Solution Showcase

Who Better than Dell EMC to Offer Best-for-VMware Data Protection?

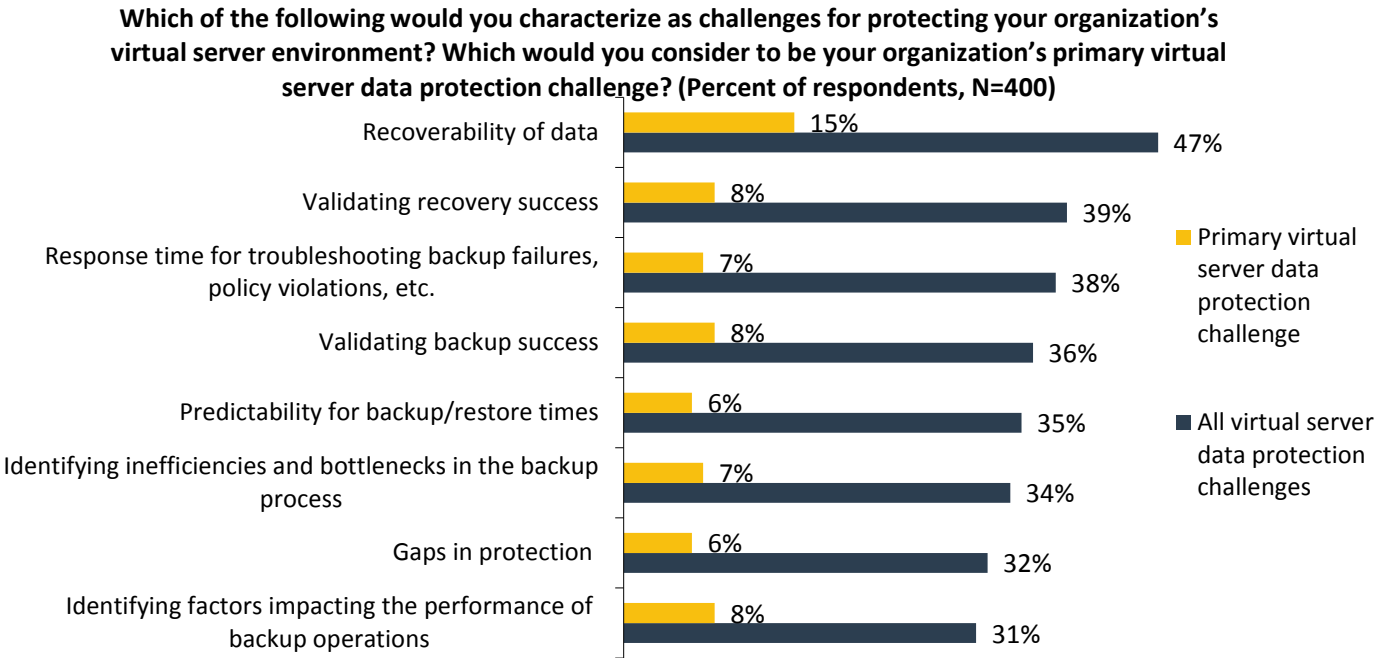
Date: August 2017 **Author:** Jason Buffington, Principal Analyst

Abstract: At VMworld 2017, Dell EMC raised the question, "*Who better than Dell EMC to offer best-for-VMware data protection?*" In doing so, Dell EMC raised the bar on what enterprise-suitable virtualization protection should look like—and how it should perform.

Overview

Even in 2017, satisfactory protection within VMware environments continues to elude too many organizations. In fact, only 18% of surveyed organizations stated that they were very confident in their organization's ability to protect VMs and recover what they needed within their SLAs.[1] In ESG's recent research, two foundational problems seem to be at fault: *recoverability* of data, and *insight* into the protectability/recoverability of their systems (see Figure 1).

