

ARKEIA SOFTWARE CUSTOMER SNAPSHOT



THE UNIVERSITY OF
CHICAGO

Arkeia Software Protects Virtual and Physical Environments at the University of Chicago

Quick Take

Infrastructure

- 2 Backup Servers
- Data Deduplication
- 30+ Windows, Linux, and Mac Server Agents
- 2 vStorage Agents
- 1 Tape Library
- 1 Disk-to-Disk-to-Tape

Key Results

- Reduced backup window
- Improved backup reliability
- Increased flexibility
- Uninterrupted division operations

“One solution protects both physical and virtual environments.”

Tom Indelli

Senior System Administrator
University of Chicago

Background

The Physical Sciences Division at the University of Chicago performs research in Theoretical Chemistry and Theoretical Physics, as well as delivering textbooks for Science Education. “These activities require the management of large volumes of data, much of it generated by computational analysis,” explains Tom Indelli, Senior System Administrator. “Molecular dynamics applications simulate the interactions among 20,000 to 100,000 atoms in nanoseconds. These simulations, performed on 100-node high-performance compute clusters can take up to 48 hours to perform a simulation of as little as 50 nanoseconds. Simulation results are maintained on a group of three file servers with 44TB of disk storage.”

More routine operations include management of information technology infrastructure and delivery of a large number of web sites. To keep costs low, the Division has invested in VMware virtualization technology and uses VMware vCenter and vMotion products. By distributing operations across multiple hypervisors, administrators can isolate each hypervisor server in turn for maintenance purposes.

Challenges

The Physical Sciences Division faced several challenges when designing a data protection solution for this wide range of IT tasks. First, data volumes for molecular dynamics simulation are large, and the challenge is to be able to complete full backups within a 24-hour period. Second, secure storage of backups requires that backup sets be written to tape for off-site storage. Third, the Division wanted a single solution for both physical and virtual environments, knowing that they would continue to use dedicated physical environments indefinitely. Fourth, the Division will continue to employ a heterogeneous platform environment, including Windows, Linux, and Mac operating systems, as well as virtual environments—possibly from several vendors—for the foreseeable future.

Solution

The Physical Sciences Division selected Arkeia Network Backup to meet all their data protection challenges. Their simulation infrastructure is protected by an Arkeia Backup Server on Red Hat 6.0 with 100TB of target direct-attached storage. Full backups are performed weekly, incremental backups are performed nightly. Using Arkeia’s multi-flow technology, all three file servers are backed up in parallel directly to a tape library. Data compression is performed on the agents so that all three file servers can process data in parallel.

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Solution Continued

The Division's virtual environment contains diverse data sources, including web servers, management software and data, and support software and data. The key requirement for this environment is uninterrupted operation. Two VMware hypervisors manage up to 20 virtual machines concurrently that access 3TB of data. Backups to a 20TB EqualLogic SAN are replicated to a Dell Powervault TL-2000 tape library. Tapes are stored across campus for safekeeping.

All the Division's VMware backups use VMware's vStorage APIs for Data Protection (VADP) and take advantage of changed block tracking (CBT) for both full and incremental backups. Arkeia's support for VMware's changed block tracking accelerates backups because only blocks within a disk image that are both in-use and have changed since the last backup are written to storage. Changed block tracking makes backup sets smaller and makes backups faster because less data is transmitted over the network. "Arkeia Network Backup is a rock-solid, high-performance, and easy-to-use solution for data backups," concludes Indelli. "One solution protects both physical and virtual environments. Arkeia's deep support for VMware makes backups and restores both fast and painless. I particularly enjoy our ability to remotely manage servers and agents, either through Arkeia's web interface or its command-line interface. Not only has the Arkeia solution proven itself over the years, but each successive release delivers new capabilities. We can rely on it."

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About Arkeia Software

Arkeia Software delivers fast, easy-to-use, and affordable solutions for data backup and disaster recovery. The award-winning Arkeia Network Backup Suite is designed for mid-sized organizations and safeguards more than 100,000 networks for 7,000 customers in 70 countries. Arkeia's integrated solution is ideal for the consolidation of disparate backup products. We protect all major virtual platforms including VMware, Hyper-V, and XenServer—and over 200 physical platforms including AIX, BSD, HP-UX, Linux, Mac OS, Netware, Solaris, and Windows.

Arkeia delivers software and both virtual and hardware appliances, backing up data to disk, tape, and the cloud. We provide bare-metal disaster recovery, LAN/WAN replication of backup sets, and numerous hot backup agents. Arkeia's unique source-side progressive deduplication technology reduces storage requirements and accelerates backups, especially of virtual environments. Arkeia shipped the industry's first network backup solution for Linux in 1999 and is headquartered in San Diego, California.



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