

SIMPLIFYING CLOUD DR WITH VMWARE AND AWS

The No. 1 application for public cloud is backup, yet organizations of all sizes routinely develop a disaster recovery plan that includes replicating infrastructure—including compute and storage—at a secondary on-premises location. Since the public cloud is “built for backup,” why aren't more businesses taking advantage of the cloud as a DR platform? In a word, complexity.

Today's highly hybrid IT environments contain on-premises, public and private cloud components, and often, each environment has its own backup formats, procedures and policies—which are not always compatible with each other. Ideally, IT and business units should be able to protect any virtual machine workload, provide for rapid failover (RPO and RTO), and have the ability to restore cloud-resident VM backups and their data to any location, whether on premises or in the cloud.

This paper looks at the challenges facing IT and backup admins and discusses approaches to DR that can offer a cohesive, enterprise-wide approach that encompasses on-premises and cloud workloads, while enabling rapid restoration to either on-premises or cloud infrastructure.

INTRODUCTION: TRANSFORMATION AND THE CLOUD

As businesses embrace digital transformation as the way to deliver a better customer and user experience, they increasingly find themselves relying on cloud services—public and private—as the preferred platform to host application workloads on. While many IT and line-of-business professionals prefer the cloud as a way to reduce infrastructure expenses, others still keep workloads in on-premises data centers because of regulatory and compliance issues, fear of losing control, uptime requirements or cost models that favor on-premises hosting.

Although the cloud brings many positives, including increased agility and virtually limitless expandability to meet increasing or shrinking demand, it also brings challenges. The growth in organizations utilizing multiple cloud providers as well as on-premises infrastructure has created a complex hybrid environment in which server sprawl has been replaced with VM sprawl and multiple toolsets and subject matter experts are needed to manage its multiple, heterogeneous parts.

But hybrid IT is the new reality, as organizations move workloads to where they best fit. It's no wonder that a recent survey found that 92% of IT pros consider it important to have the same architecture on premises as they do in the cloud.¹

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1 VMware Cloud Survey

HYBRID IT: BEYOND AGILITY

Since businesses are adopting hybrid IT environments to gain agility, they must also put additional focus on availability across their entire on-premises and cloud-based infrastructure. In our always-on, 24/7 business world, downtime of any time can quickly translate into a loss of business-critical data, customer satisfaction and trust, and ultimately revenue, since customers are just one click away from competitors.

Although heterogeneous hybrid environments add complexity for IT, admins and even users, businesses want the ability to seamlessly scale capacity on demand. From IT's perspective, rather than adding tools for each environment, a single toolset that can handle all workloads—whether on premises or in the cloud—would have a major impact in terms of reducing IT's management burden.

The first step in this streamlining process should be an enterprise-wide adoption of a single virtualization platform, like VMware, for both on-premises and cloud-based applications. When workloads are virtualized with VMware, it's possible to use a single set of tools for a variety of functions, including:



- Seamlessly running any application, anywhere, by utilizing VMware Cloud™ on Amazon AWS
- Simplifying failover and failback of workloads gracefully and quickly, whether to the cloud or on-premises infrastructure
- Leveraging public clouds like Amazon's Elastic Compute Cloud (EC2) to gain the ability to spin up an entire virtual data center when disaster strikes, without having to incur any additional expenses until the need arises
- Responding quickly and easily to changing business demands in an elastic, predictable manner
- Creating a new DR strategy or replacing a legacy DR plan that includes the burden of unwanted infrastructure lifecycle issues

BRINGING DR TO THE CLOUD

The cloud is an ideal DR platform, inherently elastic and offering pay-as-you-go pricing with total cost of ownership that is often considerably less than that using on-premises infrastructure handling the same number of applications. Once organizations copy their workloads to Amazon EC2, they can take advantage of agile, cost-effective cloud object storage to implement a DR strategy for the first time or reduce their existing DR costs by modernizing or replacing existing DR infrastructure. Also, new or additional workloads can be protected as they come online and coexist side by side with existing DR assets.

Opting for cloud-based DR can offer additional benefits. For example, when it is time to move workloads to the cloud—for whatever reason—having a common VMware platform enterprise-wide can simplify and accelerate the migration. Cloud DR can also be the basis for creating an extensible data center that can elastically change to meet seasonal needs or other business demands. And solutions such as Dell EMC Cloud DR can simplify IT management, working alongside Dell EMC Cloud Snapshot Manager, which protects born-in-the-cloud workloads, too.

