



DocAve® 6 VM Backup & Restore

User Guide

Service Pack 5, Cumulative Update 1

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Table of Contents

What's New in this Guide	4
About DocAve VM Backup & Restore	5
Submitting Documentation Feedback to AvePoint	6
Before You Begin.....	7
AvePoint's Testing Policy and Environment Support.....	7
Supported Hardware.....	7
Supported Backup and Recovery	7
Configuration	8
Agents	8
VMWare Agent Installation	8
Hyper-V Agent Installation.....	8
Required Permissions	9
Required Permissions for Hyper-V VM	9
Required Permissions for ESX/ESXi or vCenter VM	9
Supported Operating System for Hyper-V Host Server	11
Supported ESXi Host Server Versions	11
Supported vCenter Host Server Versions	11
Health Analyzer.....	11
Getting Started.....	12
Launching VM Backup & Restore.....	12
Navigating DocAve	12
User Interface Overview	13
Configuring Host Profile.....	14
Configuring Devices and Setting Up Storage Policies	14
Performing a Backup.....	16
Overview of Backup Types.....	16
Using Wizard Mode.....	17
Backup Schedule	18
Advanced Predefined Scheme Settings	19

Using Form Mode.....	20
Unsupported Elements to Be Backed Up.....	21
Managing Plans.....	22
Configuring Run Now Interface.....	22
Performing a Restore	24
Restoring VM	24
Time-Based Restore	24
Object-Based Restore	26
Restoring Files.....	29
Appendix A – Accessing Hot Key Mode	32
Backup Tab.....	32
Restore Tab.....	32
Plan Manager Tab	33
VM Pop-Up Window	33
Notices and Copyright Information	34

What's New in this Guide

- Minor edits and cover page update for current release.

About DocAve VM Backup & Restore

DocAve VM Backup & Restore ensures resiliency of service in the event of a disaster and provides methods for recovering the entire VM backup data or select VM file backup data.

VM Backup & Restore offers full and incremental backup capabilities for VMs on the ESX/ESXi and vCenter host servers and full backup capability for VMs on the Hyper-V host servers. VM Backup & Restore also enables users to build backup plans and schedules that focus on frequent backup of high priority VMs, which improve backup operations and storage efficiency.

Submitting Documentation Feedback to AvePoint

AvePoint encourages customers to provide feedback regarding our product documentation. You can [Submit Your Feedback](#) on our website.

Before You Begin

Refer to the following sections for system and VM requirements that must be in place prior to installing and using VM Backup & Restore.

AvePoint's Testing Policy and Environment Support

Supported Hardware

AvePoint is committed to maintaining a hardware agnostic platform to ensure that DocAve operates on common Windows file sharing and virtualization platforms. To ensure that DocAve is hardware agnostic, AvePoint tests hardware that is intended to support SharePoint and DocAve infrastructure, storage targets, and hardware-based backup and recovery solutions, as supported by AvePoint's partnerships. AvePoint directly integrates with the following platforms: any Net Share, IBM Storwize Family, FTP, Amazon S3, AT&T Synaptic, Caringo Storage, Del DX Storage, EMC Centra, HDS Hitachi Content Platform, Rackspace Cloud Files, TSM, and Windows Azure Storage.

All other hardware platforms that support UNC addressable storage devices are supported.

***Note:** Most of the hardware partnerships referenced in this guide are intended to make use of advanced functionality (such as snapshot mirroring, BLOB snapshots, indexing, long-term storage, WORM storage, etc.), and are not indications that any changes to the product are required for basic support. In most cases, hardware can be supported with no change to the product.

Supported Backup and Recovery

DocAve supports BLOB backup storage according to the list of hardware platforms above. BLOB snapshot functionality, however, is currently only supported on OEM versions and NetApp hardware.

DocAve supports SQL content and Application database backups via the SharePoint Volume Shadow Copy Service (VSS) on all Windows and SQL server platforms listed above. DocAve also supports snapshot-based SharePoint VSS on all hardware listed above where the hardware partner has certified support with Microsoft.

DocAve supports application and configuration server backups for all the supported software environments listed above. DocAve 6 supports VM backup via Hyper-V/VMWare for the following operating systems: Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, and Microsoft Hyper-V Server 2012 R2.

Configuration

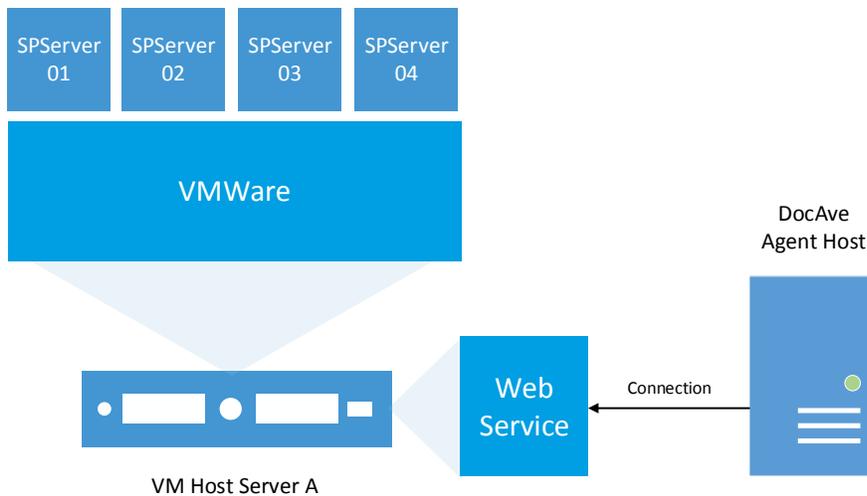
In order to use VM Backup & Restore, the DocAve 6 Service Pack 5 must be installed and configured properly.

Agents

DocAve Agents are responsible for running DocAve jobs and interacting with the VMs. To back up and restore the VM on different types of host servers, ensure that the DocAve Agents are properly installed as follows.

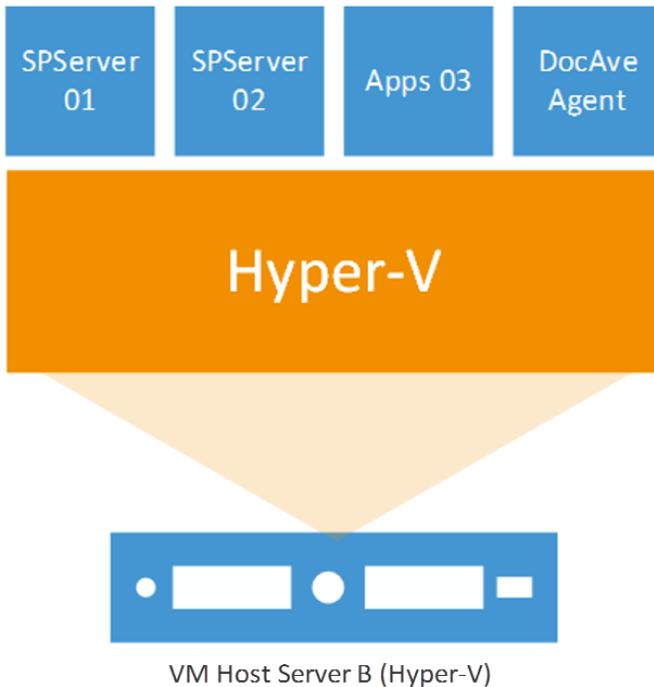
VMWare Agent Installation

For VMWare hosts, the DocAve agent must be installed in a separate server that can communicate with the VMWare through a Web service. AvePoint recommends that the DocAve agent is not installed on the server intended to be backed up in order to prevent an interruption of Agent services while the backup occurs.



