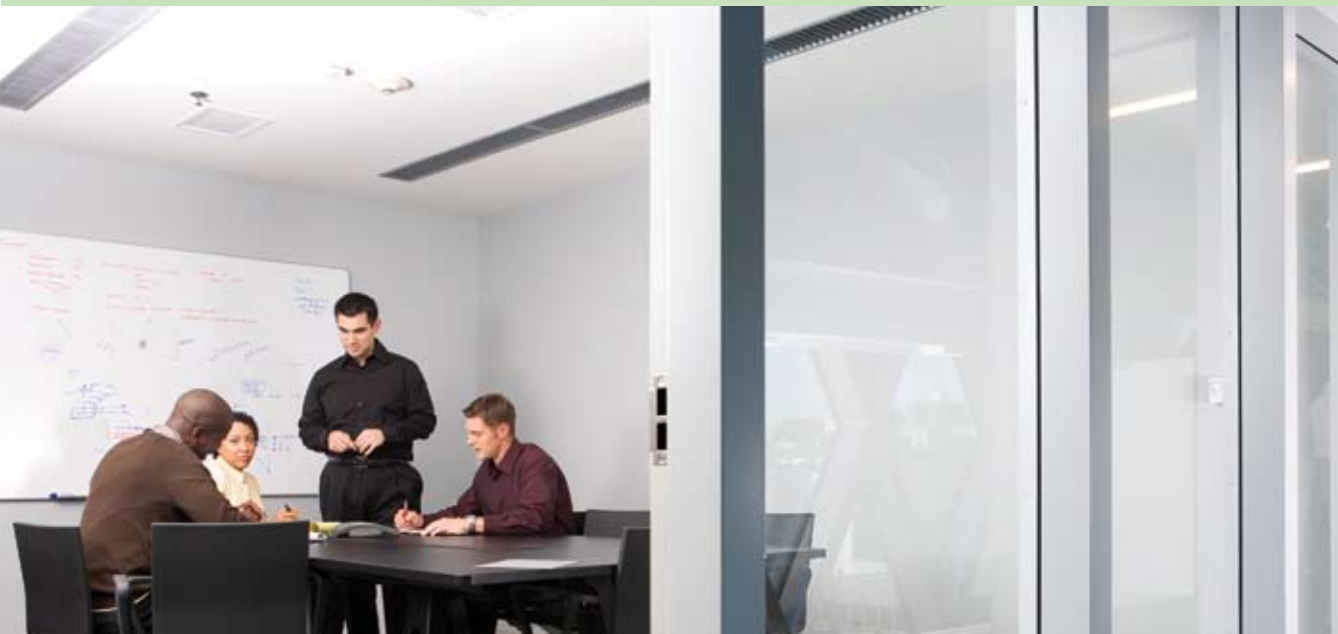




VLSYSTEMS
secure information solutions

NEWSLETTER SUMMER 2008



CEO INSIGHT

Welcome to the newly redesigned VLSystems newsletter! Through the past six months, we have gone through some very big and exciting changes here at VLSystems, as well as reached a major milestone. While we are celebrating VLSystems' 30-year anniversary, we are also celebrating the launch of our new brand identity.

As you may have noticed, VLSystems has a fresh new look and feel — from our new logo to our rebranded website and associated collateral. We feel the new branding will provide our customers and partners with more concise and targeted information, presented in a more effective way.

Throughout these changes, however, we will continue to bring both the perspective of our thirty years' experience and the freshness of fast-moving technologies to each consulting engagement. To remain in the forefront of information technology, VLSystems will continue to focus on providing customers with the latest technology news and highlights. Looking forward, VLSystems will be concentrating on providing our customers with the power of virtualization, the savings of green computing and the efficiencies of information management.

I hope that you enjoy our new look and encourage you to visit the website at www.vlsystems.com to discover what freshness VLSystems can offer your company.

Sincerely,



Tom White
Chief Executive Officer





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PARTNER SPOTLIGHT

VMware technology works to separate the operating systems and application software from the underlying hardware. This enables organizations to aggregate multiple servers, storage infrastructure and networks into shared pools of capacity, increasing hardware utilization and reducing cost.



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LIFE IN THE REAL WORLD

While VMware provides a valuable cost benefit by consolidating your servers, NetApp deduplication solves redundancy problems. This NetApp solution reduces space usage and provides deduplication with minimal system performance intrusion.