Figure 1. Top Challenges with Protecting Virtual Server Environments



Source: Enterprise Strategy Group, 2017

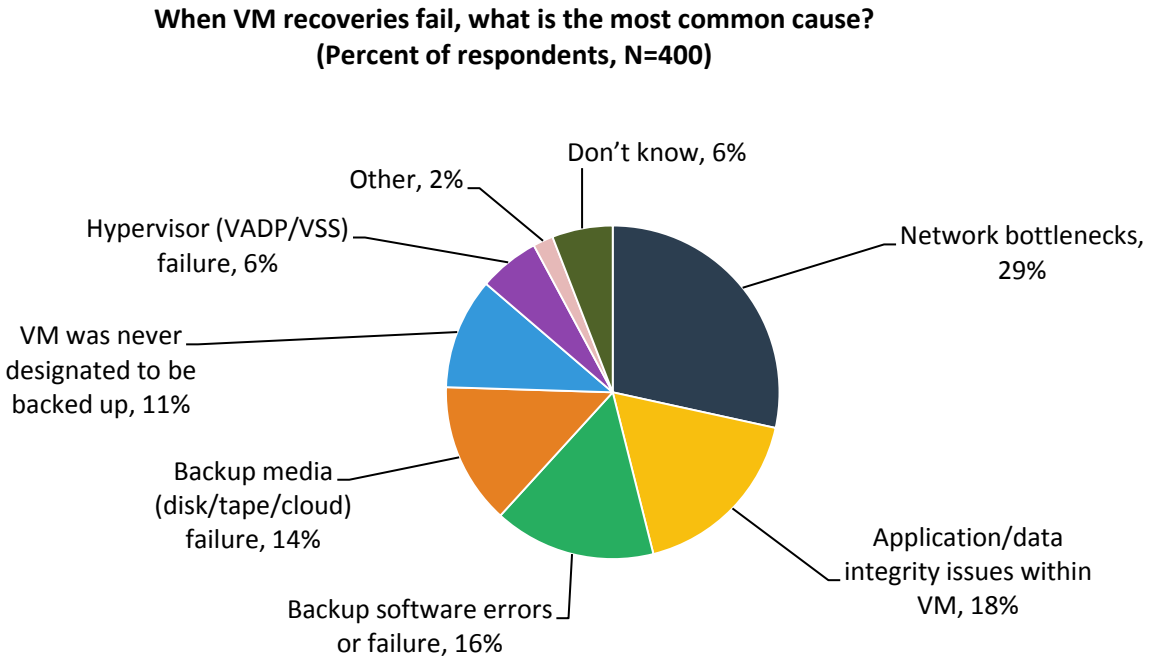
[1] Source: ESG Brief, *Is a VM-specific Approach to Backup and Recovery Still Necessary in 2017?*, August 2017. All ESG research references and charts in this solution showcase have been taken from this brief.

While the top response, which is consistent year over year within ESG research, continues to be recoverability of data, a more problematic scenario comes from several of the other challenges listed in Figure 1, which can be summarized as a lack of virtualization-savviness in design and instrumentation. The result is not just a failure to deliver protection, but also a failure to provide insight into what is working, what isn't working, and why.

The Challenges Are Not Simple

The problem with the data in Figure 1 is that it would be easy to erroneously assume that only the backup software is to blame when virtualization protection is insufficient. Further investigation into why recoveries within virtualized environments fail (see Figure 2) shows that the backup solution (including hardware and software) is often not the cause; the stack and the architecture matter.

