Protecting your Data in a New Generation Virtual and Physical Environment

Read this white paper to learn how you can easily and safely protect your data in a new generation virtual and physical IT environment, eliminate single point of failure, and the need for multiple backup solutions.
Introduction

Virtualization is rapidly becoming the norm in small to medium-size IT environments with solutions like VMware vSphere®, Microsoft® Hyper-V®, Citrix® XenServer®, Red Hat® Enterprise Virtualization, Linux KVM, and Oracle® VM Server.

According to the Acronis / IDC Disaster Recovery Survey dated May 2014, 61 percent of SMBs use virtual technologies, 79 percent use physical servers, and 48 percent of the respondents have a new generation environment consisting of both virtual and physical servers. When an organization has an IT environment consisting of both virtual and physical servers, we call this a hybrid environment.

In any environment, your data needs protection from loss and disasters whether you have a physical, virtual, or hybrid IT environment. However, data protection is different for physical and virtual environments.

Because of the differences in infrastructure, operation, and management between virtual and physical environments, each environment requires a different technology and approach to protect data. SMB organizations, in particular, have many challenges when trying to protect data in their hybrid environment because most of the data protection products on the market are not complete, easy to use, or affordable.

There are several kinds of data protection products on the market today. Some vendors offer a one-size-fits-all traditional platform, which provides a smart backup server, cell, or core that performs and manages full unified data protection for the entire environment, whether physical, virtual, or both. Other vendors offer separate products for backup and recovery; that is, their customers purchase a backup tool for each of their different data types, operating system platforms, and applications.

Finally and importantly, Acronis offers an integrated suite of products that provides unified control, management, and reporting for their entire environment regardless of the size of the organization, the number of data types, the number and types of operating system platforms and applications.

This use case describes the challenges that SMB organizations with hybrid IT environments face and presents use cases to demonstrate how the Acronis AnyData Engine protects the data of two organizations with different IT infrastructures.
Small Business Use Case

Protecting a Physical Active Directory DC and Virtual Machines Running Microsoft Exchange

In this example, an organization has a hybrid IT environment that includes:

- Two physical servers with an Active Directory® domain controller; the physical servers are used to ensure end user availability and operations of the VMware® vCenter™, even when the ESX(i) hypervisor is not operational
- Two virtual hosts running VMware vSphere Essentials
- Microsoft Exchange on two virtual machines located on different hosts with DAG configuration of the database
- Additional VMs for other production workloads

This type of infrastructure is quite common for smaller organizations and it has a sufficient level of high availability without the high costs of implementation and maintenance.
Many companies, both large and small, use a set of separate backup tools that are designed for backing up a single environment. The challenge with this approach is that each backup product supports one specific environment only. This means that this company would need anywhere between two to five different backup products, which creates a multitude of problems because it multiplies training, management, installation, monitoring, and reporting activities. In addition, the organization will need to hire more IT administrators as the number of products and technical expertise requirements increase. Like most small organizations, this company cannot afford this.

Instead, this organization chose the Acronis Backup Advanced suite of products as their single backup solution. Powered by the Acronis AnyData Engine, Acronis Backup Advanced protects everything in this environment, from the physical servers and Active Directory domain controllers, to the virtual servers, Exchange, and all other workloads. Each component is optimized for a specific workload but also seamlessly blends into a total solution.

With Acronis Backup Advanced, the system administrator uses one console to install and configure all Acronis products and can back up the machines in the environment to the centralized NAS backup storage if required.

**No extra hardware is required. In addition, the system administrator can:**

- Manage all physical and virtual machines locally or remotely with one consistent user interface, the Acronis Management Server (AMS), which minimizes administrator training.
- Install the AMS on any Windows Machine; it is lightweight and requires minimal resources.
- Use the AMS to schedule backups to one or more machines, review status updates, generate reports, and receive alerts all from the single console.
- Use Acronis Backup Advanced for Windows Server and Acronis Backup Advanced for Active Directory to back up the physical servers. Each backup has its own schedule and each runs independently while the AMS manages and reports the status of both.
- Use Acronis Backup Advanced for VMware to back up the virtual servers without agents, using a light virtual appliance that will interact with VMware vSphere and back up VMs from the hypervisor level.
- Install Acronis Backup Advanced for Exchange to back up the Exchange database and selected mailboxes, and recover individual emails or folders through a searchable catalog.
This medium-sized organization runs all key operations using a specialized ERP system, running on a Windows server, which interacts with the hardware sensors on their factory floor.

The ERP infrastructure is not virtualized. The IT infrastructure includes:

- A VMware vSphere virtualized infrastructure to support their remaining production systems
- Microsoft Active Directory, which is running on virtual domain controllers
- Microsoft Exchange for email and Microsoft SharePoint® for collaboration
- A copy of the physical infrastructure on Microsoft Hyper-V for ERP testing purposes
In many cases, mid-sized organizations implement enterprise-level traditional data protection platforms. While traditional platform vendors claim to protect hybrid environments with one solution, there are several problems with this approach particularly for SMB organizations.

First, a traditional platform can become a single point of failure because you have one central server that backs up multiple types of operating systems, hypervisors, applications, files, and so on. When this server fails, all backup operations are down. In a disaster recovery situation, you must also install and configure the backup server first before restoring the production workloads. This increases the time it takes to recover from a disaster. In addition, a traditional platform is not the best of breed for backing up any individual component or workload because it tries to be all things to all people.

