> Protecting Microsoft Hyper-V 3.0 Environments with Arcserve®

Adding value to your Hyper-V environment. Today, you face demanding service level agreements (SLAs) while having to address staffing and budget constraints. You seek ways to reduce cost and complexity and have to support an evolving IT infrastructure and business. Microsoft Hyper-V server virtualization has proven itself and now is being used by all size IT organizations and vertical industries.

With the adoption of Hyper-V, you can gain efficiency, flexibility and cost reduction, but you face increased risk as now you have multiple systems and applications residing on a single physical host machine. In addition, instead of multiple physical servers, each with its own storage, you likely now have a single storage array shared across multiple virtual host servers. In essence, you have created a single point-of-failure with the servers and storage on which your business depends. And while Microsoft offers failover clustering, hypervisor-based replication and storage array clustering, these don't protect against a site outage, so you might consider a comprehensive solution that supports backup, recovery, replication, high availability and disaster recovery. To address this risk, you must find innovative ways to protect your systems, applications and data from simple day-to-day outages and issues to more catastrophic events like power loss, fire, flood and other natural disasters. You need fast system and data recovery to reduce business disruptions and downtime that affects your top and bottom lines, employee productivity, customer service and even reputation.

The Solution: Arcserve

To achieve these goals and simplify system and data protection, you should use a comprehensive solution that supports both virtual and physical server environments, as well as multiple virtualization platforms. This solution must be flexible and configurable for easy adaptation to a variety of complex businesses, infrastructures and processes. It must be highly automated to improve operational efficiency and to reduce costs and the potential for human error. And they must be economical, generating initial and sustained return on investment (ROI) while reducing risk and increasing application availability.

Above and beyond all of this, your business needs a solution that can easily grow and adapt to dynamic business requirements. This means it will be a significant component of an effective IT management architecture that combines people, processes, services and technologies in ways that address critical business needs, today and tomorrow.

To meet a diverse IT infrastructure with a wide range of recovery time objectives (RTO) and recovery point objectives (RPO), Arcserve provides comprehensive protection, recovery and availability for both virtual and physical servers. It supports Hyper-V 3.0 and leverages Hyper-V APIs. You get VM-level image and file-based backup to disk and tape for flexibility and can protect the Hyper-V hypervisor itself. You get storage reduction technologies like block-level Infinite Incremental backup (I2 Technology™) and data deduplication, at no additional cost. You also get scheduled replication to copy backups offsite for disaster recovery and continuous replication to complement periodic backups to further reduce risk of data loss and improve RPO.

For fast system recovery, you get hardware-independent bare metal recovery (BMR), P2V and V2V virtual standby and true high availability with continuous data protection—all to help you address different IT environments and RTOs as part of your business continuity strategy.

Quick and Easy Physical to Virtual Migration

All organizations need a faster and easier way to migrate from physical to their Hyper-V virtual servers. With Arcserve you simply perform an image-based backup of the physical Windows or Linux server and then perform a Bare Metal Recovery (BMR) to the Hyper-V virtual machine/guest (VM). And Arcserve will even help you migrate VMware virtual servers to Hyper-V.

Simplifying Backup and Recovery

Arcserve's image-based disk-to-disk backup provides fast backup and recovery for Hyper-V. You get hypervisor and Windows and Linux VM protection and you can recover individual VMs, and even a single file or folder. For Windows VMs, Arcserve's block-level, Infinite Incremental (I2 Technology) helps speed backups to address backup window constraints and can significantly reduce storage costs and the volume of data transmitted across the network. It can also reduce the impact on production server resources and enable more frequent backups (up to every 15-minutes) to improve your RPO. Plus you can copy critical files offsite and to a public cloud like Amazon Web Services, Microsoft Windows Azure, Fujitsu Global Cloud for disaster recovery. Arcserve's image-based backup for Windows VMs also provides hardware-independent bare metal recovery (BMR) along with P2V and V2V Virtual Standby for near-instantaneous system, application and data recovery. And Arcserve's image-based backup also protects Linux VMs with near-agentless full and block-level incremental backup with granular file and folder recovery. It includes built-in compression to help reduce storage requirements and cost, encryption for added security and hardware-independent Bare Metal Recovery (BMR) for fast system recovery.

If you require direct disk-to-tape backup and recovery, Arcserve also offers file-based backup to tape. For Hyper-V, Arcserve provides full image backup of VMs, with subsequent VM-level restore. For VMs with a Windows Guest OS, Arcserve also supports full image backup and subsequent file-level incremental backup, with VM or file-level recovery, as well as simply supporting file-level backup, also with file-level recovery. The Arcserve Agent for Virtual Machines resides on the protected host and, except for the case of full image backup with no file-level restore, also in the VMs. The Arcserve Agent for Virtual Machines also protects VMs residing on CSVs and leverages Microsoft VSS for transaction-consistent snapshot backups. Alternatively, for Hyper-V, the Windows Microsoft Volume Shadow Copy Service agent can be used, instead of the Arcserve Agent for Virtual Machines, to protect the Hyper-V server itself.

