

Ahsay Online Backup Manager v8

Microsoft Exchange 2016 Mail Level Backup & Restore Guide

Ahsay Systems Corporation Limited

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Revision History

Date	Descriptions	Type of modification
6 March 2019	Updated link in Ch. 1.4, 2.1.1, 2.1.1, 4.1.1, 4.2.1 and 5.1.1; Updated screenshots in Ch. 2.1.4, 4.1.1, 4.1.2, 4.1.3, 4.2.1, 4.2.3, 5.1.1, 5.1.2, 5.1.3, 5.2.1, 5.2.2 and 5.2.3; Added another restore option in Ch. 4.1.3, 4.2.3, 5.1.3 and 5.2.3	Modification

Table of Contents

1	Overview.....	1
1.1	Introduction	1
1.2	What is this software?	1
1.3	System Architecture	1
1.4	Why should I use AhsayOBM to back up my Mailboxes and Public Folders?	3
1.5	About This Document.....	8
1.5.1	Document Main Part	8
1.5.2	What should I expect from this document?	9
1.5.3	Who should read this document?.....	9
2	Preparation for Backup and Restore	10
2.1	Requirement.....	10
2.1.1	Software Requirement	10
2.1.2	Antivirus Exclusion Requirement	10
2.1.3	AhsayOBM Installation	10
2.1.4	Microsoft Exchange Mailbox Add-On Module.....	10
2.1.5	AhsayOBM Licenses.....	11
2.1.6	Backup Quota Requirement.....	11
2.1.7	Continuous Backup Module	11
2.1.8	Java Heap Size	11
2.1.9	Temporary Directory Folder	12
2.1.10	Scheduled Backup for Exchange Server in Data Availability Group (DAG)	12
2.1.11	Mailbox Role.....	12
2.1.12	Operating System.....	12
2.1.13	Supported Exchange Server 2016 Version.....	13
2.1.14	Windows User Account Permission	13
2.1.15	Enabling Mailbox.....	15
2.1.16	Backup Source Requirement	15
2.1.17	Port Configuration	16
2.1.18	Exchange related Windows Services.....	16
2.1.19	MS Exchange Databases.....	17
2.1.20	Windows PowerShell 5.1 Engine	17
2.1.21	.Net Framework 4.6.2 Features	18
2.2	Supported Source	19
2.3	Limitation.....	19
2.4	Best Practice and Recommendation.....	21
3	Overview of MS Exchange Mail Level Backup Process	23
4	On Exchange Server	24
4.1	Standalone Backup Option	24
4.1.1	Create Mail Level Backup Set.....	24
4.1.2	Run Mail Level Backup Job.....	31
4.1.3	Restore Mail Level Backup	33
4.2	Database Availability Group (DAG) Backup Option.....	40
4.2.1	Create Mail Level Backup Set.....	40

4.2.2	Run Mail Level Backup Job.....	47
4.2.3	Restore Mail Level Backup	48
5	On Remote Backup Machine	55
5.1	Standalone Backup Option	55
5.1.1	Create Mail Level Backup Set.....	55
5.1.2	Run Mail Level Backup Job.....	62
5.1.3	Restore Mail Level Backup	64
5.2	Database Availability Group (DAG) Backup Option.....	71
5.2.1	Create Mail Level Backup Set.....	71
5.2.2	Run Mail Level Backup Job.....	78
5.2.3	Restore Mail Level Backup	80
6	Contact Ahsay	87
6.1	Technical Assistance	87
6.2	Documentation	87

1 Overview

1.1 Introduction

This user guide aims at providing detailed information for backing up and restoring individual mail items and public folder items stored in Microsoft Exchange Server 2016 with AhsayOBM, also known as the Mail Level backup.

Mail Level Backup must be utilized in conjunction with full Information Store Backup as Mail Level backup for Microsoft Exchange Server is not designed to fully protect an Exchange Server, but to facilitate easy backup and fast restoration of individual emails, contacts, calendars or public folder, etc.

AhsayOBM supports standalone backup option and Database Availability Group (DAG) backup option for Exchange server Mail Level backup.

Exchange Server 2016 Mail Level backup and restore can be performed by installing AhsayOBM either on the Exchange server 2016 hosting the database or on a remote backup machine.

1.2 What is this software?

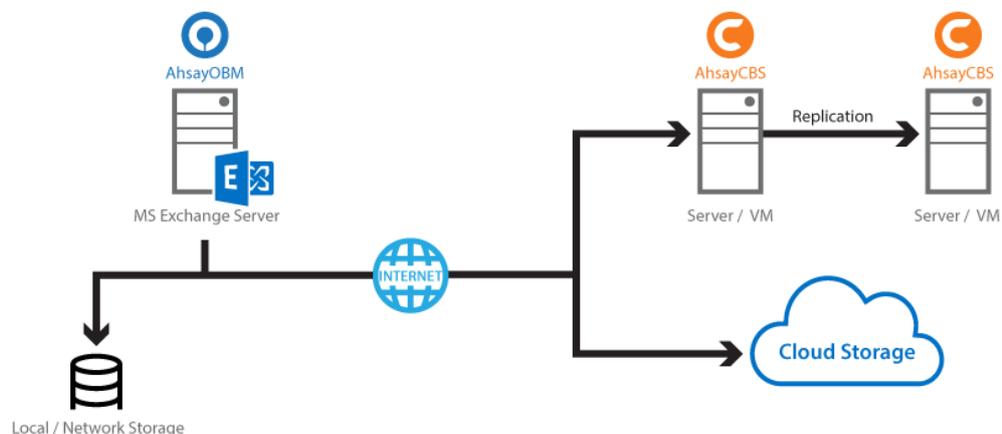
Ahsay brings you specialized client backup software, namely AhsayOBM, to provide a set of tools to protect your mailboxes and public folders on Microsoft Exchange Server 2016. This includes backup and recovery of individual emails, contacts, calendars and other mail items in your mailboxes and public folders, with snapshots / versioning, and retention policy to protect even email that you may have accidentally deleted from your Exchange 2016 mailboxes or public folders.

1.3 System Architecture

Below is the system architecture diagram illustrating the major elements involved in the backup and restore process among the Microsoft Exchange Server 2016, AhsayOBM and AhsayCBS.

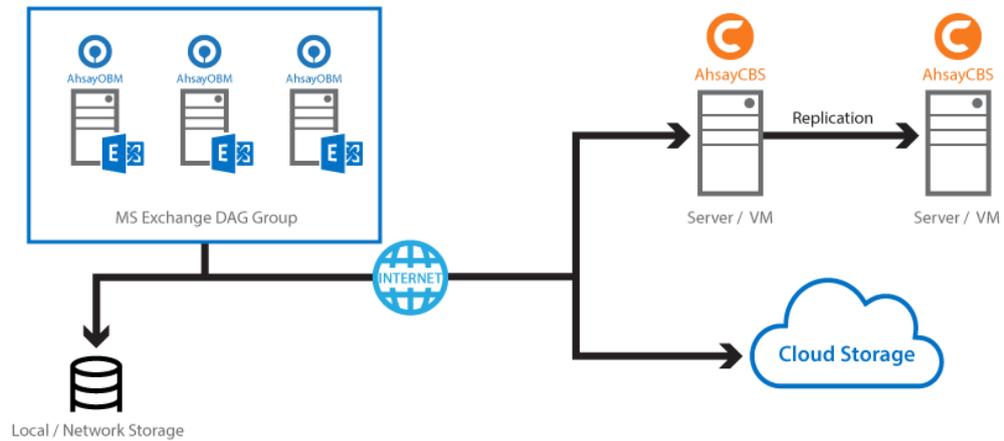
1. AhsayOBM v8.1.0.0 or above installed on Exchange Server 2016.

1. **Standalone:** The latest version of AhsayOBM is installed on the Exchange server which is connected to AhsayCBS backup server through LAN or internet.



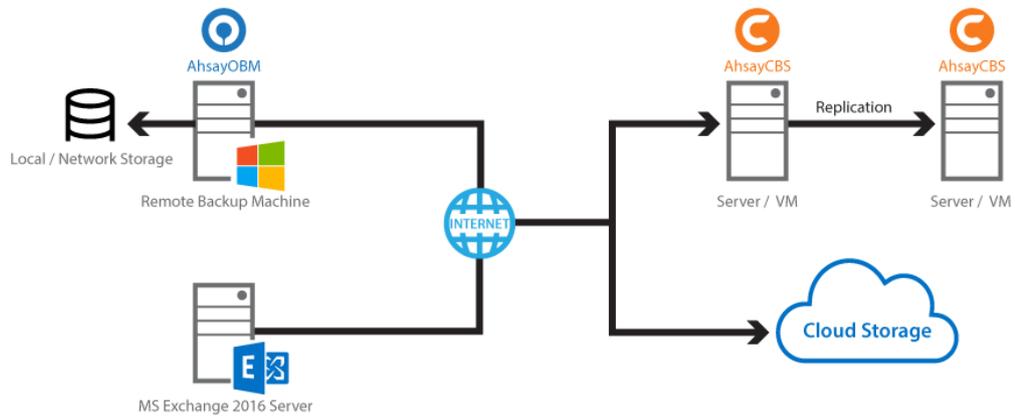
2. **Database Availability Group (DAG):** The latest version of AhsayOBM is installed on all the DAG members on Exchange server which is connected to AhsayCBS backup

server through LAN or internet, and all the DAG members share the same backup set.

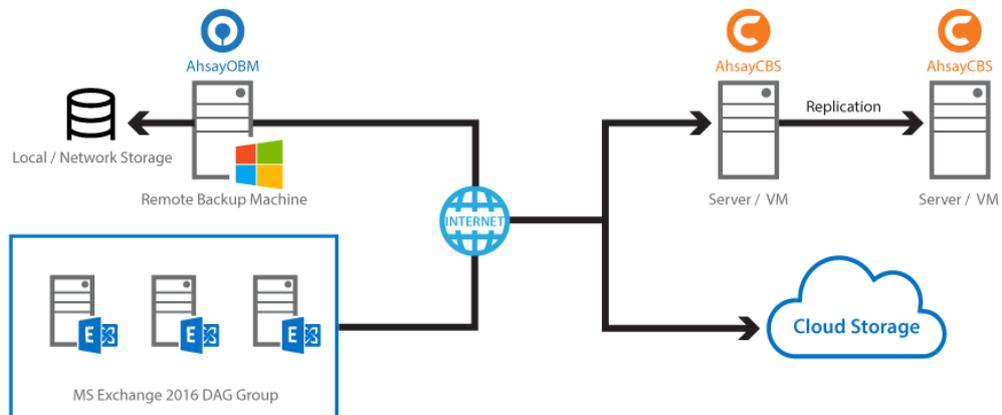


2. AhsayOBM v8.1.0.0 or above installed on Remote Backup Machine.

1. **Standalone:** The latest version of AhsayOBM is installed on the remote backup machine which is connected to Exchange server and AhsayCBS backup server through LAN or internet.

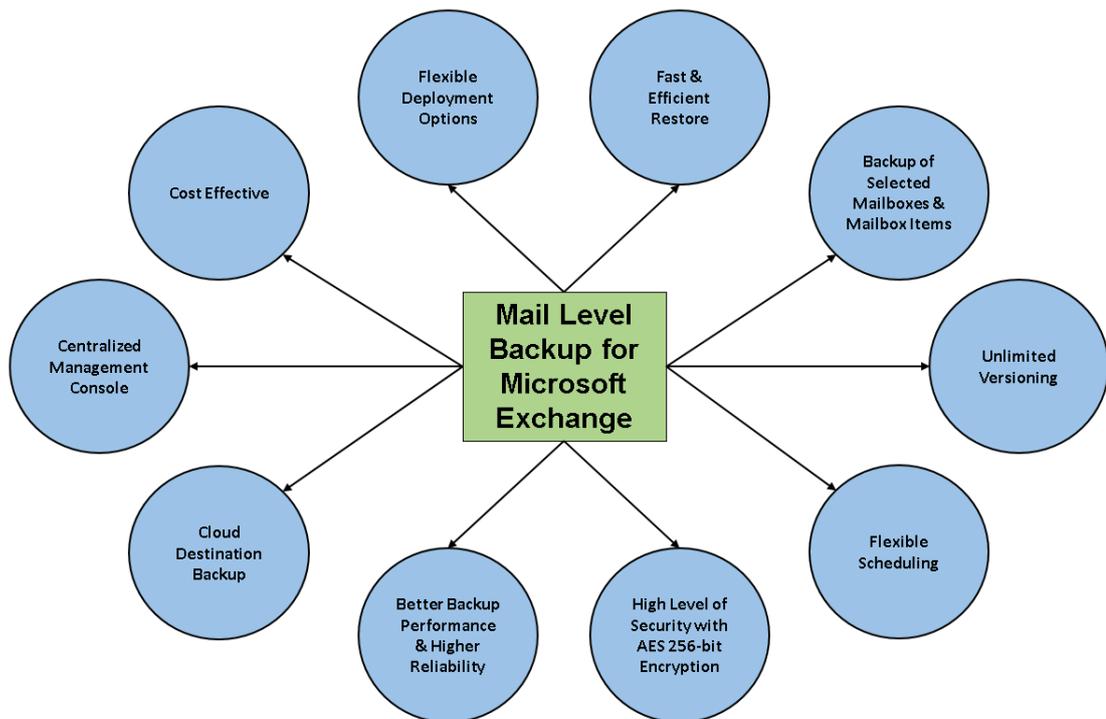


2. **Database Availability Group (DAG):** The latest version of AhsayOBM is installed on the remote backup machine which is connected to DAG members on Exchange server and AhsayCBS backup server through LAN or internet, and all the DAG members share the same backup set.



1.4 Why should I use AhsayOBM to back up my Mailboxes and Public Folders?

We are committed to bringing you a comprehensive Exchange 2016 Mail Level backup solution with AhsayOBM. Below are some key areas that we can help to make your backup experience a better one.



1. Fast and Efficient Restore

We understand that restore could be a time and resources consuming process, which is why AhsayOBM is designed with advanced technologies to make restore a fast and efficient process by restoring individual mail items without the need to restore the whole Exchange server database.

AhsayOBM supports recovery directly to a live production MS Exchange server, so there is no service interruption or downtime incurred, and also the user mailboxes do not have to be disabled and can function normally during the recovery procedure.

2. Backup of Selected Mailboxes & Mailbox Items

The backup resources can be mailbox level, folder level and even item level.

- ⦿ Flexible backup options:
 - Only select the required mailboxes, specific folders or items for backup.
- ⦿ Flexible restore options:
 - Restore the whole mailbox contents or just one email.
 - Restore mail items to the original mailbox or an alternate mailbox
 - Restore mail items to an alternate mailbox on another email domain

3. Unlimited Versioning

AhsayOBM provides backup and restore option for different version of exchange server to fulfill your requirement.

4. Flexible Scheduling

You may wish to run backup at a specified time interval of your choice, that's why we also allow you to set your own backup schedules so that you can take full control of the time when to perform backup.

- ⦿ **Block Level Incremental Backup**—this technology breaks down the backup files into multiple blocks and only the changed blocks will be backed up each time

5. High Level of Security with AES 256-bit Encryption

We understand your Exchange mail objects may contain sensitive information that requires to be protected, that is why your backup data will be encrypted with the highest level of security measure.

- ⦿ **Un-hackable Encryption Key** – to provide the best protection to your backup data, you can turn on the encryption feature which will default encrypt the backup data locally with AES 256-bit truly randomized encryption key.
- ⦿ **Encryption Key Recovery** – Furthermore, we have a backup plan for you to recover your encryption key in case you have lost it. Your backup service provider can make it mandatory for you to upload the encryption key to the centralized management console, the encryption key will be uploaded in hashed format and will only be used when you request for a recovery.

