicated LAN. The U.S. Army will also enjoy peace of mind with built-in PC health monitoring. There are four onboard voltage monitors for the processors, as well as six fans with tachometer status monitoring. Environmental temperature monitors, including chassis and CPU overheat alarms, provide further security. "[The Stirling 266] is what the engineer recommended, and based on previous experiences, I was happy to go with his suggestion," Dupere says.

Aberdeen also preloaded ESXi on the hosts of the server, which made the environment turnkey for the Army. "We more or less just had to install the equipment in the racks and turn it on," Dupere says. "They also were able to provide all the extras we needed (additional drives, controllers, etc.) to make onsite repairs much quicker."



Aberdeen Stirling X888

Stirling X888

The Stirling X888 storage server can provide up to 100TB of storage, and the U.S. Army took advantage of the X888's dual SFF-8087 miniSAS connectors to connect with the Aberdeen XDAS D-Series SAN to deliver up to 196TB of storage. "We needed a ton of storage and very fast I/O," Dupere says. "The Stirling X888 had this in spades—so much so that we're in the process of buying another to supplement our environment." For fast I/O when needed, the server features quad Gigabit Ethernet LAN and dual SAS expansion ports. And Aberdeen's Teaming Technology offers transfer rates up to 430MBps with an added XDAS-iSCSI RAID enclosure. The Army also benefits from Intel's QuickPath Interconnect Technology, which can be found on Intel Xeon 5500 Series processors, providing them with 6.4GTps and 4.8GTps data transfer speeds.

The SAS RAID on the X888 includes dual IOP348 1,200MHz PCI-E controllers, and each controller features 512MB of DDR2-553 SD RAM with ECC protection. The controllers support RAID 0, 1, 5, 6, and 10. Overall, the Stirling X888 can provide up to 1,200MBps of internal transfer speeds. The RAID controllers can also support SATA disk drives and SAS hard drives at the same time. External SAS connectivity is also available via the SFF-8088 connector. The miniSAS backplane on the X888 provides the Army with 50 (48 front, 2 rear) hot-swap/hot spare SATA 3.0 drive bays.

The 8U chassis comes with a 1,760W 3+1 redundant hot-swap power supply. Fan maintenance is also a breeze with the eight hot-swappable 80mm cooling fans. Options for flexibility with the build include a DVD-R or CD-RW and software upgrades such as iSCSI, NAS, SAN, and backup software.

Aberdeen XDAS D-Series

Aderdeen XDAS D-Series

The XDAS D-Series is a 4U high-speed, high-availability SAN that features four 8GB Fibre Channel host ports on each of the controllers, which are ideal for the fast throughput and I/Ops needed by the U.S. Army. The XDAS also features full support for 6Gbps SAS drives to provide support for today's fastest hard drives. The XDAS D-Series is also designed to be always available with fault-tolerant hardware modules, including redundant controllers, PSUs, and fans. As such, there's no single point of failure for the U.S. Army to worry about.

Other helpful protection features include real-time problem detection and notifications through multiple monitoring capabilities on the XDAS. And intelligent firmware helps to protect against hardware failure to optimize performance and maintain data integrity. The XDAS D-Series uses a power supply that's more than 80% efficient, and it can spin down the drive to save energy when the disks aren't in use.

The U.S. Army benefits from the XDAS D-Series' local replication abilities. XDAS storage provides the Army with both snapshot and volume copy/mirror capabilities. Full data copies let administrators quickly restore service if a RAID volume fails, and files can be restored or rolled back through the XDAS' snapshot copies. Some upgrades the U.S. Army chose to add include increasing the bandwidth across the Fibre Channel fabric and adding larger drives.

Dupere says that the set of products the Army chose from Aberdeen has met or exceeded all of the group's expectations. "Aberdeen is not a huge company like some of their competitors, as evidenced that few folks will recognize the name when you bring it up," Dupere says. "That said, they offer solutions and equipment that are every bit on par with the commonly referenced brands in this genre. From sales, to the product itself, to the support you receive afterward, you will not be disappointed." P

Aberdeen Storage Solutions

A number of intelligent storage systems, including the Stirling 266 servers, Stirling X888 storage server, and the XDAS D-Series SAN, designed to offer high-capacity, high-performance solutions to organizations in need of fast and reliable storage.

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