

# Ahsay Online Backup Restorer v8 User Guide for Windows

Ahsay Systems Corporation Limited

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# **Revision History**

Date	Descriptions	Type of modification
12 March 2021	Modified System Architecture diagram in Ch. 1.2; Modified features comparison table in Ch. 1.4; Reorganized and added Requirements in Ch. 3; Added Ch. 4 Limitations; Added login scenarios in Ch. 6; Reorganized Ch. 7	New / Modifications

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# 1 Overview

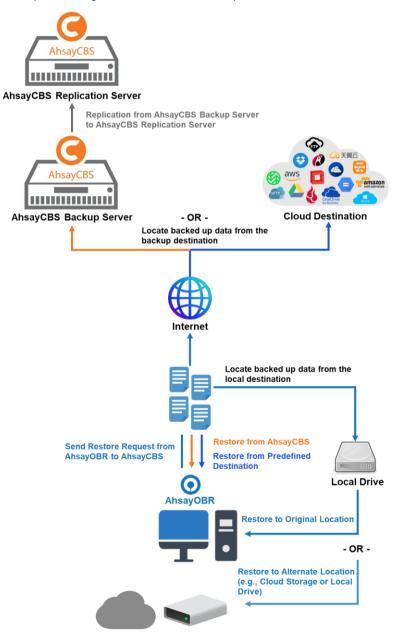
## 1.1 What is this software?

Ahsay brings you specialized restore software, namely Ahsay Online Backup Restorer (AhsayOBR), to provide a quick and secure solution for restoring your backup data anytime and anywhere. This software is designed specifically as a one-time restorer and is not served for performing backup and configuring any backup user settings. The software supports restoring data that is backed up with AhsayOBM or AhsayACB.

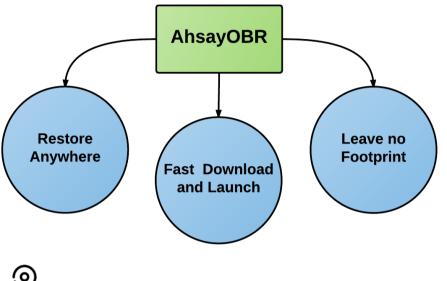
## **1.2 System Architecture**

Below is the system architecture diagram illustrating the major elements involved in the process when you are using the AhsayOBR to restore data.

In this user guide, we will focus on information to get you started with using the software, as well as instructions on performing an end-to-end restore process.



\*Original location – the backed up data will be restored on the computer running the AhsayOBR under the same directory path as on the machine storing the backup source. For example, the backup source files are stored in C:\User\Downloads same as on the computer running the AhsayOBR.



## 1.3 Why should I use AhsayOBR to restore backup data?

# **X** Restore Anywhere

There may be times when you wish to restore your backed up data but have no access to the computer with the Client Backup Agent (AhsayOBM/AhsayACB) installed. AhsayOBR is exactly designed to cater to your needs under such circumstances.

You can now download and launch the AhsayOBR anytime and anywhere you like as long as you have a computer with a web browser installed and Internet connection.

# Fast Download and Launch

Unlike a Client Backup Agent (AhsayOBM/AhsayACB) which is significantly larger in file size and takes longer time to install on your computer, AhsayOBR is a compact solution that can be downloaded and launched in a short period of time in just a few clicks.

Besides, the AhsayOBR is designed as a one-time restorer that will be removed from your computer completely after it is closed. All the restore log files or settings will also be removed from the computer altogether so you would not need to spend the time on uninstalling the software after you finished the restore.

# Leave no Footprint

When you are trying to restore your backed up data remotely, the computer you use for restoring may not have the same level of security settings as the one you normally use for backup and restore onsite. Therefore, it may not be completely secure to install a Client Backup Agent (AhsayOBM/AhsayACB) to restore data because the backup agent will store information such as the backup user's personal info, backup set settings, backup/restore logs, etc. Using a Client Backup Agent for restore under such circumstances may pose potential threat to your personal and confidential information.

That is why the AhsayOBR is designed as a single-purpose restorer with high level of security protection and supporting Two-Factor Authentication (2FA). The restorer takes you right to the restore start point after login, where you can start performing a restore right away. It will also be removed completely after the restore is done, so you do not have to worry about leaving important information behind in the restore logs which could be viewed by a third party.

# 1.4 Features comparison between Client Backup Agent and AhsayOBR

While you can still download a Client Backup Agent (AhsayOBM/AhsayACB) to restore data, AhsayOBR gives a quick, direct and secure solution just for the data restore purpose. Below is a table comparing some major features of both tools, and the pros and cons of using them.

Feature	Tool	Pros	Cons
Installation	AhsayOBR	<ul> <li>No installation required</li> <li>Faster to launch</li> </ul>	Required to launch every time you use
	Client Backup Agent	One-time installation	Larger installer size hence longer installation time
Run Direct Restore	AhsayOBR	N/A	Run Direct restore for VMware and Hyper-V servers is <b>NOT</b> supported, since AhsayOBR is not a Client Backup Agent and therefore NFS is not bundled along with the software. NFS is a mandatory item for performing Run Direct restore for VMware and Hyper-V servers.
	Client Backup Agent	Support Run Direct restore for both VMware and Hyper-V servers.	N/A
OpenDirect Restore	AhsayOBR Client Backup Agent	OpenDirect restore allows you to view and download individual files from a compressed or image file, without having to restore compressed file or image file first. OpenDirect restore gives you the flexibility to restore selective file(s) quickly, so it saves you time and effort to achieve your restore goal.	To ensure optimal restore performance, the backup of the files in an OpenDirect file backup set will <b>NOT</b> be encrypted and compressed, therefore, you may have to take these factors in consideration when selecting this restore option.

Granular Restore	AhsayOBR Client Backup Agent	In some cases, you may only need to restore a few individual file(s) from the guest VM, therefore, granular restore gives you a fast, convenient, and flexible tool to restore selected file(s) from a guest VM quickly.	To make ensure optimal restore performance, the backup of the guest VM will <b>NOT</b> be encrypted and compressed, therefore, you may have to take this factor in consideration when using this restore method.	
Cross platform usage	AhsayOBR	Although both tools are available for use on various platforms, e.g., Windows, Mac, Linux, FreeBSD etc., cross platform restore is <b>NOT</b> recommended. For example, files backed up on Windows are not recommended to restore on a Mac/Linux/FreeBSD machine. Not supported on Synology DSM or QNAP QTS platforms.		
	Client Backup Agent			
Compatibility AhsayOBR N/A		N/A	Does not support restore of photos and videos backed up using Ahsay Mobile.	
	Client Backup Agent	N/A	Support restore of backup set created by the same type of Client Backup Agent only.	
			Example: backup set created on AhsayOBM can only be restored by AhsayOBM.	

# 2 About This Document

# 2.1 What is the purpose of this document?

This document aims at introducing the AhsayOBR software and its features, providing all necessary information to download and launch the AhsayOBR software and instructions on performing restore.

# 2.2 What should I expect from this document?

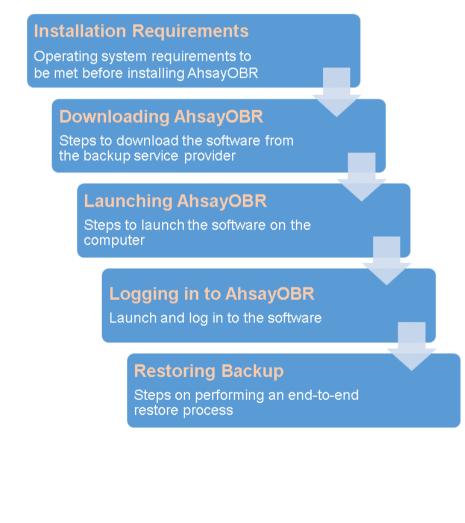
After reading through this documentation, you can expect to have sufficient knowledge to download and launch the AhsayOBR software, as well as to perform a restore

# 2.3 Who should read this document?

This document is intended for backup users who need to perform restore while having no access to their Client Backup Agent (AhsayOBM/AhsayACB) or for those who need to quickly recover file(s) on another machine or device with minimal effort.

## 2.4 Overview of the Document Content Structure

Below is a flow chart illustrating the major chapters this document will cover in sequence.



# **3** Prepare for Using AhsayOBR

## 3.1 Hardware Requirements

You can launch the AhsayOBR on a physical machine or on a virtual machine. The hardware requirements for launching AhsayOBR is the same as installing AhsayOBM.

Refer to the link below for details of the minimum and recommended hardware requirements: FAQ: Ahsay Hardware Requirement List (HRL) for version 8.1 or above

Refer to the following article for the list of compatible operating system for OpenDirect and Granular Restore:

FAQ: Ahsay Software Compatibility List (SCL) for Granular and OpenDirect Restore (5250)

## 3.2 Software Requirements

Refer to the link below to see the list of the system requirements for software compatibility: FAQ: Ahsay Software Compatibility List (SCL) for version 8.1 or above

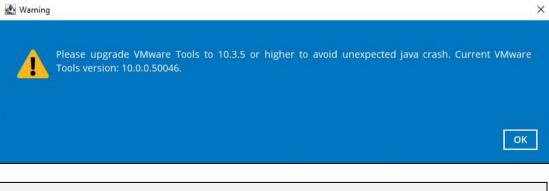
## 3.3 Antivirus Exclusion Requirement

To optimize performance of AhsayOBR on Windows, and to avoid conflict with your antivirus software, refer to the following KB article for the list of processes and directory paths that should be added to all antivirus software white-list / exclusion list: <u>FAQ: Suggestion on antivirus exclusions to improve performance of Ahsay software on</u> Windows

# 3.4 Upgrade VMware Tools Requirement

To avoid unexpected java crash, if the Windows machine is a guest VM hosted on a VMware Host, then it is highly recommended that the VMware tools version installed on the guest VM must be 10.0.5 or above.