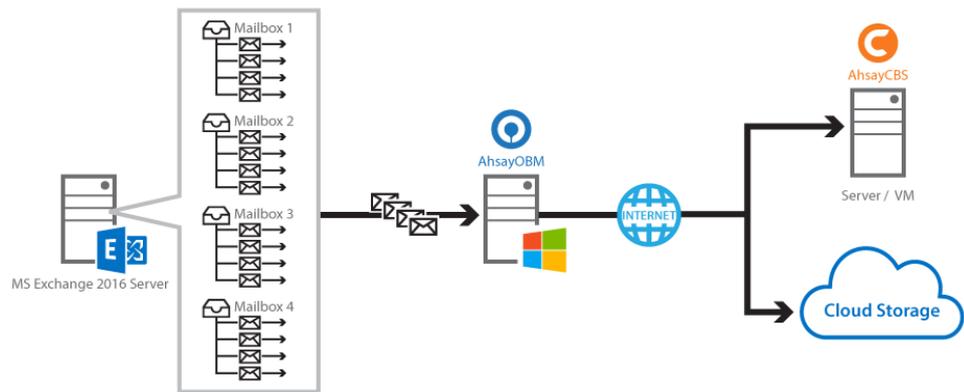
6. Better Backup Performance & Higher Reliability

1. Better Performance:

- ⦿ **Multi-thread Backup:** The technology utilizes the computing power of multiple CPU cores for creating multiple backup and restore threads to produce fast backup and restore performance.

The default setting for MS Exchange 2016 mail level backup sets supports:

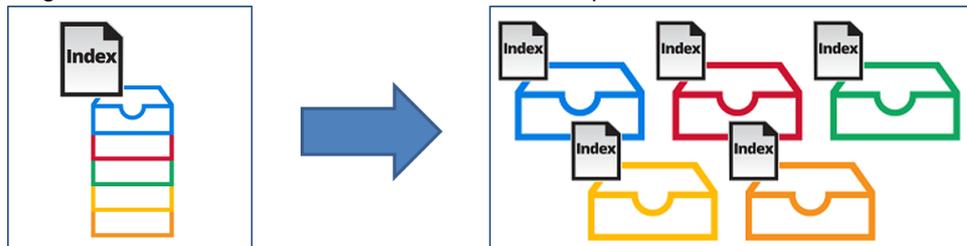
- Backup of 4 mailboxes concurrently (4 threads).
- For each of the 4 mailboxes, now supports a maximum 4 mail items concurrently (4 threads).



As shown the technology translate into a total of 16 concurrent threads compared with a total 4 concurrent backup threads for Exchange 2007/ 2010/ 2013 mail level backup.

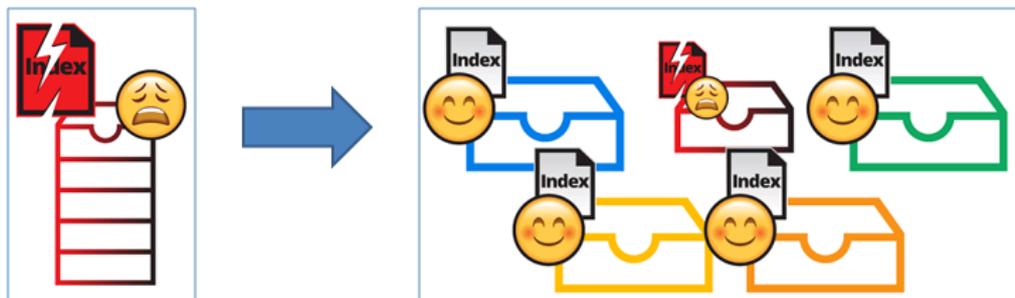
- Index File Structure: The index file structure has been re-designed to improve the backup and restore performance.

Each Exchange 2016 mailbox will have its own individual index file instead of a single index file for all mailboxes within the backup set.



This new design eliminates any potential I/O performance bottlenecks when the index file is updated during each backup job, which can occur when using single index file structure for multi-thread concurrent backup.

- Higher Reliability: The implementation of one index file per mailbox can significantly improve the overall resilience of backup and restore from index related issues.



For example, if a single index file is corrupted, it will only affect the corresponding mailbox, while other mailboxes selected for backup are unaffected.

7. Cloud Destination Backup

To offer you with the highest flexibility of backup destination, you can now back up mail objects to a wide range of cloud storage destinations. Utilizing cloud destination backup gives you an extra layer of protection in the event of a local drive corruption, where you will still be able to retrieve data from the cloud destination.

Below is a list of supported cloud destinations.

Aliyun (阿里云) *	Google Drive	Amazon S3	Amazon Cloud Drive
Google Cloud Storage	CTYun (中国电信天翼云)*	AWS S3 Compatible Cloud Storage	Microsoft OneDrive / OneDrive for Business
Rackspace	OpenStack	Microsoft Azure	Dropbox
FTP	SFTP	OneDrive	

8. Centralized Management Console

Our enriched features on the centralized web console offers you a one-stop location for monitoring and managing your backup and restore. Below is an overview of what you can do with it. For more details regarding the setup and operations of the centralized management console, refer to the [AhsayCBS User's Guide](#) for details.

- ⦿ Create / update / delete backup set
- ⦿ Configure user settings
- ⦿ Configure backup settings
- ⦿ View and download backup and restore reports
- ⦿ Monitor backup and restore live activities
- ⦿ Monitor storage statistic

9. Cost Effective

License is based on per user mailbox, so you only need to pay for the mailboxes that you wish to backup.

10. Flexible Deployment Options

AhsayOBM supports Mail Level backup and restore of Exchange Server 2016 by installing the client agent either on the Exchange server hosting the database, or on a remote backup machine.

Below is a comparison table on the differences on backup and restore with AhsayOBM installation on an Exchange server and on a remote backup machine.

	On Server Backup	Remote Backup
Backup	<ul style="list-style-type: none"> ➤ Backup jobs will utilize the Exchange server's resources, so it may impact the server performance. If the load on Exchange server is already high, this can impact the backup performance. ➤ There is minimal performance issue with the transfer of mail items from the Exchange mail store to 	<ul style="list-style-type: none"> ➤ Backup jobs will utilize the remote backup machine's resources, therefore, there is minimal impact on the Exchange server performance. ➤ Backup performance can be affected by the network connection speed between the Exchange server and the remote backup machine, especially for connection

	AhsayOBM.	<p>over the Internet.</p> <ul style="list-style-type: none"> ➤ General backup performance issues can be easily resolved by installing AhsayOBM on a more powerful backup machine.
Large Number of Mailboxes	<ul style="list-style-type: none"> ➤ Backup of a large number of mailboxes can take more time to complete. <p>For example, it may not be possible to run multiple mail level backup sets concurrently on the Exchange server for 1000 user mailboxes, as it may affect the server performance, so administrator may be limited to start one backup set at a time.</p> <p>1 backup set can only have a total of 16 concurrent threads by default.</p>	<ul style="list-style-type: none"> ➤ Backup of a large number of mailboxes can take less time to complete. <p>For example, 1000 user mailboxes can be divided into 5 separate backup sets of 200 mailboxes each. The 5 backup sets can be started concurrently on 1 machine or started by multiple machines.</p> <p>5 backup sets * 16 concurrent threads = 80 concurrent threads</p>
Backup Scheduling	<ul style="list-style-type: none"> ➤ For environment with limited backup window, there may not be sufficient time to complete both database and mail level backup jobs on a daily basis. 	<ul style="list-style-type: none"> ➤ For environment with limited backup window, remote backup may be a good option as the mail level backup can be completed remotely, while the database backup can be completed on the Exchange server at the same time period. ➤ Continuous backup can be enabled without significant impact on the Exchange server performance, as backup jobs will utilize the resources of the remote backup machine.
Costs	<ul style="list-style-type: none"> ➤ For Exchange DAG setup, the number of AhsayOBM licenses required is equal to the number of DAG members (nodes). For example, if there are 3 DAG members then 3 AhsayOBM licenses are required. ➤ If the Exchange server is 	<ul style="list-style-type: none"> ➤ Only requires 1 AhsayOBM license as remote backup of Exchange DAG only requires AhsayOBM to be installed on 1 machine. ➤ May require provision of additional Windows machine. It may also be possible to

	<p>already setup for database backups, then there is no additional license cost.</p> <ul style="list-style-type: none"> ➤ Do not require provision of additional Windows machine. 	reuse existing AhsayOBM installation on a Windows machine.
Restore	<ul style="list-style-type: none"> ➤ The restore of mailbox items to another (standby) MS Exchange server, requires installation of AhsayOBM on the new MS Exchange server. 	<ul style="list-style-type: none"> ➤ Easily restore mailbox items to another (standby) MS Exchange server, without the need to reinstall AhsayOBM. ➤ Restore mailbox items without direct / physical access to the MS Exchange server. ➤ Restore performance can be affected by any network connection issue between the Exchange server and the remote backup machine, especially if the connection is over the Internet.

1.5 About This Document

1.5.1 Document Main Part

The document can be divided into 3 main parts.

Part 1: Preparation for Exchange 2016 Mail Level Backup & Restore

Requirements

Requirements on AhsayOBM, Exchange Server 2016 and Windows Operating System

Supported Backup Source & Limitation

Supported backup source of Exchange Server 2016 and limitation

Best Practice and Recommendation

Items recommended to pay attention to before backup and restore

Part 2: Perform Mail Level Backup and Restore for Microsoft Exchange 2016 on Exchange Server

Standalone Backup Option

Create Mail Level backup set, run Mail Level backup job and restore Mail Level backup

Database Availability Group (DAG) Backup Option

Create Mail Level backup set, run Mail Level backup job and restore Mail Level backup

Part 3: Perform Mail Level Backup and Restore for Microsoft Exchange 2016 on Remote Backup Machine

Standalone Backup Option

Create Mail Level backup set, run Mail Level backup job and restore Mail Level backup

Database Availability Group (DAG) Backup Option

Create Mail Level backup set, run Mail Level backup job and restore Mail Level backup

1.5.2 What should I expect from this document?

After reading through this documentation, you can expect to have sufficient knowledge to set up your system to make Mail Level backup of Exchange Server 2016 on AhsayOBM, as well as to carry out an end-to-end backup and restore process.

1.5.3 Who should read this document?

This documentation is intended for backup administrators and IT professionals who are responsible for the Exchange Server 2016 Mail Level backup and restore.

2 Preparation for Backup and Restore

2.1 Requirement

You are strongly recommended to configure or check all the settings below to confirm all the requirements are met before you proceed with the Exchange Mail Level backup and restoration.

2.1.1 Software Requirement

Refer to the following article for the list of compatible operating systems and application versions.

[FAQ: Ahsay Software Compatibility List \(SCL\) for version 8.1 or above](#)

2.1.2 Antivirus Exclusion Requirement

To optimize performance of AhsayOBM on Windows, and to avoid conflict with your antivirus software, refer to the following article the list of processes and directory paths that should be added to all antivirus software white-list / exclusion list:

http://wiki.ahsay.com/doku.php?id=public:8014_faq:suggestion_on_antivirus_exclusions

NOTE

The bJW.exe process is automatically added to Windows Defender exclusion list for Windows 10 and 2016, during installation / upgrade via installer or upgrade via AUA.

2.1.3 AhsayOBM Installation

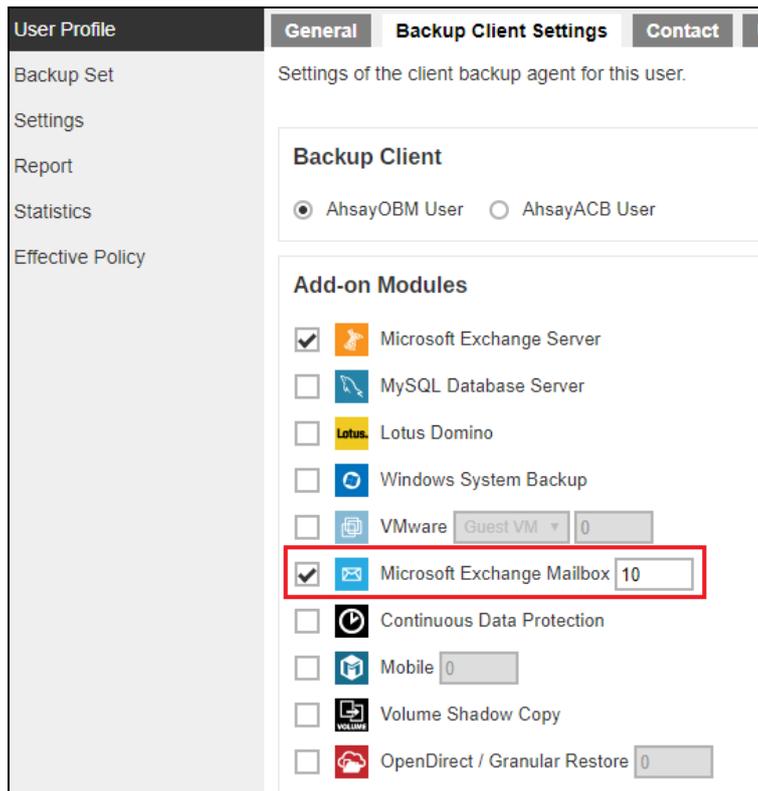
AhsayOBM v8.1.0.0 or above must be installed either on the Exchange Server 2016 hosting the database or on the remote backup machine.

2.1.4 Microsoft Exchange Mailbox Add-On Module

One Microsoft Exchange Mailbox license is required for the backup of each user mailbox. No license is required for public folder.

Make sure the Microsoft Exchange Mailbox feature has been enabled as an add-on module in your AhsayOBM user account and there is sufficient Microsoft Exchange Mailbox license quota to cover the backup of your mailboxes.

Please contact your backup service provider for more details.



2.1.5 AhsayOBM Licenses

AhsayOBM licenses are calculated on a per device basis.

1. For backup of mailboxes on a standalone Microsoft Exchange 2016 Server, one AhsayOBM license is required.
2. For backup of mailboxes on a Microsoft Exchange Server 2016 DAG setup, the number of AhsayOBM licenses required is equal to the number of DAG members in the DAG. For example, if there are three DAG members then three AhsayOBM licenses are required.

Please contact your backup service provider for more details

2.1.6 Backup Quota Requirement

Make sure that your AhsayOBM user account has sufficient storage quota assigned to accommodate the storage of additional Exchange mailbox and public folder items for the new mail level backup set and retention policy.

Please contact your backup service provider for more details.

2.1.7 Continuous Backup Module

The Continuous backup add-on module is required if you would like to enable the continuous backup feature.

2.1.8 Java Heap Size

The default Java heap size setting on AhsayOBM is 2048MB. For Exchange 2016 mail level backup, it is highly recommended to increase the Java heap size setting to be at least

4096MB to improve backup and restore performance. The actual heap size is dependent on amount of free memory available on your Exchange 2016 server.

2.1.9 Temporary Directory Folder

Temporary Directory folder is used by AhsayOBM for storing backup set index files and any incremental or differential delta files generated during a backup job. To ensure optimal backup/restoration performance, it is recommended that the temporary directory folder is located on a local drive with sufficient free disk space.

2.1.10 Scheduled Backup for Exchange Server in Data Availability Group (DAG)

Scheduled backup is required if you choose to back up in DAG option on Exchange server as AhsayOBM on all DAG members will base on the scheduled backup time to start backup on all the individual DAG member at the same time.