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SOLUTION CENTER

The Burton Asset Management business continuity and disaster recovery (BC/DR) methodology ensures organizations have the ability to respond to adverse market conditions, natural hazards, terror threats or other hazardous events.



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GET PLUGGED IN

The ramifications of data loss are severe. IronPort Data Loss Prevention (DLP) technology gives corporate IT teams a single, fully integrated solution that combines traditional e-mail security capabilities with workflow-based functions that are easy to administer and have minimal impact on users.



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EVENTS AND NEWS

Visit the events section of the newly redesigned VLSystems website to sign up for upcoming events and view video from archived events. Current on-demand events include topics such as PCI compliance and secure virtualization.



PARTNER SPOTLIGHT

VMware. Taking the cost and complexity out of IT.



VMware and VLSystems have recently partnered to deliver greater value to your organization.

VMware is the leading provider of virtualization solutions for x86-based servers and desktops. Through a pioneering approach to virtualization, VMware technology works to separate the operating systems and application software from the underlying hardware to achieve significant improvements in efficiency, availability, flexibility and manageability. These solutions enable organizations to aggregate multiple servers, storage infrastructure and networks together into shared pools of capacity that can be allocated dynamically, securely and reliably to applications as needed, increasing hardware utilization and reducing cost.

Key benefits to VMware's virtualization solutions include:

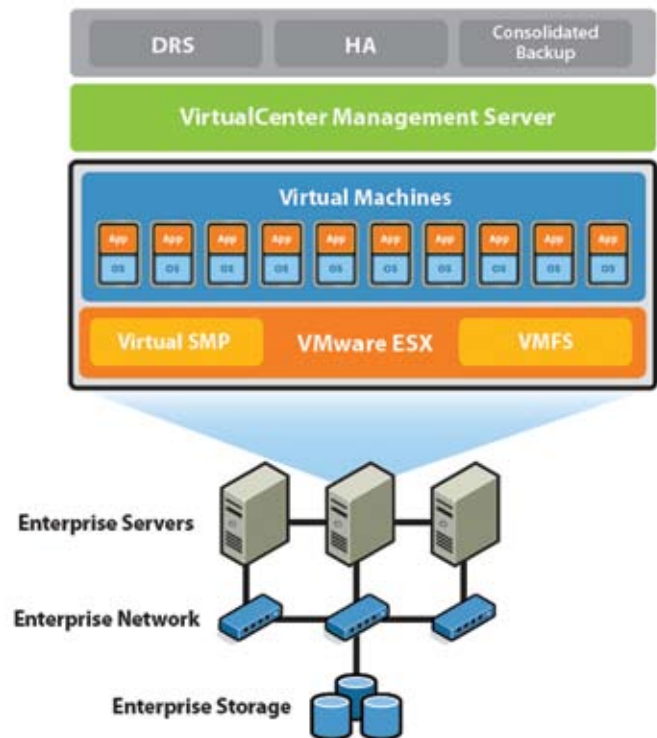
- Server consolidation and infrastructure optimization
- Physical infrastructure cost reduction
- Improved operational flexibility and responsiveness
- Increased application availability and improved business continuity
- Improved desktop manageability and security

Founded in 1998, VMware is headquartered in Palo Alto, Calif., with offices around the world. VMware's customer base consists of more than 20,000 organizations of all sizes, including 100 percent of Fortune 100 companies. VMware delivers technology designed to substantially lower IT costs, provide more flexibility in choosing operating systems, and offer a more automated and resilient systems infrastructure capable of responding to variable business demands.

Limited Time Offer

Visit www.vmware.com/go/getkit to download your FREE VMware Virtualization Kit, which includes the IDC Analyst Report, "The Impact of Virtualization Software on Operating Environments."

VMware Infrastructure



VMware Infrastructure virtualizes and aggregates industry standard servers and their attached network and storage.



LIFE IN THE REAL WORLD

The Perfect (Virtual) Marriage: Deduplication and VMware

By Larry Freeman and Bill Mary

Article adapted with permission from NetApp's Tech OnTap, January 2008.

VMware® has become one of the more popular use cases we've seen for NetApp deduplication. Shortly after the release of deduplication with Data ONTAP® 7.2.2, customers began reporting great success deduplicating VMware virtual machines (VMs), both in traditional V13 environments and also emerging VDI environments.