Below is the warning message that will be displayed if the version of the VMware Tools is less than 10.0.5.



#### NOTE

For more information about VMware Tools upgrade, refer to the following article: <u>https://wiki.ahsay.com/doku.php?id=public:5288\_ahsayobc\_crash\_on\_vm\_with\_vmware\_tools\_pre-10.0.5</u>.

# 3.5 Encryption Key

If the backup set(s) are enabled with an encryption key, then the encryption key for the backup set(s) is required to successfully access and restore the data.

## 3.6 Temporary Directory Requirement

The temporary directory folder should have at least the same available size as the compressed or image file to be restored and should be located on a local drive to ensure optimal performance.

### 3.7 Permissions

The Windows login account used for installation and operation of the AhsayOBR client machine requires Administrator privileges.

## 3.8 OpenDirect/Granular Restore

#### 3.8.1 Windows Operating System

AhsayOBR must be installed on a 32 bit or 64-bit Windows Operating System as libraries for OpenDirect only supports Windows platform.

Windows 7 SP1 or above	Windows 8	Windows 8.1
Windows 10	Windows 2008 R2 SP1 or above	Windows 2012
Windows 2012 R2	Windows 2016	Windows 2019

For MS Hyper-V, AhsayOBR must be installed on a 32 bit or 64-bit Windows Operating System as libraries for Hyper-V Granular Restore only supports Windows platform.

For VMware, AhsayOBR must be installed on a 64-bit Windows machine as libraries for Granular only supports 64-bit Windows operating system for VMware ESXi/VCenter.

AhsayOBR must be installed on the following Windows Operating Systems:

Operating System	MS Hyper-V Backup Set	VMware ESXi/vCenter Backup Set
Windows 7 SP1 or above	N\A	Compatible
Windows 8	Compatible	Compatible
Windows 8.1	Compatible	Compatible
Windows 10	Compatible	Compatible
Windows 2008 R2 SP1 or above	N\A	Compatible
Windows 2012	Compatible	Compatible
Windows 2012 R2	Compatible	Compatible
Windows 2016	Compatible	Compatible
Windows 2019	Compatible	Compatible

#### 3.8.2 Available Spare Drive Letter

One spare drive letter must be available on the Windows machine for the OpenDirect/Granular restore process, as the compressed file or image (for OpenDirect restore) or VDDK virtual disk (for Granular restore) is mounted on Windows as a logical drive. AhsayOBR will automatically take the next available drive letter in alphabetical order for the compressed or image file or for the mounted virtual disk.

#### NOTES

- > The Windows drive letters A, B, and C are not used by OpenDirect/Granular Restore.
- The assigned drive letter(s) will be released once you exit from AhsayOBR UI.

#### 3.8.3 Network Requirements

The recommended minimum network speed is at least 100Mbps download speed.

The network bandwidth requirements will increase in proportion to the size of the guest VM, compressed file/image and or the incremental delta chain length to ensure optimal performance. Working with limited network bandwidth may severely affect the granular restore performance.

You can use an online network speed test website (e.g., <u>www.speedtest.net</u>) to get an idea of the actual bandwidth of the machine.

#### 3.8.4 Other Dependencies

The following dependencies are restore-related and need to be installed on the AhsayOBR machine for OpenDirect/Granular restore to work. Absence of these elements will not affect the backup job but would cause the restore to fail.

- Microsoft Visual C++ 2015 Redistributable (x86) / (x64) <u>https://www.microsoft.com/en-hk/download/confirmation.aspx?id=48145</u>
- Microsoft Visual C++ 2015 Redistributable Update 3 RC <u>https://www.microsoft.com/en-us/download/details.aspx?id=52685</u>
- Update for Universal C Runtime in Windows <u>https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in-windows</u>
  - Prerequisites for Windows 8.1 or Windows Server 2012 R2
    - Install KB2919442 <u>https://support.microsoft.com/en-us/help/2919442/march-</u> 2014-servicing-stack-update-for-windows-8.1-and-windowsserver-2012-r2

#### Install KB2919355

https://support.microsoft.com/en-us/help/2919355/windowsrt-8.1,-windows-8.1,-and-windows-server-2012-r2-updateapril-2014

 Microsoft Security Advisory 3033929 for Windows 7 and Windows Server 2008 R2

https://technet.microsoft.com/en-us/library/security/3033929.aspx

# 4 Limitations

- 1. AhsayOBR is not supported on Synology DSM or QNAP QTS platforms.
- 2. AhsayOBR does not support restore of photos and videos backed up using Ahsay Mobile.
- 3. Enhanced Network Drive Support

Not supported for "Restore Raw file" and "Restore to local computer" options.

# 5 Download and Launch AhsayOBR

There are two installation modes for AhsayOBR: online installation and offline installation. Below is the table of comparison between online installation and offline installation.

	Online Installation	Offline Installation
Installation Time	<ul> <li>Takes more time as it needs to download the binary and component files (150MB to 272MB depending on operating system) each time the installation is run.</li> <li>Online installer size is 9KB to 2MB depending on operating system as it contains only the initial installation package files.</li> </ul>	<ul> <li>Takes less time as all the necessary binary and component files are already available in the offline installer, and offline installer can be downloaded once but can be reused many times.</li> <li>Offline installer size is 150MB to 272MB depending on operating system as it contains all the necessary binary and component files.</li> </ul>
Deployments	<ul> <li>Suitable for sites with fast and stable internet connection as internet connection is needed each time when an installation is run.</li> <li>A slow internet connection will result in longer installation time and interrupted, or unstable internet connection may lead to unsuccessful installation.</li> <li>Ensures the latest version of the product is installed.</li> </ul>	<ul> <li>Suitable for client sites with metered internet connections as once the offline installer is downloaded, internet connection is not needed each time when an installation is run.</li> <li>May not be the latest version.</li> </ul>

# 5.1 Download AhsayOBR

1. In a web browser, click the blue icon on the top right corner to open the download page for the AhsayOBR installation package file from your backup service provider's website.

English	✓ 👱

2. In the **Restore** tab of the download page, choose the AhsayOBR installer for the appropriate operating system.

G AhsayCBS	
AhsayOBM AhsayACB Mobile Restore	
Choose operating system.	
Windows	🛃 Download (Online)
💼 Mac OS X	Download (Online)     Download (Offline)
👌 Linux	📩 Download (Online)
🍯 FreeBSD	📩 Download (Online)
solaris (x86)	📩 Download (Online)
Ubuntu	<ul> <li>▲ Download (Online)</li> <li>▲ Download (Offline)</li> </ul>

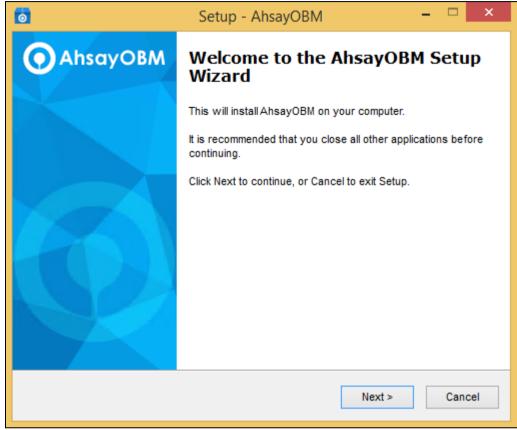
3. In the **Windows** section, click on the **Download (Online)** or **Download (Offline)** button to download the AhsayOBR installation package.



# 5.2 Launch AhsayOBR

### 5.2.1 Option 1: Online Installation

- 1. Launch the file you have downloaded from AhsayCBS. Refer to <u>Ch. 5.1</u> <u>Download AhsayOBR</u>.
- 2. Click **Next** to proceed.



3. Select **I accept the agreement** after reading the license agreement. Then click **Next** to proceed.

Setup - AhsayOBM -	×
License Agreement Please read the following important information before continuing.	$\odot$
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
Terms of Use 1. All softwares provided by Ahsay Systems Corporation is on an "as is" basis with no warranties of any kind and Ahsay Systems Corporation will not be liable for any damages of any kind arising from the use.Ahsay Systems Corporation further disclaims all warranties, express and implied, including without limitation, any implied warranties of merchantability or fitness for a particular purpose. 2. Ahsay Systems Corporation grants you a non-exclusive, non-transferable, royalty-free, limited license to use the binary form of the software provided by Ahsay Systems Corporation for personal use only. Redistribution of programs owned by Ahsay Systems Corporation, unless explicitly granted by Ahsay Systems Corporation, is strictly prohibited.	~
I accept the agreement     I do not accept the agreement	
< Back Next >	Cancel

4. The installation will start after you click Install.

Setup - AhsayOBM -		×
Ready to Install Setup is now ready to begin installing AhsayOBM on your computer.		•
Click Install to continue with the installation, or click Back if you want to review or change any settings.	ır	
Destination location: C:\Users\Administrator\Downloads\RestoreWizard	^	
<	>	
< Back Install	Can	cel

5. The component files will be downloaded first during installation.

6	Setup - AhsayOBM	- 🗆 ×
Downloading addi Please wait white	tional files e setup downloads additional files	$\odot$
Total progress:		7.44 MB / 119.76 MB (6%)
Current file:		7.44 MB / 34.95 MB (21%)
File:	app-common.tar.gz	
Speed:		
Status:	Downloading	
Elapsed time:	00:00:00	
Remaining time:		
		Next > Cancel