Hyper-V Agent Installation

For Hyper-V hosts, the DocAve agent must be installed on the VM Host Server B as a local agent. And the DocAve Manager can be installed at anyone server, as long as the manager server can connect the agent server. And if you have other Hyper-V VM host server, the VM agent needs to be installed at the specific the Hyper-V VM host server.



For instructions on installing the DocAve Platform, DocAve Manager, and DocAve Agents, refer to the [DocAve 6 Installation Guide](#).

Required Permissions

Refer to the section below for the required permissions to use VM Backup and Restore.

Required Permissions for Hyper-V VM

To back up and restore the VMs on the Hyper-V host server, ensure the Agent account has the following permissions:

1. Local System Permission:
 - A member of the local **Administrators** group
2. Hyper-V VM Permission:
 - Full Control to the folders where the specific VMs are stored
 - Full Control to all of the VMs virtual hard disks

Required Permissions for ESX/ESXi or vCenter VM

To back up and restore the VMs on the ESX/ESXi or vCenter host server, the Agent account and the user in the applied host profile must have the following permissions:

1. Local System Permissions for Agent Account

- A member of the local **Administrators** group
2. ESX/ESXi or vCenter VMs Permission for the User in the Applied Host Profile
- Administrator role to the ESX/ESXi or vCenter VMs

***Note:** If the user does not have the Administrator role to the ESX/ESXi or vCenter VMs, ensure that this user is assigned by a role with at least the privileges in the following table enabled:

Privileges		
Datastore	Allocate space	
	Browse datastore	
	Low level file operations	
	Remove file	
Folder	Create folder	
Resource	Assign vApp to resource pool	
	Assign virtual machine to resource pool	
	Create resource pool	
vApp	Add virtual machine	
	Assign resource pool	
	Assign vApp	
	Create	
Network	Assign network	
Virtual machine	Configuration	
	Interaction	Answer question
		Configure CD media
		Configure floppy media
		Device connection
		Power On
	Power Off	
	Inventory	Create new
		Register
		Remove
		Unregister
	Snapshot management	Create snapshot
		Remove Snapshot
	Provisioning	Allow disk access
		Allow read-only disk access
Permission	Modify permissions	
	Modify role	
Global	DisableMethods	
	EnableMethods	
	License	

***Note:** If the user does not have the Administrator role to the ESX/ESXi or vCenter VMs, to restore the **Security** settings in the backed up these VMs, except the privileges above-mentioned, this users must have all of the privileges that are enabled to all of the users to be restored.

Supported Operating System for Hyper-V Host Server

VM Backup and Restore supports the following operating system editions for the Hyper-V host server:

- Windows Server 2008 R2
- Windows server 2012
- Windows Server 2012 R2
- Microsoft Hyper-V Server 2012 R2

***Note:** If the operating system of your Hyper-V host server is **Windows Server 2008 R2** or **Windows server 2012**, in order to ensure that the VMs on this host server keep functioning properly during the backup process, the following must be in place:

- The **Backup (volume snapshot)** service is offered to these Hyper-V VMs.
- The operating system for these Hyper-V VMs supports VSS snapshot.
- The **Hyper-V Volume Shadow Copy Requestor** service in these VMs is running during the backup process.

Supported ESXi Host Server Versions

VM Backup and Restore supports the following ESXi host server versions:

- VMware ESXi 5.0
- VMware ESXi 5.5

Supported vCenter Host Server Versions

VM Backup and Restore supports the following vCenter host server versions:

- VMware vCenter server 5.5

Health Analyzer

AvePoint recommends using Health Analyzer to check the prerequisites required to correctly use DocAve Platform Backup and Restore.

***Note:** Only the users in the DocAve **Administrators** group can use Health Analyzer.

***Note:** You can ignore the **Agent Account Cannot be SharePoint System Account** rule if you are not going to back up and restore SharePoint apps.

For more information about Health Analyzer, refer to the [DocAve 6 Installation Guide](#).

Getting Started

Refer to the sections below for important information on getting started with VM Backup & Restore.

Launching VM Backup & Restore

To launch VM Backup & Restore and access its functionality, complete the following steps:

1. Log in to DocAve. If you are already in the software, click the **DocAve** tab.
2. From the **DocAve** tab, click **Data Protection** to view the **Data Protection** modules.
3. Click **VM Backup & Restore** to launch this module.

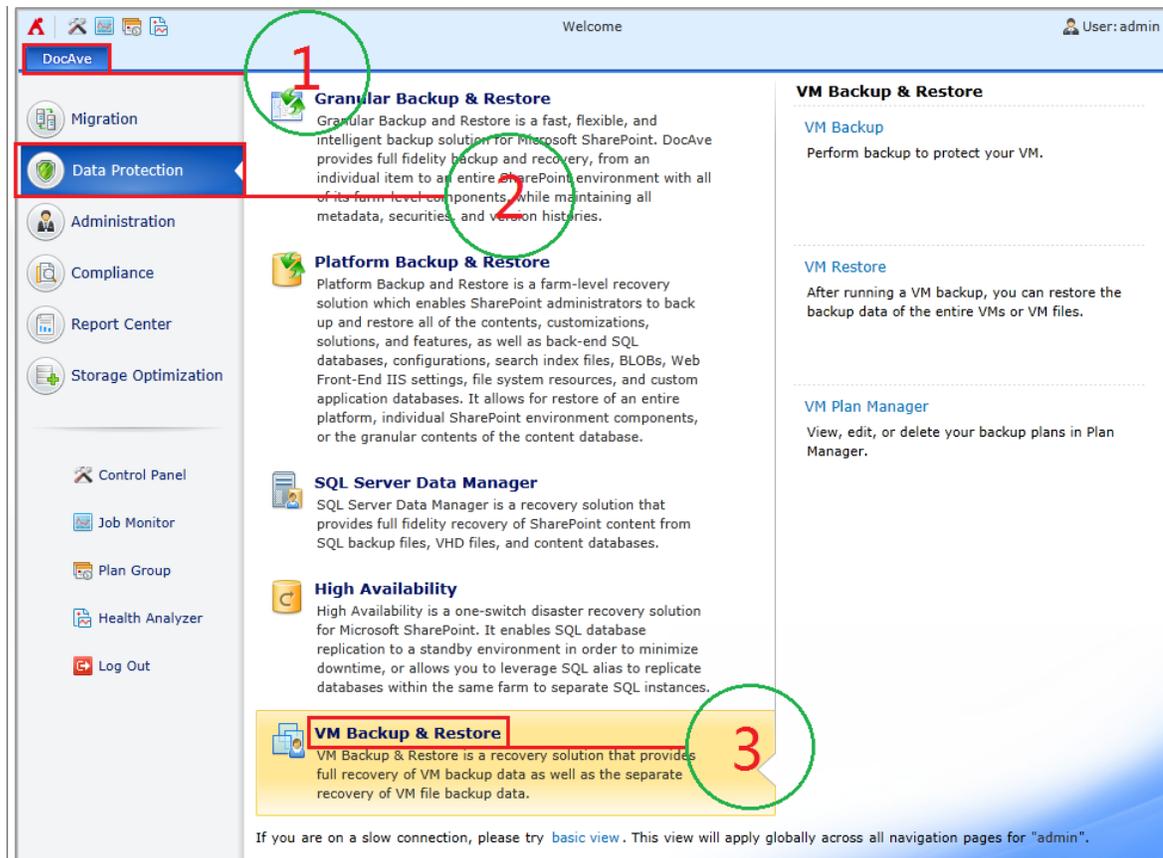


Figure 1: VM Backup & Restore user interface.