Naturally, we wanted to take a closer look and discover why they were so excited. The answer came quickly: They were consistently seeing space savings of 50 percent or more with virtually no performance impact. Some were obtaining storage savings as high as 90 percent. Here's how:

NetApp Deduplication

The unique advantage of NetApp deduplication is that it can take any NetApp flexible volume (FlexVol® volume) — regardless of how the data was written into the volume — and easily identify and eliminate duplicate blocks within that volume. If two or more blocks are the same, we eliminate the duplicate blocks and change the data pointers so that all the duplicates are redirected to a single data block.

It doesn't matter what the blocks are or what application they belong to; if the blocks are the same, the duplicates are eliminated. This is in sharp contrast to most other deduplication products out there, which are predominantly limited to use with a single application — typically backup. Another NetApp advantage is that you can deduplicate existing data volumes. You don't have to have deduplication running from the start. You can take a volume that's been in use for a long time and recover significant disk space through deduplication.

How NetApp Deduplication Works

When deduplication is enabled on a volume, it creates a list of the digital fingerprints that represent all blocks in use. These fingerprints are already part of the Data ONTAP metadata, so it is

not necessary to create a new one for each block. By comparing these fingerprints, it is relatively easy (that is, system overhead is low) to determine which blocks are duplicates. (Possible duplicates are compared to ensure they are indeed the same.) Then, it's just a matter of bookkeeping to change the reference pointers and eliminate the duplicates. The fingerprints are only used to identify duplicate blocks; they are not used to look up or access data. Thus, data access remains fast and is not subject to data corruption due to the deduplication process. By the way, this is the same basic process we've been using with our Snapshot™ technology for over a decade: using one "physical" data block to represent many "logical" data blocks. The deduplication process is simply run on a volume periodically whenever you need to reclaim storage space. Because of its low overhead, NetApp deduplication can be used with a wide range of workloads.



VMware Environments

VMware is a terrific technology that reduces the number of servers needed in the data center by consolidating several physical servers into one "virtual" server. VMware accomplishes this by allowing users to first create a master template for each application environment, then to "clone" these templates into many VM images. Once the clones are created, they are installed concurrently as "guests" on a single server. By virtualizing your server environment, you can utilize your servers much more efficiently. VMware users typically run six to 10 VM guest operating systems per physical server, although we have heard from some customers that they are running up to 70 VMs on a single server.

The Perfect Marriage

While VMware provides a valuable cost benefit by consolidating your servers, it is not quite so efficient at consolidating the

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SOLUTION CENTER

Burton Asset Management and BC/DR



Business Continuity and Disaster Recovery (BC/DR) are an important part of ongoing operational excellence in all types of organizations: public and private, large and small. VLSystems is proud to be partnered with Burton Asset Management (BAM) to bring you world-class methodology in business continuity and disaster recovery program services.

Recognized by Gartner and others as an emerging best practice, the BAM Business Continuity/Disaster Recovery Program Methodology is now being rolled out in enterprises large and small. For more than a decade, BAM has provided strategic advisory services to firms such as Caterpillar, IBM, Toyota, Oakley and others who rely on BAM intelligence, depth and capability in the areas of disaster recovery and IT process management.

All of these firms required business continuity and disaster recovery assessments to ensure their ability to respond to adverse market conditions, natural hazards, terror threats or other hazardous events. Furthermore, BAM solutions allowed these companies to meet their primary objective of governing and maintaining the appropriate level of IT spend and growth, in accordance with their business needs, by leveraging BC/DR intelligence into IT process control.

Customers who are long-term practitioners of the BAM methodology have successfully utilized data and intelligence delivered from their BC/DR programs to build out additional IT process capabilities and controls. As a matrixed, cross-functional effort, BC/DR is a natural and evolutionary stepping stone to organizational maturity. When well executed, the BAM BC/DR program extends the boundaries of risk to deliver reward through better IT-to-business alignment and cost containment.

The BAM methodology for BC/DR encompasses five phases and a core governance model:

1. Risk modeling or testing
2. Business and/or application impact analysis
3. Technology and process mapping
4. Backup and recovery tactics
5. BC/DR planning

To learn more about Burton Asset Management, contact VLSystems or visit www.thinkbam.com.