6. AhsayOBR will be displayed after a successful installation.

0	AhsayOBM		– 🗆 🗙
		English	~
	O AhsayOBM		
	Login Login name		
	Password		
	Forgot password		
	Show advanced option	ок	

### 5.2.2 Option 2: Offline Installation

1. Extract the offline installation package file (obr-win.zip) that you have downloaded from AhsayCBS. Refer to <u>Ch. 5.1 Download AhsayOBR</u>.

obr-win	Open
	Open in new window
	SkyDrive Pro
	Extract All
	Pin to Start
	Open with
	Share with
	Restore previous versions
	Send to >
	Cut
	Сору
	Create shortcut
	Delete
	Rename
	Properties

2. Select a destination where the files will be extracted, then extract the files.

÷	Extract Compressed (Zipped) Folders	×
	Select a Destination and Extract Files	
	Files will be extracted to this folder: C:\Users\Administrator\Downloads\obr-win Browse	
	Show extracted files when complete	
	Extract	Cancel

3. Launch the installer you have extracted from the zip format file.





4. Click **Next** to proceed.

👩 Setup - AhsayOBM	– 🗆 ×
AhsayOBM	Welcome to the AhsayOBM Setup Wizard
	This will install AhsayOBM on your computer.
	It is recommended that you close all other applications before continuing.
	Click Next to continue, or Cancel to exit Setup.
	Next > Cancel

5. Select **I accept the agreement** after reading the license agreement. Then click **Next** to proceed.

Setup - AhsayOBM —	×
License Agreement Please read the following important information before continuing.	$\odot$
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
Terms of Use 1. All softwares provided by Ahsay Systems Corporation is on an "as is" basis with no warranties of any kind and Ahsay Systems Corporation will not be liable for any damages of any kind arising from the use.Ahsay Systems Corporation further disclaims all warranties, express and implied, including without limitation, any implied warranties of merchantability or fitness for a particular purpose. 2. Ahsay Systems Corporation grants you a non-exclusive, non-transferable, royalty-free, limited license to use the binary form of the software provided by Ahsay Systems Corporation for personal use only. Redistribution of programs owned by Ahsay Systems Corporation, unless explicitly granted by Ahsay Systems Corporation, is strictly prohibited.	~
I accept the agreement	
O I do not accept the agreement           < Back	Cancel

6. The installation will start after you click **Install**.

o Set	up - AhsayOBM	_		×
	ady to Install Setup is now ready to begin installing AhsayOBM on your computer.			$\bigcirc$
	Click Install to continue with the installation, or click Back if you want change any settings.	to reviev	v or	
	Destination location: C:\Users\Administrator\Downloads\obr-win\RestoreWizard		^	
	<		>	
	< Back Insta	all	Car	ncel

7. AhsayOBR will be displayed after a successful installation.

AhsayOBM		— 🗆
		English
	Login Login name	
	Password	
	Save password	
	Forgot password	
	Show advanced option	ок

# 6 Start AhsayOBR

Starting with AhsayOBR v8.5.0.0, Two-Factor Authentication (2FA) is introduced to provide high level of security protection to the backup data that will be restored. With this new feature, there are several scenarios that will be encountered for first time login. Login steps for the different scenarios will be discussed in this chapter.

# 6.1 Login to AhsayOBR without 2FA

1. The AhsayOBR will launch automatically, and you will see the following screen. Click **Show advanced option** to configure the network settings.

AhsayOBM		- 🗆 X
		English
	AhsayOBM	
	Login Login name	
	Password	
	Show advanced option	ок

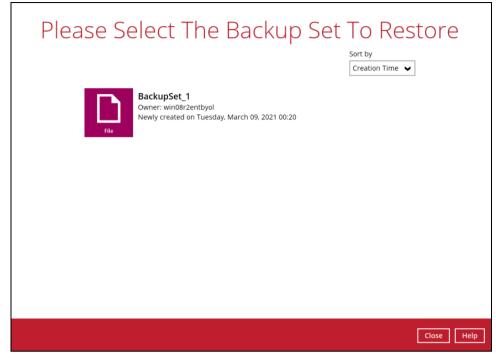
2. Enter the Backup Server address provided by your backup service provider. If you need to use proxy to access the Internet, enable the Proxy feature and fill in the relevant information. Click **OK** when you are done with the settings.

Backup Server	
https 🖌 10.16.10.12	~
Proxy (HTTP)	
Use proxy to access the Internet Off	
	OK

3. Enter the login name and password of your Client Backup account, then click **OK** to log in.

• AhsayOBM			- 🗆 ×
		English	~
	Login name		
	Password		
	Save password		
	Show advanced option	ок	

4. After a successful login, the available backup set(s) for restore will be displayed.



# 6.2 Login to AhsayOBR with 2FA enabled

1. The AhsayOBR will launch automatically, and you will see the following screen. Click **Show advanced option** to configure the network settings.

AhsayOBM			_	$\times$
		English	~	
	Login name			
	Password			
	Save password			
Sho	w advanced option	ок		

2. Enter the Backup Server address provided by your backup service provider. If you need to use proxy to access the Internet, enable the Proxy feature and fill in the relevant information. Click **OK** when you are done with the settings.

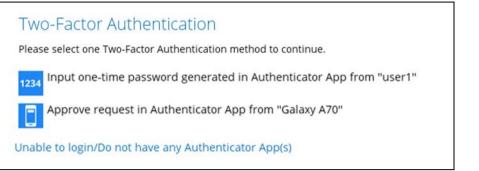
Backup Server	
https V 10.16.10.12 V	
Proxy (HTTP)	
Use proxy to access the Internet	
	OK Cancel

3. Enter the login name and password of your Client Backup account, then click **OK** to log in.

AhsayOBM					×
		E	nglish	~	
	Login name				
	Password				
	Save password				
	Show advanced option	ок			

4. If the 2FA setup is enabled, the following screen will be displayed. Select the authentication method to continue with the login.

**Example:** the AhsayOBM/AhsayACB user account is setup with 2FA using Ahsay Mobile Authenticator on a Mobile device called "Galaxy A70" and a third party TOTP Authentication app such as Google Authenticator, Microsoft Authenticator, LastPass etc.



There are two authentication method to choose from which are:

- Ahsay Mobile Authenticator
- TOTP Authentication App

If Ahsay Mobile will be used as authenticator, follow the steps below to log in.

i. Click Approve request in Authenticator App to proceed with the login.



#### ii. Accept the authorization request sent to your device.

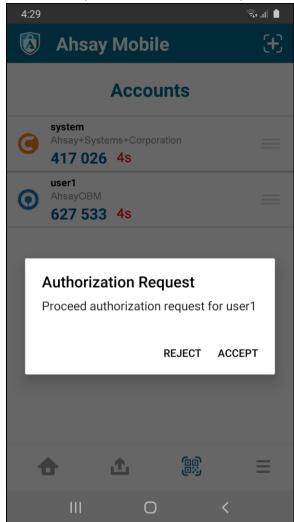
## Two-Factor Authentication

Please approve the notification request in Authenticator App on "Galaxy A70".

Waiting for response (00:04:57)

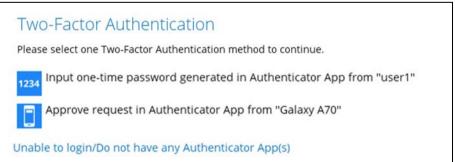
Authenticate with one-time password

This is a sample of the authorization request sent to Ahsay Mobile.



If a third-party **TOTP Authenticator App** will be used, follow the steps below to log in.

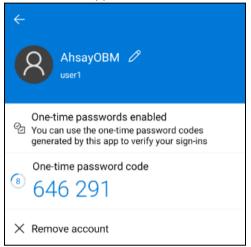
i. Click **Input one-time password generated in Authenticator App** to proceed with the login.



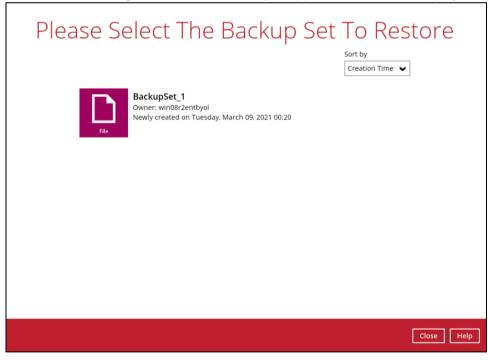
ii. Enter the one-time password that is generated by the app and click Next.



This is a sample of the one-time password generated in the third-party Authenticator App Microsoft Authenticator.



5. After a successful login, the available backup set(s) for restore will be displayed.



# 7 Restore File Backup Sets

# 7.1 Restore Method

There are two restore methods available in AhsayOBR:

- Normal Restore (File backup set restore without OpenDirect)
- **OpenDirect Restore** (open backup data directly without restoration)

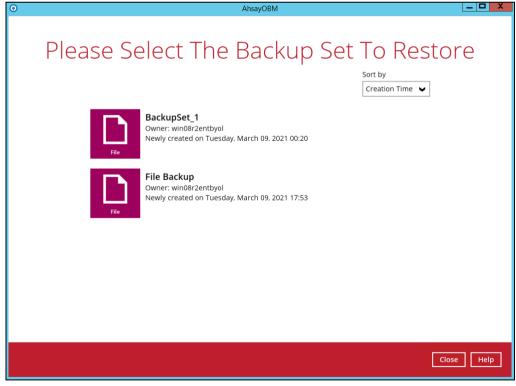
OpenDirect restore only applies to File backup sets with OpenDirect feature enabled.