Navigating DocAve

DocAve mimics the look and feel of many Windows products, making for an intuitive and familiar working environment. While there are many windows, pop-up displays, and messages within DocAve products, they share similar features and are navigated in the same ways.

Below is a sample window in DocAve. It features a familiar, dynamic ribbon, and a searchable, content list view.

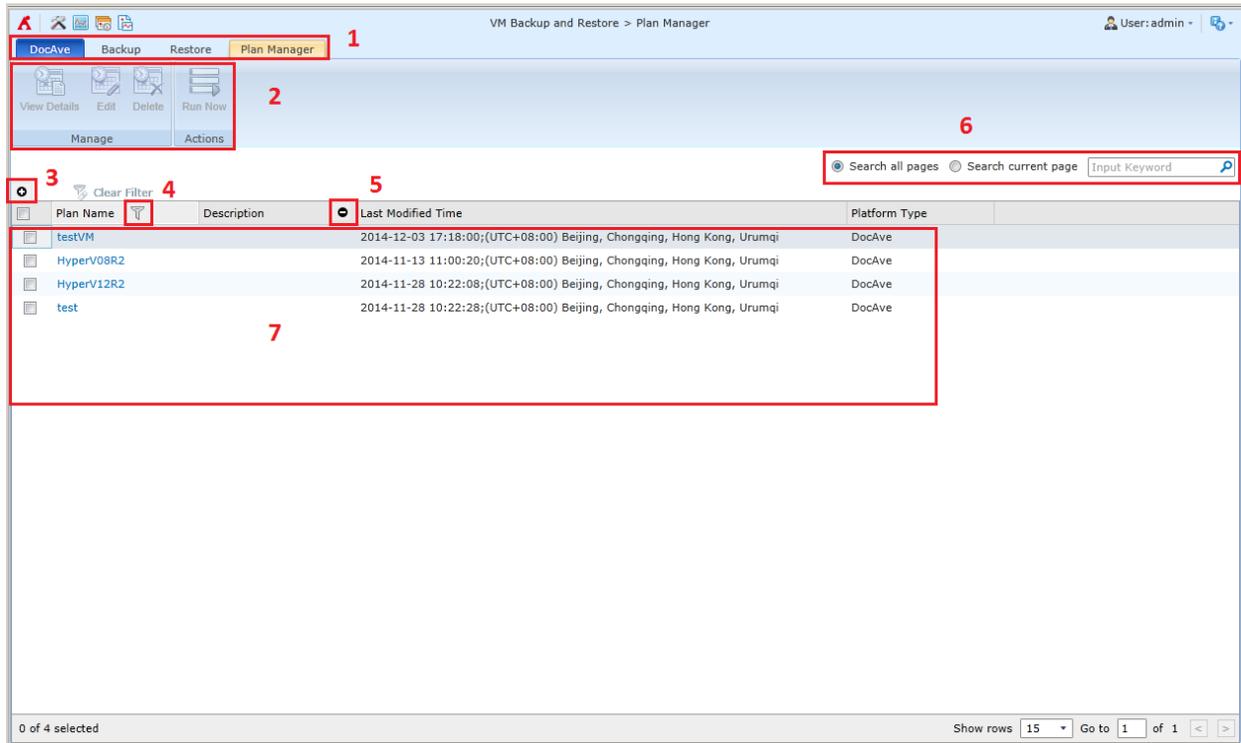


Figure 2: Navigating DocAve.

1. Ribbon Tabs— Allows users to navigate to the DocAve Welcome page and within the active module.
2. Ribbon Panes – Allows users to access the functionality of the active DocAve module.
3. Manage columns (⊕) – Allows users to manage which columns are displayed in the list. Click the manage columns (⊕) button, and then select the checkbox next to the column name in the drop-down list.
4. Hide the column (⊖) – Allows users to hide the selected column.
5. Filter the column (🔍) – Allows users to filter the information in the List View. Click the filter the column (🔍) button next to the column and then select the checkbox next to the column name.
6. **Search** – Allows users to search the List View pane for a keyword or phrase. You can select **Search all pages** or **Search current page** to define the search scope.
*Note: The search function is not case sensitive.
7. Management Pane – Displays the actionable content of the DocAve module.

User Interface Overview

The VM Backup & Restore interface launches with the **Analyze** tab active. This tab displays the dashboard and allows for quick access to a list of the VM Backup & Restore features.

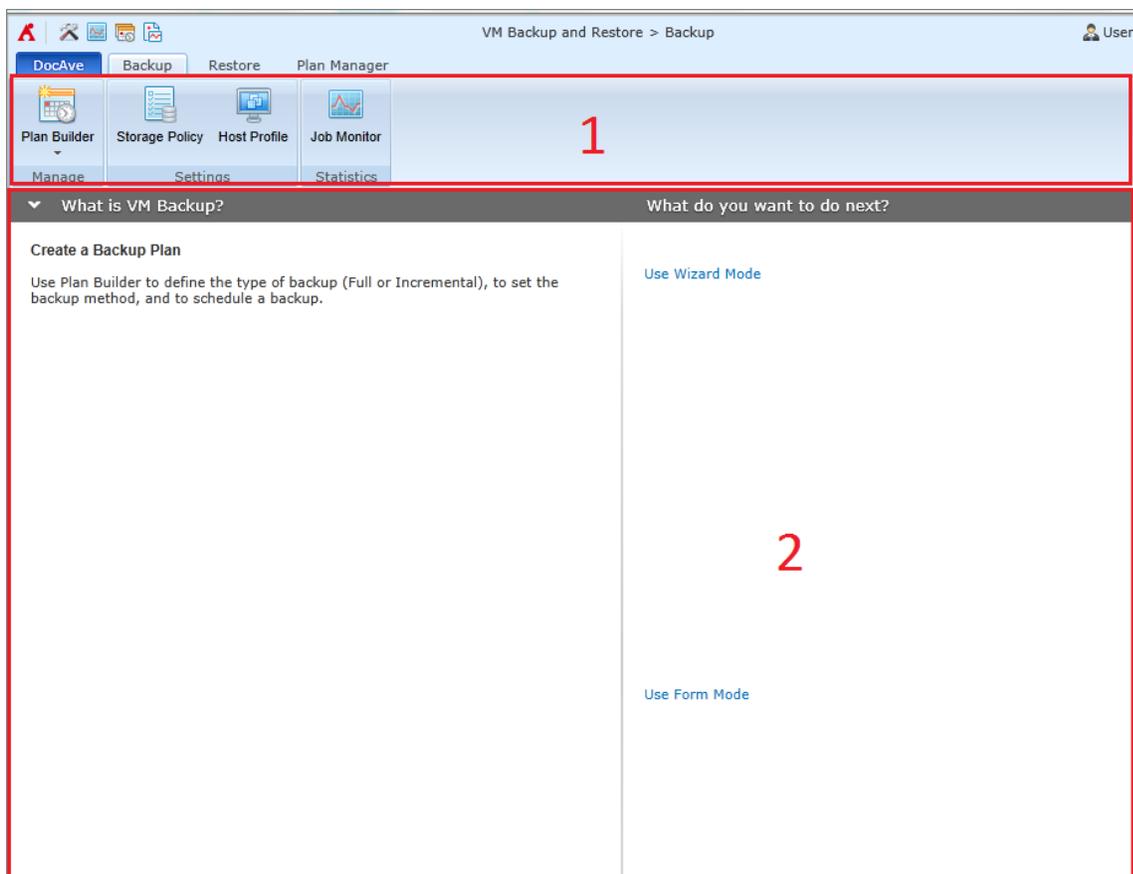


Figure 3: VM Backup & Restore user interface.