VLSYSTEMS
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GET PLUGGED IN

IronPort Encryption Capabilities

E-mail has become the primary communication method for organizations of all sizes. Whether private information is deliberately or accidentally leaked, the ramifications of data loss are severe: violation of compliance regulations, erosion of customer trust and destruction of brand equity. As a result, executives are focused more than ever on rapidly deploying solutions to address data loss — and doing it in an easy-to-administer, unobtrusive manner.

As a leader in Internet gateway security, IronPort Systems understands the complexities of creating a solution to address one of the most significant vectors for data loss: electronic communications. IronPort Data Loss Prevention (DLP) technology gives corporate IT teams a single, fully integrated solution that combines traditional e-mail security functions (like spam and virus filtering) with workflow-based functions such as policy creation, content scanning, message encryption, quarantining and archiving.

Encryption is the cornerstone of an effective DLP solution. Automatic encryption is imperative as a remediation option for situations where sensitive information needs to be transmitted outside the organization. IronPort encryption capabilities use IronPort PXE™ encryption technology directly integrated on the IronPort appliance.

Incoming and outgoing mail can now be encrypted and decrypted with no additional hardware required to filter, route and deliver messages securely. Based on an organization's policies, outbound messages are detected and automatically encrypted on the appliance.

IronPort PXE encryption technology revolutionizes e-mail encryption — satisfying compliance requirements while providing opportunity to extend into areas that can add tangible business value. IronPort provides the only e-mail encryption technology that combines universal accessibility (send and receive on any e-mail platform) with ease of use (no client software or PKI), and is proven in mission-critical deployments of up to 30 million recipients.



Limited-Time Offer

Based upon your popular feedback, we are extending IronPort's limited-time offer from last issue. Respond before August 30, 2008, and you will receive a FREE IronPort evaluation appliance, plus installation. If, after the trial period, you decide that the appliance is right for your company, you will then be offered installation at the reduced cost of \$750 (normally \$2,000).

EVENTS AND NEWS

EVENTS:

To register for the following archived events, please visit www.vlsystems.com/events.

PCI Compliance: Debunking the Myths

Date: On Demand

Duration: 1 Hour

In 2008, thousands of merchants will suffer unnecessary consequences because they did not understand the requirements of the Payment Card Industry (PCI) Data Security Standard (DSS). Join Digital Resources Group and VLSystems for this webinar that will bust the myths and give you the facts you need to comply with the PCI standard.

Secure Virtualization

Date: On Demand

Duration: 1 Hour

What every executive needs to know about virtualization and ensuring that virtualized data is secure. Be our guest for an insider's view of this leading-edge technology. Plus, join our discussion regarding the taboo topic of the security of your data within a virtual platform.

LIFE IN THE REAL WORLD *continued from page 5*

storage used by VMware clones. That's where deduplication comes into the picture.

Each cloned VM image requires the same amount of physical storage space as the template from which it was created, but it is largely redundant. This makes such images good candidates for space reduction through deduplication, but — because VMware is a primary storage application — users are reluctant to impose any additional load on these servers, which might degrade end user read/write response times. NetApp deduplication solves this problem. Because it provides deduplication with minimal system performance intrusion, users can substantially reduce the amount of storage capacity required to house VMware clone copies without affecting business workflow.

How is this possible? NetApp deduplication is an intrinsic part of Data ONTAP and its WAFL® file system. Unlike other forms of deduplication, NetApp deduplication utilizes many characteristics inherent within the storage operating system. There is no need to create complicated hashing algorithms, no lookup tables to search for and reconstitute data, and no rewriting of data during the actual deduplication process. All that's required is a small digital

fingerprint for each 4KB WAFL block (which already exists in the system), a quick comparison of these fingerprints, and a simple blockredirect process to rereference the original data block. Duplicate data blocks are then released back to the system. NetApp deduplication is performed as a low-priority background process. This process can be run automatically any time the VMware data grows beyond a predetermined threshold, or it can be scheduled to run only during convenient off-peak hours.

Sounds Good, How Do I Start?

To get started, you first have to add NearStore® and deduplication licenses to your system. Then you can enable deduplication on your desired volume(s) with a simple CLI command. This will trigger the process of gathering fingerprints in each enabled volume. If you have existing data in the volume, NetApp deduplication can optionally scan that data too. Once deduplication has been enabled, it's simply a matter of deciding how often you want to reduce your volume space requirements by running the deduplication process. Most customers run deduplication nightly, since their daily data-change rate is normally low enough that the deduplication process will run quickly.