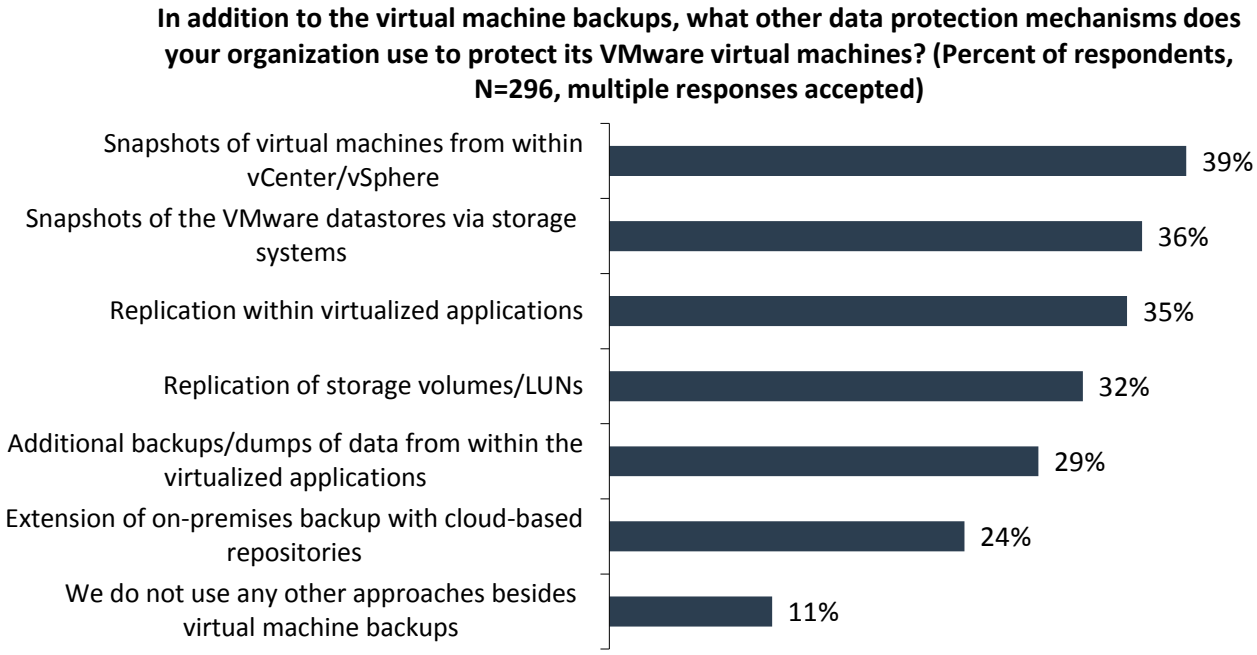
Figure 2. Why Recoveries of Virtual Machines Fail



Source: Enterprise Strategy Group, 2017

But even with the right solution stack and architecture (that includes the right software), backups alone are not enough. Modern organizations have increasingly high expectations for the resiliency and recoverability of their IT systems; expectations that cannot be met with only traditional backups. Only one in nine organizations rely solely on VM backups. Most organizations supplement VM backups with other data protection mechanisms, including snapshots, replication, or both, as seen in Figure 3.

Figure 3. Mechanisms Used to Protect VMware VMs in Addition to Virtual Machine Backups



Source: Enterprise Strategy Group, 2017

This is not a slight against VM backups but instead a recognition that to achieve the level of IT resiliency that business unit leaders expect, storage-centric (e.g., snapshots/replication) and workload-centric (backups) activities are complementary and necessary.

The Answer for VMware Protection Comes from Dell Technologies, Too

For many enterprises embracing software-defined data centers (SDDCs) that are powered by VMware, the answer to these data protection challenges comes from VMware's "sibling" organization within Dell Technologies: Dell EMC. The Dell EMC Data Protection offerings include a variety of data center-centric data protection tools, with the most noteworthy being:

- **Data Domain**, whose name is still somewhat synonymous with data deduplication in storage systems and which now offers physical, virtual, and cloud-hosted variations of its protection storage system.
- **Networker** and **Avamar**, whose complementary data protection software solutions each address aspects of an enterprise data protection strategy and which are most often consumed as part of one of a few Dell EMC DP Suites.