1. The **ribbon** shows the available actions for VM Backup & Restore Manager.
2. The **workspace** shows explanations for the content of VM Backup & Restore that are used during the configuration of actions performed in DocAve products.

Configuring Host Profile

The host profile provides the connection to the host server for backing up and restoring VM data managed by this host server. In order to perform a backup or restore job to the VMs managed by the EXS/EXSi, vCenter or Hyper-V host using VM Backup and Restore, you need to first configure one or more host profiles of the corresponding host type.

For instruction on configuring a host profile, refer to the [DocAve 6 Control Panel Reference Guide](#).

Configuring Devices and Setting Up Storage Policies

In order to perform a backup job using VM Backup & Restore, it is necessary to first configure one or more physical devices and then set up a storage policy.

When performing a backup job, VM Backup & Restore can write to Net Share or IBM Storwize Family.

***Note:** To perform successful VM Backup and VM Restore, the physical device cannot be created in the VMs you are about to back up and restore.

***Note:** VM Backup and Restore only supports the storage policies with a concurrent storage device configured.

In addition, DocAve has the ability to treat multiple storage devices as a single logical unit when saving backup data. This feature is especially useful for very large backup plans, because many small drives can be combined. A logical drive must be defined before creating a backup plan.

For instructions on defining devices and setting up storage policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

Performing a Backup

You can use the Plan Builder to create a plan for performing a VM backup. There are two methods you can select for Plan Builder to create a plan:

- [Using Wizard Mode](#)
- [Using Form Mode](#)

Overview of Backup Types

When configuring a backup plan, there are two backup types you can select to perform a backup job: **Full** and **Incremental**.

The **Full** option backs up all of the selected data each time a backup is performed. This option requires the most storage space because, depending upon the size of your VM server, each backup file can be large. Unlike incremental backup, all full backup files are independent of one another and do not have any dependencies on other back up data files, however, because each of the backups is comprehensive, full backup jobs take the longest time to complete.

The **Incremental** option backs up only the data that has been updated since the last backup, drastically reducing the size of the backup files created. Incremental backups also reduce execution time, allowing for shorter backup windows. It is important to note, however, that in order to recover all of the most recent VM data from an incremental backup, all of the backup files must be available. Each incremental backup file is an important piece of the whole VM server backup. If one of these files is not available, the full VM server backup cannot be restored.

For example, the following three cylinders represent three backups and they are performed in this order – Full Backup, Incremental Backup, Incremental Backup:

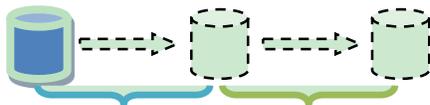


Figure 4: One Full backup followed by two Incremental backups.

1. The first Incremental Backup backs up the newly-added data in the blue period.
2. The second Incremental Backup backs up the newly-added data in the green period.

***Note:** The Hyper-V VMs does not support incremental backup. If you select the incremental backup, you can choose whether to perform a full backup for the Hyper-V VMs in the selected scope.

Using Wizard Mode

To configure a plan using Wizard Mode, complete the following steps:

***Note:** A red asterisk (*) marked next to a field in the DocAve GUI indicates a mandatory field.

1. **Plan Name** – Enter a **Plan Name** and an optional **Description**. Click **Next**. The **Add VMs** page appears.
2. **Add VMs** – Add VMs to the backup list for the backup plan. Click **Add**. In the pop-up **Add VMs to the Backup List** interface, configure the following settings:

- a. **Host Profile** – Select a host profile. The VMs managed by the host selected in the host profile will be loaded as the backup scope.
- b. **Agent** – Select an Agent for connecting to the host server in the selected host profile and executing the backup job.

***Note:** If the VM host type of the selected host profile is Hyper-V, the Agent selected for this host profile will be retrieved automatically. The **Select an Agent** field will be disabled.

- c. **VM Selection** – Selected one or more VMs in the loaded tree. Expand the loaded VM tree and then select the VMs you want to back up.

***Note:** After expanding the tree, use the **Search** text box and then click the magnifying glass () button to find specific VMs.

***Note:** For the loaded VMs that are powered on, the corresponding VM's statuses will be displayed next to the VMs. When the mouse is hovering over one of these VMs, the information about the VM operating system and memory will appear.

Click **Add** to add the selected VMs to the backup list and go back to the **Add VMs** interface. Click **Next** when you are finished. The **Settings** interface appears.

3. **Settings** – Configure the following settings:
 - **Storage Policy** – Select the storage policy for the backup data in the **Select a storage policy** drop-down list or create a new storage policy by clicking the **New Storage Policy** link in the **Select a storage policy** drop-down list.

***Note:** Only the storage policies with a concurrent storage device configured are supported and can be loaded in the **Select a storage policy** drop-down list.

A storage policy is used to configure a set of rules for storing backed up data. It also supports configuring the retention rule to prune the data backed up by VM Backup and Restore and delete or move the pruned backup data.

***Note:** The retention rule will not occur if **Differential backup** is configured as the retention trigger: **Differential backup** is not supported by VM Backup and Restore.

For more information on working with storage policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

- **Notification** – Select the e-mail notification profile for sending e-mails. For more information on working with notification policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

Click **Next** when you are finished. The **Schedule** interface appears.

4. **Schedule** – Select a scheduling option.
 - **No Schedule** – Select this option to make the job not run on a particular schedule.
 - **Configure the schedule myself** – Select this option to configure a customized schedule, and run the backup job by that schedule. Click **Add Schedule** to set up a schedule. The **Add Schedule** window appears. For more information about adding a schedule, refer to [Backup Schedule](#). After configuring the schedule for the backup job, click **Calendar View** to view the scheduled jobs by **Day**, **Week**, or **Month**. Multiple schedules can be added and displayed in the **Summary** table. Click the delete () button to delete a schedule.

Click **Next** after you are finished. The **Overview** interface appears.

5. **Overview** – Review and edit the plan selections. To make changes, click **Edit** to the right of the row. This links to the corresponding setting page, allowing you to edit the configuration.
6. On the lower-right section of the screen, or on the ribbon, click **Finish** to save the configuration of the plan without running it or **Finish and Run Now** to save the configuration and then run the saved plan immediately. The backup plan is now listed in Plan Manager.

Backup Schedule

Configure the following settings to add a new backup schedule.

