

# Yellow Pages Publisher Dials up Tegile Systems to Power Virtualization and SAN Upgrades



Online business directories and Google searches are now standard tools for consumers looking to buy goods and services. But consumers still refer to Yellow Pages more than 15 billion times a year. So, for US-Yellow, a Jacksonville, FL, - based independent yellow page publisher, print directories are still a strong revenue producer in addition to the company's online and CD directory products. The company is now a top resource for finding information online, in addition to its print directory and directory on CD.



## Challenges

- Heavy database and enterprise application use driving performance requirements beyond legacy storage capabilities
- VDI implementation driving further performance challenges

## Solutions

- Tegile Intelligent Hybrid Arrays

## Results

- Database latency reduced by over 5X
- Capacity reduction over 65%
- VDI challenges addressed

The company operates a database-heavy IT infrastructure with multiple large SQL databases as well as Microsoft Exchange, PostgreSQL, and custom SAP applications. US-Yellow recently undertook a major IT upgrade, adopting server and desktop virtualization platforms for the first time and making the transition from local server-attached storage to a high-availability Storage Area Network.

Ben Croxton, IT Director at US-Yellow, was well aware of the storage challenges of a virtualized environment, such as the I/O blender effect of server virtualization and the extreme I/O demands of a Virtual Desktop Infrastructure deployment. To mitigate the I/O challenges of a virtualized infrastructure, Croxton sought out a flash-assisted storage solution but was frustrated by what he found.

"I was looking for SAN storage that I felt comfortable using both for production servers and VDI at the same time," he said. "But after speaking to several larger vendors I realized they either did not have an applicable solution, or their solution was far beyond my price range."

Croxton considered building his own solution based on a software defined storage product but decided that option was not suitable for the company's production environment. He then narrowed his choice down to commercial SSD hard disk hybrid arrays from Nimble Storage and Tegile Systems. The decision was an easy one, he said, with Tegile offering better hardware, better pricing, more storage capacity (Tegile arrays boast almost a 4x flash capacity advantage per array compared to Nimble), and an honest, up-front sales process with excellent customer service.

Tegile's arrays bring a new approach to high-performance network storage with an innovative hybrid design that leverages the high performance of SSDs and the low cost-per-terabyte of capacity hard disk drives. Unlike, conventional network storage designs that use tiers of SSD, performance disk and capacity disk and constantly migrate data between the tiers, Tegile has architected the performance benefits of SSD throughout the data path, providing every application with the performance boost of flash storage. The result of Tegile's single-tier design is a storage array that delivers up to seven times the performance and up to 70% less capacity than legacy arrays. And unlike those legacy arrays where any additional storage services require additional license fees, everything needed is built into the arrays, a full range of storage services, including backup snapshots, remote

replication, inline compression and data deduplication, application optimized templates for fast and easy storage provisioning and one-click deployment of virtual machines and virtual desktops.

For US-Yellow, the virtualization support radically simplified and accelerated the usually complex and time-consuming task of provisioning 7 VMware ESXi physical hosts, about 24 servers and 30 virtual desktops. Not surprisingly, the inline data deduplication functionality that is built into the Tegile Intelligent Flash Array has made a major impact in reducing the storage capacity required for the operating system volumes. Virtual machine images are highly redundant so VMware deployments respond very well when data deduplication is applied to those images.

Along with the hybrid array, US-Yellow installed a complete iSCSI SAN at its

Jacksonville headquarters. The array with 22 TB of raw storage is attached via 4 10 Gigabit Ethernet connections to redundant network switches which then use multiple GigE connections to seven VMware ESXi hosts. US-Yellow also has VDI users running VMware View 5 – adding further stress to the network storage. But Croxton said the Tegile hybrid array has handled the server and desktop virtualization load without a hitch. Croxton also had praise for the unified storage functionality of the Tegile array.

After its initial deployment with block storage in the iSCSI SAN, US-Yellow is planning to install additional Tegile arrays to handle the file storage requirements, replacing disk-based Network Attached Storage arrays it currently uses for backup and disaster recovery.

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