A traditional data protection platform is typically too expensive for most SMB organizations. For example, there are significant upfront costs to procure a traditional platform including the license, dedicated hardware, and the networking components to support the central core. Maintenance costs can also be high but the hidden costs can be the most significant:

- The time a system administrator spends managing a complex centralized core, including the hardware and network
- The training and time to study and certify
- The increased costs of qualified trained IT staff to manage the backup
- The costs of lost production due to prolonged downtimes caused by the complexity of a traditional platform, especially in a disaster recovery scenario

The Acronis Backup Advanced suite of products offers total protection for this company. The system administrator uses only one interface, can see all the machines, and has the ability to apply global, group, or individual policies.

As with the previous use case, no extra hardware is required. In addition, the system administrator can:

- Install the Acronis Management Server (AMS) on any Windows machine.
- Manage all physical and virtual machines locally or remotely with the AMS; assign backup plans to one or more machines, review status updates, generate reports, and receive alerts – all from a single console.
- Use Acronis Backup Advanced for Windows Server to back up the physical ERP servers at the disk level to get a complete copy of everything.
- Use Acronis Backup Advanced for VMware to back up the rest of the production infrastructure without the need for an agent in the VMs.
- Use Acronis Backup Advanced for Hyper-V to backup Hyper-V VMs and hosts, offering complete protection for the test environment.

As the organization scales their environment and operations, Acronis Backup Advanced will scale with it.
Today, your IT infrastructure is more complex with the mixture of physical and virtual machines. Yet your organization must minimize costs and improve both IT and user productivity.

Therefore, the question remains. How do you safely back up your entire environment without affecting your business operations and cost-effectively protect 100 percent of your data?

Developed for SMB organizations that have hybrid IT environments, Acronis' new generation technology simplifies backup, disaster recovery, and secure access of your critical data - reducing data loss, IT management time, and total cost of ownership. Leveraging the power of the Acronis AnyData Engine, the Acronis Backup Advanced suite of products protects hybrid environments with a unified interface, unified policies, and centralized management, monitoring and reporting; eliminating single point of failure and the need for multiple, disjointed, separate products.

Fueled by over 100 patents, the Acronis AnyData Engine provides any-to-any protection: it protects any data, in any environment, across all locations.

Disk-image technology captures and stores all data in a universal backup format so you can capture any workload data, store it on any storage device, recover it to any platform, hypervisor, or operating system.

You can safely store your data in up to five different locations – disk, tape or the cloud – including Acronis Cloud, providing the hybrid protection you need in the event of a disaster. You can recover files, folders, applications, operating systems or your entire system to any location in record time. You can also recover your entire physical and hypervisor environments to bare metal, including host machines.

The Acronis AnyData Engine completely solves the complexity and cost issues associated with older traditional platforms and the combination of separate backup products because it is:

- **Efficient:** A small application footprint on your production servers minimizes the overhead needed for backup.
- **Affordable:** Efficient use of the physical infrastructure minimizes your hardware investment.
- **Robust:** Integration with hypervisors ensures efficient use of host resources when backing up virtual machines.
- **Complete:** Protect both physical and virtual environments and recover to bare metal, including host machines, providing 100 percent data protection.
- **Easy to use:** A unified interface, the Acronis Management Server (AMS), provides a consistent look and feel even if it involves different operating systems or hypervisors.
- **Scalable:** Add on workloads as your environment evolves.
- **Flexible:** Acronis Universal Restore ensures that your workloads are completely portable; you can back up a physical server and restore it to a VM (P2V), transfer workloads between hypervisors (V2V) and de-virtualize machines (V2P).
Acronis Backup Advanced is an integrated suite of products that unleashes the full power of the Acronis AnyData Engine. Providing unified control, management, and reporting, it simplifies backup and protection of hybrid physical & virtual environments for multi-system small to medium business environments. The suite includes local and cloud backup and recovery for virtual and physical Windows / Linux environments; VMware, Microsoft, Citrix, Red Hat, Linux KVM, and Oracle hypervisors; and Microsoft Exchange, SQL Server, SharePoint and Active Directory.

**With the Acronis Backup Advanced suite of products, you can:**

- Backup your physical servers at the disk level to ensure complete protection.
- Protect your VMware and Hyper-V virtual machines (VMs) without the need to install agents on each VM.
- Backup physical RDMs, pass-through drives, fault tolerant, guest-level iSCSI or free ESXi by installing and using the agent inside the VM.
- Protect XenServer, RHEV, KVM, and Oracle VMs.
- Protect the hypervisor hosts.
- Restore backups of your VM to the same or different hypervisor, or back to physical machines.
Top 5 Reasons to Choose Acronis Backup for Hybrid Environments

1. **Complete:** protect your physical and virtual servers with one solution.

2. **Safe:** eliminate single point of failure.

3. **Affordable:** less expensive than traditional, one-size-fits-all platforms and multiple dissimilar products.

4. **Any-to-any recovery:** supports P2P, P2V, V2V, and V2P recovery and migrations.

5. **Hybrid protection:** Maximizes your recovery options by copying backups to multiple local and cloud locations, including Acronis Cloud.
About Acronis

Acronis sets the standard for new generation data protection through its backup, disaster recovery, and secure access solutions. Powered by the AnyData Engine and set apart by its image technology, Acronis delivers easy, complete and safe backups of all files, applications and OS across any environment—virtual, physical, cloud and mobile.

Founded in 2002, Acronis protects the data of over 5 million consumers and 300,000 businesses in over 130 countries. With its more than 100 patents, Acronis products were named best product of the year by Network Computing, TechTarget and IT Professional and cover a range of features, including migration, cloning and replication.

For additional information, please visit www.acronis.com. Follow Acronis on Twitter: http://twitter.com/acronis.