1. **Options** – Select a backup type from the drop-down list. For more information, refer to the [Overview of Backup Types](#) section.
 - **Full Backup** – A full backup of the selected source.
 - **Incremental Backup** – A partial backup; backs up only the data that has been added since the last backup (whether it's full or incremental).

***Note:** For best results when conducting high frequency backups, it is recommended that you use incremental backups. Incremental backups save time and storage space by backing up only the differences between incremental backups or an incremental backup and a full backup, instead of backing up the entire source location.

***Note:** The Hyper-V VMs does not support incremental backup. If you select the incremental backup, you can choose whether to perform a full backup for the Hyper-V VMs in the selected scope.

2. **Backup Hyper-V VMs** – Choose whether to perform a full back for the Hyper-V VMs in the selected scope. Select **Yes** to perform a full backup on the Hyper-V VMs; select **No** to skip the backup of the Hyper-V VMs. This field only appears when the backup type you selected is **Incremental Backup**.
3. **Type** – Select the interval at which the backup occurs: **By hour**, **By day**, **By week**, or **By month**.
4. **Schedule Settings** – Set up the frequency for the scheduled backup job. If you select the type as **By hour**, **By week**, or **By month**, you will have the option to check the **Advanced** checkbox to configure more settings for the frequency. For more information, see the [Advanced Predefined Scheme Settings](#) section below.
5. **Range of Recurrence** – Choose one of the following options to configure when to start and stop running the recurring schedule:
 - **No end date** – The job is run on the schedule indefinitely.
 - **End after ... occurrence(s)** – The job stops running after the entered amount of occurrences.
 - **End by** – The job stops repeating on schedule on the date you select.

Advanced Predefined Scheme Settings

The following advanced settings are available for configuring a predefined scheme:

By Hour

- **Specify production time: From ... to ...** – Run the backup job on the selected production time.
- **Select time below** – Select the time you want to run the backup job. To add several run job times, click **Add**.

By Week

Run every ... weeks; On ... – Select which days of the week to run the plan on, and enter after how many weeks for it to recur.

By Month

- **On day ... of ...** – Select the day and the month to run the backup job. For example, set this option as **On day 3 of January**, and the backup is run on 3rd January.
- **Day ... of every ...month(s)** – Select the day and the month interval to run the backup job. For example, set this option as **Day 3 of every 2 months**, which means the backup job will run on the 3rd of this month, and on the 3rd of the month after next month, until the configured end date.

- **The of every ... month(s)** – Select the time and the interval for the backup job. For example, set this option as **The First Monday of every 2 months**, which means the backup job will run on the first Monday of this months and on the first Monday of the month after next month, until the configured end date.
- **The of ...** – Select the day and the month for the backup job. For example, set this option as **The First Monday of January**, and the backup is run on the first Monday of January.

Using Form Mode

Form Mode is intended for advanced users only. To configure a plan using Form Mode, complete the following steps:

***Note:** A red asterisk (*) marked next to a field in the DocAve GUI indicates a mandatory field.

1. **Plan Name** – Enter a **Plan Name** and optional **Description**.
2. **Add VMs to the Backup List** – Add VMs to the backup list for the backup plan. Click **Add** in the **Create a New Plan** interface, the **Add VMs to the Backup List** interface appears. Configure the following settings:
 - a. **Host Profile** – Select a host profile. The VMs managed by the host selected in the host profile will be loaded as the backup scope.
 - b. **Agent** – Select an Agent for connecting to the host server in the selected host profile and executing a backup job.

***Note:** If the VM host type of the selected host profile is Hyper-V, the Agent selected for this host profile will be retrieved automatically. The **Select an Agent** field will be disable.
 - c. **VM Selection** – Selected one or more VMs in the loaded tree. Expand the loaded the VM tree, and then select the VMs you want to back up.

***Note:** After expanding the tree, use the **Search** text box and then click the magnifying glass () button to find specific VMs.

***Note:** For the loaded VMs that are powered on, the corresponding VM's statuses will be displayed next to the VMs. When the mouse is hovering over one of these VMs, the information about the VM operating system and memory will appear.
 - d. Click **Add** to add the selected VMs to the backup list.
3. **Storage Policy** – Select the storage policy for the backup data in the **Select a storage policy** drop-down list or create a new storage policy by clicking the **New Storage Policy** link in the **Select a storage policy** drop-down list.

***Note:** Only the storage policies with a concurrent storage device configured are supported and can be loaded in the **Select a storage policy** drop-down list.

A storage policy is used to configure a set of rules for storing backed up data. It also supports configuring the retention rule to prune the data backed up by VM Backup and Restore and delete or move the pruned backup data.

***Note:** The retention rule will not occur if **Differential backup** is configured as the retention trigger: **Differential** backup is not supported by VM Backup and Restore.

For more information on working with storage policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

4. **Schedule** – Select a scheduling option.
 - **No Schedule** – Select this option to configure the job to not run on a schedule (the job must be manually initiated).
 - **Configure the schedule myself** – Select this option to configure a customized schedule, and run the backup job by schedule. Click **Add Schedule** to set up a schedule. The **Add Schedule** window appears. For more information about adding a schedule, refer to [Backup Schedule](#). After configuring the schedule for the backup job, click **Calendar View** to view the scheduled jobs by **Day, Week, or Month**. Multiple schedules can be added and displayed in the **Summary** table. Click the delete () button to delete a schedule.
5. **Notification** – Select the e-mail notification profile for sending e-mails. For more information on working with notification policies, refer to the [DocAve 6 Control Panel Reference Guide](#).
6. On the lower-right section of the screen, or on the ribbon, click **Finish** to save the configuration of the plan without running it or **Finish and Run Now** to save the configuration and then run the saved plan immediately. The backup plan is now listed in Plan Manager.

Unsupported Elements to Be Backed Up

The followings elements s are not supported to be backed up by VM Backup and Restore:

- Unsupported VMs:
 - ESX/ESXi or vCenter VMs using any hard disk in **Independent & Persistent Mode**
 - ESX/ESXi or vCenter VMs using the Raw Device Mappings disks
 - ESX/ESXi VMs in the vCenter host cluster or ESX/ESXi VMs stored by the datastores that are in the vCenter datastore cluster
 - Hyper-V VMs using any Pass-through disks
 - VMs on the Hyper-V host server that is in the failover cluster
- Unsupported elements that are associated with VMs:
 - LUNs that are mapped to the Hyper-V, ESX/ESXi or vCenter VMs

Managing Plans

After launching the **VM Backup and Restore** interface, click **Plan Manager** next to the **Restore** tab. In the Plan Manager interface, all of the previously-created plans are displayed in the main display pane.

In this interface, you can change the number of plans displayed per page. To change the number of the plans displayed per page, select the desired number from the **Show rows** drop-down menu in the lower right-hand corner. To sort the plans, click the column heading such as **Plan Name**, **Description**, **Last Modified Time** and **Platform Type**.

Perform the following actions in the **Plan Manager** interface:

- **View Details** – Select a plan and click **View Details**. The backup scope and the plan settings are displayed on the **View Details** interface. When you want to change the nodes you selected or want to modify the migration settings, click **Edit** on the ribbon.
- **Edit** – Select a plan and click **Edit** on the ribbon to change the configurations for the selected plan. You can change the nodes you selected and modify the VM Backup plan settings.

