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Storage: The NextGeneration

Recent IBM acquisition strengthens position in the storage space

BY RYAN RHODES



Today's data storage landscape continues to be shaped by a confluence of rapidly evolving realities. For example, storage devices and the information infrastructure have largely become more reliable and, in many cases, less expensive. At the same time government- and industry-ordained regulatory compliance initiatives have made data storage a stringent requirement for companies large and small.

Add to this the emerging world of the new media—sometimes referred to as Web 2.0—where a vast amount of digital information is being generated by thousands, if not millions, of online users, rather than by a relatively small group of commercial content creators, and you have a seemingly divergent world where information still has to be stored for operational and regulatory reasons. There's also a wealth of somewhat benign and superfluous—albeit important to some people—data piling up, with few people sure how to deal with it all.

With data storage now more important than ever, and with the sheer, nearly choking amounts of data now being stored by companies worldwide—both for mission-critical applications and information, as well as for less important unstructured data in the form of e-mail, instant messaging threads, forum topics, digital audio, video, images and more—businesses are looking even closer at their information infrastructures and trying to better allocate resources to best fit rapidly growing and diverse storage requirements, while at the same time keeping costs down and ensuring security.

In an effort to continue its leadership position in the data-storage space and provide a lower cost alternative for accommodating the explosive growth of Web 2.0-spawned data (also known as unstructured data) and information, early this year IBM® acquired Tel Aviv, Israel-based XIV Ltd. XIV, a privately held storage company, brought its Nextra architecture

to the table, an architecture IBM believes is well-suited to the unique dual demands of today's adapting data centers and the Web 2.0 world of user-generated media and data.

"There are some important reasons why IBM looked to acquire XIV," says David Vaughn, worldwide product marketing manager in the IBM System Storage™ group. "Basically, when we looked at the popular trends that can be found online today, we realized practically anyone on the Internet can establish a Web presence, start a journal, upload video, audio, images, etc. There's this expectation on their part that they can do so all for free because companies are offering hosting services free of charge all over the Web. We realized there was an entire other realm of data storage that had to be considered and accounted for that was outside our normal area of data center expertise."

"XIV Nextra is well-positioned for dealing with the current demands of the Web 2.0 information age."

**—David Vaughn, worldwide product marketing manager,
IBM System Storage group**

Data Storage, Then and Now

It wasn't all that long ago that the concept of a data center and information infrastructure could be largely thought of as self-contained constructs, meaning data and IT operations were kept in house, with most of the data and information originating within the company walls or via employees working remotely. The task of managing and storing that information was mostly a matter of deciding what was sensitive or mission-critical to operations and what had to be saved on secondary or tertiary storage devices for the purposes of company record keeping and staying current with regulatory-compliance requirements.

IBM has been on the innovative edge when it comes to providing the IBM information infrastructure of powerful, high-volume data-storage solutions. The company's tape storage, disk storage, storage-area network (SAN) fabric solutions and others are among the best positioned in the market when it comes to storing, managing and backing up data and information, with the IBM DS8000™ offering being the top-tier data-storage workhorse. With the XIV acquisition, IBM is hoping to further strengthen its storage position by stacking Nextra alongside its existing portfolio to meet the new and growing storage needs from emerging workloads.

"If you look at the IT marketplace of the last decade or so, we've had customers with data centers that for years have had what we call 'traditional workloads,' such as database

applications, DB2®, capabilities for online transaction processing and so forth," says Vaughn. "Those kinds of workloads have very specific needs, with companies running their businesses with maybe thousands of people having access, and they want instant response times, predictable data growth, understandable applications. Those kinds of workloads are a continuing necessity, and we have solutions like the DS8000 and DS4000™ that are very well-designed for those kinds of workloads. Now you have these new kinds of workloads that are different and are really growing very fast—possibly the fastest-growing storage segment in today's market—things like Web 2.0 and digital media have characteristics that are considerably different than more traditional business information infrastructures."

Indeed, the emerging world of Web 2.0, with all of its user-created digital media, text messages, online forums, e-mail groups, etc., represents something of a conundrum for many of today's businesses. On the one hand, there's clearly an established and popular demand for cheap/free and easy-to-use digital media hosting solutions; people are clamoring for online repositories where they can host and share their video, audio and other personal files. On the other hand, as eager as companies are to fill this rapidly growing market demand, they also recognize this glut of digital information isn't mission critical or subject to most regulatory-compliance oversight and therefore doesn't warrant the kind of expensive storage functionality and dedication powering most core business data centers.

