

Vizioncore vRanger Pro™ Archive Management Methods Make it a Winner in the World of VMware Data Protection

By Jerome M Wendt



The ability of vRanger Pro to monitor resources in the virtual environment and then dynamically schedule backup jobs according to the availability of these resources is only one part of the equation to successfully protecting VMs. Equally important is how it creates and manages the resulting backup archives.



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Community

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Industry

Virtualization Management Solutions

Challenges

- Knowing which VMs host which applications and the application's peak hours of operation
- Accounting for how all of resources in the virtual environment are used, when they are used and under what conditions
- Managing server virtualization environments with more than one physical host
- Ensuring backup archive integrity and efficient restore

Solution

Vizioncore vRanger Pro™ DPP

Benefits

- Automating the monitoring and collection of data of the available resources within the VMware environment
- Dynamic scheduling of backup jobs based on gathered information
- Managing archives in such a way that multiple backup jobs can run concurrently while still granting a third party backup software access to the archives

It's easy for those new to VMware, or even for those who have used VMware for awhile, to assume that all VMware backup solutions provide similar functionality. While it might be true to say that all of these solutions protect VMs, their similarities in many cases end there. Among their differences, two of the largest focus on how they manage VMware backups and the ensuing archives that are created which is where software like Vizioncore's vRanger Pro stands out.

VMware Backup Job Management

The management of backup jobs in VMware environments bears little to no resemblance to what they look like in the physical world. In the physical world, backup administrators have the opportunity to document what applications are running on individual physical machines, what the applications' peak hours of operations are and how much of a physical machine's resources the application consumes and when. Based upon that information, they can schedule backup jobs accordingly.

In the virtual world, that luxury is gone. Multiple VMs now reside on a single physical machine and share the same underlying network and storage resources. So now to effectively manage them calls for the backup administrator to know which VMs host which applications and the application's peak hours of operation. Further, backup administrators also need to account for how all of these resources in the virtual environment are being used, when they are being used and under what conditions.

Server virtualization environments with more than one physical host add to the management complexity. Simply retrieving a list of alphanumeric VM names from each VMware host or from the vCenter console and then scheduling backup jobs does not take into account all of these variables.

This is where vRanger Pro differentiates itself. It queries the environment and obtains details such as how many VMDK files are associated with each VMware ESX or vSphere host, what networked storage protocols are being used and how storage is shared between VMs. Then once it obtains that information, backup administrators can set up parameters within it that define when and how the resources within it are used.

vRanger Pro eliminates the complexity of manually orchestrating these activities. By automating the monitoring and collection of data of the available resources within the VMware environment, it can dynamically schedule VM backup jobs according to the availability of resources in the physical environment. It does so without negatively impacting other backup jobs or production applications and without the need for backup administrators to constantly monitor and intervene to ensure backup jobs complete successfully.

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— Jerome Wendt, DCIG Lead Analyst

resources is only one part of the equation to successfully protecting VMs. Equally important is how it creates and manages the resulting backup archives.

Backup Archive Management

The manner in which backup archives are created can contribute to how many concurrent backup jobs can take place at one time. Further, more organizations are looking to bring these archives under the management of their main backup software to meet their broader disaster recovery (DR) initiatives and regulatory compliance requirements.

To facilitate these emerging user demands, vRanger Pro manages its archives in such a way that it can run multiple backup jobs at the same time while still granting a third party backup software access to these archives that they can be effectively managed. vRanger Pro does the following to accomplish these tasks:

- **Creates and manages multiple independent archive files.** vRanger Pro creates multiple, independent archive files that are each associated with a specific VM so that multiple backup jobs

each with their own data stream can concurrently take place. This enables vRanger Pro to dynamically schedule VM backups as resources in the virtual environment become available by immediately running the backup job that has a Save Point within that individual archive file.

- **Use “human readable” names.** vRanger Pro names each VM backup archive so that as the archive is backed up by the main backup software, naming conventions remain “human readable.” This enables backup administrators to identify by simply looking at the name of the archive file which backup archive belongs to what VM. Further, they can ascertain the date and time that the backup archive was created and if the archive file is a full, incremental or differential.
- **No modifications to backup archives.** When the main backup software does incremental and differential backups, it looks for and detects image level block changes in archive files so if they have changed, it backs them up again. This is why vRanger Pro leaves archives unmodified and daily creates a new backup file. This minimizes the amount of data that the main backup software will have to protect as well as the amount of tape capacity that it will eventually need to store these archives. Modifying the backup archives also creates compliance concerns as it brings into question the authenticity of the data in the backup archive. Recent court rulings cite the inability to preserve data subject to litigation holds as a reason to issue sanctions against companies. Since vRanger Pro does not modify backup archives, it does not leave organizations exposed to these types of rulings.
- **A portable archive file for each VM. Each archive file created by vRanger Pro has its own Save Point.** This makes it possible for organizations to port the archive file to either a USB thumb drive or a tape cartridge so any archive file may be taken to another location and the individual VM associated with that archive file restored or recovered.
- **Single pass restore from multiple archives.** vRanger Pro excels at restoring VMs or files efficiently by intelligently reading only the relevant portions of the archive files. When

restore of a VM or a file requires blocks from multiple archive images (for example, a full backup and one or more incremental backups), vRanger Pro builds an in-memory bitmap of the archives and reads only the parts of the archive files that are needed for the restore. This speeds up the restores and also reduces the resource utilization on the network and the servers.

vRanger Pro: A Winner in the World of VMware Data Protection

There are differences between backup solutions intended for the protection of VMware environments but those differences are not always easily discerned. Yet it is those unseen features such as the monitoring of available resources in the virtual environment, the dynamic scheduling of backup jobs based upon that information and then the creation and management of backup archives that separate the winners from the loser in the world of VMware data protection.

vRanger Pro’s ability to deliver on these features is a major reason why it is a winner in this space. vRanger Pro monitors the virtual environment for available resources so backup jobs can be dynamically scheduled. It creates independent archive files that it associated with specific VMs to help facilitate the scheduling of multiple concurrent backup jobs. It assigns a unique, recognizable and understandable name to each archive file to facilitate recoveries by either vRanger Pro or third party backup software products. Finally, it creates a Save Point within each archive file so that it remains portable and suitable for offsite recoveries.

How well organizations incorporate and manage VMware’s server virtualization technology will separate winners from the losers in the months and years to come. So as they look to optimize the management of virtualized environment, it is imperative that they select a VMware backup solution that provides the seen and unseen features that will both successfully backup and recover this virtual environment and complement whatever backup strategy they already have in place. vRanger Pro delivers on these specific needs that virtualized environments possess.

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About Vizioncore

Vizioncore Inc. is a wholly owned subsidiary of Quest Software (Nasdaq: QSFT), a leading IT management vendor. Vizioncore is the market leader in virtualization management, enabling organizations to reduce complexity and improve operational efficiency by redefining how data management, monitoring and administration are performed in virtual environments. The combination of Vizioncore’s virtualization expertise and Quest Software’s leadership gives customers a single vendor for managing dynamic environments that combine physical and virtual resources, either on-premise or in the cloud.



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