

> Virtual Server System and Data Protection, Recovery and Availability

Although server virtualization helps reduce IT infrastructure costs, it also adds complexity to protecting the wide range of applications installed on the virtual machines and the ever-increasing volumes of data created on shared storage devices. System and application outages and loss of data translate to loss of revenue, lower levels of customer service and employee productivity, and even loss of reputation. Organizations need more than basic backup to provide business protection in today's fast-paced environment. They seek faster recovery times and more frequent recovery points to support their demanding service level agreements and disaster recovery strategies. And they seek high availability for critical file servers and applications.

The Solution

Arcserve® provides a proven foundation for data protection, business continuity and disaster recovery strategies. IT executives value how it helps reduce risk and cost while helping simplify the IT environment to improve productivity. Arcserve delivers modern data protection and enables the use of key technologies like Virtualization and Private/Public Cloud. And it helps you future-proof your investment as your IT strategy and environment evolves over time.

To meet demanding recovery time objectives (RTO) and recovery point objectives (RPO), Arcserve provides comprehensive protection, recovery and availability technology for both virtual and physical servers. You get both image-based backup to disk and file-level backup to tape to address different requirements. You can even migrate image backups to tape for archiving and long-term storage.

To simplify VM backup and recovery you can choose agentless, single-pass host-level backup or use VM-level protection for more control and granular recovery. You get built-in 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 system, application and data high availability with continuous data protection—all to help you address different IT environments and RTOs as part of your business continuity strategy. And it's also integrated with a number of public clouds if you don't have your own remote BC/DR site. With CA Arcserve, you can recover your systems, applications and data when, where and how you want.

Quick and Easy Physical to Virtual Migration

All organizations need a faster and easier way to migrate from physical to 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 a supported virtual server platform (VMware, Hyper-V, XenServer, and RHEV) and create a new virtual machine (VM). And Arcserve also offers an even faster way via the Full System Protection feature in its high availability component.

Simplifying Backup and Recovery

You can't simply approach virtual server backup the same way you do with physical servers. Each virtual server host may have many virtual machines (VMs), each performing a different task and running different operating systems and applications. All of these VMs are vying for processing power from the host and also share common storage. And adopting different solutions for physical servers and virtual servers only adds cost and complexity.

Arcserve provides fast image-based disk-to-disk backup and recovery for VMware ESX/vSphere, Microsoft Hyper-V, Citrix XenServer and Red Hat EV. Arcserve 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. You get local backup with the ability to copy critical files offsite and to a public cloud like Amazon Web Services and Microsoft Windows Azure for disaster recovery. More detail may be found below under the Virtual Standby section and on page 7.

If you require direct backup to tape, Arcserve also offers file-based backup for VMware, Hyper-V and XenServer. For VMware and Hyper-V with Windows Guest OS's, Arcserve provides file-level backup with file-level recovery as well as full image backup of any VM, with VM-level restore. For VMware, no agent is required in the protected host. For transaction-consistent, granular recovery of application items, Arcserve offers a variety of application-specific agents which can be installed in the VMware, Hyper-V and XenServer VMs running the applications. In these cases, the VM is backed up as if it were a physical machine, without the use of the Agent for Virtual Machines. Arcserve file-based backup includes built-in data deduplication at no additional cost to help reduce storage requirements and TCO. You get the ability to copy and archive critical information and migrate complete backups to a remote site and public clouds including Amazon Web Services, Windows Azure, Eucalyptus, Fujitsu Global Cloud and Cloudian-based clouds. 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. More detail may be found on page 7.

And if you prefer disk-to-disk backup for speed but require tape support for long-term archiving or compliance, you get disk-to-disk-to-tape migration by using both Arcserve image and file-based backup components 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 VMware, Hyper-V and XenServer 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 a remote location or in the cloud.

System Protection and Recovery

Today, performing basic backup and recovery alone is just not good enough to meet demanding service level agreements (SLAs) and business continuity/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 and high availability to address business demands. To support this need, Arcserve provides two other system recovery technologies.

