

Cost Effective Backup & Recovery & Storage for Virtualized Environments with Vizioncore Solutions and Data Domain Deduplication Appliances

Meeting Customers' Need for Affordable Downtime Protection

Traditional backup strategies are marked by cost and complexity which constrain IT managers from widespread deployment to cover all servers in the data center. Pricier backup and recovery technologies and storage are typically reserved for the most mission-critical servers with the lowest RTO (Recovery Time Objective) and RPO (Recovery Point Objective). Yet there are other servers with higher level RTO and RPO, which, were they to go down in a major outage, would have serious consequences for the business. Storage cost, in particular, limits IT managers in terms of what they can back up (how much) and how long they can keep data. As a result, many managers only implement agent-based file-level backups which may only retain data for a couple of weeks. Archiving (vaulting) servers is out of the question. The shortcomings of this approach become painfully evident in the recovery part of the cycle, when the RTO is extended by the arduous process of rebuilding the server, OS, apps and restoring the data.

Virtualization is a game-changing technology in that it allows for image-level backups, addressing a major issue for companies in terms of RTO and RPO. Virtual machines (VMs) are encapsulated files, which allow for bare-metal restores that considerably shortens RTOs and simplifies recovery. Virtualization backup and recovery tools, when paired with deduplication technologies, offers IT managers an affordable, easy and effective method to extend downtime prevention to many more servers in the data center.

Today, Vizioncore offers the leading virtualization backup and restore software, vRanger Pro. Data Domain was a pioneer in the data deduplication market and is a current leader in this emerging market. These two leaders have come together to offer a compelling option for server backup, archiving and disaster recovery.

VMware backups are a significant concern for customers. Even with the efficiencies that vRanger Pro or vReplicator bring to the backup and restore process, VMs themselves are very large files. Storage of VM backups can present problem to customers.

Customers are: 1) storing very large files and 2) are likely to need to store many more of these files to satisfy corporate retention policies. This situation is often complicated by the fact that, backup storage requirements

often are two-to-three times the requirements of the primary storage.

For example, a 50GB VM may consume 100GB to 150GB of space on the customers' backup appliances with a normal (seven day) retention period.

The vRanger Pro solution using Data Domain is very similar to the typical implementation. vRanger Pro is installed and configured on the VMware® VCB proxy server (if VCB is to be used)

Simplicity and Cost Savings

The Vizioncore and Data Domain joint solution offers customers tremendous value by allowing them to simplify their backup and recovery process, adjust their retention policies to be commensurate with their needs, reduce overall cost and build simple, but powerful disaster recovery solutions.

Vizioncore's vRanger Pro is the recognized industry-standard backup and restore solution that provides image-level hot backups simply and easily, while VMs are still running. vRanger Pro runs on a centralized Windows host and can use the standard Windows scheduler, eliminating the need for complex scripting. This solution can be implemented stand-alone or be integrated with VMware's VirtualCenter, which centralizes management, monitoring, resource optimization, and other functions for groups of ESX Servers through a single graphic user interface. vRanger Pro will send image files to any chosen server or storage destination, including Linux or Windows servers, NAS, SAN, UNC and mapped drives.

Data Domain provides a nearline storage solution for customers who are faced with never-ending data growth and unabated storage expansion associated with ballooning amounts of backup and archive data. Data Domain reduces unnecessary data storage via inline data deduplication. Data deduplication is performed on incoming data streams and allows only the new segments of data to be identified and stored as unique instances within the Data Domain file system. A base Data Domain system supports a certain capacity of addressable storage (post-RAID, post-spare). Based on backup policy, this will enable 20x-100x more logical capacity in VMware environments. For example, a system that offers 10TB of addressable capacity would offer 200TB to 1PB of logical capacity. Each Data Domain system instance supports 200MB/sec average throughput. This base metric applies both to read and write operations, as the architecture is optimized for sequential I/O.

Data Domain's offering has further appeal in that it is a passive appliance. Customers do not need to change their backup processes or install software in their servers. They can simply use the Data Domain appliance as a target for vRanger Pro backups. The Data Domain device can present itself as a Windows file server, Unix/Linux file server or as a virtual Tape Library.

How The Joint Solution Works

or a physical Windows® based backup server. This server would then have a network share presented to it from the Data Domain device.

This share is mounted on the vRanger Pro server as a normal CIFS network share. It is however important that the user ID to which the share is mounted is the same ID that the vRanger Pro backup job will run under. That is, customers should create a user id for vRanger Pro which is a local admin on the backup server, an "Administrator" in VMware VirtualCenter and

How The Joint Solution Works *(continued)*

is the "Owner" of the Data Store on the Data Domain device.

For optimal performance and to prevent possible traffic on the customers' LANs, it is suggested that customers consider creating a VLAN for the Data Domain backup traffic and add a second NIC card to the vRanger Pro box to route this traffic. This adjustment will isolate the flow of data to the Data Domain device off of customers' production networks.

It is also important to note that data should not be overwritten on a Data Domain device. This is due to the fact that the pointer system on the appliance is complex and overwriting data can destroy data segments to which other archives may link. In order to prevent this, you must ensure each vRanger backup archive has a unique name, which can be accomplished by simply adding the date and time to the archive name, which is in fact the default setting in vRanger Pro.

The final configuration adjustment for Data Domain integration is the retention period.

Customers will likely enjoy greater compression by having longer retention periods. On average two-to-four weeks (7-14) images seem to produce a very high compression ratio. Low retentions (two to three days) do not allow the device to store and "learn" enough data segments to offer an attractive compression.