1. A DAG backup cycle is considered complete only when scheduled backup on all DAG members have been carried out. An email report will be generated when a complete DAG backup cycle has taken place.
2. Please keep in mind that manual backup will only be considered as individual Mail Level backup, and therefore will not be counted as part of the DAG backup cycle.

However, for backup and restore on a remote backup machine, as the operation for single node can be done either manually or automatically, a scheduled backup is not required.

2.1.11 Mailbox Role

Ensure all nodes have mailbox role. This can be checked by accessing the Exchange admin center (EAC).

Exchange admin center

recipients permissions compliance management organization protection mail flow mobile public folders unified messaging **servers** hybrid tools

servers databases database availability groups virtual directories certificates

NAME	SERVER ROLES	VERSION
W2K16-XCH2K16	Mailbox	Version 15.1 (Build 669.32)

W2K16-XCH2K16
Mailbox
Version 15.1 (Build 669.32)
Enterprise
Licensed

1 selected of 1 total

2.1.12 Operating System

1. For AhsayOBM installed on the Exchange Server 2016, the operating system must be Windows Server 2012/ 2012 R2/ 2016 or above.

- For AhsayOBM installed on the remote backup machine, the operating system must be Windows 7/ 8/ 8.1/ 10 or Windows Server 2008/ 2008 R2/ 2012/ 2012 R2/ 2016 or above.

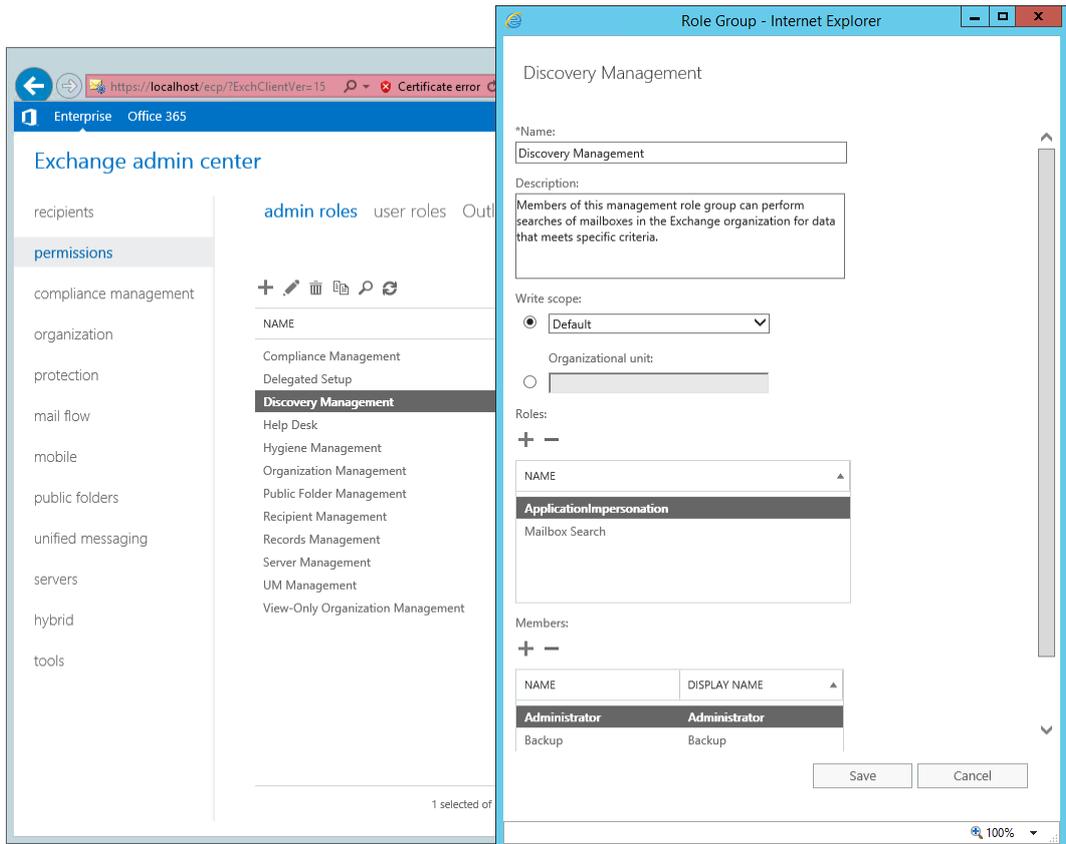
2.1.13 Supported Exchange Server 2016 Version

MS Exchange Server 2016 Cumulative Update 4 (CU4) or above is supported.

2.1.14 Windows User Account Permission

The Windows user account used for the backup must be a member of the following security groups.

- Discovery Management (including ApplicationImpersonation and Mailbox Search)



Organization Management

The screenshot shows the Exchange Admin Center interface with the 'Organization Management' role group selected in the 'admin roles' list. An overlay window titled 'Role Group - Internet Explorer' displays the configuration for this role group.

Organization Management

*Name: Organization Management

Description: Members of this management role group have permissions to manage Exchange objects and their properties in the Exchange organization. Members can also delegate role groups and management roles in the organization. This role group shouldn't be deleted.

Write scope: Default

Organizational unit:

Roles: **Active Directory Permissions**

NAME	DISPLAY NAME
Administrator	Administrator
Backup	Backup

Buttons: Save, Cancel

Public Folder Management

The screenshot shows the Exchange Admin Center interface with the 'Public Folder Management' role group selected in the 'admin roles' list. An overlay window titled 'Role Group - Internet Explorer' displays the configuration for this role group.

Public Folder Management

*Name: Public Folder Management

Description: Members of this management role group can manage public folders. Members can create and delete public folders and manage public folder settings such as replicas, quotas, age limits, and permissions as well as mail-enable and mail-disable public folders.

Write scope: Default

Organizational unit:

Roles: **Mail Enabled Public Folders**

NAME	DISPLAY NAME
Administrator	Administrator
Backup	Backup

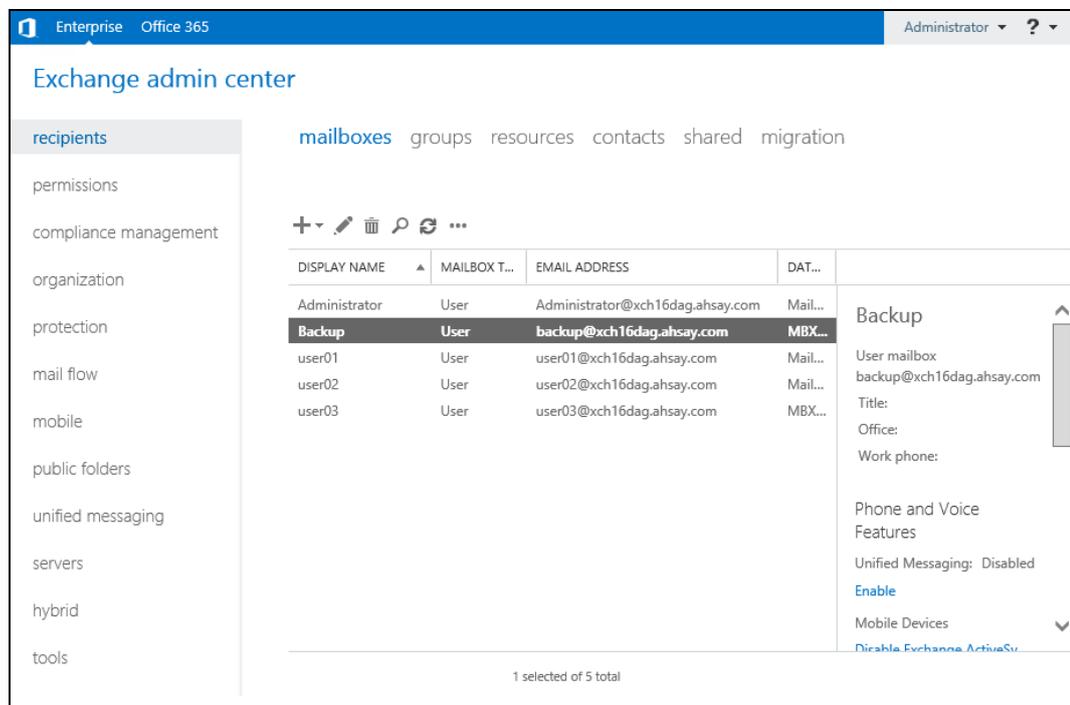
Buttons: Save, Cancel

Login to the Exchange admin center, under **permissions, admin roles**. Assign the user to be running the backup as member of the following **admin roles**:

- Discovery Management (including the following **Roles**):
 - ApplicationImpersonation
 - Mailbox Search
- Organization Management
- Public Folder Management

2.1.15 Enabling Mailbox

The Windows user account must have an Exchange Server mailbox. Refer to the URL below for more information.



Refer to the following article from Microsoft for more details on how to check if an account is mailbox enabled and how to enable it:

<https://docs.microsoft.com/en-us/Exchange/recipients/create-user-mailboxes?view=exchserver-2019>

2.1.16 Backup Source Requirement

Ensure that the “**Hide from address lists**” option is unchecked for all mailboxes to be selected for backup. Mailbox hidden from the address list will not be shown in the backup source selection menu.

Backup

- general
- mailbox usage
- contact information
- organization
- email address
- mailbox features
- member of
- MailTip
- mailbox delegation

First name: Backup

Initials:

Last name:

*Name: Backup

*Display name: Backup

*Alias: backup

*User logon name: backup @ XCH16DAG.ahsay.com

Require password change on next logon

Hide from address lists

[More options...](#)

Save Cancel

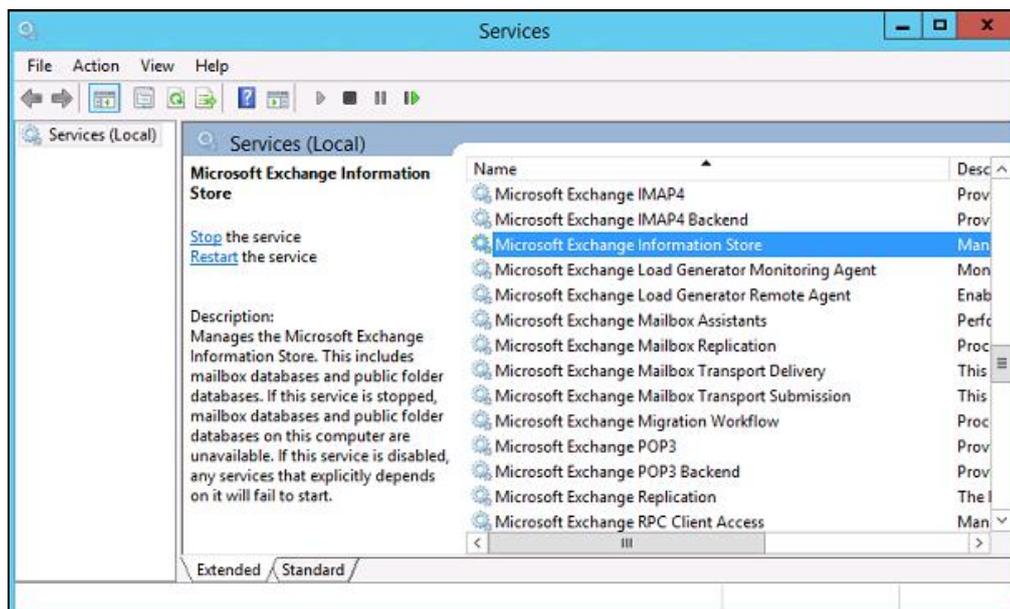
2.1.17 Port Configuration

As Exchange 2016 mail level backup and restore is implemented using Microsoft EWS API (Exchange Web Services), which enables AhsayOBM to access mailbox items such as email message, meetings, notes, calendar, contact, etc, without any additional installation or complicated setup required on the Exchange 2016 Server or remote backup machine, only **port 443** must be configured to allow communication between AhsayOBM and Exchange server.

2.1.18 Exchange related Windows Services

Ensure all MS Exchange related services have been started, particularly the **MS Exchange Information Store**.

To verify this setting, launch the **Services** menu by clicking **Start** then typing "Services" in the search box. All Exchange related services should be started by default, in case it is not, turn it on by right clicking the item and then select **Start**.

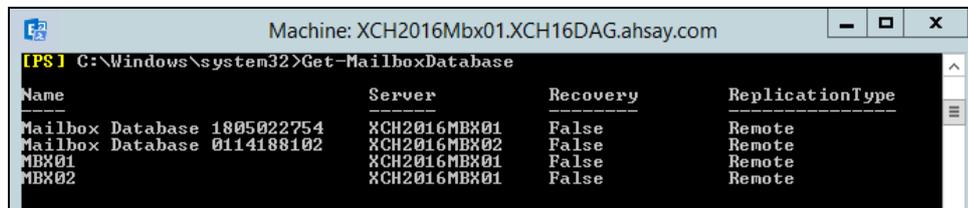


2.1.19 MS Exchange Databases

Ensure the MS Exchange Mailbox and Public Folder databases are mounted. This can be verified by Exchange Management Shell or Exchange Admin Center (EAC).

- Type the following command in the Exchange Management Shell.

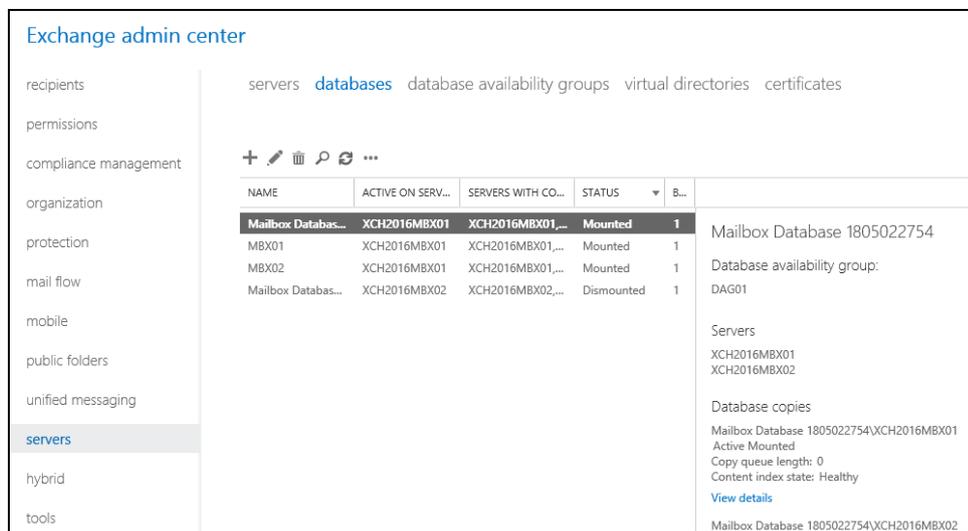
```
Get-MailboxDatabase
```



```
Machine: XCH2016Mbx01.XCH16DAG.ahsay.com
PS C:\Windows\system32>Get-MailboxDatabase

Name                               Server           Recovery         ReplicationType
-----
Mailbox Database 1805022754         XCH2016MBX01    False           Remote
Mailbox Database 0114188102         XCH2016MBX02    False           Remote
MBX01                               XCH2016MBX01    False           Remote
MBX02                               XCH2016MBX01    False           Remote
```

- Exchange Admin Center (EAC)

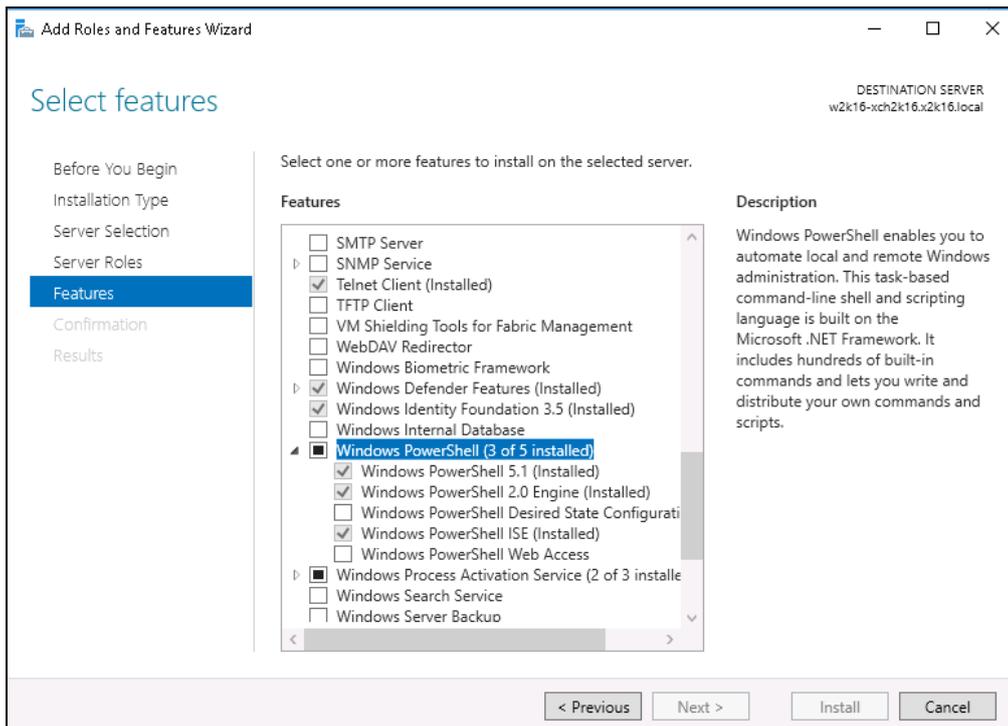


2.1.20 Windows PowerShell 5.1 Engine

Ensure that Windows PowerShell 5.1 Engine is installed.