## 7.2 Normal Restore

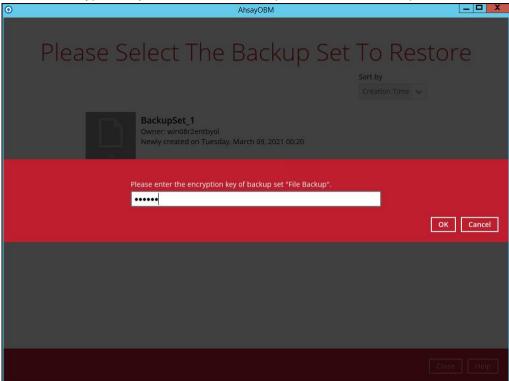
The following is a typical end-to-end process for a file normal restore. The actual steps may slightly vary depending on the module you are restoring.

#### IMPORTANT

- > AhsayOBR can be used to restore data that is backed up with AhsayOBM or AhsayACB.
- Clicking Cancel then Yes at any point during the steps below will close the software completely. If you wish to use it after the software is closed, you will have to launch it again according to the instructions in Ch. 5.2 Launch AhsayOBR.
- 1. After logging in to your backup account, the available backup set(s) for restore will be displayed. Click on the backup set that you would like to restore.



2. Enter the encryption key of the selected backup set, then click **OK** to proceed.



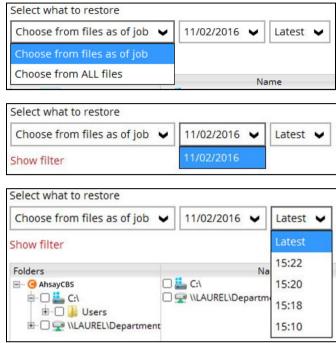
3. Click on the location from where you would like to restore the data from.

•	AhsayOBM	_ <b></b> X
	Select From Where To Restore	
	File Backup	
	G AhsayCBS Host: 125.	
	Previous	ancel Help

4. Select to restore files from a specific backup job, or from all files available, then select the files or folders that you would like to restore.

There are two options from the Select what to restore drop-down menu:

Choose from files as of job – this option allows you to select a backup version from a specific date and time to restore.



Choose from ALL files – this option allows you to restore all the available backup versions for this backup set. Among all the available backup versions, you can even select only some of the backup versions of a file to restore.

0		AhsayOBM			X
	Select What to restore Choose from ALL files Show filter	′our Files To E 	3e Re	stored	
	Folders AhsaycBS AhsaycBS AhsaycBS AhsaycBS AhsaycBS AhsaycBS Customer Servi AhsaycBS Customer Servi AhsaycBS Common AhsaycBS Common AhsaycBS Common AhsaycBS Customer Servi AhsaycBS Common AhsaycBS Common AhsaycBS Common AhsaycBS Customer Servi AhsaycBS Common AhsaycBS Customer Servi AhsaycBS Customer Servi AhsaycBS Custo	in ihers File : KPI Refe	Size 1 KB 1 KB 1 KB 1 KB	Date modified 11/07/2016 18:54 11/07/2016 18:52 11/07/2016 18:51 11/07/2016 18:39	
	Search	> Items p	er page 50	♥ Page 1/1 ♥	
			Pre	vious Next Can	cel Help

Below is an example showing all the available backup versions of the **File snapshot testing.txt** file. The latest version is shown in solid black color and all the previous versions are shown in grey color. You can identify the file version from the **Date modified** column.

Size	Date modified
1 KB	11/07/2016 18:54
1 KB	11/07/2016 18:52
1 KB	11/07/2016 18:51
1 KB	11/07/2016 18:39
	1 KB 1 KB 1 KB

When the restore is done, you will see all the selected backup versions in the restore destination. The latest backup version has the file name as the original file, while the previous versions have the time stamps added to their file names for easy identification.

« Common ▶ KMT ▶ Steven ▶ Others ▶ File Snapshot		
Name	Date modified	
File snapshot testing	11/7/2016 6:54 PM	
File snapshot testing_2016-11-07-18-39-11	11/7/2016 6:39 PM	
File snapshot testing_2016-11-07-18-51-55	11/7/2016 6:51 PM	
File snapshot testing_2016-11-07-18-53-26	11/7/2016 6:52 PM	

- 5. Click **Next** to proceed when you are done with the selections.
- 6. Select to restore the files to their **Original location**, or to an **Alternate location**, then click **Next** to proceed.
  - Original location the backed up data will be restored to the computer running the AhsayOBR under the same directory path as on the machine storing the backup source. For example, the backup source files are stored in C:\User\Downloads same as on the computer running the AhsayOBR.

<u>с</u>	Andyobin	
Choose W	here The Files To Be	Restored
Restore files to Original location		
<ul> <li>Alternate location</li> </ul>		Browse
	This share requires access credentials	
Show advanced option	1	
	Previo	us Next Cancel Help

 Alternate location – you can choose to restore data to an alternate location on the computer where AhsayOBR is running. Click Browse to choose a location, then click OK to select.

0	AhsayOBM	- 🗆 X
Choose Wi	nere The Files To Be Restored	k
<ul> <li>Original location</li> </ul>		
<ul> <li>Alternate location</li> </ul>	Browse	
	Change Path	
Show advanced option	Look in : 📙 Downloads 🔹 🗸 🔁 🖆 🖽 🗸	
	Recent Items	
	Desktop Documents	
	This PC	
	Folder name :         C: Users'Downloads         OK           Network         Files of type :         All Files         Cancel	
	Previous Next Cancel	Help

Alternatively, you may also choose to restore data to an unmapped network share.

0	AhsayOBM	_ <b>D</b> X
Choose W Restore files to	here The Files To Be F	Restored
Original location		
<ul> <li>Alternate location</li> </ul>	\\W2K12RS1\Shared	Browse
_	This share requires access credentials	
	User name (e.g. domain\username)	
	Administrator	
	Password	
	•••••	
Show advanced opti	, 20	
	Previous	Next Cancel Help

7. Click **Show advanced option** to configure other restore settings:

Original location	
Choose W	here The Files
Restore files to <ul> <li>Original location</li> </ul>	
O Alternate location	
	This share requires access credentials
Restore file permi     Delete extra files     Follow Link     Verify checksum o     Hide advanced optior	f in-file delta files during restore

Iternate location

 $\odot$ 

Choose Wł	here The Files
Restore files to Original location	
<ul> <li>Alternate location</li> </ul>	\\W2K12RS1\Shared
	This share requires access credentials User name (e.g. domain\username)
	Administrator
	Password
	••••••
Restore file permis Delete extra files Follow Link Resolve Link Verify checksum of	sions in-file delta files during restore
Hide advanced option	

#### Restore file permissions

By enabling this option, file permissions of the operating system files will be restored. File permission defines, for example, the right to view or change a file by the system owner/group/individual. If file permission is not restored properly, there is a potential risk that the restored data could be viewed by group/individual who is not supposed to have the access to.

#### Delete extra files

By enabling this option, the restore process will attempt to synchronize the selected restore source with the restore destination, making sure the data in the restore destination is exactly the same as the restore source. Any data created after backup will be treated as "extra files" and will be deleted from the restore source if this feature is enabled.

#### Example:

i) Two files are created under the **Document folder 01**, namely doc 1 & doc 2.

▶ Docum	ent folder 01	
^	Name	*
	📋 doc 1	Files exected initially.
	📄 doc 2	Files created initially

- ii) A backup is performed for folder **Document folder 01**.
- iii) Two new files are created, namely doc 3 & doc 4.

Document folder 01				
^	Name			
	📄 doc 1	- Files created BEFORE backup		
	📄 doc 3 📄 doc 4	- Files created AFTER backup		
		-		

- iv) A restore is performed for the **Document folder 01**, with **Delete extra files** option enabled.
- v) Since doc 3 & doc 4 have never been backed up, therefore, they will be deleted from **Document folder 01**, leaving only the two files that have been backed up.

Document folder 01				
^	Name	*		
	📋 doc 1	– Files remain after restore		
	📄 doc 2			

WARNING					
Please exercise extra caution when enabling this feature. Consider what data in the restore source has not been backed up and what impact it would cause if those data were deleted.					
Prior to the data restore and synchronization, a warning message shows as the one shown below. Clicking <b>Yes</b> will delete the "extra file". You can check the <b>Apply to all</b> option to confirm deleting all the "extra files" at a time.					
NLAUREL\Departments\Customer Services\Common\KMT\Steven\Others\File     Snapshot\File snapshot testing - Copy - Copy.txt     Are you sure you want to delete this file/folder?					
Apply to all Yes No					

### Follow Link (Enabled by default)

When this option is enabled, not only the symbolic link or junction point will be restored, the directories and files that the symbolic link or junction point links to will also be restored.

The table below summarizes the behaviors when a restore is performed with different settings.

Follow Link	Restore to	Behavior
Enabled	Original location	Symbolic link or junction point is restored to the original backup location. Target directories or files are also restored to the original backup location.
Linabled	Alternate location	Symbolic link or junction point is restored to the location specified. Target directories or files are also restored to the alternate location specified.
Disabled	Original location	Symbolic link or junction point is restored to the original backup location. Target directories or files are NOT restored to the original backup location.
	Alternate location	Symbolic link or junction point is restored to the location specified. Target directories or files are NOT restored to the alternate location specified.

### Resolve Link (Only applicable for restoring to Alternate Location)

This option must be used in conjunction with the **Follow Link** option. When this option is enabled, the symbolic link or junction point, as well as the directories and files that the symbolic link or junction point links to will also be restored in the alternate location you have chosen. This means that the symbolic link or junction will point to the alternate location instead of the original location.

The table below summarizes the behaviors when a restore is performed with this option turned on and off.