At Dell EMC World 2017, Dell EMC also announced the Integrated Data Protection Appliance (IDPA) as a converged solution that combined these and other DP Suite components, with the promise of accelerated time to value and ease of management. One of the Dell EMC DP Suites is the Data Protection Suite for VMware, which includes:

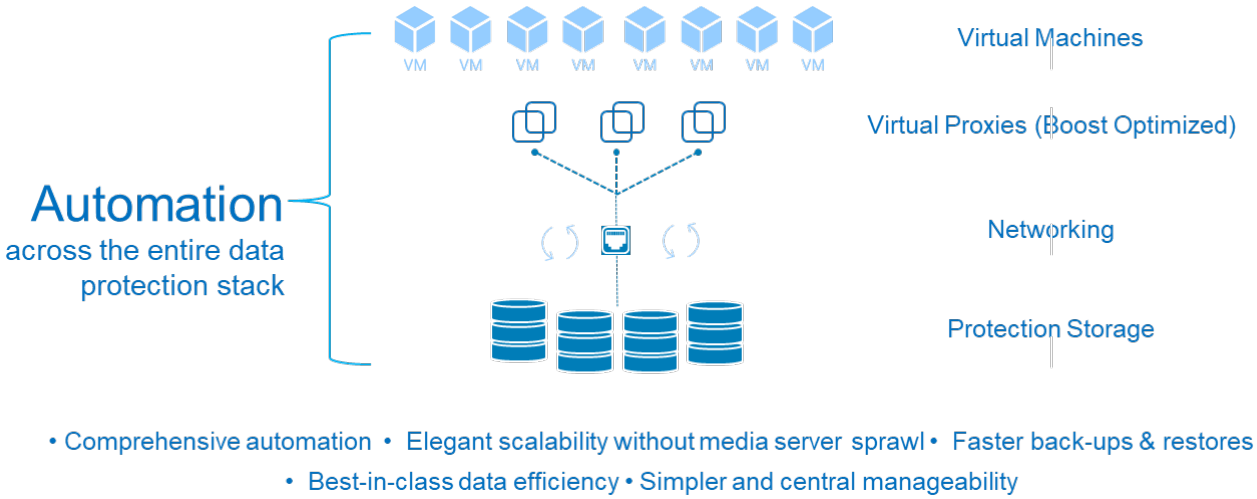
- **Dell EMC Avamar Virtual Edition** – a virtualized version of the Avamar appliance.
- **Dell EMC Data Protection Advisor** – for analyzing environment status and monitoring the solution outcomes.
- **Dell EMC RecoverPoint for Virtual Machines** – a VMware datastore, storage-centric continuous data replication and failover solution for VMware hosts.
- **Dell EMC Data Protection Search** – for fast, scalable search and analysis of backup files

Innovations within each of the Dell EMC offerings, as well as the suites and combined solutions, continue to evolve.

What's New with Dell EMC Data Protection for VMware

Announced at VMworld US 2017, Dell EMC is again raising the bar on comprehensive recoverability for VMware environments, including those running mission-critical applications within their virtualized infrastructure.

Figure 4. Dell EMC Data Protection Architecture



Source: Dell EMC, 2017

According to Dell EMC, the solution is purpose built for modern SDDCs, many of which have struggled with adequate protection and recovery of VMs at enterprise-scale. While most VM backup solutions automate VM backup policies when a new VM is spun up, they often entail manual processes for setting up proxies and media servers and configuring the movement of data from the VMs to backup storage, and require complex networking and additional hardware as the number of VMs goes up. All of which results in increased management overhead and costs and reduced performance, especially as the number of VMs goes up. Dell EMC's data protection architecture delivers automation throughout the entire VMware protection stack—from VM policies to setting up and configuring virtual proxies to directing the data to backup storage. This enables Dell EMC to increase agility and reduce complexity as a VM environment grows to enterprise levels without any degradation in performance. The Dell EMC approach to modern data protection boasts the following outcomes:

- Up to 72x deduplication rate for VMware.
- Less than five minutes to deploy and configure a proxy.
- Up to 98% reduction in network usage.
- Up to 50% faster backups and 20x faster recovery (faster recovery with flash-enabled Data Domain and IDPA).

