DCIG

DCIG *Solution Profile*

Midsize Enterprise VMware vSphere Backup Solutions

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MIDSIZE ENTERPRISE 2022–23 DCIG TOP 5 VMWARE vSPHERE BACKUP

SOLUTION

Arcserve UDP

COMPANY

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DISTINGUISHING VMWARE VSPHERE BACKUP FEATURES OF ARCSERVE UDP

- Combined cybersecurity and data protection solutions
- Support for multiple immutable cloud storage offerings
- Offers two instant recovery options for VMs

DISTINGUISHING VMWARE VSPHERE BACKUP FEATURES OF MIDSIZE ENTERPRISE SOLUTIONS

- Optimized for the backup and recovery of vSphere environments with up to 10,000 VMs
- Support leading guest OSes
- Integrate with and create application-consistent backups for leading Microsoft applications
- Support for block, file, and cloud storage backup media targets
- Provide multiple restore options for VM file data and images
- Email, phone, and web chat support

BACKUP SOLUTION FEATURES EVALUATED

- Backup administration
- Backup capabilities
- Configuration, licensing, and pricing
- Recovery and restore
- Service and support

VMware vSphere Leads in Enterprise Server Virtualization

Analyst market reports that track server virtualization software indicate it will continue to grow for the foreseeable future.[1] These reports also find VMware vSphere maintains its lead as the server virtualization platform midsize enterprises most use.[2]

Server virtualization in general and VMware vSphere specifically have transformed how enterprises manage their physical infrastructure. Used to host multiple applications on a single physical machine, vSphere simultaneously lowers costs while increasing operational efficiency.

VMware also makes multiple tools available to complement vSphere to assist large enterprises in deploying and managing it. For example:

- VMware's vRealize Suite visualizes virtual infrastructures to create and simplify virtual workflows within enterprises.
- VMware High Availability and Fault Tolerance help enterprises create and maintain virtual data centers with uninterrupted 24x7x365 availability.

These tools and others from VMware position large enterprises to create stable, high performing virtual infrastructures. However, they must still protect the virtual machine (VM) applications, data, and workloads hosted on VMware vSphere. This necessitates they acquire backup software specifically tuned for this task.

Backing up and Recovering VMware vSphere VMs

Midsize enterprise VMware vSphere backup solutions capitalize on specific features VMware offers to back up and recover VMs. These include VMware vCenter integration and leveraging its vSphere Storage APIs—Data Protection (VADP) and Storage vMotion features, among others. Their use of these features typically appears in the following three ways:

- **Backup and recovery management within VMware vCenter.** 75 percent of midsize enterprise VMware vSphere backup solutions directly integrate with VMware vCenter. Through this integration, administrators may manage backup within the vCenter console without separately logging into the backup software. Some backup solutions make all their functionality available through vCenter. Others offer just a subset, such as the ability to schedule and view backup jobs and perform recoveries.

- **Non-disruptive VM backups.** 69 percent of midsize enterprise vSphere backup offerings leverage VMware vSphere VADP feature to perform agentless VM backups. This feature minimizes the need to put a backup agent on all VMs. Using VADP, the backup software tracks changed blocks in each VM. It then only backs up the blocks that have changed since the last backup. This facilitates the ability to perform non-disruptive backups and to back up more frequently since backups incur less overhead.

- **Instant VM restores.** A VM or VMs may go down due to user error or perhaps a ransomware attack. In those circumstances, enterprises need to recover the VM quickly. To accelerate recoveries, 88 percent of these solutions offer an instant recovery option.

While implementation nuances exist between backup solutions, most initiate the VM recovery while it still resides on backup storage. This permits the VM to resume production operations, though possibly with degraded performance. Once restarted, the backup solution may use vMotion or some other technique to copy the VM's data back onto production storage. This data restoration occurs in the background as the VM continues to run.

Distinguishing Features of Midsize Enterprise VMware vSphere Backup Solutions

DCIG identified over 30 solutions suitable for protecting applications, data, and workloads on VMware vSphere. Of these, sixteen met DCIG's definition of a midsize enterprise VMware vSphere backup

1. https://www.idc.com/getdoc.jsp?containerId=prUS47921221; https://www.marketresearchfuture.com/reports/server-virtualization-market-3981. Referenced 9/27/2021.
2. https://www.smartprofile.io/analytics-papers/vmware-further-expands-market-share-server-virtualization/. Referenced 9/27/2021.

solution. Attributes that help distinguish midsize enterprise backup solutions from those that target small and large enterprises include:

1. ***Optimized for the backup and recovery of vSphere environments with up to 10,000 VMs.*** Some of the solutions covered can back up vSphere environments with more than 10,000 VMs. However, DCIG finds these solutions and their feature sets most appropriate for vSphere environments with 1,000 to 10,000 VMs.