Resolve Link	Behavior	
Enabled	Symbolic link or junction point is restored to the alternate location specified, with its target directories and files also restored to the same location in their relative path.	
	Target of the link or junction is updated to the new relative path. In other words, the link or junction now points to the new alternate location.	
Disabled	Symbolic link or junction point is restored to the alternate location specified, with its target directories and files also restored to the same location in their relative path.	
	However, target of the link or junction is NOT updated to the new relative path. In other words, the link or junction still points to the original location.	

### Verify checksum of in-file delta files during restore

By enabling this option, the checksum of in-file delta files will be verified during the restore process. This will check the data for errors during the restore process and create a data summary of the in-file delta files which will be included in the report.

- 8. Once done with the restore settings, click **Next** to proceed.
- 9. Select the temporary directory for storing temporary files, such as delta files when they are being merged.

By default, the temporary files are stored under the temporary directory of the user profile directory. However, there is a chance that the same directory path does not exist in the computer you are running the AhsayOBR. In that case, you will have to click **Browse** to define a new location for storing the temporary files. Otherwise, you will not be able to perform a restore.

Once the temporary directory is configured, click Restore to start the restore

0	AhsayOBM	_ <b></b>
	Temporary Directory	
	Temporary directory for storing restore files	
	C:\Users\Temp Browse	
	Previous Restore Ca	ncel Help

10. Restore job has completed successfully. To check for the restore log, click the 🖸 icon.

0	•	AhsayOBM		
		Restore		
	File Backup			
G	AhsayCBS (Host: 125 Restore Complete Estimated time left Restored Elapsed time Transfer rate	ed Successfully	<u>م</u>	
				Close Help

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The restore log window will be displayed. Click **Close** to exit the pop-up window.

AhsayOBM			
		_	_
	Show	All	~
Type		Time	
Start [ AhsayOBM v8.5.0.63 ]	03	/09/2021 1	14:19:51
Initializing decrypt action	03	/09/2021 1	14:19:51
Initializing decrypt action Completed	03	/09/2021 1	14:19:51
Creating new directory "C:\Users\Restore\C_"	03	/09/2021 1	14:19:51
Creating new directory "C:\Users\Restore\C_\Users"	03	/09/2021 1	14:19:51
Creating new directory "C:\Users\Restore\C_\Users\Administrator"	03	/09/2021 1	14:19:51
Creating new directory "C:\Users\Restore\C_\Users\Administrator\Desktop"	03	/09/2021 1	14:19:51
Creating new directory "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files"	03	/09/2021 1	14:19:51
1 Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_acb_quickstart_win_v8 - Copy (2) - Copy.p	. 03	/09/2021 1	14:19:51
1 Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_acb_quickstart_win_v8 - Copy (2).pdf" (Tot.	03	/09/2021 1	14:19:51
1 Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_acb_quickstart_win_v8 - Copy (3).pdf" (Tot.	03	/09/2021 1	14:19:51
Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_obm_quickstart_win_v8 - Copy.pdf" (Total .	03	/09/2021 1	14:19:54
Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_obm_quickstart_win_v8.pdf" (Total 7.74M.	03	/09/2021 1	14:19:54
Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_obm_user_oracle_win_v8 - Copy (2) - Cop	. 03	/09/2021 1	14:19:55
Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_obm_user_oracle_win_v8 - Copy (2).pdf" (	. 03	/09/2021 1	14:19:55
Downloading "C:\Users\Restore\C_\Users\Administrator\Desktop\Test files\guide_obm_user_oracle_win_v8 - Copy (3).pdf" (	. 03	/09/2021 1	14:19:55
Restore Completed Successfully	03	/09/2021 1	14:19:57
ogs per page 50 V		Page	1/1 🗸
			c
		Clos	

11. After restoring, click the **close** button to exit the AhsayOBR, then click **Yes**. This will completely uninstall the software. If you wish to use it again, you will have to launch it again according to the instructions in <u>Ch. 5.2 Launch AhsayOBR</u>.

0	AhsayOBM	
	Select Your Files To Be R	lestored
	Select what to restore	
	Choose from files as of job 👻 03/09/2021 👻 Latest 👻	
	Folders Name Size	é Date modified
2	Are you sure you want to exit AhsayOBM?	
		Yes No
		) V Page 1/1 V
		Previous Next Cancel Help
		Henry Herry Herry

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# 7.3 OpenDirect Restore

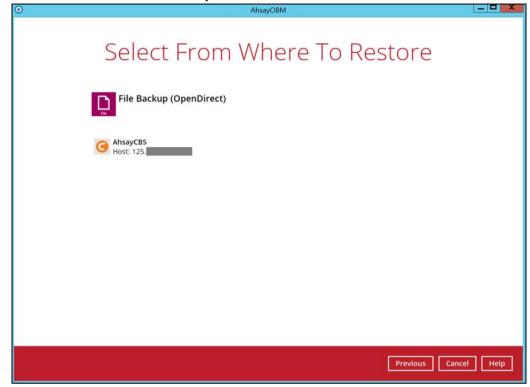
This restore method applies to backup sets created with OpenDirect restore enabled only.

IMPORTANT				
	Before you proceed with the OpenDirect Restore, ensure that the following dependencies are fulfilled. Failure to do so may cause the restore to fail.			
	Microsoft Visual C++ 2015 Redistributable (x86) / (x64) https://www.microsoft.com/en-hk/download/confirmation.aspx?id=48145			
	Microsoft Visual C++ 2015 Redistributable Update 3 RC https://www.microsoft.com/en-us/download/details.aspx?id=52685			
<u></u>	Update for Universal C Runtime in Windows https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in- windows			
	Prerequisites for Windows 8.1 or Windows Server 2012 R2			
	Install KB2919442			
	https://support.microsoft.com/en-us/help/2919442/march-2014-			
	servicing-stack-update-for-windows-8.1-and-windows-server-2012-r2			
	Install KB2919355			
	https://support.microsoft.com/en-us/help/2919355/windows-rt-8.1,-			
	windows-8.1,-and-windows-server-2012-r2-update-april-2014			
	Microsoft Security Advisory 3033929 for <b>Windows 7</b> and <b>Windows Server 2008 R2</b> https://technet.microsoft.com/en-us/library/security/3033929.aspx			

1. After logging in to your backup account, the available backup set(s) for restore will be displayed. Click on the backup set that you would like to restore.

0	AhsayOBM	_ 🗆 X
Please Se	elect The Backup Set To Resto Sort by Creation Time V	ore
File	File Backup Owner: win08r2entbyol Newly created on Tuesday, March 09, 2021 17:53 File Backup (OpenDirect)	
File	Owner: win08r2entbyol Newly created on Tuesday, March 09, 2021 22:31	
	CI	ose Help

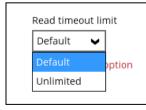
2. Click on the location from where you would like to restore the data from.



 From the two available restore modes, select the option Open backup data directly without restoration (OpenDirect). Click Show advanced option to display the other restore settings.

Please Choose A Restore Mode
Restore mode
O Normal restore
<ul> <li>Open backup data directly without restoration (OpenDirect)</li> </ul>
Show advanced option

**Read timeout limit** defines the duration when the OpenDirect restore session will be disconnected if there is no response from the mounted compressed or image file.



- Default This setting is suitable for compressed or image file located on a local, removable, or network drive. The timeout value is 15 seconds.
- Unlimited The connection will not have a timeout when this option is selected. This setting is recommended under the following usage:
  - Backup destination is a cloud storage.
  - AhsayCBS over the Internet.
  - A large compressed or image file with large incremental delta chain.

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#### NOTE

If in doubt or unsure about the compressed or image file size or network stability, it is recommended to use **Unlimited**.

Click **Next** once done with the selection.

4. The following screen will be displayed when the OpenDirect restore for the backup set on the AhsayOBR machine will be performed for the first time. Click **Install** to confirm mounting of file(s) on the machine. Clicking **No** will exit the restore process.

0	AhsayOBM	_ <b>D</b> X
?	Virtual File System Driver - Driver is not installed	Install No
		Cancin

5. Select to restore files from a specific backup job, or from all files available, then select the files or folders that you would like to restore.

Select Y	our Files To Be	e Re	stored
Select what to restore Choose from files as of jo	b 🗙 18/05/2017 🖌 Latest 🖌		
Folders	Name	Size	Date modified
- 🕒 AhsayCBS	🗹 🎒 OpenDirect Restore 01.zip	60 KB	18/05/2017 11:16
🖕 🔲 📕 C:\	DenDirect Restore 02.zip	54 KB	18/05/2017 11:22
⊡-□ 🌽 Users ⊡-□ 🥦 steven ⊡-□ 🛄 Desktoj	OpenDirect Restore 03.zip	106 KB	18/05/2017 11:22

6. Select a temporary directory for storing restore files, then click **Restore** to start the restore process.

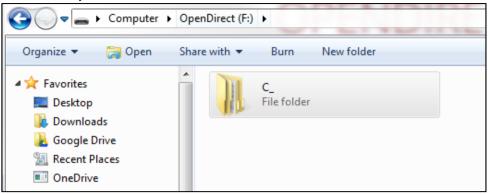
•		AhsayOBM	
	Τ		
	lempo	orary Directory	
		5	
	Temporary directory for storing restore	files	
	D:\Temp	inco	Browse
		Previous	Restore Cancel Help

7. You will be prompted to select a drive letter where you wish the mounted files to be mapped on your machine. Click the drop-down arrow to choose then click **OK** to select.

0	AhsayOBM	X
	OpenDirect	
	File Backup (OpenDirect)	
	Ahsai/ RS (Host: 175 5 18/ 16/ 80)	
	Please choose a drive letter, and also add the drive to exception list of antivirus or security software in advance.	
		ок
	Cancel	Help

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8. The selected drive letter will be mapped and prompted in the Windows Files Explorer with the files you wish to restore.