To install the feature:

- Navigate to **Server Manager > Manage**, then select **Add Roles and Features**.
- On the **Select installation type** screen, select **Role-based or feature-based** installation.
- Select the target server.
- On the **Select features** screen, go to the **Features** option, check the box next to **Windows PowerShell 5.1 Engine**.

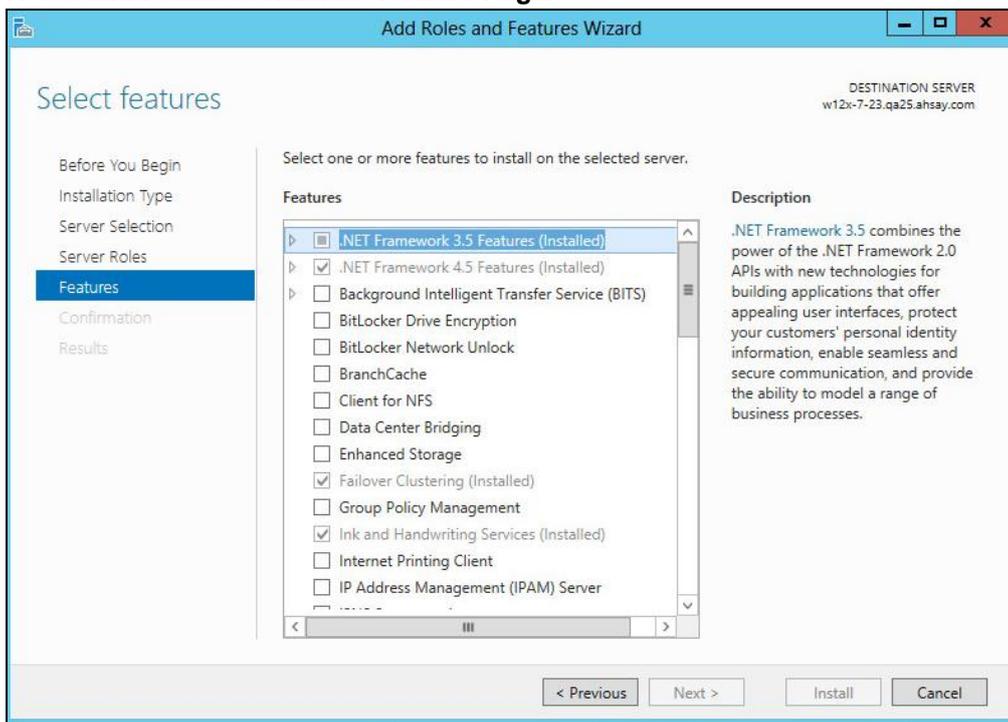


2.1.21 .Net Framework 4.6.2 Features

Ensure **.Net Framework 4.6.2 Features** is installed. Please refer to the following URL for detailed information:

<https://docs.microsoft.com/en-us/Exchange/plan-and-deploy/system-requirements?view=exchserver-2016>

This feature can be enabled by accessing **Server Manager > Dashboard > Manage > Add Roles and Features Wizard > Feature Page**.



2.2 Supported Source

Below is the supported mailbox type of Exchange Server 2016 Mail Level backup.

Mailbox Level			
Item	Supported?	Item	Supported?
User mailbox	✓	Room Mailbox	✓
Public Folder	✓	Equipment Mailbox	✓
Public Folder Mailbox	✓	Shared Mailbox	✓

Below are the items that you can backup or restore from an Exchange Server 2016 Mail Level backup set.

Folder Level			
Item	Supported?	Item	Supported?
Inbox	✓	RSS Feeds	✓
Drafts	✓	Junk Email	✓
Sent Items	✓	Tasks	✓
Deleted Items	✓	Calendar	✓
Archive	✓	Contacts	✓
Notes	✓		

2.3 Limitation

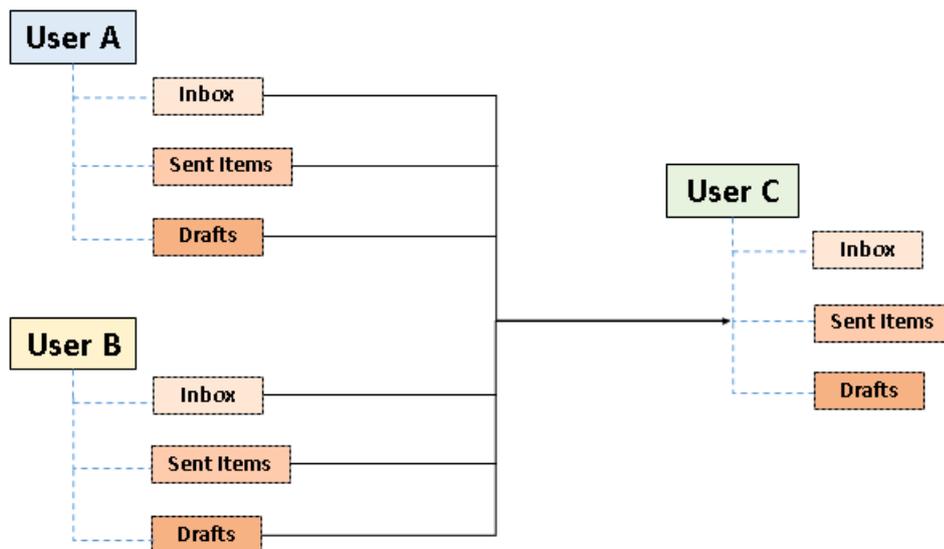
For backup and restoration of Exchange 2016 Mail Level backup set, there is some limitation:

1. If you are trying to restore item(s) from one mailbox to an alternate location mailbox, AhsayOBM will restore the item(s) to their respective destination folder(s) with the same name of the original folder(s).

Example: Item from “Inbox” folder of Mailbox-A will be restored to the “Inbox” folder of the alternate location Mailbox-B; Item from “Drafts” folder of Mailbox-A will be restored to the “Drafts” folder of the alternate location Mailbox-B.

2. If you are trying to restore item(s) from several mailboxes to an alternate location mailbox, AhsayOBM will restore the item(s) to their respective destination folder(s) in

alternate location mailbox with the same name of the original folder(s).



Example: Item from “Inbox” folder of Mailbox-A and Mailbox-B will be restored to the “Inbox” folder of the alternate location Mailbox-C.

3. Restore of mailbox items or public folder items is only supported if the according mailbox or public folder exists.
4. Only Alternate Location is supported for restoring mailbox items to another domain.
5. Restore of mailbox item(s) in public folder to an alternate location mailbox is not supported.

Example: Restore of mailbox item(s) in public folder from Mailbox-A to alternate location Mailbox-B is not supported.

6. If you are trying to restore the mailbox item to a destination mailbox which has a different language setting than the original mailbox, AhsayOBM will restore mailbox item(s) to their respective destination folder based on the translation listed below.

For folders such as ‘Calendar’ or ‘Notes’, a new folder ‘Calendar’ or ‘Notes’ will be created.

Backup source (English)	Action	Destination mailbox with Chinese as default language settings
Inbox	Merge	收件箱
Outbox	Merge	寄件匣
Sent Items	Merge	寄件備份
Deleted Items	Merge	刪除的郵件
Drafts	Merge	草稿
Junk E-Mail	Merge	垃圾電郵
Calendar	Create new folder	Calendar
Notes	Create new folder	Notes

2.4 Best Practice and Recommendation

The following are some best practices or recommendations we strongly recommend you follow before you start any Exchange Server 2016 Mail Level backup and restore.

- Mail Level Backup must be utilized in conjunction with Database Level Backup to fully protect an Exchange Server.
- Active Directory server should be protected by regular full Window System Backup at least once every two weeks.
- For AhsayOBM installed on Exchange Server, enable scheduled backup jobs when system activity is low to achieve the best possible performance.
- The remote backup machine should be on the same LAN as the MS Exchange server for optimal backup and restore performance.
- To provide maximum data protection and flexible restore options, it is recommended to configure:
 - At least one offsite or cloud destination
 - At least one local destination for fast recovery
- Perform test restores periodically to ensure your backup is set up and performed properly. Performing recovery test can also help identify potential issues or gaps in your recovery plan. It's important that you do not try to make the test easier, as the objective of a successful test is not to demonstrate that everything is flawless. There might be flaws identified in the plan throughout the test and it is important to identify those flaws.
- **Distributed Backup Solution:** For backup of multiple or mass backup sets, to achieve better backup performance and to minimize any unnecessary loading on the Exchange server, please consider deploying AhsayOBM on remote backup machines as distributed backup solution instead of on the MS Exchange server.
- For backup of a large number of mailboxes, it is recommended to divide all mailboxes into multiple backup sets. By default, the MS Exchange 2016 mail level backup module can back up a maximum of 4 mailboxes concurrently (4 concurrent backup threads), while backing up a maximum of 4 mail items concurrently per mailbox (4 concurrent backup threads). Therefore, each backup set supports a maximum of $4 \times 4 = 16$ backup threads at a time. By splitting up all mailboxes into separate backup sets, the more backup sets, the faster the backup process can achieve.

Example-1: There are 100 mailboxes that need to be backup, you can divide 20 mailboxes into one backup set.

Backup Set Name	Mailbox Number
Backup-Set-1	No.1 -- 20
Backup-Set-2	No.21 -- 40
Backup-Set-3	No.41 -- 60

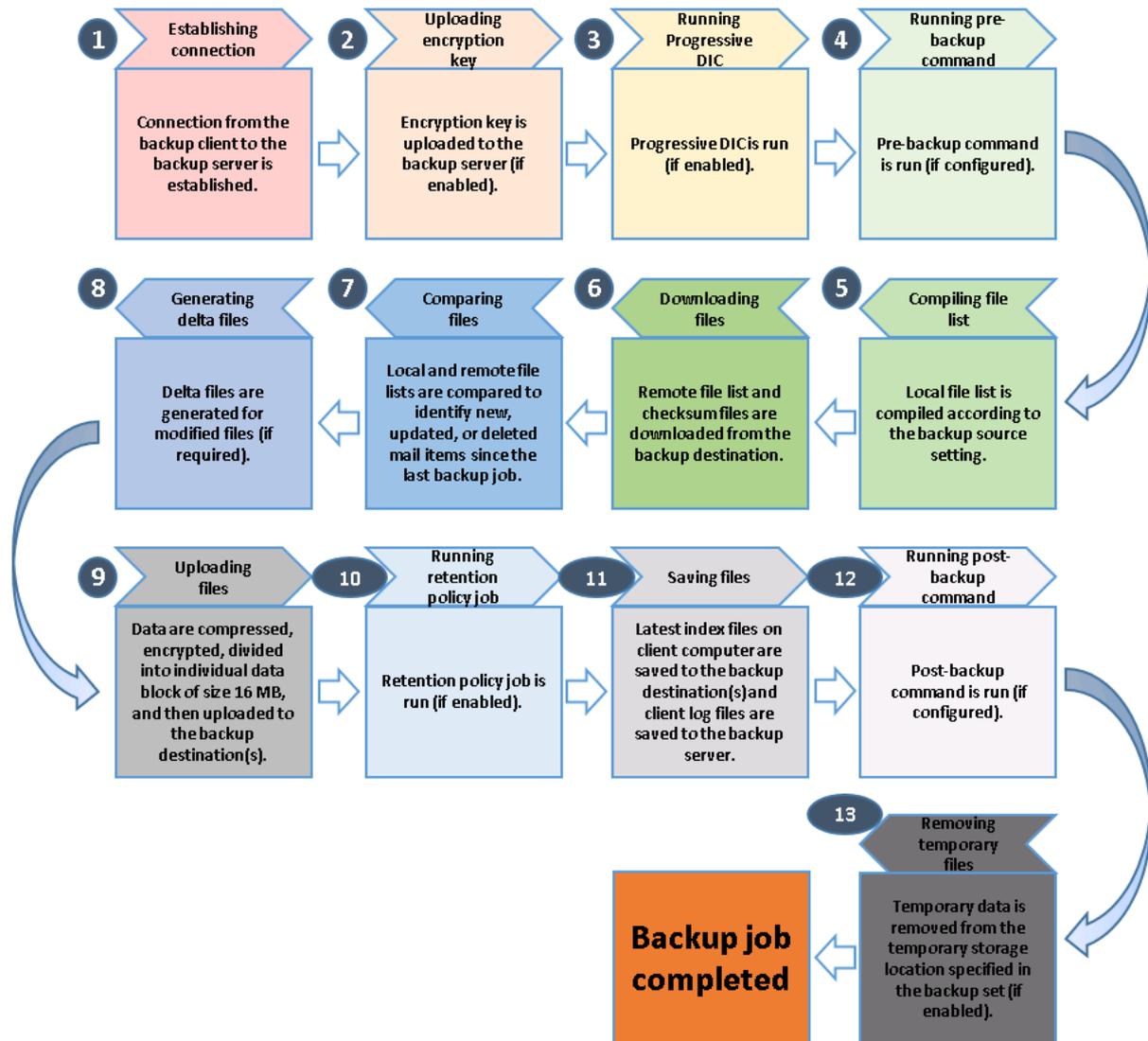
Backup-Set-4	No.61 -- 80
Backup-Set-5	No.81 -- 100
Note: If there are new mailboxes added, you can create new backup set for the new mailboxes.	

Example-2: There are 100 mailboxes that needs to be backup, you can divide mailboxes into backup sets in alphabetic order.

Backup Set Name	Mailbox Name Start with
Backup-Set-1	A -- E
Backup-Set-2	F -- J
Backup-Set-3	K --O
Backup-Set-4	P -- T
Backup-Set-5	U -- Z
Note: If there are new mailboxes added, you can add the new mailboxes into the original backup set by the corresponding alphabetic order.	