INTRODUCING DELL EMC CLOUD DR FOR THE VMWARE CLOUD™ ON AWS

Dell EMC's Cloud DR was purposefully designed to protect VMware VMs, using VMware Cloud™ on AWS as a recovery target. Dell EMC Cloud Backup offers four primary benefits:

- 1 Protection of all VMs to cloud object storage
- 2 Simplified DR test or failover by recovering VM copies into a native AWS EC2 instance
- 3 Failback to a VMware VM to any vCenter on premises or in the VMware Cloud™
- 4 Direct recovery of a VM copy from object storage to vCenter on premises or in the VMware Cloud™

Recovering to VMware Cloud™ on AWS eases migration to an off-site virtual environment in case of disaster and minimizes downtime by presenting a familiar environment for vAdmins and IT while on-premises infrastructure issues are being resolved.

The Dell EMC solution greatly simplifies the entire DR process. Cloud DR enables automated, end-to-end orchestration of failover to EC2 instances with just 3 clicks, whether for DR testing or in the case of a real-time disaster. Once issues are resolved, Cloud DR enables automated failback of workloads to on-premises VMware environments (or VMware Cloud™ on AWS) with just 2 clicks.

A GREENER WORLD WITH CLOUD DR

At GEI Consultants, reliable and fast access to sophisticated data analytics is critical to the success of its engineering projects. Exponential data growth at GEI threatened the company's ability to meet this requirement, as data backups began failing and not completing within specified windows. It called on Dell EMC to solve its backup and disaster recovery woes. Now, the company uses Dell EMC Data Protection solutions to back up 140 VMware virtual machines across 33 offices and Dell EMC Cloud DR to replicate backups to AWS S3 object storage in the cloud. If disaster strikes, GEI can run its VMs live on AWS EC2 and then fail back to its on-site data center when the issue is resolved. "Cloud DR's efficient orchestration of resources is magnificent," says Adam Schmitt, network operations supervisor at GEI. "It automatically chooses the lowest cost resource option for restore in Amazon EC2."

Cloud DR and Amazon's cloud services also eliminated the need for a second physical data center for replicating backups. Schmitt estimates GEI saves a quarter-million dollars per year in physical data center expenses such as rent, power, cooling, Internet and security. "By reducing energy usage, Cloud DR is well aligned with GEI's focus on the environment," he adds. GEI's results were dramatic:

- Increased its cloud backup success rate from 30% to 100%
- Gained ability to complete VMs restores in anywhere from instantaneously to 60 minutes
- Eliminated the need for a physical DR site, saving \$250,000 per year
- Reduced 10 TB server backups from 36 to 48 hours to just four hours
- Achieved a 70:1 data deduplication rate

"With a few clicks, we can create and define our Cloud DR backup and restore jobs using Data Protection software," says Schmitt. "It used to take several days to seed the initial backup to the cloud. Now, we get it done in four hours or less. It's like night and day."

WHY DELL EMC FOR DR?

With Dell EMC Cloud DR, IT can provision a VMware Cloud™ on AWS software-defined data center (SDDC) on demand—only when recovery is needed—for cost efficiency. Those VMs can later use vMotion to transfer back from the VMware Cloud™ on AWS to the on-premises VMware environment. No other cloud DR solution can provide this capability or these cost savings as part of a DR strategy.

Additionally, Cloud DR supports VM image-level recovery and crash consistency and can support VSS for consistency of relevant applications.

The benefits of Dell EMC Cloud DR stack up:

- Cost savings from:
 - Reduced compute cycle costs, since SDDCs are spun up on demand only when needed
 - Utilizing cloud object storage
 - Reduced bandwidth due to superior deduplication
- Simplicity of 3 click failover and 2 click failback
- Fast recovery time objectives (RTOs) when recovering to VMware Cloud™ on AWS, since no data conversion is needed between DR and source workloads. Fast RTO is also available for recovering to EC2 instances, by enabling conversion of the data once it is uploaded to the cloud
- Orchestration that maintains source VM settings, including MAC address and UID for lightning-fast recovery
- Simplified DR and management by utilizing one set of tools for on-premises and cloud-based workloads

Every organization wants to simplify its IT and DR strategy while supporting a growing number of new business initiatives. By adopting an enterprise-wide VMware strategy, regardless of workload location, organizations that adopt VMware Cloud™ on AWS with Dell EMC Cloud DR solutions can ensure their data and applications are constantly protected and easily managed and migrated, and when needed, can be recovered, backed up and running as quickly as possible. In case of disaster, migration to an off-site virtual environment or SDDC is simple and downtime is reduced by a simple “3 click to failover, 2 click to failback” solution.

Simplicity, faster recovery and lower infrastructure and administrative costs are just a few of the benefits you enjoy when you adopt Dell EMC Cloud DR. [Click here to learn more: www.dell.com/cloudprotection](http://www.dell.com/cloudprotection)