9. You can now click on the files to view them directly from here, which will be in read-only mode.

enDirect (F:) • C_ • Users • steven	▶ Desktop ▶	✓ 49	Search Desktop		
Burn New folder					
Name	Date modified	Туре	Size		
👍 OpenDirect Restore 01	5/18/2017 11:16 AM	Compressed (zipp	60 KB		
OpenDirect Restore 02	5/18/2017 11:22 AM	Compressed (zipp	54 KB		
OpenDirect Restore 03	5/18/2017 11:22 AM	Compressed (zipp	106 KB		

### If it is a zipped file, you can directly click on it to see all the individual files inside.

→ Users → steven. Deskto	op     OpenDirect Restore 01	<ul> <li>✓</li> <li>✓</li></ul>	rch OpenDirec
			90
Name	Туре	Compressed size	Password
R ACB icon	PNG image	3 KB	No
📭 AhsayCBS icon	PNG image	4 KB	No
尾 mounting in progress	PNG image	15 KB	No
nounting in progress 2	PNG image	15 KB	No
尾 mounting in progress 3	PNG image	14 KB	No
nounting in progress 4	PNG image	11 KB	No

You may also copy individual file(s) you wish to restore to your local machine.

C_ ► Users ► steven. ► Deskto	op      OpenDirect Restore	• 01 🗸	Sec	arch OpenDirect
				3
Name	Туре	Compress	ed size	Password
Note: ACB icon	PNG image		3 KB	No
📭 AhsayCBS icon	PNG image		4 KB	No
尾 mounting in progress	PNG image		15 KB	No
📭 mounting in progress 2	PNG image	0	15 KB	No
📭 mounting in progress 3	PNG image	Open	14 KB	No
mounting in progress 4	PNG image	Сору	11 KB	No
		Properties		

10. The mounted drive letter cannot be ejected from the Windows File Explorer, it will only be closed when you exit AhsayOBR.



11. When you have finished restoring the necessary files, you can go back to AhsayOBR to **Cancel** and **Stop the OpenDirect**.

0	AhsayOBM	- <b>X</b>
	OpenDirect	
Fa	File Backup (OpenDirect)	
<b>(</b>	AhsayCBS (Host: 125. ) Mounting virtual file systemCompleted Elapsed time 7 min 5 sec Transfer rate 0bit/s OpenDirect	¢
		Cancel Help

0	AhsayOBM	_ <b>D</b> X
	OpenDirect	
	File Backup (OpenDirect)	
	AssayCBS (Host: 125	
	<b>?</b> Are you sure to stop the OpenDirect?	
		Stop the OpenDirect Cancel
		Cancel Help

### IMPORTANT

- 1. As a result of the limitation of the virtual file system library, the mapped drive will only be unmounted from your machine when you exit AhsayOBR. In other words, each OpenDirect restore session on AhsayOBR can only be mounted and unmounted once.
- 2. OpenDirect restore of file backup sets:
  - Will not show up on the Restore Status tab in Live Activities of the backup service provider AhsayCBS. Restore Status tab in Live Activities only applies to the restore performed directly through AhsayOBR.
  - Will not generate restore reports or report email on backup service provider AhsayCBS.
  - > Will not generate restore log on AhsayOBR.

# 8 Microsoft Hyper-V Guest VM Granular Restore

#### IMPORTANT

Before you proceed with the Granular Restore, ensure that the following dependencies are fulfilled. Failure to do so may cause the restore to fail.

- Microsoft Visual C++ 2015 Redistributable (x86) / (x64) <u>https://www.microsoft.com/en-hk/download/confirmation.aspx?id=48145</u>
- Microsoft Visual C++ 2015 Redistributable Update 3 RC <u>https://www.microsoft.com/en-us/download/details.aspx?id=52685</u>
- Update for Universal C Runtime in Windows <u>https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in-windows</u>
  - Prerequisites for Windows 8.1 or Windows Server 2012 R2
    - Install KB2919442
       <u>https://support.microsoft.com/en-us/help/2919442/march-2014-servicing-stack-update-for-windows-8.1-and-windows-server-2012-r2</u>
    - Install KB2919355
       <u>https://support.microsoft.com/en-us/help/2919355/windows-rt-8.1,-windows-8.1,-and-windows-server-2012-r2-update-april-2014</u>
- Microsoft Security Advisory 3033929 for Windows 7 and Windows Server 2008 R2 <u>https://technet.microsoft.com/en-us/library/security/3033929.aspx</u>

## 8.1 Requirements and Limitations

- 1. Granular restore does not support the mounting of virtual disks, for example if the disk itself is encrypted using Windows Bitlocker or other third-party security features.
- Granular restore does not support the restore of folders or files on a virtual disk if the files/folders are encrypted. For example, if the "Encrypt contents to secure data" is selected in Advanced attributes.
- 3. The mounting of Linux/Unix file systems from virtual disk file is currently not available due to limitations of the file system drivers.
- 4. Granular restore can only be performed on one guest VM at a time.

## 8.2 Start Granular Restore

1. After logging in to your backup account successfully, you should see a screen showing all the available backup sets for restore. Select the backup set that you would like to restore data from.

Please Se	elect The Backup Set To Restore
HYPER-V	<b>OpenDirect Restore</b> Owner: w16-hvcl-cl02 Last Backup: Thursday, May 11, 2017 16:36
HYPER-V	OpenDirect Restore 02 Owner: w16-hvcl-cl02 Newly created on Friday, May 12, 2017 10:04
HYPER-V	OpenDirect Restore 03 Owner: w16-hvcl-cl02 Newly created on Friday, May 12, 2017 10:06

2. Select the backup destination that contains the guest VM that you would like to restore.

Select The Destination From Which To Restor
Hyper-V GR
Local-1 F:\HyperVRunDirect AhsayCBS Host: 10.120.10.12:443

3. Select to the Restore individual files in virtual machine (Granular Restore) option. Click **Show advanced option** to display the other restore settings.

Please Choose A Restore Mode
Restore mode O Restore virtual machines Restore individual files inside virtual machine (Granular Restore)
Mount virtual disks automatically
Show advanced option

### NOTE

The **Mount virtual disks automatically option** is selected by default. If the guest VM contains a multiple virtual disk and you only require the restore of files from a single or certain virtual disk(s), then unselect this option to speed up the virtual disk mounting. Otherwise, Granular Restore will connect and mount all available virtual disks and this process could take longer.

**Read timeout limit** defines the duration when the Granular Restore session will be disconnected if there is no response from the mounted virtual machine.

Read timeout limit			
	Default 💊	•	
	Default		ption
	Unlimited		

- Default This setting is suitable for guest VMs located on a local, removable, or network drive. The timeout value is 15 seconds.
- Unlimited The connection will not have a timeout when this option is selected. This setting is recommended under the following usage:
  - Backup destination is a cloud storage.
  - AhsayCBS over the Internet.
  - A large guest VM or guest VM with large incremental delta chain.

NOTE

If in doubt or unsure about the guest VM size or network stability, it is recommended to use **Unlimited**.

Click **Next** once done with the selection.

4. The following screen will be displayed when the Granular restore for the backup set on the AhsayOBR machine will be performed for the first time. Click **Install** to confirm mounting of the virtual disk on the machine. Clicking **No** will exit the restore process.



5. Select the virtual machine that you would like to perform Granular Restore for, then click **Next** to proceed.

t Your Virt	ual Machines	s To	Be Res
Select what to restore Choose from files as of job	✓ 05/16/2017 ▼ Latest ▼		
Folders	Name	Size	Date modified
AhsayCBS	Snapshots Virtual Hard Disks Virtual Machines		
🖶 🕞 🚪 FreeDos 🖶 📇 Host Component	emponents.xml writers.xml	9 KB 7 KB	05/16/2017 14:55 05/16/2017 14:55

6. Select a temporary directory for storing restore files, then click **Restore** to start the Granular restore process.

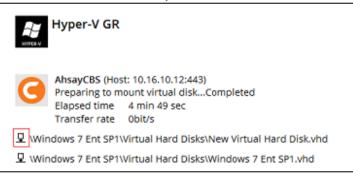


7. When the virtual disk(s) are in the process of being prepared for mounting on the AhsayOBR machine, you will see the following screen.



Please wait as the process could take some time depending on the size of the virtual disk, network bandwidth, and storage location.

8. If the **Mount virtual disks automatically** option is unselected, then click on the disk icon to mount the virtual disk you wish to restore files from.



Otherwise, the virtual disks will be automatically mounted without manual selection.

Hyper-V GR	
AbsayCBS (Host: 10.16.10.12:443) Mounting virtual disk "E:\Windows 7 Ent SP1\Virtual Hard Disks\Windows 7 Ent SP1 Elapsed time 13 min 42 sec Transfer rate 59.56Mbit/s	.vhd"C
Windows 7 Ent SP1\Virtual Hard Disks\New Virtual Hard Disk.vhd Volume-1	<b>^</b> ৭ দ্র
Windows 7 Ent SP1\Virtual Hard Disks\Windows 7 Ent SP1.vhd Volume-1 Volume-2	<b>^</b> 또 만

There are two options to restore individual files from here.

Option 1: Restore Using AhsayOBR File Explorer

This method allows you to use the file explorer in AhsayOBR to browse through the files from the backup up image mounted and select those you wish to restore.

i. Click the icon to browse the files in the mounted backup image. If there are multiple volumes in the guest VM, you can only select one volume to restore indidual files at a time.

You will then see a file explorer menu as shown below. Select the file(s) you wish to restore, then click **Next** to proceed.