Virtual Standby for Fast System Recovery

Arcserve provides Virtual Standby for fast system recovery of Windows servers/VMs. It automatically converts Arcserve image-based backup recovery points to a virtual disk format and registers with the standby Virtual Server (VMware or Hyper-V) hypervisor. If the system fails for any reason, you can perform manual or automatic failover to any recovery point. Virtual Standby can be used at the VM level as well as at the host level to protect all VMs on a single host. 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 component as well.

High Availability for Continuous System, Application and Data Availability

Some systems and applications require near-continuous availability and continuous data protection to meet business continuity and RPO goals. Arcserve offers real-time, continuous replication and high availability to protect VMware, Hyper-V and XenServer environments. You get system and application-level monitoring, automatic and push-button failover push-button failback and automated, non-disruptive recovery testing. And you get 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. More details may be found on page 7.

Technical Details

Image-Based Backup:

Arcserve image-based backup is available for Windows and Linux servers/VMs. For VMware, Arcserve provides agentless single pass, host-based backup that protects all VMs on the host using a VM Proxy server. For Windows VMs, you can recover all VMs, individual VMs, and even a single file or folder. Non-Windows VMs are recovered in their entirety with no granular recovery. For granular application recovery like Microsoft Exchange emails or mailboxes, and Linux file-level recovery, you install Arcserve image-based backup in each VM. For Hyper-V, you can backup the hypervisor itself and you get VM-level backup with granular recovery leveraging Microsoft VSS for snapshot backups. In this case, the Arcserve image backup software is installed in each VM. And for XenServer and Red Hat EV, you get VM-level backup and granular recovery when the Arcserve image backup software is installed in each VM.

File-Based Backup:

For VMware and Hyper-V, Arcserve provides full image backup of VMs, with subsequent VM-level restore. For VMware or Hyper-V 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. For VMware, no agent is required in the protected host, however, a proxy server is employed, running the Agent for Virtual Machines. VMware Change Block Tracking is employed by the Arcserve Agent for Virtual Machines for full backups to only back up used blocks. For Hyper-V, 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. For Hyper-V, 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. When using VMware and Hyper-V, 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.

For Citrix XenServer, Arcserve offers a variety of OS specific agents, including Client Agent for Windows, UNIX and Linux Data Mover & application-specific agents, or the Windows Microsoft Volume Shadow Copy Service agent, which can be installed in the VM running the application. In this case, VMs are backed up as if they were physical machines, without the use of the Arcserve Agent for Virtual Machines.

Replication and High Availability:

For VMware, Arcserve provides VM-level replication and failover for high availability and can be used on the VMware vCenter Server itself to protect the VMware management system. The Arcserve replication and high availability software is installed on each protected VM. For Hyper-V, you get both hypervisor-level (protects the hypervisor and all VMs and is installed on the hypervisor) and VM-level replication and failover for high availability. And for Citrix XenServer, you get VM-level replication and failover for high availability. To speed and ease deployment and reduce TCO, Arcserve offers Full System Protection for Windows VMs as part of the high availability component. This component includes synchronization and continuous replication of the entire VM (O/S, System State, application and data) to an offline VM, typically located on a different hypervisor. Full System Protection also offers hardware-independent Bare Metal Recovery (BMR) to help restore the production VM after an outage. This is a non-disruptive process as end users continue to use the failover VM until the production VM is ready. Replication and High Availability may be deployed virtual-to-virtual, physical-to-virtual, physical-to-physical and virtual-to-physical using local, remote and cloud resources.

Licensing Options

For flexibility, you have the option of licensing all Arcserve components described above bundled together as Managed Capacity Licensing per terabyte of protected data (starting at 1TB) as well as Per-Socket (unlimited cores) Licensing. You can also license individual Arcserve components per host (unlimited VMs) and per VM and add to it as your needs and environment evolves. Arcserve is used by many managed services providers (MSPs) offering turn-key data protection and BC/DR managed services if you seek a SaaS solution.

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.