3 Overview of MS Exchange Mail Level Backup Process

The following steps are performed during an Exchange Mail Level backup job:

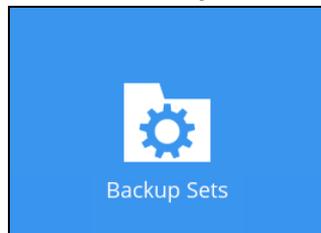


4 On Exchange Server

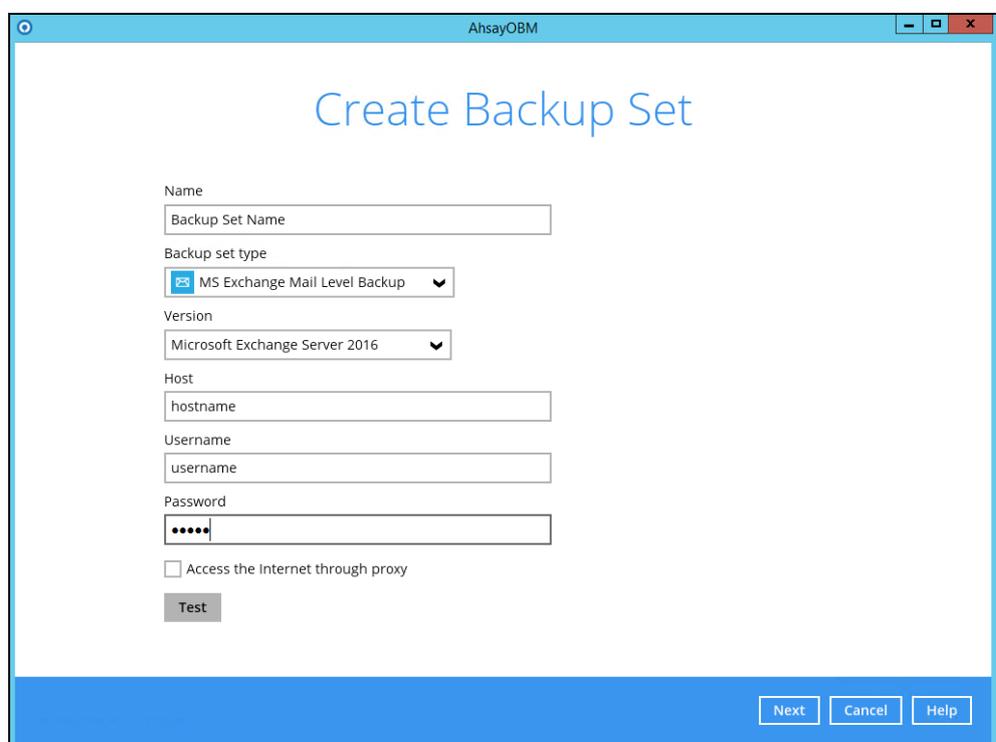
4.1 Standalone Backup Option

4.1.1 Create Mail Level Backup Set

1. Click the **Backup Sets** icon on the main interface of AhsayOBM.

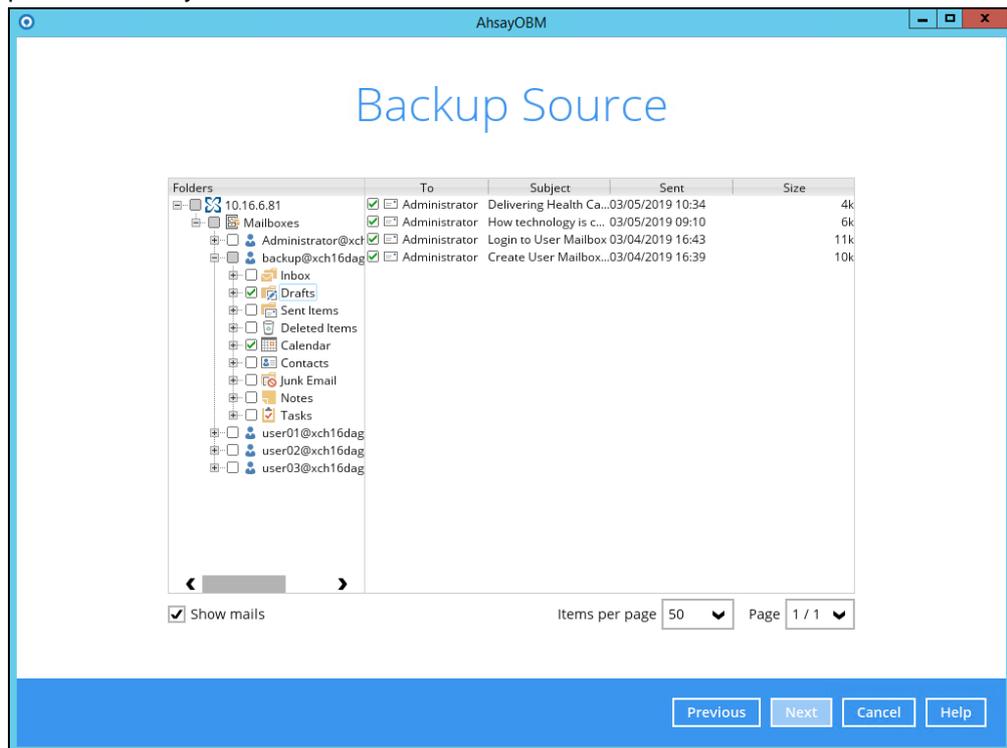


2. Create a new backup set by clicking the “+” icon next to **Add new backup set**.
3. Select the Backup set type as **MS Exchange Mail Level Backup**. The system will automatically detect and select the Exchange Server version, make sure the version selected is correct.
 - Name your new backup set.
 - Enter the hostname of Exchange server 2016
 - Enter the username and password of the Windows user account used for backup.
 - Check the “Access the Internet through proxy” if required. Then click **Next** to proceed.

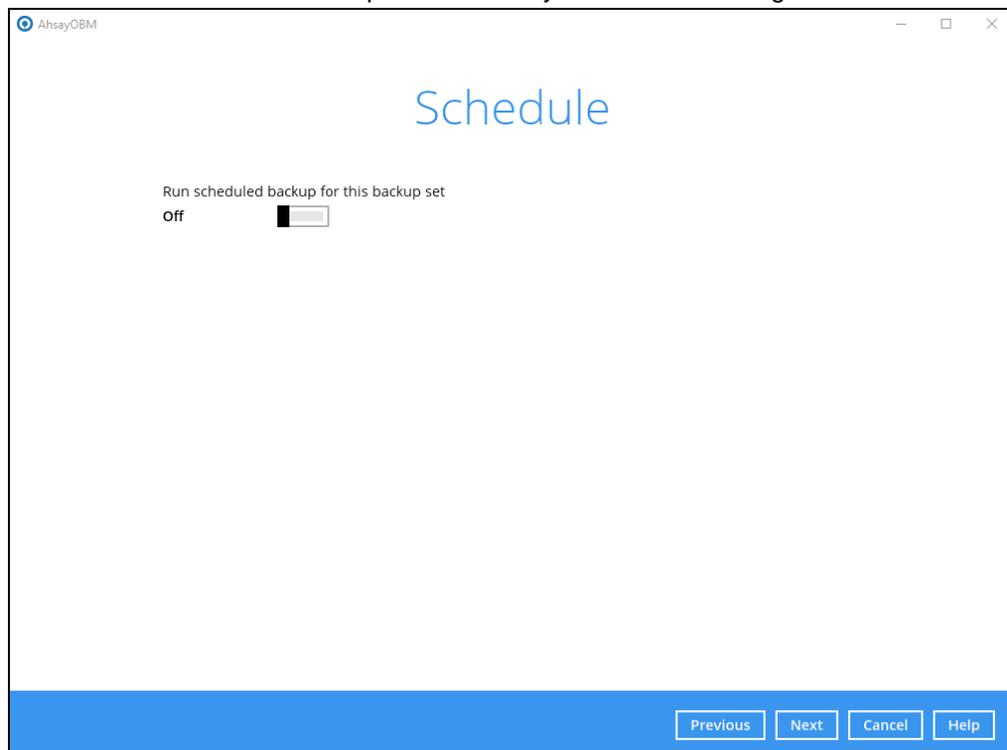


4. In the **Backup Source** menu, select the mailboxes or public folders for backup. You can click to expand the mailbox or public folder to select which mail folder to back up.

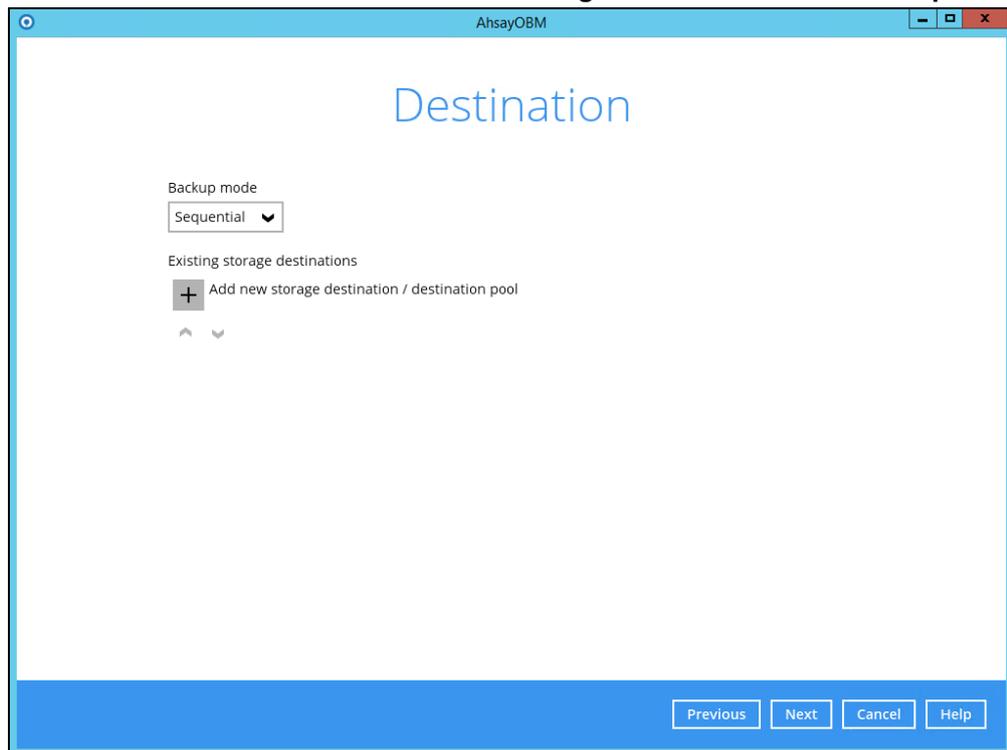
You can also click **Show mails** to select individual mail to back up. Click **Next** to proceed when you are done.



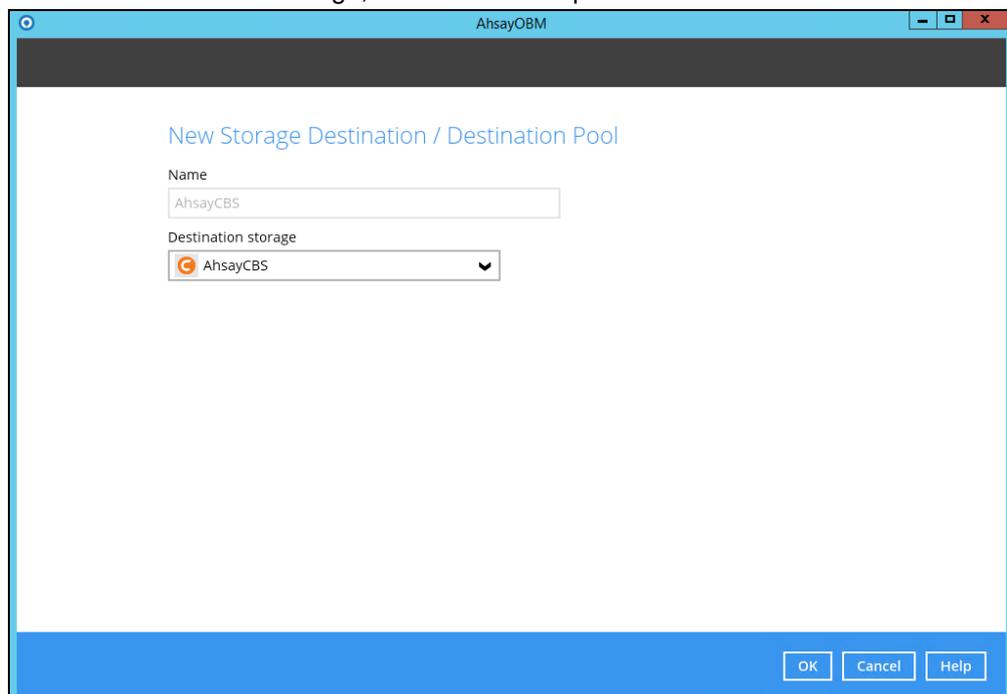
5. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default the **Run scheduled backup for this backup set** option is disabled. Enable it then click the “+” icon next to **Add new schedule**. Click **Next** to proceed when you are done setting.



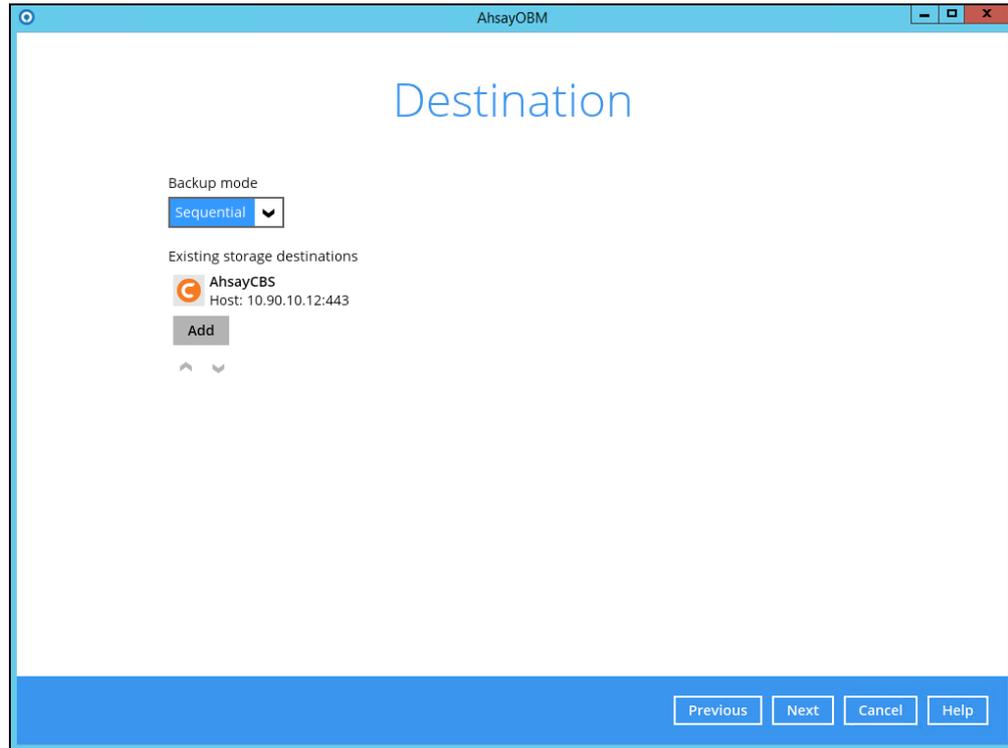
6. In the Destination menu, select a backup destination where the backup mail will be stored. Click the “+” icon next to **Add new storage destination / destination pool**.