***Note:** If the host type of the host profile in the plan you are about to edit is ESX/ESXi and the ESX/ESXi VMs selected in this plan are currently managed by the vCenter host server, update the specific host profile by changing the host server type from ESX/ESXi to vCenter first. For instruction about how to edit the created host profile, refer to the [DocAve 6 Control Panel Reference Guide](#).

After editing the selected plan, on the lower-right section of the screen or on the ribbon, click:

- **Save** to save the configuration of the plan without running it.
- **Save As** to save the configuration for another plan.
- **Save and Run Now** to save the configuration and then run the saved plan immediately.
- **Delete** – Select the plans that you want to delete and click **Delete** on the ribbon. A confirmation window will pop up and ask whether you are sure that you want to proceed with the deletion. Click **OK** to delete the selected plans, or click **Cancel** to return to the **Plan Manager** interface without deleting the selected plans.
- **Run Now** – Click **Run Now** to go to the **Run Now** interface. For more information of the settings on **Run Now** interface, see [Configuring Run Now Interface](#).

Configuring Run Now Interface

In the **Run Now** interface, configure the backup job settings.

- **Option** – Select a backup type from the drop-down list. For more information, see [Overview of Backup Types](#).

- **Full Backup** – A full backup of the selected source.
- **Incremental Backup** – A partial backup; backs up only the content that has been updated since the last backup, whether it's Full or Incremental.

***Note:** The Hyper-V VMs does not support incremental backup. If you select the incremental backup, you can choose whether to perform a full backup for the Hyper-V VMs in the selected scope.

***Note:** For best results when conducting high frequency backups, it is recommended to use incremental backups. Incremental backups save time and storage space by backing up only the differences between incremental backups or an incremental backup and a full backup, instead of backing up the entire source location.

- **Backup Hyper-V VMs** – Choose whether to perform a full back for the Hyper-V VMs in the selected scope. Select **Yes** to perform a full backup on the Hyper-V VMs; select **No** to skip the backup of the Hyper-V VMs. This field only appears when the backup type you selected is **Incremental Backup**.

Performing a Restore

A VM restore can be performed both on the VM data backed up using DocAve's VM Backup and Restore and Platform Backup and Restore. VM Restore can perform a full recovery solution as well as a targeted recovery solution using the following restore modules:

- [Restoring VM](#)
- [Restoring File](#)

Restoring VM

A VM restore provides a full recovery solution for restoring the entire backup data of VMs. Two restore methods are provided for selecting the backed-up data: **Time-based restore** and **Object-based restore**. Use a **Time-based restore** to select a backup job on the calendar, and then select objects to restore the backed-up data. Use an **Object-based restore** to restore the backed-up data by selecting the specific object and selecting which backup job to restore it from. Refer to the sections below for details.

Time-Based Restore

The **Time-based restore** is designed to find the backed-up jobs first, and then select the objects to restore the backed-up data. Complete the following steps to configure a time-based restore:

1. On the **Restore** tab in VM Backup and Restore, click **Restore** on the ribbon. The **Restore** interface appears. Click **Restore VM** and the **Restore Method** interface appears.
2. **Restore Method** – Select the **Time-based restore** radio button, and then click **Next**. The **Job Selection** interface appears.
3. **Job Selection** – The jobs completed within the 7 days are available in the calendar. Click **Day**, **Week**, or **Month** in the top-right corner of the calendar to change the view to see all available jobs. Click the left and right arrows beside the date on the top-left of the calendar to move forward or backward. Select the backup job that you want to restore. You can also configure settings in the **Set Filter** field to limit the **scope** of the backup job.
 - **Filter by Job** – Filter the backup job by job information. You can filter the backup data in the **Filter by Job** area by backup job module and backup type of the backup job by selecting corresponding checkbox in the drop-down list. By default, **VM Backup Jobs** and **All Types** are selected.
 - **Filter by Plan** – Filter the backup job by plan information. You can filter the backup data in the **Filter by Plan** area by plan name by selecting corresponding checkbox in the **Plan Name** drop-down list. By default, **All Plans** is selected.
 - **Filter by Time Range** – Filter the backup data by job completed time range. The **All jobs** selection lists all backup jobs whenever the job completed, while **Backup Jobs start within** filters the backup jobs which are completed in the specified time range. By default, **Backup jobs start within Last 7 Days** is selected.

After you finish configuring the **Set Filter** drop-down lists, click **Filter**. All the backup jobs that meet the filter rules are listed in the calendar. Click **Reset**, and then the jobs with all backup types that have been started within the last 7 days are available in the calendar.

When you are finished, click **Next**. The **Data Selection** page appears.

4. **Data Selection** – Select the backed up data to be restored. Expand the loaded VM backup data tree and select the VMs to restore. Click **Next** when you are finished and the **Restore Settings** interface appears.

***Note:** If the backed up VMs are displayed in more than one page and all of the VMs you select to restore in this job are not displayed in the first page, an error message will appear when you proceed to the **Overview** step; however, this error will not interfere the execution of the restore job. Please ignore that error message.

***Note:** For the backed up VMs managed by the ESX/ESXi or vCenter host server, you can configure to restore the **Security** settings by selecting the applicable checkboxes next to the following backup levels in the tree: Host, Resource Pool, vApp, and VM.

***Note:** To successfully perform a VM Restore for the ESX/ESXi VMs backed up from a plan that employs the ESX/ESXi type host profile, if these VMs are currently managed by the vCenter host server, they must be backed up again. Before you try to back up these VMs again, edit the applied host profile to change the host profile type from ESX/ESXi to vCenter first, and then reselect these VMs on the loaded VM tree by editing the corresponding backup plan. For more information about editing the VM backup plan and host profile, refer to [Managing Plans](#) and the [DocAve 6 Control Panel Reference Guide](#).

5. **Restore Settings** – Configure the following settings for the restore.

- **Agent Selection** – Select an Agent to execute the restore job. By default, the Agent specified in the host profile selected for the backup plan is selected.

***Note:** If the VM you are about to restore resides in the Hyper-V host server, the Agent drop-down list will be unavailable and you can only use the default Agent to execute the restore job.

- **VM Conflict Resolution** – Define the VM conflict resolution behavior. For the ESX/ESXi or vCenter VMs, if the **.vmx** configuration file of the source VM is under the same full path as an existing **.vmx** configuration file in the target, it is considered a conflict. For the Hyper-V VMs, if the **Name**, the GUID of the Hyper-V VMs, of the source VM is same as that of a VM in the target, it is considered a conflict.
 - **Skip** ignores the source VM.
 - **Replace Virtual Disk Only** deletes the data in the target virtual disk and then restore data in the source virtual disk only to the target.
 - **Overwrite** deletes the target VM and restore the source to the target.

***Note: Replace Virtual Disk Only** is invalid for the VMs managed by the Hyper-V host. If you set the VM conflict resolution to Replace Virtual Disk Only when restoring VM on the Hyper-V host, the conflicting VM will be deleted, and the backup data of the VM will be restored.

- **Hyper-V Parent Disk Conflict Resolution** – Define the Hyper-V parent disk conflict resolution behavior. If the Hyper-V parent disk in the source is under the same full path as an existing Hyper-V parent disk in the target, it is considered a conflict.
 - **Skip** ignores the source Hyper-V parent disk.
 - **Overwrite** deletes the target Hyper-V parent disk and restore the source Hyper-V parent disk to the target.

