

VMware Backup and the Barracuda Backup Service

Many critical IT functions have migrated to virtual machine environments. Using virtual machines to host email servers, database servers, domain controllers and other functions can streamline IT deployments and management. While virtual machines have improved many aspects of server and application management, they have also introduced new challenges for backup and data protection. This is an overview of the recommended best practices for using the Barracuda Backup Service in conjunction with VMware to protect virtual machine environments.

VMware Recommendations

A best practice white paper from VMware titled Using VMware Infrastructure for Backup and Restore provides details on VMware capabilities for data protection. This guide provides technical descriptions of what resources should be backed up, the advantages and disadvantages of various backup techniques and instructions for restoring virtual machines. In summary, the three main backup options for VMware are:

1. Treating the Virtual Machines as Physical Machines

Advantages	Disadvantages
<ul style="list-style-type: none">• Consistent backup method across all servers, physical and virtual.• Ability to do file-level backup and restore of data.• Ability to backup live applications incrementally.	<ul style="list-style-type: none">• Backup is not encapsulated into a single file that can restore a whole virtual machine.

2. Treating Virtual Machines as a File on an ESX Server Host

Advantages	Disadvantages
<ul style="list-style-type: none">• Backup is encapsulated into a single file that can restore a whole virtual machine.	<ul style="list-style-type: none">• Does not provide ability to do file-level restores.• Not application aware, backups only file-system-consistent.

3. Consolidated Backup: Moving the Workload Off the Server

Advantages	Disadvantages
<ul style="list-style-type: none">• Removes workload of performing backups from the ESX server.• Option to use file-level backup software or export the full virtual machine to a file.	<ul style="list-style-type: none">• Restores of partial sets of files can be a two-step process.• Does not work with Windows VSS snapshot tools in some cases.

Barracuda Backup Service Recommendations

1. Use the Barracuda Backup Agent on Windows Virtual Machines

The Barracuda Backup Service includes backup software for Windows called the Barracuda Backup Agent. This agent provides the ability to perform crash-consistent full system backups of Windows Server 2003 & 2008 (standard, enterprise and SBS editions), Windows Storage Server 2003, Windows Vista, Windows XP and Windows 7. Each backup is incremental and fully deduplicated to provide a very efficient backup storage footprint. This agent also provides application aware backup support for Microsoft Exchange Server 2003, 2007 and 2010; Microsoft SQL Server 2005 and 2008; and protection of the Windows System State information.

Using the Barracuda Backup Agent to protect Virtual Machines running Windows is the best way to benefit from data deduplication technology in the Barracuda Backup Service. This will greatly facilitate the ability to keep backups transferred offsite for disaster protection.

2. Use a Combination of Backup Approaches

If you would like to realize the benefits of treating the Virtual Machines as a file for backup, it is recommended that you perform this type of VMware backup locally to an available NAS location. The Virtual Machine snapshot files are difficult to keep replicated offsite so combining this approach with the Barracuda Backup Agent running inside the Virtual Machine will provide the advantages of both approaches. For non-Windows systems, file-level backups of the Virtual Machines can be performed by the Barracuda Backup Server's NAS backup capabilities using a CIFS or SSHFS connection to the Virtual Machine.

The Virtual Machine files will provide easy recovery of the whole Virtual Machine and the Barracuda Backup Agent backups will enable easy file-level recovery and reliable offsite replication while minimizing the backup storage footprint.

About Barracuda Networks Inc.

Barracuda Networks Inc. combines premises-based gateways and software, virtual appliances, cloud services, and sophisticated remote support to deliver comprehensive content security, data protection and application delivery solutions. The company's expansive product portfolio includes offerings for protection against email, Web and IM threats as well as products that improve application delivery and network access, message archiving, backup and data protection.

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