The Data Domain device also offers a compelling story for Disaster Recovery when Vizioncore's vReplicator product is integrated into the solution. Customers should identify the Recovery Time Objective (RTO) for each of their servers. For servers with a RTO of 30 minutes or more, (likely the majority of customers' servers), vRanger Pro will be sufficient.

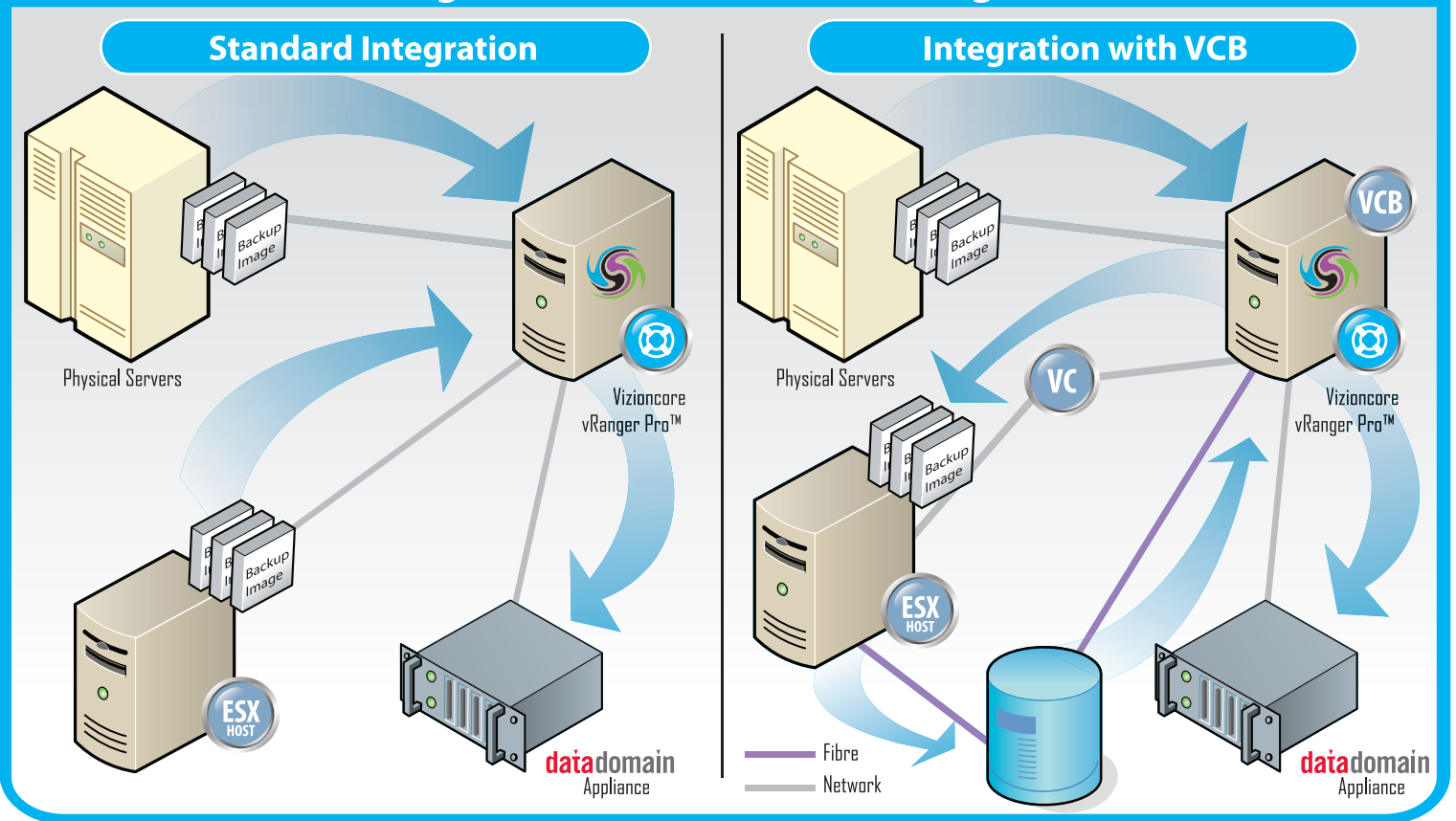
However, if customers have a number of servers for which they want a RTO of less than 30 minutes, vReplicator can be used to backup these servers. vReplicator delivers a complete VM ready to be turned on in the event of disaster. Although Vizioncore's vRanger Pro and vReplicator offers simple restorations of VMs, some time must be budgeted for the extraction of the image from the Data Domain appliance and transfer back to

the VMware ESX Server.

The Data Domain products offer site-to-site replication over a WAN for disaster recovery purposes. Since the data stored on the device is deduplicated, it can be replicated to a remote site over very low bandwidth links. Additionally, with the introduction of the P2V-DR module for vRanger Pro, customers can now backup their entire data centers (both physical and virtual servers) using much less disk, use vReplicator to replicate them to a remote site using a low bandwidth link, then easily restore entire servers using vRanger Pro at the remote location. All through one, easy to use GUI and on a scheduled basis.

General Note: The compression engine used in vRanger Pro modifies the data segments contained within VMs. This reduces the effectiveness of the deduplication engine in the Data Domain appliance. To correct this, the compression engine in vRanger Pro must be turned off. This task is accomplished by selecting "Do not create an archive" from the vRanger Pro menu.

vRanger Pro™ & Data Domain Integration



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