Select Your Files To Be Restored				
Folders Win2003.vmdk (Volume-1) 477c0b3c92104cd3a Config.Msi Config.Msi Config.Msi Config.Msi Folders and Setti Folders	1 V W msxpsdrv.cat V msxpsdrv.inf M msxpsinc.gpd V msxpsinc.ppd N mxdwdrv.dll V msxpssvcs.dll	5ize 144 KB 11 KB 3 KB 1 KB 1 KB 731 KB 2,868 KB	Date modified 06/07/2008 20:06 19/06/2008 13:33 19/06/2008 11:03 19/06/2008 13:33 06/07/2008 13:33 06/07/2008 20:06 06/07/2008 17:36	
NOTE				
Some system folder(s)/file(s) (e.g., System Volume Information) are only shown in the AhsayOBR File Explorer and will be not restored. Therefore, those folder(s)/file(s) will not				

ii. Select a path where you wish the files to be restored to, then click Restore.

be shown in the mapped drive shown in step iv below.

Cho	ose Where The Files To Be R	estored
Re	estore files to	Browse

iii. The following screen shows when the selected files have been restored to the defined destination.



		Restore
Where	GR-VMWARE	
$\odot$	Local-1 (G:\VMware-	RunDirect-Sore)
	Restore Complete	ed Successfully
	Estimated time left	0 sec
	Restored	342.33M (1 file)
	Elapsed time	7 sec
	Transfer rate	426.13Mbit/s

iv. Open the defined restore path and you should be able to see the files being restored there.

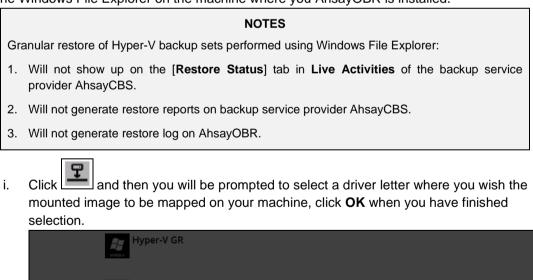
🕞 🕞 🗢 🕌 🕨 Win2003.vmdk (	/olume-1) • 477c0b3c92104cd3a1226aeb06e7f6	10 🕨 amd64	• 4 <sub>7</sub>	Search amd64	
Organize 👻 Include in library	Organize ▼ Include in library ▼ Share with ▼ Burn New folder இ				
☆ Favorites	Name	Date modified	Туре	Size	
🧮 Desktop	ilterpipelineprintproc.dll	5/10/2017 12:08 PM	Application extens	64 KB	
🐌 Downloads	msxpsdrv	5/10/2017 12:08 PM	Security Catalog	11 KB	
诸 Google Drive	msxpsdrv	5/10/2017 12:08 PM	Setup Information	3 KB	
🗐 Recent Places	msxpsinc.gpd	5/10/2017 12:08 PM	GPD File	1 KB	
OneDrive	msxpsinc.ppd	5/10/2017 12:08 PM	PPD File	1 KB	
	🚳 mxdwdrv.dll	5/10/2017 12:08 PM	Application extens	64 KB	
☐ Libraries ☐ Documents	🚳 xpssvcs.dll	5/10/2017 12:09 PM	Application extens	64 KB	

### **Option 2: Restore Using Windows File Explorer**

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G:

This method allows you to browse through the files from the mounted virtual disk through the Windows File Explorer on the machine where you AhsayOBR is installed.



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ОК

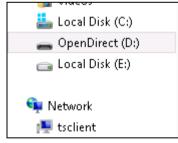
ii. The selected drive letter will be mapped and prompted in the Windows Files Explorer with the files you wish to restore.

(€) ♥ ↑ □ ► This PC ► Local Disk (E:) ►				
🚖 Favorites	Name	-	Date modified	Туре
📃 Desktop	퉬 477c0b3c92104cd3a1226aeb06e7f610		5/25/2016 4:11 PM	File folder
鷆 Downloads	퉬 Documents and Settings		5/18/2016 10:16 PM	File folder
🔢 Recent places	퉬 Inetpub		5/25/2016 4:28 PM	File folder
	퉬 Program Files		5/8/2017 3:38 PM	File folder
🌉 This PC	퉬 WINDOWS		5/8/2017 3:34 PM	File folder
膧 Desktop	퉬 wmpub		5/18/2016 9:04 PM	File folder
Documents				

iii. You can now click on the files to view them directly from here, which will be in readonly mode, or copy them to your local machine.

► Local Disk (E:) ► 477c0b3c92104c				
Name	Date modified	Туре	2	Size
🚳 filterpipelineprintproc.dll	7/6/2008 8:06 PM	· · ·	7_7in	
🧼 msxpsdrv.cat	7/6/2008 8:06 PM		<b>7-Zip</b> Edit with Notepad++	·
msxpsdrv.inf	6/19/2008 1:33 PM			pau++
📄 msxpsinc.gpd	6/19/2008 11:03 AM		Send to	
nsxpsinc.ppd	6/19/2008 1:33 PM		Cut	
🚳 mxdwdrv.dll	7/6/2008 8:06 PM		Сору	
🚳 xpssvcs.dll	7/6/2008 5:36 PM		Create shortcu	t
			Delete	
		Rename		
			Properties	

iv. The mounted drive letter cannot be ejected from the Windows File Explorer, it will only be closed when you exit AhsayOBR.



v. When you have finished restoring the necessary files, you can go back to AhsayOBR and click on **Cancel**.

Granular Restore
GR-VMWARE
Local-1 (G:WMware-RunDirect-Sore) Mounting virtual disk "H:Windows 2003 SP2 Ent [10.1.0.208]/Hard disk 1/Win2003.vmdk" Elapsed time 3 min 30 sec Transfer rate 9.22kbit/s
Windows 2003 SP2 Ent [10.1.0.208]/Hard disk 1/Win2003.vmdk
Volume-1     Q     Z     Windows 2003 SP2 Ent [10.1.0.208]/Hard disk 2/Win2003_1.vmdk
Powered by OpenDirect
Cancel Help

vi. Then click on **Stop the granular restore** to unmount the virtual disk(s).

	Local-1 (G:\VMware-RunDirect-Sore) Restore reference lob ID: 2017-07-06-16-56-16	
3	Are you sure to stop the granular restore?	
		Stop the granular restore Cancel

#### IMPORTANT

Due to the limitation of the virtual file system library, the mounted virtual disks will only be unmounted from your machine when you exit AhsayOBR.

# 9 VMware vCenter/ESXi Guest VM Granular Restore

#### IMPORTANT

Before you proceed with the Granular Restore, ensure that the following dependencies are fulfilled. Failure to do so may cause the restore to fail.

- Microsoft Visual C++ 2015 Redistributable (x86) / (x64) <u>https://www.microsoft.com/en-hk/download/confirmation.aspx?id=48145</u>
- Microsoft Visual C++ 2015 Redistributable Update 3 RC https://www.microsoft.com/en-us/download/details.aspx?id=52685
- Update for Universal C Runtime in Windows <u>https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in-windows</u>
  - Prerequisites for Windows 8.1 or Windows Server 2012 R2
    - Install KB2919442
       <u>https://support.microsoft.com/en-us/help/2919442/march-2014-servicing-stack-update-for-windows-8.1-and-windows-server-2012-r2</u>
    - Install KB2919355
       <u>https://support.microsoft.com/en-us/help/2919355/windows-rt-8.1,-windows-8.1,-and-windows-server-2012-r2-update-april-2014</u>
- Microsoft Security Advisory 3033929 for Windows 7 and Windows Server 2008 R2 <u>https://technet.microsoft.com/en-us/library/security/3033929.aspx</u>

## 9.1 Requirements and Limitations

- 1. Granular restore does not support the mounting of virtual disks, for example if the disk itself is encrypted using Windows Bitlocker or other third-party security features.
- Granular restore does not support the restore of folders or files on a virtual disk if the files/folders are encrypted. For example, if the "Encrypt contents to secure data" is selected in Advanced attributes.
- 3. The mounting of Linux/Unix file systems from virtual disk file is currently not available due to limitations of the file system drivers.
- 4. Granular restore can only be performed on one guest VM at a time.

## 9.2 Start Granular Restore

1. After logging in to your backup account successfully, you will see a screen showing all the available backup sets for restore. Select the backup set that you would like to restore data from.

Please S	elect The Backup Set To Restore
VMware	<b>GR-VMWARE</b> Owner: steven-tse Newly created on Monday, 8 May 2017 19:08
VMware	<b>BackupSet-1</b> Owner: win-tu41rc45mk0 Newly created on Tuesday, 9 May 2017 09:42
VMware	OPENDIRECT NOT SELECTED Owner: win-tu41rc45mk0 Newly created on Tuesday, 9 May 2017 16:03

2. Select the backup destination that contains the VM that you would like to restore.

Select The Destination From Which To R	estor
GR-VMWARE	
Cocal-1 G:\VMware-RunDirect-Sore G AhsayCBS Host: 10.120.0.12:80	

3. Select the **Restore individual files in virtual machine (Granular Restore)** option. Click **Show advanced option** to display the other restore settings.

Please Choose A Restore	Mode
Restore mode O Restore virtual machines O Restore individual files inside virtual machine (Granular Restore)	
<ul> <li>Mount virtual disks automatically</li> </ul>	
Show advanced option	

### NOTE

The **Mount virtual disks automatically option** is selected by default. If the guest VM contains a multiple virtual disk and you only require the restore of files from a single or certain virtual disk(s), then unselect this option to speed up the virtual disk mounting. Otherwise, granular restore will connect and mount all available virtual disks and this process could take longer.

**Read timeout limit** defines the duration when the Granular Restore session will be disconnected if there is no response from the mounted virtual machine.