7. Select the destination storage, then click **OK** to proceed.



8. Click **Next** on the Destination menu page to proceed.



9. In the Encryption window, the default **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



10. You can choose from one of the following three Encryption Type options:
- **Default** – an encryption key with 44 alpha numeric characters will be randomly generated by the system
 - **User password** – the encryption key will be the same as the login password of your AhsayOBM at the time when this backup set is created. Please be reminded that if you change the AhsayOBM login password later, the encryption keys of the backup sets previously created with this encryption type will remain unchanged.

- **Custom** – you can customize your encryption key, where you can set your own algorithm, encryption key, method and key length.

The screenshot shows the 'Encryption' configuration window. At the top, the title 'Encryption' is displayed in blue. Below it, there are several settings: 'Encrypt Backup Data' is set to 'On' with a toggle switch; 'Encryption Type' is set to 'Custom' in a dropdown menu; 'Algorithm' is set to 'AES' in another dropdown menu; 'Encryption key' and 'Re-enter encryption key' are both masked with asterisks in text input fields; 'Method' has radio buttons for 'ECB' and 'CBC', with 'CBC' selected; and 'Key length' has radio buttons for '128-bit' and '256-bit', with '256-bit' selected.

Note: For best practice on managing your encryption key, refer to the following KB article: [Best Practices for Managing Encryption Key on AhsayOBM or AhsayACB](#)

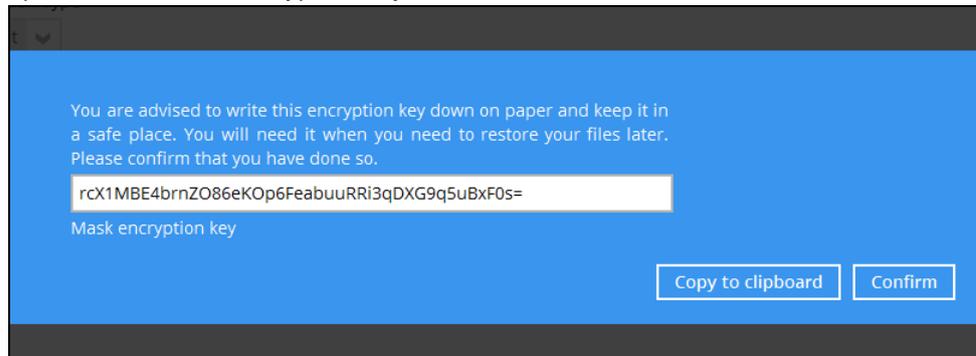
Click **Next** when you are done.

11. If you have enabled the Encryption Key feature in the previous step, the following pop-up window shows, no matter which encryption type you have selected.

The screenshot shows a confirmation pop-up window titled 'Encryption'. It has a dark grey header with the title. Below the header, the settings from the previous step are visible: 'Encrypt Backup Data' is 'On', 'Encryption Type' is 'User password', and 'Algorithm' is 'User password'. The main body of the pop-up is blue and contains the following text: 'You are advised to write this encryption key down on paper and keep it in a safe place. You will need it when you need to restore your files later. Please confirm that you have done so.' Below this text is a text input field with asterisks. At the bottom, there is a link 'Unmask encryption key' and two buttons: 'Copy to clipboard' and 'Confirm'.

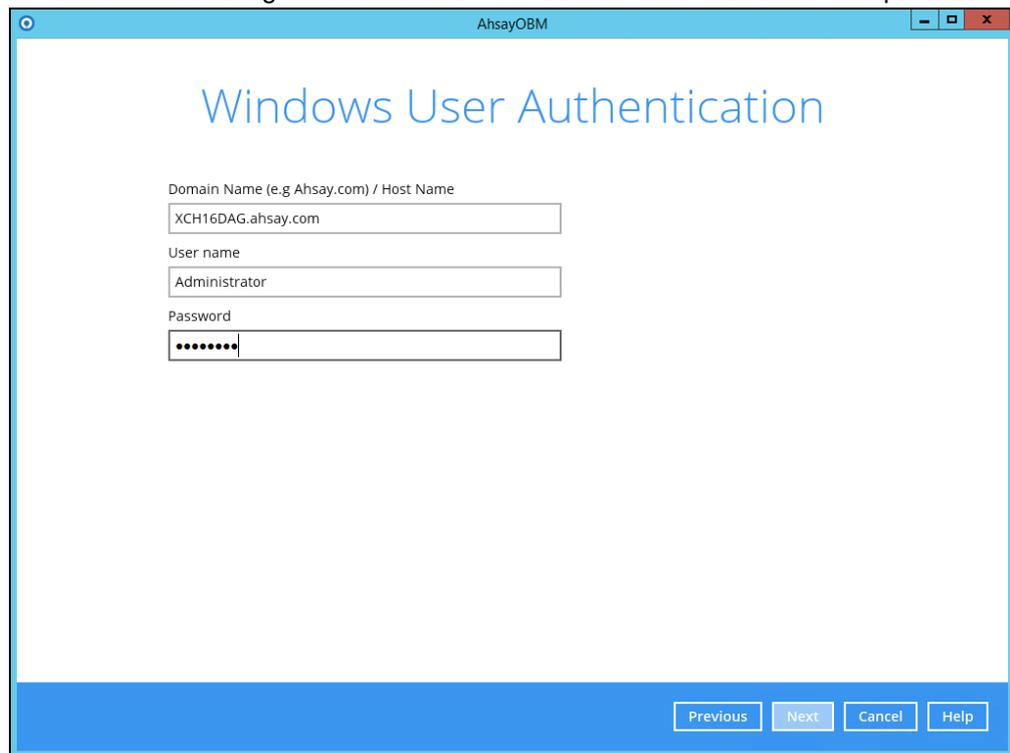
The pop-up window has the following three options to choose from:

- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.
- **Confirm** – Click to exit this pop-up window and proceed to the next step

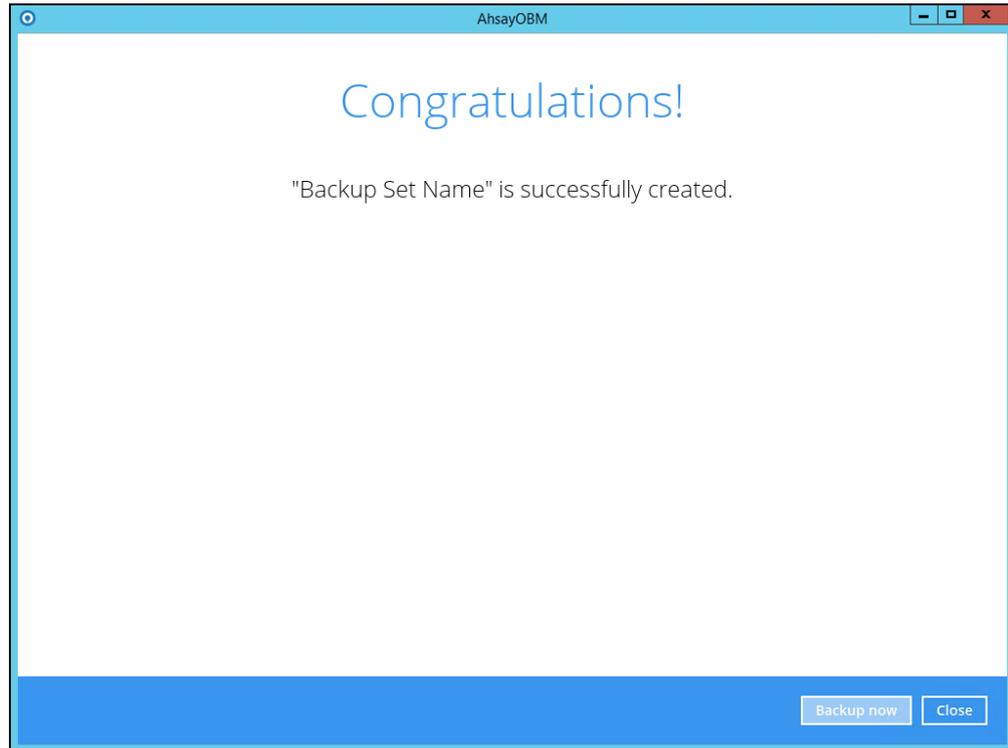
12. Enter the Windows login credentials for user authentication. Click **Next** to proceed.

A screenshot of a web browser window titled "AhsayOBM". The main content area is white and features the heading "Windows User Authentication" in blue. Below the heading are three input fields: "Domain Name (e.g Ahsay.com) / Host Name" with the value "XCH16DAG.ahsay.com", "User name" with the value "Administrator", and "Password" with masked characters "••••••". At the bottom of the window is a blue bar containing four buttons: "Previous", "Next", "Cancel", and "Help".

Note

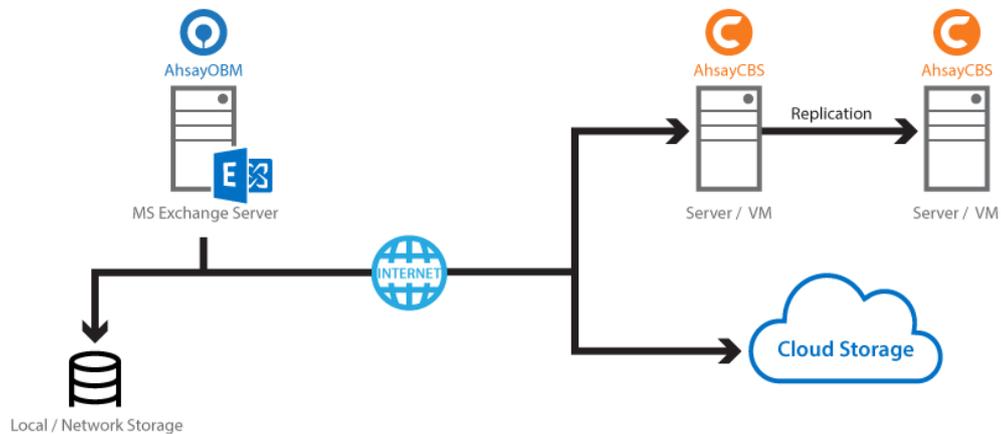
The Windows User Authentication interface will show only if scheduled backup is enabled and set successfully.

13. The following screen shows when the new backup set is created successfully.



14. Click **Backup now** to start a backup immediately, or you can run a backup job later by following the instructions in [Run Mail Level Backup Job](#)

4.1.2 Run Mail Level Backup Job

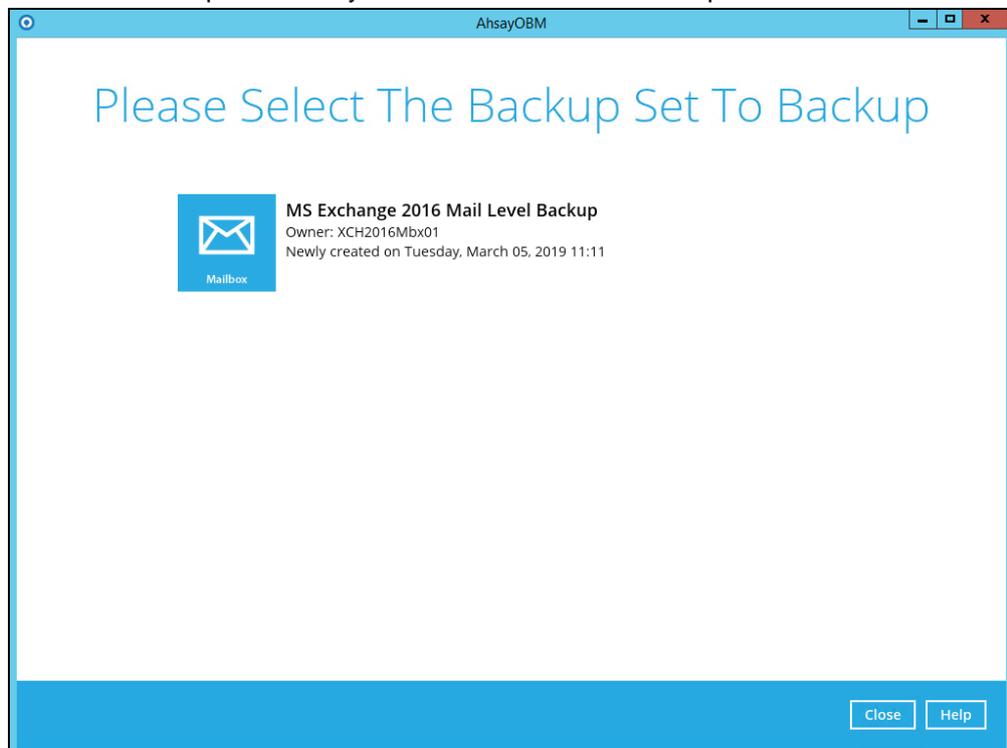


Below are the steps of the backup process.

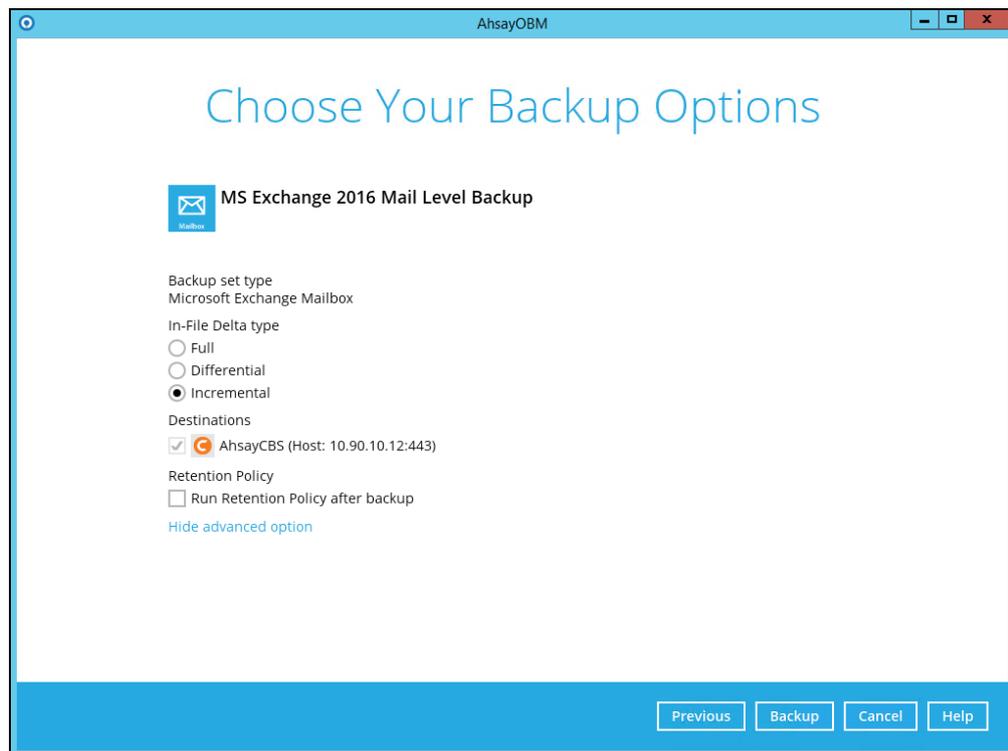
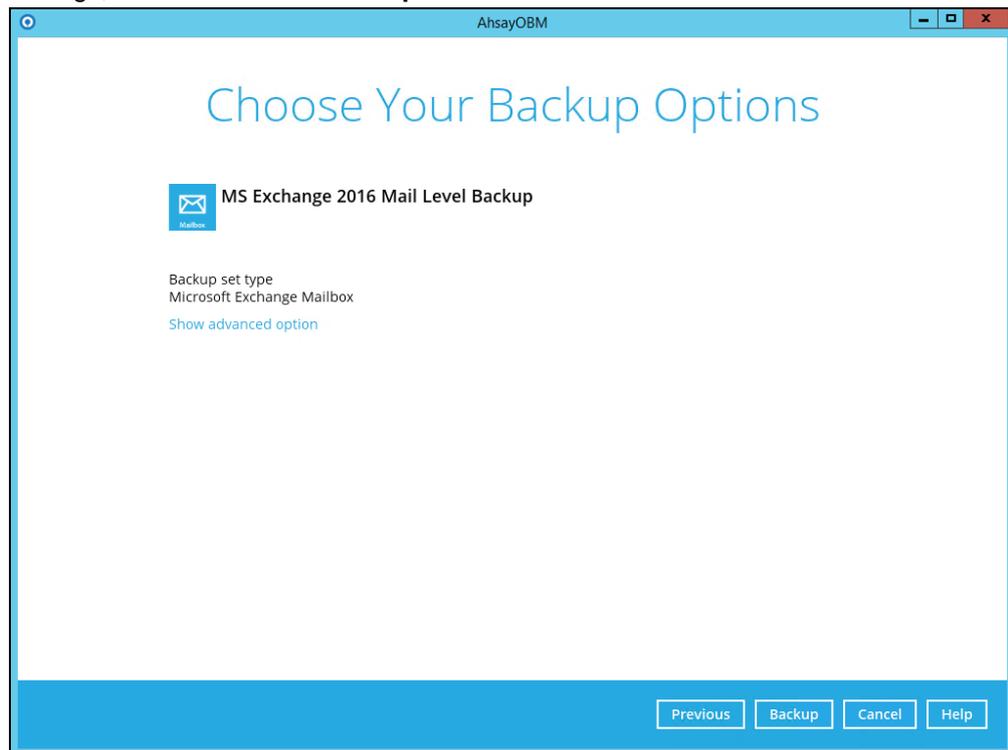
1. Log in to AhsayOBM.
2. Click the Backup icon on the main interface of AhsayOBM.



