



Mission-Critical Disaster Recovery in the Virtual World

*Ten questions you should be asking
when choosing a DR solution for your
virtualized mission-critical applications*



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Disaster Recovery – A Bump in the Virtualization Highway

Enterprise application virtualization is no longer emerging or niche technology. Enterprises of all sizes are deploying applications on virtualized IT infrastructures and clouds, and reaping the benefits - ease of management, simplicity, flexibility, mobility, cost-effectiveness.

But there's a bump on the virtualization highway. Traditional replication and disaster recovery (DR) solutions were not conceived to deal with the demands created by the virtual paradigm. No matter how vendors try to fit the square peg into the round hole - existing DR solutions are hard-pressed to adapt to the scalability, mobility, and flexibility that enterprise-class applications require when running on a virtual infrastructure.

In light of the challenges facing DR for virtualized mission-critical applications, ZeRTO has put together a list of ten questions you should be asking yourself about your DR solution, to ensure its suitability to the virtual paradigm.



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Ten questions you should be asking...

Question #1 – Is it 'virtual ready'?

Today, your applications are managed and provisioned as Virtual Machines (VM) and virtual disks (VMDK). Requests for new services (new applications, additional application resources, etc.) are handled by the virtualization team, because that's the paradigm you've adopted. Thus, when it comes to DR, you need to know if your solution is 'virtual ready'.

For example, can you manage replication at the VM and VMDK level, like your infrastructure, or do you have to actually manage it at the LUN level? If you need to replicate a complete application running on eight VMs, will you need to first track down and consolidate storage locations, and then define replication policies - all with different tools and applications?

If the solution isn't virtual ready, your management overhead may be effectively doubled. This can mean that many of the benefits you've achieved through virtualization of the rest of your infrastructure may be lost in the DR sphere.

Question #2 – Can it support your mission-critical application needs?

Can your DR solution provide you with the level of functionality required for protecting mission-critical applications?

For example, does it support consistency grouping of VMs across hosts and storage, to ensure write order fidelity of an entire application? Can you achieve a Recovery Time Objective (RTO) of less than a minute, and Recovery Point Objective (RPO) levels of seconds? Additionally, does your DR solution offer near-synchronous replication? Does it include Continuous Data Protection (CDP) capabilities? Does the scalability meet your enterprise needs?

Question #3 - Is it application aware?

The essence of your virtualized infrastructure is application-awareness – it's the enabler for the high level of IT service that your internal clients love.

Does your DR solution replicate at the application level? Does it support VMware vApp objects? Can you configure replication policy for a whole



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application at one time? Can the solution, for example, consistently replicate an application spread across 10 VMs, located on different ESX hosts, and using storage from different LUNs?

Question #4 – What about vendor heterogeneity?

Everyone, from CIOs down, is careful to avoid vendor lock-in whenever possible. In both public and private cloud scenarios, vendor heterogeneity is crucial to both flexibility and cost-effectiveness.

Is your DR solution hardware-agnostic? Does it support replication and mobility between different storage technologies (FC, NAS etc.) and between different vendors? True heterogeneity will enable you to replicate from high-end storage to a lower tier of storage at your secondary site, or even replicate to a cloud provider without changing your environment - driving down the cost of establishing a DR site.

Question #5 – Can it provide mobility and migration?

Does your enterprise DR solution fully support VMware Storage vMotion - so you won't have to worry whether replication will be moved with storage? Can you use replication to move workloads between datacenters, while still maintaining full transaction integrity and non-stop service availability?

Question #6 - Does it add or remove control points?

DR is a critical operation, involving a number of technical resources and demanding a high level of cooperation and inter-communication. One way of keeping overhead, complexity and resource consumption down in any complex process is to keep the number of control points to a minimum.

Does your DR solution add new control points? Will it work within your existing infrastructure management environment (vSphere and vCenter, for example), and actually reduce the amount of control points by replacing existing replication solution consoles? Does it offer an API for integration of cloud enterprise management and workflow applications? Does it offer standardized web services and PowerShell API?



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Question #7 – What’s the learning curve?

Like any other tool, a DR solution *will* have a learning curve. The question is: how *long* a curve?

Key to successful adoption and implementation of any enterprise tool is overall ease of use, and this should be the first thing you check. Beyond this, does your DR solution work seamlessly with (ideally *within*) your existing enterprise management and workflow applications? Does it introduce new concepts, requiring your staff to learn new methodologies, or does it use concepts and methodologies already well known to your team? How long will it take to get a new employee up to speed on the solution?

Check the ease of installation – and overall time to production. Does the solution automate key implementation processes, which can significantly lower setup overhead?

Question #8 – How scalable is the solution?

Scalability has two components – deployment and management. As your virtual infrastructure grows, you need your DR to grow with it seamlessly, without the need to purchase, install, and configure additional proprietary hardware.

Managing hundreds and thousands of VMs is not trivial. Does replication increase this challenge? Can your DR solution perform operations and configure policies at the application level, managing groups of VMs?

Question #9 – What’s the performance impact?

There is one acceptable level of performance impact in mission-critical replication – *zero*.

Non mission-critical virtual replication solutions – many actually delivering *data protection* built around snapshot or backup paradigms – will often negatively impact application performance, perhaps even interrupting service. Does your DR solution rely on a “data path splitting” paradigm, which has no negative performance impact, and introduces no data lag? Or does it rely on snapshots, which slow down your applications?



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Question #10 – Is it cloud ready?

A cloud-based DR paradigm lowers the time and cost barriers to replication, opening high-end replication up to customers and data sets that were not previously feasible. Although you may prefer to keep the DR solution in-house *today*, in the future you may want to leverage the cloud for DR, or at least parts of it.

Is your DR solution truly cloudy-ready? As open as cloud storage is, both cloud service providers and cloud users need the flexibility to replicate between different environments, different vendors, and different technologies. Can your solution integrate both with cloud management tools and specific cloud provider technologies?

About ZeRTO

ZeRTO was founded by a team of storage industry veterans with a shared vision – enabling mission critical clouds by reducing storage complexity and increasing its flexibility. Ziv Kedem, ZeRTO's founder and CEO, previously co-founded Kashya, now EMC RecoverPoint, where he developed the industry leading storage replication solution for disaster recovery. ZeRTO is based in Israel and the US and is proud to be backed by Greylock Partners and Battery Ventures.

ZeRTO is currently in stealth mode. We cannot share product details publicly at this time, but if you are virtualizing mission critical applications and can see how these pain points will affect you on this journey, please contact us and we'll be excited to discuss our product and technology in detail with you.