2. ***Support leading guest operating systems (OSes).*** The breadth of guest OSes the backup software protects comes into play in midsize enterprises. All these solutions protect the primary OSes midsize enterprises likely possess. For instance, they protect all recent versions of Microsoft Windows Server (2012, 2016, & 2019). The majority (90+ percent) also support the Red Hat Enterprise and SUSE Linux OSes.

3. ***Integrate with and create application-consistent backups for leading Microsoft applications.*** 90+ percent of these solutions integrate with and can create application consistent backups of the following on-premises Microsoft applications: Active Directory, Exchange, and SQL Server.

4. ***Support for block, file, and cloud storage backup media targets.*** All these solutions support using local block and network-attached storage devices for storing backups. They also support using off-premises, S3-compliant cloud storage to store backup data. Of these solutions, 90 percent have gone the extra step to certify AWS S3 as a cloud storage target.

5. ***Provide multiple restore options for VM file data and images.*** Using almost any of these solutions, midsize enterprises may perform multiple types of restores. All support granular file and folder restores. They also all support VM image restores to the same vSphere host, a different vSphere host, or restoring the VM with a different name.

6. ***Email, phone, and web chat support.*** All these solutions afford midsize enterprises the option to contact them for support using email, phone, or web chat.

Midsize Enterprise VMware vSphere Backup Solution Profile

Arcserve Unified Data Protection (UDP)

Upon DCIG's completion of reviewing multiple, available midsize enterprise VMware vSphere backup solutions, DCIG ranked Arcserve UDP as a TOP 5 solution.

Arcserve UDP specifically targets meeting the virtual backup and recovery needs of midsize enterprises. Recognized as a TOP 5 solution for protecting VMware vSphere VMs in midsize enterprises, it clearly meets that stated goal.

However, Arcserve UDP continues to mature and evolve to meet the newest data protection needs of midsize enterprises. These needs now often surface in how well backup software prepares them to stop and recover from ransomware attacks. The following three Arcserve UDP features help differentiate it from other TOP 5 offerings.

- ***Combined cybersecurity and data protection solutions.*** Recognizing the threat that ransomware poses to midsize enterprises, Arcserve has partnered with Sophos. Arcserve now offers Sophos Intercept X Advanced for Server with its UDP software and Arcserve appliances. This approach provides midsize enterprises with a combined backup and threat detection solution to deter and recover from ransomware attacks.

- ***Support for multiple immutable cloud storage offerings.*** More strains of ransomware target backup data stores during an attack to encrypt or delete it to prevent recoveries. Storing backups in an immutable or unalterable data store preserves the data for recovery efforts.

  In that vein, Arcserve continues to support more immutable cloud storage offerings to address concerns about cost and location. It offers its own OneXafe immutable scale-out storage solution for midsize enterprises needing a private storage cloud.

  It also supports the Object Lock feature available from general-purpose (AWS, Azure Blob) and purpose-built (Wasabi) public cloud storage providers. These give midsize enterprises multiple ways in which to secure their backups based on their specific cost constraints and geographic preferences.

- ***Offers two instant recovery options for VMs.*** Due to ransomware's impact, midsize enterprises place a higher premium on a backup solution's instant recovery capabilities. Arcserve UDP offers two instant recovery options through its Instant Virtual Machine (IVM) and Virtual Standby (VSB) machine features.

  Using IVM, UDP creates a VM on a Hyper-V or vSphere hypervisor and reads the virtual disk data directly from its deduplicated backup repository. This eliminates the need for any pre-data conversions or downtime should an unplanned recovery needs to occur. It simultaneously provides instant access to applications and data.

  The virtual standby (VSB) option differs in that it pre-populates VM disks after every incremental backup. UDP converts a VM's recovery points into a virtual disk VM format usable by a hypervisor or on a cloud platform. VSB can recover a VM to a vSphere, Hyper-V, or Nutanix AHV hypervisor or to the AWS or Azure cloud. Once restored, the VSB VM may perform as well as a production VM. ∎