In this case, there are no file-level restores. For transaction-consistent, granular recovery of application items, Arcserve offers a variety of application-specific agents, or the Windows Microsoft Volume Shadow Copy Service agent, which can be installed in the VM running the application. In that case, the VM is backed up as if it were a physical machine, without the use of the Arcserve Agent for Virtual Machines. Arcserve's file-based backup includes built-in data deduplication at no additional cost to help reduce storage requirements and cost. You get local backup and restore along with the ability to copy and archive critical information and migrate complete backups to private and public clouds including Amazon Web Services, Eucalyptus and Cloudian-based clouds for disaster recovery. You also get a comprehensive backup dashboard, SRM reporting and infrastructure visualization—all to help you more easily manage the environment and help you avoid unplanned outages. And you can even migrate disk-based backups to tape when using Arcserve's image and file-based backup together.

Replication for Offsite Protection and Better RPO

Once backups are completed, most IT organizations want to migrate a copy offsite for disaster recovery. Arcserve offers both scheduled and continuous replication for Hyper-V to meet different needs. To migrate backups offsite to a remote location, MSP facility or public cloud, you use scheduled replication once backup completes. And if you're looking to reduce data loss and meet more demanding recovery point objectives (RPOs), you use continuous data replication—whether to a local server or one stored at any remote location or in the cloud. You can replicate individual VMs as well as the Hyper-V hypervisor and all VMs together.

System Recovery

Today, performing basic backup and recovery alone is just not good enough to meet demanding service level agreements (SLAs) and disaster recovery strategies. IT organizations need fast system recovery to reduce the risk and impact of system outages that cause business downtime.

Arcserve offers hardware-independent Bare Metal Recovery (BMR) for fast system recovery but some IT organizations need even faster recovery to address business demands. To support this need, Arcserve provides two other system recovery solutions.

Virtual Standby

Arcserve provides Virtual Standby for fast system recovery. It automatically converts periodic image-based backup recovery points to VHD virtual disk format and pre-registers the recovery points (including incrementals) with the standby Hyper-V hypervisor. If the system fails for any reason, you can perform manual or automatic failover for fast recovery. Virtual Standby can be used at the VM level as well as at the host level to protect all VMs on a single host. Arcserve's virtual Standby feature is also a great way to migrate physical to virtual servers.

This solution supports both P2V and V2V failover scenarios and may be deployed locally as well as at a remote location or MSP facility using Arcserve's replication capability.

High Availability for Continuous System, Application and Data Availability

Some systems and applications require continuous availability and continuous data protection to meet business continuity goals so Arcserve offers high availability to protect Hyper-V environments. It provides Hypervisor and VM-level high availability and delivers full system protection that includes continuous replication of the entire VM (O/S, System State, application and data), system and application-level monitoring, automatic and push-button failover, hardware independent non-disruptive BMR failback, and automated, non-disruptive recovery testing. And you get continuous data replication with data rewind (for CDP) to help reduce risk of data loss and for better RPO. You can deploy this solution onsite, or at any remote location including a MSP facility or public cloud like Amazon Web Services (AWS/EC2). You can even design a failover strategy that includes multiple local and remote failover servers to address simple system outages along with man-made and natural disasters.

Flexible Licensing Options for Virtual Environments

Arcserve offers per-host licensing that allows you to protect an unlimited number of Virtual Machines (VMs) on a single host server with one, low-cost license. You can also choose from per-socket licensing and per-VM licensing—whichever best meets your specific needs. For environments with a large number of host servers, you can use Managed Capacity licensing that allows for an unlimited number of servers/VMs and is sold based on the volume of data being protected.

The Arcserve Advantage

- **Allows you to recover assets where, when and how you like:**

  That includes all your systems, applications and data. You can recover a single file, folder or email, an Exchange mailbox, a large server volume or an entire database like Exchange, SQL Server, SharePoint and Oracle.

- **Helps you build effective business continuity and disaster recovery strategies:**

  You can use your own facilities and resources, partner with a MSP or leverage a public cloud. Besides offering onsite protection and recovery, it allows you to quickly and easily migrate files, applications and even entire systems offsite and to a public cloud for disaster recovery. You can even run your systems and applications from the cloud for disaster recovery and business continuity.

- **Delivers true hybrid data protection:**

  That means fast onsite backup and restore for improved business continuity along with file copy, migration, replication, high availability and cloud support for offsite protection and disaster recovery.Arcserve protects BOTH virtual and physical servers in a single solution.

- **Helps you virtualize with confidence and protect your investment:**

  VMware. Hyper-V. XenServer. Red Hat EV. You're covered, whether you choose one or some combination of these for your server virtualization platform. By using server virtualization as part of your system and data protection strategy, you can speed recovery time and reduce costs.

Benefits

With Arcserve, you can:

- Simplify system, application and data protection, recovery and availability.

- Reduce cost, risk and complexity by having one solution with comprehensive protection and recovery capabilities for both physical and virtual servers.

- Reduce storage requirements by up to 95 percent.

- Enhance business continuity and disaster recovery by recovering systems, applications and data up to 80 percent faster than with traditional methods.

- Meet demanding compliance requirements.

- Save money by taking advantage of flexible, needs-based license management.

Summary

Whether you're protecting a handful of servers or thousands of virtual machines across your organization, Arcserve simplifies data protection and gives you control over your virtualized environments by delivering comprehensive protection, recovery and availability for your virtualized servers, applications and data.

Next Steps

To learn more about Arcserve, visit arcserve.com.
Contact your local reseller or visit arcserve.com/us/partners-info to locate an authorized partner in your area.
Try Arcserve for free at arcserve.com/software-trials.