3. Select the backup set which you would like to start a backup for.

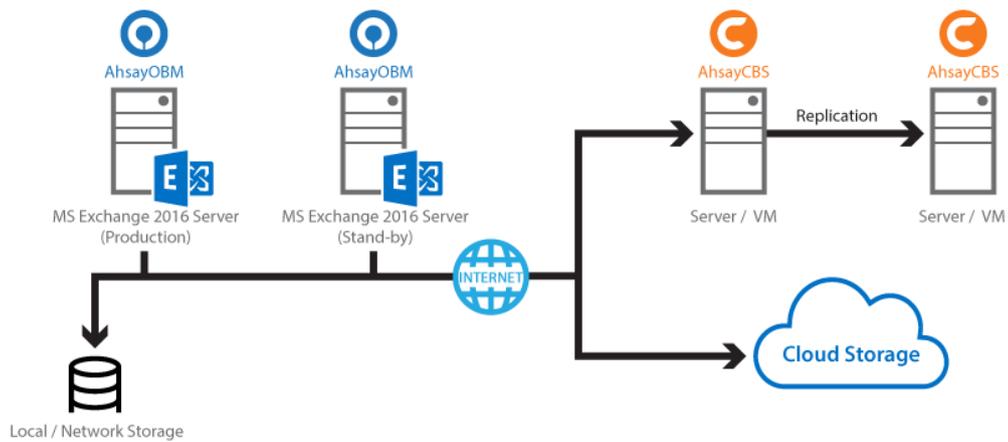


4. If you would like to modify the In-File Delta type, Destinations and Retention Policy settings, click **Show advanced option**.



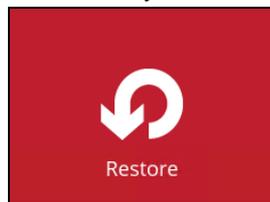
5. Click **Backup** to start the backup.

4.1.3 Restore Mail Level Backup

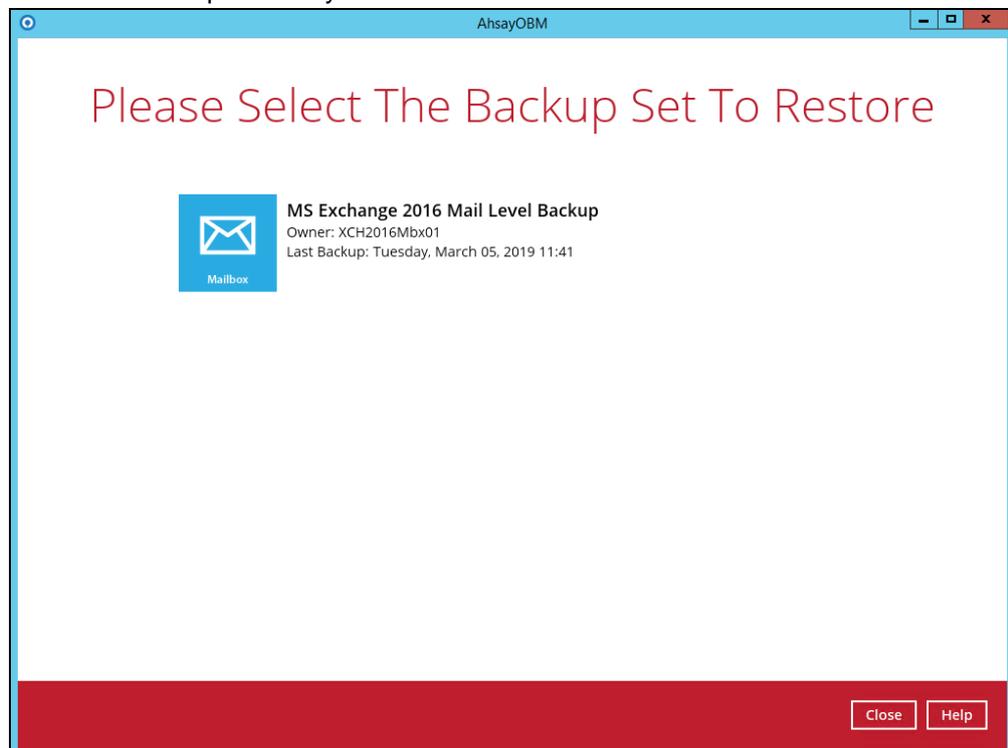


Below are the steps of the restore process.

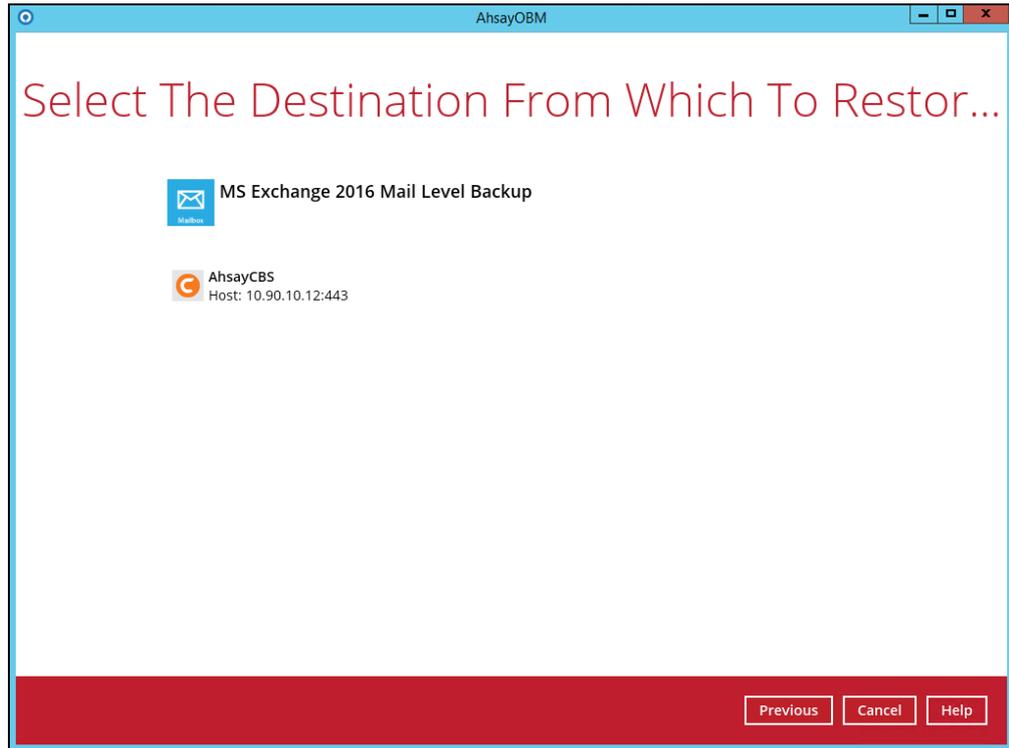
1. In the AhsayOBM main interface, click the **Restore** icon.



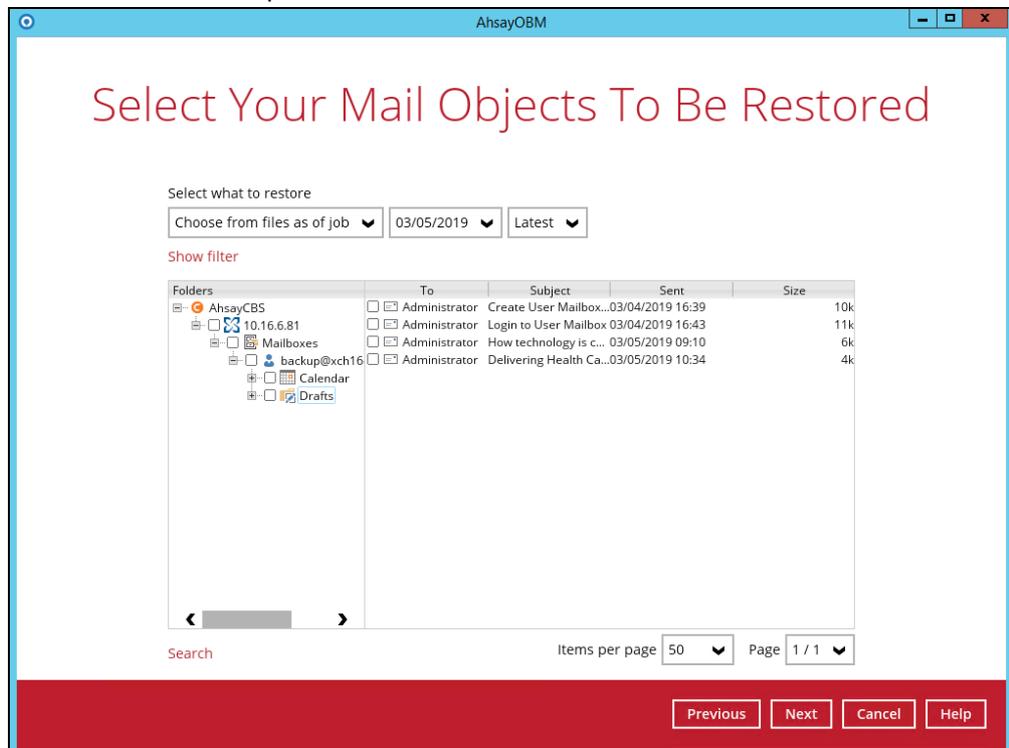
2. Select the backup set that you would like to restore mail from.



3. Select the backup destination that contains the mail(s) that you would like to restore.



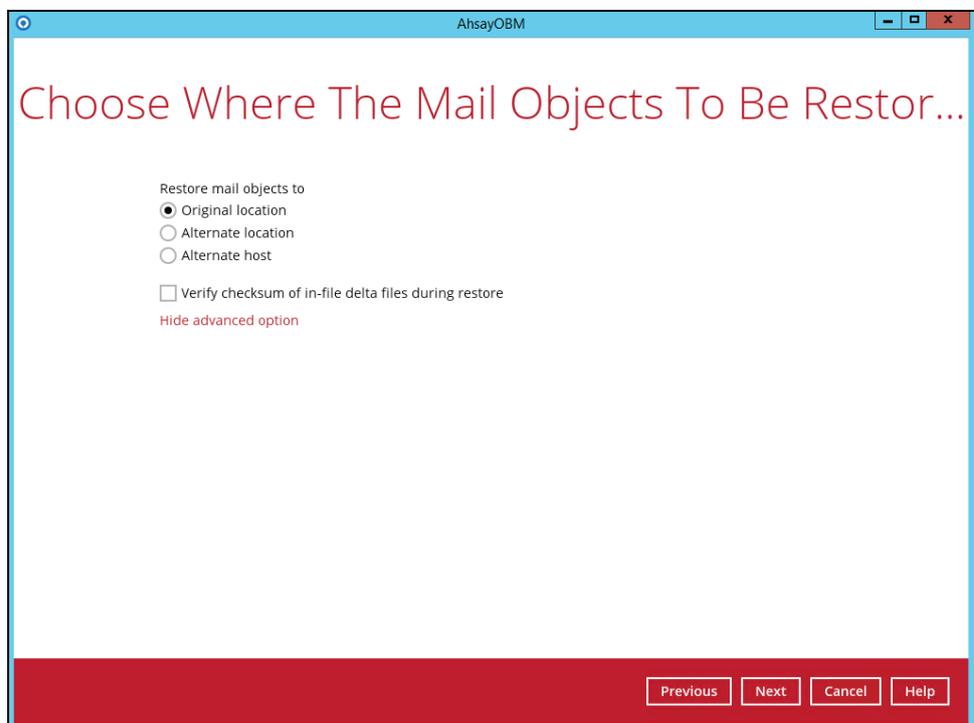
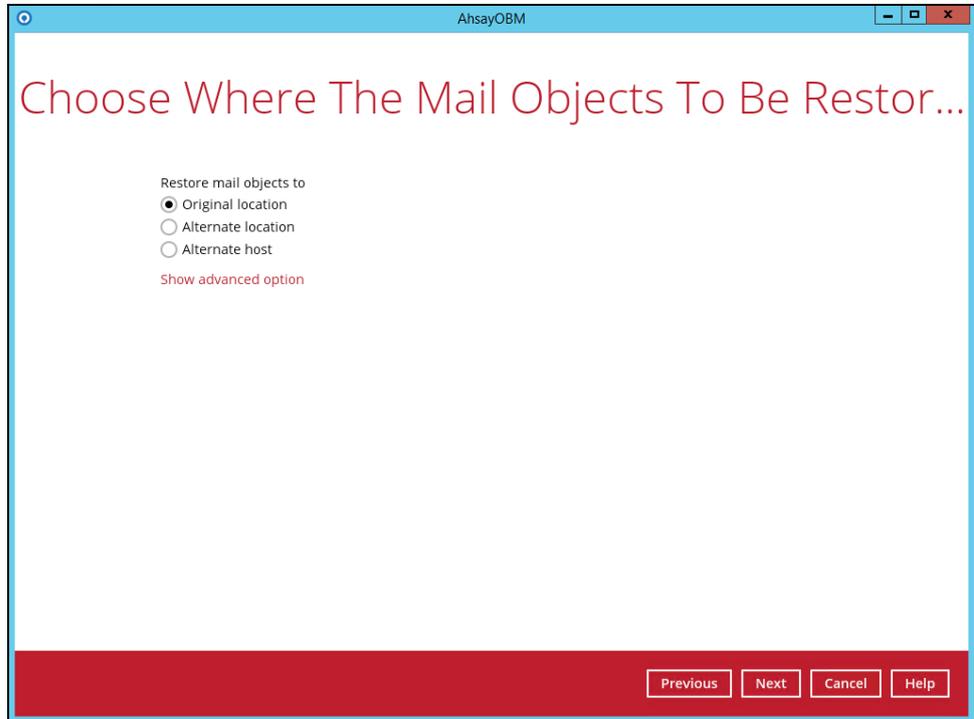
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