While there's an ongoing need for the traditional information infrastructure and data center storage devices, a growing parallel need exists for storage solutions that can keep pace with the user-driven world of data storage, which is where XIV Nextra comes in.

XIV Nextra

XIV Nextra is positioned as a new type of storage architecture well-suited to the demands of the Web 2.0 digital media age, with its scalability, reliability and overall ease of management. Nextra storage is architected as a grid-based system consisting of independent modules that are implemented using standard Intel® technology-based servers housed upon a custom Linux®

technology-based architecture. The modules, interconnected over redundant Gigabit Ethernet switches, act together as a large data grid removed from any common backplane. The grid, in turn, is managed by distributed algorithms designed to deliver enterprise-class performance and functionality.

Businesses looking to tap into the popularity and pervasiveness of the Web 2.0 user base face a challenging proposition; online users have grown accustomed to free e-mail services, digital file hosting repositories and social networking sites. This free hosting represents a dream come true for users, but it often requires companies to recoup the requisite IT costs through alternative business models, such as omnipresent advertising, which isn't necessarily always the most reliable form of revenue stream. Therefore, the need to streamline IT costs, particularly storage costs, is an important consideration.

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—David Vaughn

“Think about a company that hosts videos,” says Vaughn. “Basically anybody can post a video to a Web hosting site and they don’t have to pay for it. So you have a lot of people uploading videos, and videos are large files for the most part, while more database-oriented environments deal with shorter or smaller files. Many people are out there uploading these kinds of videos, so you have to be prepared to grow really fast and you have to be able to handle whatever kind of growth comes at you, and it’s almost all completely unpredictable—you never know if a certain video may go viral, for example, and become wildly popular.

“Obviously, no one’s paying to either upload or view any of this so it has to be cheap,” Vaughn continues. “That’s a pretty tall order, but that’s exactly where Nextra falls into place; it’s an ideal storage alternative for the world of alternative media. We see these emerging workloads in Web 2.0 companies that we can easily see being extended to all types of companies; they’re useful technologies that can be leveraged by almost any business sector you can name.”

According to Vaughn, online users are apparently willing to sacrifice some of the performance and storage functionality that’s available in more professional business data center storage environments, in the interest of keeping file hosting services free. So, while a Nextra solution may not load a digital video quite as quickly as a DS8000 possibly could, a slightly longer wait time is more than acceptable to the online masses, who typically wouldn’t notice the difference anyway.

“What online users are generally expecting is a predictable response time, not necessarily the ultimate response time,” says Vaughn. “When you combine that with Nextra’s capacity for potential surges in growth and performance spikes, you can begin to appreciate why having a storage alternative like XIV Nextra makes a lot of sense.”

The Future With Nextra

Looking ahead, top-tier data center storage devices like the DS8000 can and will continue to be a premier solution for daily, business-critical data storage and management, while a Nextra solution can complement the top-tier devices by providing a cost-effective solution for the storage and hosting of Web 2.0 digital files and applications. Such a dual storage infrastructure would also provide a layer of security between a company’s sensitive and critical data, and the Web 2.0 online masses.

All types of companies are going to have to deal with these emerging workloads at some level, even if they’re not exactly their current focus. While it’s still not entirely clear how best to leverage a media world where practically anyone can produce online content and make it generally available to everyone with a Web browser, the capability to do so is currently wildly popular and destined to continue as a growing trend. Web pages are becoming radically more interactive and coming alive with a combination of images, video and audio files, all of which must be uploaded and hosted somewhere. In order to stay on top of the innovations and functionalities being added to Web pages and online applications today, a new way of looking at storage and information must be defined.

“This really is about a fundamental re-evaluation about what digital information is and where it can and should be stored, reliably and cost-effectively,” says Vaughn. “I think now, perhaps more than ever, the Internet is a digital Wild West, and everyone’s trying to figure out where it’s going to go next. The amount of information, files and applications that are available online is simply staggering. Something like XIV Nextra is well-positioned for dealing with the current demands of the Web 2.0 information age.”



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