***Note:** This setting is only valid for the recovery of VM files on the Hyper-V host.

- **Power on the VMs after Restore** – Before the restore job is executed, DocAve will power off the target VMs. Choose whether to automatically power on these VMs after the restore job is finished.
- **Notification** – Select the e-mail notification profile for sending e-mails. For more information on working with notification policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

Click **Next** when you are finished. The **Schedule** interface appears.

6. **Schedule** – Configure the schedule to set the time to restore the content:
 - **Schedule Selection** – Choose **Restore immediately after wizard finishes** to run the plan immediately, or choose **Configure the schedule myself** to configure a customized schedule
 - **Description** – Optionally enter a description of the restore plan in the text box.

Click **Next** to proceed to the **Overview** interface.

7. **Overview** – Review and edit plan selections. To make changes, click **Edit** in the middle of a heading row under the **Settings** tab. This links to the corresponding setting page, allowing you to edit the configuration. In the **Preview** tab, you can view the restore action and the expected VM tree after the restoration, or click **Edit** to go to the **Data Selection** interface to change the restore action.
8. Click **Finish** to save the job's configuration. If the restore job does not have a schedule, **Finish** runs the job immediately. If the restore job is set to run on a schedule, **Finish** saves the restore job's configuration without running it.

Object-Based Restore

The **Object-based restore** is designed to first locate the specific VM object, and then select which backup job to restore it from. Complete the following steps to configure an object-based restore:

1. On the **Restore** tab in VM Backup and Restore, click **Restore** on the ribbon. The **Restore** interface appears. Click **Restore VM** and the **Restore Method** interface appears.
2. **Restore Method** – Select the **Object-based restore** button, and then click **Next**. The **Object Search** interface appears.
3. **Object Search** – Complete the following configurations:
 - **Backup Job Module** – Select a backup job module from **the Backup Job Module** drop-down list. The following backup job modules are supported: VM Back jobs and PR backup jobs.
 - **Backup Time Range** – Select the backup time range to limit the search scope from the **Backup jobs within** drop-down list. You can select the backup jobs performed within the current week, the last week, the current month, the last month, or the customized time range.
 - **Search Filter** – Configure the filter conditions to limit the scope of the backup jobs, if necessary. Select an object level from the drop-down list before the **Add Criteria** button. Click **Add Criteria** to add a condition rule. Select **Contains** to find the objects that contains the entered condition, or select **Does not Contain** to find the object that does not contains the entered condition, or select **Equals** to find the object that equals to the entered condition, and then enter the required information in the following text box.

***Note:** Depending on the filters you enter, you can change the logical relationships between the filter rules. There are currently two logical relationships: **And** and **Or**. By default, the logic is set to **And**. The **And** logical relationship means that the content which meets all the rules will be filtered and included in the result. The **Or** logic means that the content which meets any one of the rules will be filtered and included in the result.

Click **Next** when you are finished. The **Data Selection** interface appears.

4. **Data Selection** – Select the backed up VM you are about to restore and click the **Load the Coexisting Backup Jobs** button. The backup jobs about the selected VMs are loaded on the right pane. Select a backup job from the loaded backup job list. You can also perform the following actions:
 - After finding the object and the backed-up data you want to restore, you can change to the time-based restore mode by clicking the job ID. A tab named by the job ID appears next to the **Search Data** tab. Refer to the Backup Data instructions in step 4 of the [Time-Based Restore](#) section to continue.
 - For the backed up VMs managed by the ESX/ESXi or vCenter host server, you can configure to also restore the Security settings by selecting the applicable checkboxes next to the following backup levels in the tree: Host, Resource Pool, vApp, and VM.
***Note:** To successfully perform a VM Restore for the ESX/ESXi VMs backed up from a plan that employs the ESX/ESXi type host profile, if these VMs are currently managed by the vCenter host server, they must be backed up again. Before you try to back up these VMs again, edit the applied host profile to change the host profile type from ESX/ESXi to vCenter first, and then

reselect these VMs on the loaded VM tree by editing the corresponding backup plan. For more information about editing the VM backup plan and host profile, refer to [Managing Plans](#) and the [DocAve 6 Control Panel Reference Guide](#).

Click **Next** when you are finished. The **Restore Setting** interface appears.

5. **Restore Setting** – Configure the following settings for the restore:

- **Agent Selection** – Select an **Agent** to execute the restore job. By default, the Agent specified in the host profile chosen for the backup plan is selected.

***Note:** If the VM you are about to restore resides in the Hyper-V host server, the Agent drop-down list will be unavailable and you can only use the default Agent to execute the restore job.

- **VM Conflict Resolution** – Define the VM conflict resolution behavior. For the ESX/ESXi or vCenter VMs, if the **.vmx** configuration file of the source VM is under the same full path as an existing **.vmx** configuration file in the target, it is considered a conflict. For the Hyper-V VMs, if the **Name**, the GUID of the Hyper-V VMs, of the source VM is same as that of a VM in the target, it is considered a conflict.

- **Skip** ignores the source VM.
- **Replace Virtual Disk Only** deletes the data in the target virtual disk and then restore data in the source virtual disk only to the target.
- **Overwrite** deletes the target VM and restore the source to the target.

***Note:** **Replace Virtual Disk Only** is only valid for the VMs managed by the ESX/ESXi or vCenter host. If you set the VM conflict resolution to Replace Virtual Disk Only when restoring VM on the Hyper-V host, the conflicting VM will be deleted, and the backup data of the VM will be restored.

- **Hyper-V Parent Disk Conflict Resolution** – Define the Hyper-V parent disk conflict resolution behavior. If the Hyper-V parent disk in the source is under the same full path as an existing Hyper-V parent disk in the target, it is considered a conflict.
 - **Skip** ignores the source Hyper-V parent disk.
 - **Overwrite** deletes the target Hyper-V parent disk and restore the source Hyper-V parent disk to the target.

***Note:** This setting is only valid for the recovery of VM files on the Hyper-V host.

- **Power on the VMs after Restore** – Before the restore job is executed, DocAve will power off the target VMs. Choose whether to automatically power on these VMs after the restore job is finished.
- **Notification** – Select the e-mail notification profile for sending e-mails. For more information on working with notification policies, refer to the [DocAve 6 Control Panel Reference Guide](#).

Click **Next** when you are finished. The **Schedule** interface appears.

6. **Schedule** – Configure the schedule to set the time to restore the content:
 - **Schedule Selection** – Choose **Restore immediately after wizard finishes** to run the plan immediately, or choose **Configure the schedule myself** to configure a customized schedule
 - **Description** – Optionally enter a description of the restore plan in the text box.

Click **Next** to proceed to the **Overview** page.

7. **Overview** – Review and edit plan selections. To make changes, click **Edit** in the middle of a heading row under the **Settings** tab. This links to the corresponding setting page, allowing you to edit the configuration. In the **Preview** tab, you can view the restore action and the expected VM tree after the restoration, or click **Edit** to go to the **Data Selection** interface to change the restore action.
8. Click **Finish** to save the job's configuration. If the restore job does not have a schedule, **Finish** runs the job immediately. If the restore job is set to run on a schedule, **Finish** saves the restore job's configuration without running it.