Read timeout limit				
	Default 🗸 🗸	]		
	Default	option		
	Unlimited			
		-		

- Default This setting is suitable for guest VMs located on a local, removable, or network drive. The timeout value is 15 seconds.
- **Unlimited** The connection will not have a timeout when this option is selected. This setting is recommended under the following usage:
  - Backup destination is a cloud storage.
  - AhsayCBS over the Internet.
  - A large guest VM or guest VM with large incremental delta chain.

NOTE

If in doubt or unsure about the guest VM size or network stability, it is recommended to use **Unlimited**.

Click **Next** once done with the selection.

4. The following screen will be displayed when the Granular restore for the backup set on the AhsayOBR machine will be performed for the first time. Click **Install** to start the installation of drivers on the machine. Clicking **No** will exit the restore process.



5. Select the virtual machine that you would like to perform granular restore for, then click **Next** to proceed.

Your Virt	ual Machine	s To	Be Res
Select what to restore			
Choose from files as of job	♥ 05/16/2017 ♥ Latest ♥		
Folders	Name	Size	Date modified
B- 🖳 Local-1	🕮 Hard disk 1		
ia- 📱 10.1.0.6	Ard disk 2		
🗄 🗹 🚰 Windows 2003 SP2	Win2003.nvram	9 KB	05/16/2017 14:30
🗠 Hard disk 1	Win2003.vmsd	0 KB	05/09/2017 16:18
	Win2003.vmx	4 KB	05/16/2017 14:30
- 👜 Hard disk 2	VVIn2003.Vmx		

6. Select a temporary directory for storing restore files, then click **Restore** to start the Granular restore process.



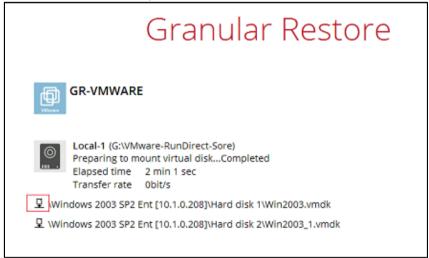


7. When the virtual disk(s) are in the process of being prepared for mounting on the AhsayOBR machine, you will see the following screen.



Please wait as the process could take some time depending on the size of the virtual disk, network bandwidth, and storage location.

8. If the **Mount virtual disks automatically** option is unselected, click on the disk icon to mount the virtual disk you wish to restore files from.



Otherwise, the virtual disks will be automatically mounted without manual selection.

9. When the virtual disk are mounted, you will see the following screen showing the information of the mounted virtual disk with the available volume shown.



## **Option 1: Restore Using AhsayOBR File Explorer**

This method allows you to use the file explorer in AhsayOBR to browse through the files from the backup up image mounted and select those you wish to restore.

i. Click the icon to browse the files in the mounted backup image. If there are multiple volumes in the guest VM, you can only select one volume to restore indidual files at a time.

You will then see a file explorer menu as shown below. Select the file(s) you wish to restore, then click **Next** to proceed.

Select Yo	ur Files To	Be Re	estored
Folders Win2003.vmdk (Volume-1) FOLDER Win2003.vmdk (Volume-1) FOLDER FOLDER Win2003.vmdk (Volume-1) FOLDER FO	<ul> <li>✓ msxpsdrv.inf</li> <li>✓ msxpsinc.gpd</li> <li>✓ msxpsinc.ppd</li> <li>✓ msxdwdrv.dll</li> <li>✓ msxpsvcs.dll</li> </ul>	Size 144 KB 11 KB 3 KB 1 KB 731 KB 2,868 KB	Date modified 06/07/2008 20:06 06/07/2008 20:06 19/06/2008 13:33 19/06/2008 11:03 19/06/2008 13:33 06/07/2008 20:06 06/07/2008 17:36

### NOTE

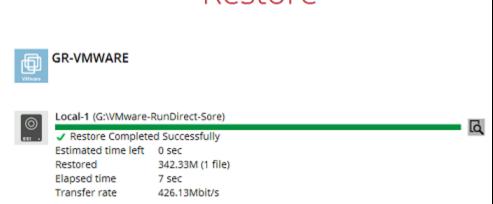
Some system folder(s)/file(s) (e.g., System Volume Information) are only shown in the AhsayOBR File Explorer and will be not restored. Therefore, those folder(s)/file(s) will not be shown in the mapped drive shown in **step iv** below.

ii. Select a path where you wish the files to be restored to, then click Restore



iii. The following screen shows when the selected files have been restored to the defined destination.

		Restore	
UVerset.	GR-VMWARE		
$\odot$	Local-1 (G:\VMware-	RunDirect-Sore)	
	Copying 72% of "G Estimated time left Restored Elapsed time Transfer rate	:\restore\Win2003.vmdk (Volume-1)\ISO\CentOS-6.4-x86_64-mini 0 sec 0 (0 file) 4 sec 0bit/s	.d <b>X</b>
		_	
		Restore	
		11000010	



iv. Open the defined restore path and you should be able to see the files being restored there.

🚱 🕞 🗸 🕨 Win2003.vmdk	(Volume-1) • 477c0b3c92104cd3a1226aeb06e7f610	▶ amd64	• 4 <sub>7</sub>	Search amd64	
Organize ▼ Include in library ▼ Share with ▼ Burn New folder ﷺ					
🔆 Favorites	Name	Date modified	Туре	Size	
🧮 Desktop	S filterpipelineprintproc.dll	5/10/2017 12:08 PM	Application extens	64 KB	
🐌 Downloads	and msxpsdrv	5/10/2017 12:08 PM	Security Catalog	11 KB	
🝌 Google Drive	i msxpsdrv	5/10/2017 12:08 PM	Setup Information	3 KB	
📳 Recent Places	msxpsinc.gpd	5/10/2017 12:08 PM	GPD File	1 KB	
OneDrive	msxpsinc.ppd	5/10/2017 12:08 PM	PPD File	1 KB	
	🚳 mxdwdrv.dll	5/10/2017 12:08 PM	Application extens	64 KB	
🧊 Libraries 📑 Documents	xpssvcs.dll	5/10/2017 12:09 PM	Application extens	64 KB	



### **Option 2: Restore Using Windows File Explorer**

This method allows you to browse through the files from the mounted virtual disk through the Windows File Explorer on the machine where you have AhsayOBR installed on.

### NOTES

Granular restore of Hyper-V backup sets performed using Windows File Explorer:

- 1. Will not show up on the [**Restore Status**] tab in **Live Activities** of the backup service provider AhsayCBS.
- 2. Will not generate restore reports on backup service provider AhsayCBS.
- 3. Will not generate restore log on backup service provider AhsayCBS.
- i. Click and then you will be prompted to select a driver letter where you wish the mounted image to be mapped on your machine, click **OK** when you have finished selection.

	Hyper-V GR	
?	Please choose a drive letter	
G:	~	ок

ii. The selected drive letter will be mapped and prompted in the Windows Files Explorer with the files you wish to restore shown.

🚖 Favorites	Name	-	Date modified	Туре
🔜 Desktop	퉬 477c0b3c92104cd3a1226aeb06e7f610		5/25/2016 4:11 PM	File folder
〕 Downloads	🐌 Documents and Settings		5/18/2016 10:16 PM	File folder
📃 Recent places	鷆 Inetpub		5/25/2016 4:28 PM	File folder
	🌗 Program Files		5/8/2017 3:38 PM	File folder
💺 This PC	🐌 WINDOWS		5/8/2017 3:34 PM	File folder
膧 Desktop	퉲 wmpub		5/18/2016 9:04 PM	File folder

iii. You can now click on the files to view them directly from here, which will be in readonly mode, or copy them to your local machine.

▶ Local Disk (E:)    ▶ 477c0b3c92104cc	13a1226aeb06e7f610 🕨 amd64			~ ¢	
Name	Date modified	Туре	2	Size	
🚳 filterpipelineprintproc.dll	7/6/2008 8:06 PM	· ·	7 710	• • • • •	
🥏 msxpsdrv.cat	7/6/2008 8:06 PM		7-Zip Edit with Notepad++		
🗿 msxpsdrv.inf	6/19/2008 1:33 PM				
msxpsinc.gpd	6/19/2008 11:03 AM	1	Send to	•	
msxpsinc.ppd	6/19/2008 1:33 PM		Cut		
🚳 mxdwdrv.dll	7/6/2008 8:06 PM		Сору		
🚳 xpssvcs.dll	7/6/2008 5:36 PM		Create shor	rtcut	
			Delete		
		Rename			
			Properties		

iv. The mounted drive letter cannot be ejected from the Windows File Explorer, it will only be closed when you exit AhsayOBR.



v. When you have finished restoring the necessary files, you can go back to AhsayOBR and click on **Cancel**.





vi. Then click on Stop the granular restore to unmount the virtual disk(s).



### IMPORTANT

Due to the limitation of the virtual file system library, the mounted virtual disks will only be unmounted from your machine when you exit AhsayOBR.

# **10 Contacting Ahsay**

# **10.1 Technical Assistance**

To contact Ahsay support representatives for technical assistance, visit the Partner Portal: <a href="https://www.ahsay.com/partners/">https://www.ahsay.com/partners/</a>

Also use the Ahsay Wikipedia for resource such as Hardware Compatibility List, Software Compatibility List, and other product information: https://wiki.ahsay.com/

# **10.2 Documentation**

Documentations for all Ahsay products are available at: <u>https://www.ahsay.com/jsp/en/home/index.jsp?pageContentKey=ahsay\_downloads\_documen</u> <u>tation\_guides</u>

You can send us suggestions for improvements or report on issues in the documentation by contacting us at:

https://www.ahsay.com/partners/

Please specify the specific document title as well as the change required/suggestion when contacting us.