VMware-centric Announcements by Dell EMC

Along with announcing their newest data protection architecture for addressing the needs of VMware enterprises, Dell EMC made the following VMware-centric announcements to highlight its ability to protect SDDCs as they evolve and transition to multi-cloud (private and public) environments:

Dell EMC's Data Protection Suite for Applications gained significant enhancements designed for those enterprises that may have been hesitant to virtualize their most critical workloads until now. For those organizations, the criticality of the applications combined with the already established data protection processes for those high-transaction, high-value processes has been one rationale for keeping those applications running on physical platforms. But it is important to note that for many, the protection solution of choice of those mission-critical physical servers and storage has been Dell EMC. As

such, it should not be a surprise for Dell EMC to have announced comparable protection capabilities for those mission-critical applications running within virtual machines.

While most VM backup solutions rely on VMware's APIs for Data Protection (VADP), Dell EMC is utilizing an aspect of its RecoverPoint for Virtual Machines (RP4VM) architecture of storage-powered replication at the VMware datastore level—directly from the VMware hosts' datastores to Dell EMC Data Domain protection storage systems ("hypervisor-direct" backup). In doing so, Dell EMC is able to gain VM-consistent protection at storage speeds, which purportedly yields 5x or better protection performance than before, thus enabling protection of environments that VADP-enabled backups can't address.

Again, part of the enhancement comes from speed gains that are achieved by decoupling the data stream and management processes:

- By optimizing the data path that backup streams take, Dell EMC is boasting 5x faster protection of data.
- The management tasks are then presented for self-service by IT operations and database admins (DBAs) via their native application management user interfaces.

As stated in various ESG briefs, the future of data protection is almost assuredly for data streams to go directly from production to protection storage, without being processed or otherwise transformed by legacy backup mechanisms. While job scheduling/monitoring as well as indexing and catalog access should come from the "backup server," the volume of data in modern environments, as well as the requirements for data reuse and agile recovery, will continue to preclude archaic approaches to transform backup data streams as part of the process. The RP4VM data path, similar to the Dell EMC ProtectPoint offerings, provides a "backup-less backup" as a testament to this evolution.

Protection for VMware Cloud on Amazon Web Services (AWS) was also announced. Cloud services will assuredly be part of almost every IT strategy moving forward. Dell EMC already offers the utilization of cloud storage as part of a data protection strategy (one-liner on CloudBoost and CloudTier). As organizations move production workloads to cloud-hosted VMs, Dell EMC protection continues.

The Bigger Truth

For over a decade, EMC (now Dell EMC) has been a dominant force in protecting the data center. Today's data center continues to evolve, not so much as a building, but as an ecosystem of underlying infrastructure that facilitates IT services. For the foreseeable future, the underpinning of the modern on-premises data center is server virtualization, with VMware's offerings being the first in use and still most prevalent. As such, Dell EMC has been continuing its own evolution to retain its leadership position as a data protection leader for the next decade with equal or more presence.

To meet the scale and criticality of highly virtualized enterprise environments, Dell EMC has made several announcements that are intended to deliver faster protection speeds in response to heightened expectations, with the result being new capabilities in protecting VMware workloads with enhancements made to its DP Suite for Applications. In addition, as virtualization creates abstraction over the "metal" servers and storage below, it is only logical that such virtualization would be enabled on "non-metal" (i.e., cloud providers') infrastructure. Thus, in response, Dell EMC has announced data protection capabilities for those virtualized servers running on AWS. The innovations continue.

The challenges described earlier show that many organizations continue to struggle with fundamental recoverability scenarios, as well as dealing with legacy backup solutions that are not purpose built for highly virtualized environments. Therefore, regardless of how virtualized your on-premises infrastructure is or your hosted services may be, the journey

toward better protection and recovery has to start by seeking innovation in data protection that is designed with virtualization and scale in mind. One company that is committed to demonstrating that innovation leadership is Dell EMC.

Enterprise Strategy Group is an IT analyst, research, validation, and strategy firm that provides market intelligence and actionable insight to the global IT community.