Restoring Files

Restore Files provides a recovery solution for separately restoring VM files without restoring the entire VM. Complete the following steps to configure a time-based restore:

1. On the **Restore** tab in VM Backup and Restore, click **Restore** on the ribbon. The **Restore** interface appears. Click **Restore file**. The restore wizard appears.
2. **Job Selection** – The jobs with all backup types that have been completed within the last 7 days are available in the calendar. Click **Day**, **Week**, or **Month** in the top-right corner of the calendar to change the view to see all available jobs. Click the left and right arrows beside the date on the top-left of the calendar to move forward or backward. Select the backup job that you want to restore. You can also configure settings in the **Set Filter** field to limit the **scope** of the backup job.
 - **Filter by Job** – Filter the backup job by job information. You can filter the backup data in the **Filter by Job** area by backup job module and backup type of the backup job by selecting corresponding checkbox in the drop-down list. By default, **VM Backup Jobs** and **All Types** are selected.
 - **Filter by Plan** – Filter the backup job by plan information. You can filter the backup data in the **Filter by Plan** area by plan name by selecting corresponding checkbox in the **Plan Name** drop-down list. By default, **All Plans** is displayed.
 - **Filter by Time Range** – Filter the backup data by job completed time range. The **All jobs** selection lists all backup jobs whenever the job completed, while **Jobs start within** filters the backup jobs which are completed in the specified time range. By default, **Backup jobs start within Last 7 Days** is selected.

After you finish configuring the **Set Filter** drop-down lists, click **Filter**. All the backup jobs that meet the filter rules are listed in the calendar. Click **Reset**, and then the jobs with all backup types that have been started within this week are available in the calendar.

When you are finished, click **Next**. The **Data Selection** page appears.

3. **Data Selection** – Select an Agent from the **Select an Agent to load the backed up VM data** drop-down list to load the backup data. Expand the loaded backup data tree and then select the file level nodes to restore.

***Note:** If the backed up VM run on VHDX disk, the Agent you select to browse the backed up VM data cannot be the server with operating system of Windows Server 2008.

***Note:** If the VM files you are about to restore are from the Hyper-V VM, ensure that the version of the operating system on the server where the selected Agent resides is equal or higher than that of the server where the Agent selected in the corresponding backup plan resides. If the specific Hyper-V VM is associated with the Hyper-V parent disk or has been snapshotted before it was backed up and the snapshot file still exists in the Hyper-V host server, additionally, the hyper-V role must be properly installed on the server where the selected Agent resides.

Click **Next** when you are finished. The **Destination Settings** interface appears.

4. **Destination Settings** – Configure the destination settings for the restore:

- **Agent** – Select an Agent to execute the restore job.

***Note:** If the backed up VM run on VHDX disk, the Agent you select to execute the restore job cannot be the server with operating system of Windows Server 2008.

***Note:** If the VM files you are about to restore are from the Hyper-V VM, ensure that the version of the operating system on the server where the selected Agent resides is equal or higher than that of the server where the Agent selected in the corresponding backup plan resides. If the specific Hyper-V VM is associated with the Hyper-V parent disk or has been snapshotted before it was backed up and the snapshot file still exists in the Hyper-V host server, additionally, the Hyper-V role must be properly installed on the server where the selected Agent resides.

- **Path** – Enter the **UNC Path** to restore the selected backed up VM files and then select a managed account profile. Click **Validation Test** to validate the configured information.

***Note:** The user in the selected managed account profile must be a member of the local **Administrators** group.

Click **Next** when you are finished. The **Restore Settings** interface appears.

5. **Restore Settings** – Configure the following settings for the restore.

- **File Conflict Resolution** – Define the VM file conflict resolution behavior. When the file name and file type of a source file are same as that of an existing file in the target, it is considered as a conflict.
 - **Skip** ignores the selected backed up VM file.
 - **Overwrite** deletes the existing VM files in the target and restore the source files to the target.
- **Job Report** – Select the job report type. Select **Simplified** to get a list containing the report for the folder level objects restored to the destination, or select **Detailed** to get a full list of all folder and file level objects restored to the destination at the cost of performance.
- **Notification** – Select the e-mail notification profile for sending e-mails. For more information on working with notification policies, refer to the [Docve 6 Control Panel Reference Guide](#).

Click **Next** when you are finished. The **Schedule** interface appears.

6. **Schedule** – Configure the schedule to set the time to restore the content:
 - **Schedule Selection** – Choose **Restore immediately after wizard finishes** to run the plan immediately, or choose **Configure the schedule myself** to configure a customized schedule
 - **Description** – Optionally enter a description of the restore plan in the text box.

Click **Next** to proceed to the **Overview** page.

7. **Overview** – Review and edit plan selections. To make changes, click **Edit** in the middle of a heading row under the **Settings** tab. This links to the corresponding setting page, allowing you to edit the configuration. In the **Preview** tab, you can view the restore action and the expected VM tree after the restoration, or click **Edit** to go to the **Data Selection** interface to change the restore action.
8. Click **Finish** to save the job's configuration. If the restore job does not have a schedule, **Finish** runs the job immediately. If the restore job is set to run on a schedule, **Finish** saves the restore job's configuration without running it.

Appendix A – Accessing Hot Key Mode

In order to work faster and improve your productivity, DocAve supports hot key mode for you to perform corresponding actions quickly by only using your keyboard. To access hot key mode from the VM Backup and Restore interface, press the key combination of **Ctrl + Alt + Z** on your keyboard.

The following table provides a list of hot keys for the Home page of the VM Backup and Restore interface. Each time you want to go back to the Home page, press **Ctrl + Alt + Z** on your keyboard. For example, continue pressing **B** to go back to the **Backup** tab of VM Backup and Restore.

Operation Interface	Hot Key
Backup	B
Restore	R
Plan Manager	P
DocAve Home Page	1
DocAve Online Community	2
Control Panel	3
Job Monitor	4
Plan Group	5

Backup Tab

The following is a list of hot keys for the **Backup** tab functions.

Functionality Name and Hot Key							
Plan Builder	P	Wizard Mode	W	Back	B		
				Next	N		
				Finish	FN	Finish	F
						Finish and Run Now	R
				Cancel	CX		
		Form Mode	F	Storage Policy	SP		
				Host Profile	HP		
				Save	O	Save	O
						Save and Run Now	R
				Cancel	C		
Storage Policy	S						
Host Profile	HP						
Job Monitor	J						

Restore Tab

The following is a list of hot keys for the **Restore** tab functions.

Functionality Name and Hot Key			
Restore	R		
Restore VM	RV	Locate	L
		Back	B
		Next	N
		Finish	FN
		Cancel	CX
Restore File	RF	Back	B
		Next	N
		Finish	FN
		Cancel	CX
Job Monitor	J		

Plan Manager Tab

The following is a list of hot keys for the **Plan Manager** tab functions.

Functionality Name and Hot Key					
View Details	V	Edit	E		
		Close	C		
Edit	E	Storage Policy	SP		
		Host Profile	HP		
		Save	S	Save and Run Now	R
				Save As	A
				Save	S
		Save As	A		
Cancel	C				
Run Now	OK	OK	O		
		Cancel	C		
Add VMs to the Backup List	Add	Add	A		
		Cancel	C		
Add Schedule	Save	Save	S		
		Cancel	C		

VM Pop-Up Window

Functionality Name and Hot Key		
Run Now	OK	O
	Cancel	C
Add VMs to the Backup List	Add	A
	Cancel	C
Add Schedule	Save	S
	Cancel	C

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