5. Select to restore the mail to their Original location, Alternate location or to an Alternate host.

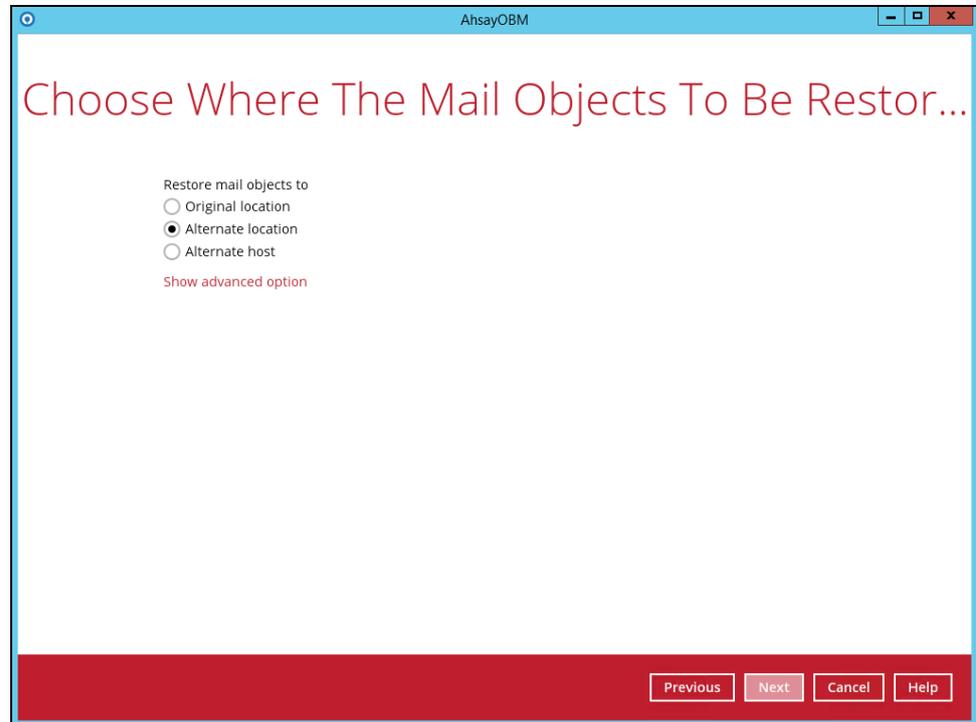
• **Restore to Original Location**

Select the **Original location** option. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**. Then press **Next** to proceed.

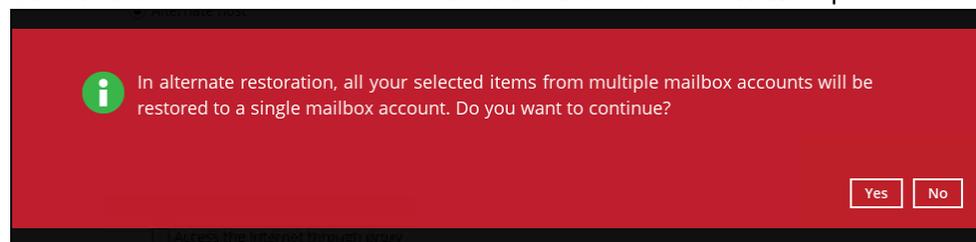


⦿ **Restore to Alternate Location**

You can choose to restore mailbox item(s) to another mailbox in the same Exchange server. Select the **Alternate location** option. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**. Then press **Next** to proceed.



Click **Yes** then select the desired mailbox destination. Press **Next** to proceed.



④ **Restore to Alternate Host**

You can also choose to restore mailbox item(s) to a different Exchange server of the same version. Select the **Alternate host** option. Enter the hostname, username and password of the alternate Exchange server. If you will access the internet through proxy, check the box beside it and set the configuration for the proxy server and click **Save**. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**.

Proxy (HTTP)

IP address Port

Login ID

Password

Click **Yes** then select the desired mailbox destination. Press **Next** to proceed.

 In alternate restoration, all your selected items from multiple mailbox accounts will be restored to a single mailbox account. Do you want to continue?

AhsayOBM

Alternate Location

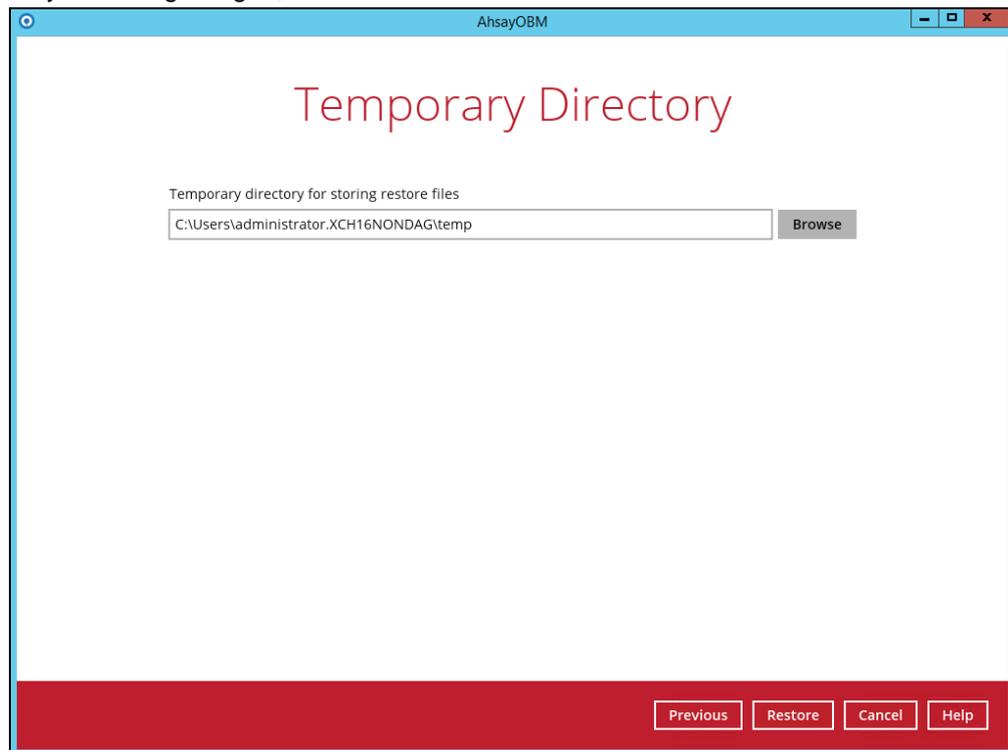
Host

User

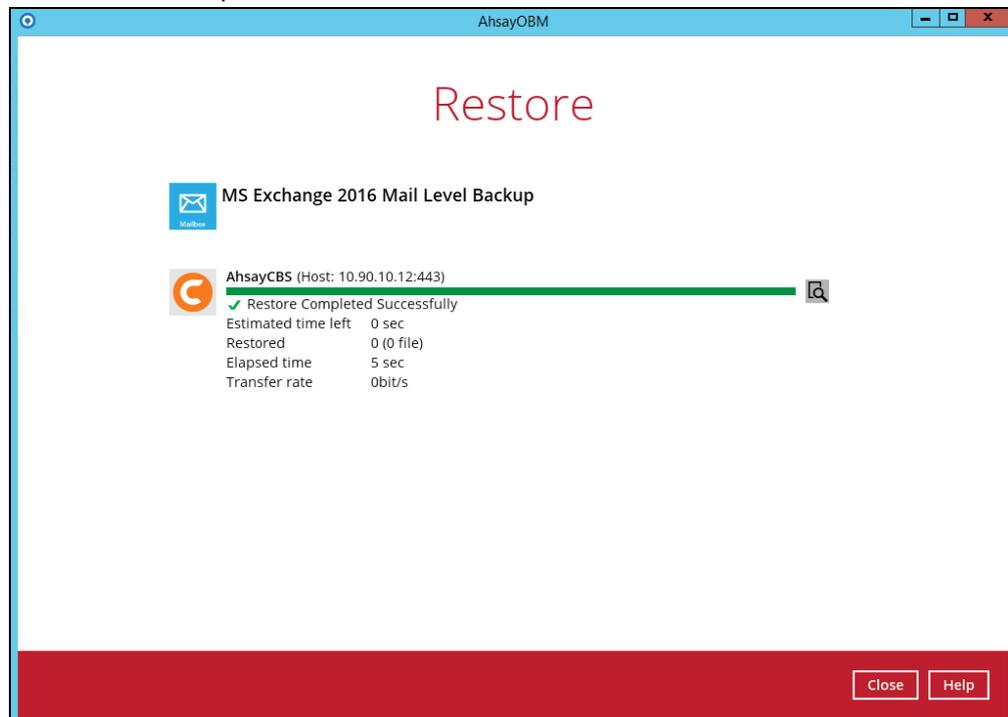
- Administrator@xch16dag.ahsay.com
- backup@xch16dag.ahsay.com
- user01@xch16dag.ahsay.com
- user02@xch16dag.ahsay.com
- user03@xch16dag.ahsay.com

Please refer to the [Limitation](#) part to check for limitation of the restore process.

6. Select the temporary directory for storing temporary files, such as delta files when they are being merged, click **Restore** to start the restoration.



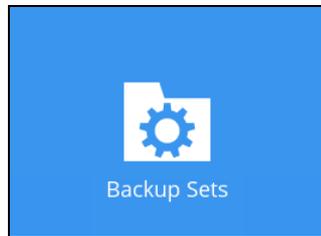
7. The following screen with the text **Restore Completed Successfully** shows when the restoration is completed.



4.2 Database Availability Group (DAG) Backup Option

4.2.1 Create Mail Level Backup Set

1. Click the **Backup Sets** icon on the main interface of AhsayOBM.



2. Create a new backup set by clicking the “+” icon next to **Add new backup set**.
3. Select the Backup set type as **MS Exchange Mail Level Backup**. The system will automatically detect and select the Exchange Server version, make sure the version selected is correct.
 - ⦿ Name your new backup set.
 - ⦿ Enter the hostname of all the DAG Member Server.
 - ⦿ Enter the username and password of the Windows user account used for backup.
 - ⦿ Check the “Access the Internet through proxy” if required. Then click **Next** to proceed.

AhsayOBM

Create Backup Set

Name
MS Backup 2016 Mail Level Backup (DAG)

Backup set type
MS Exchange Mail Level Backup

Version
Microsoft Exchange Server 2016 (DAG)

Host (DAG Member Server)
IP address of DAG Member Server X
IP address of DAG Member Server X

Add

Username
username

Password
.....

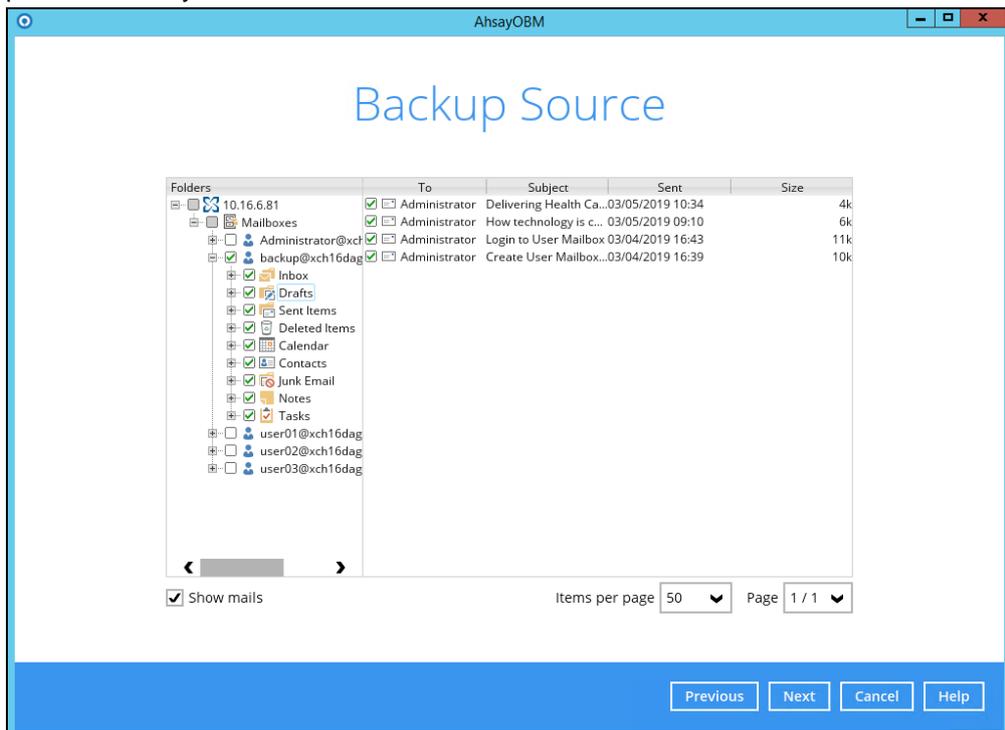
Access the Internet through proxy

Test

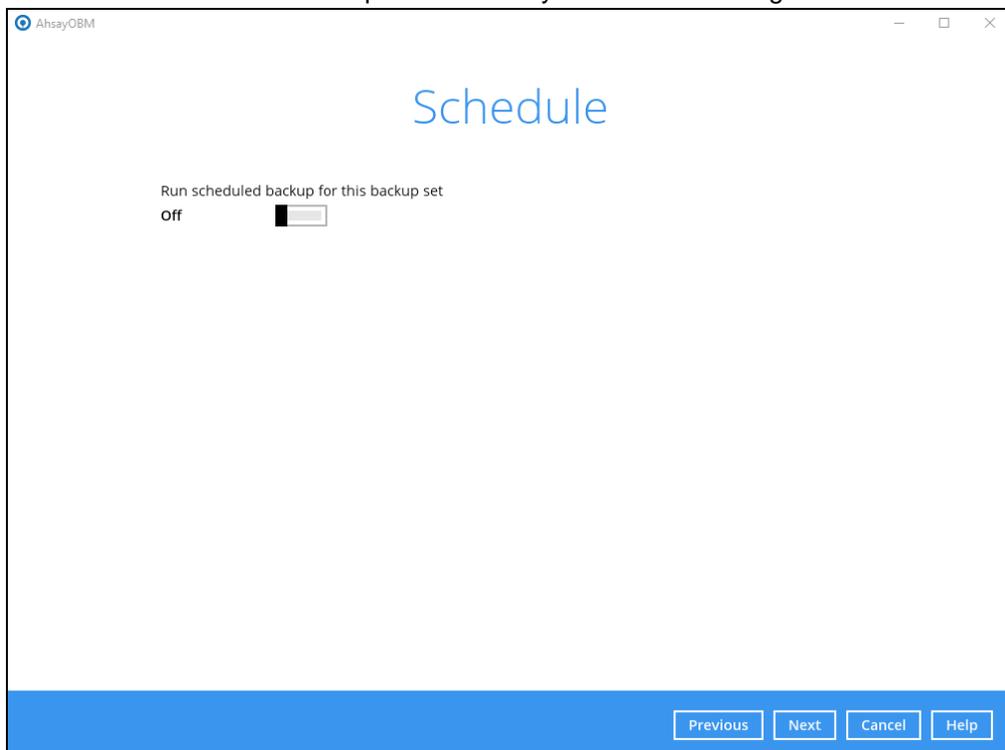
Next Cancel Help

4. In the **Backup Source** menu, select the mailboxes or public folders for backup. You can click to expand the mailbox or public folder to select which mail folder to back up.

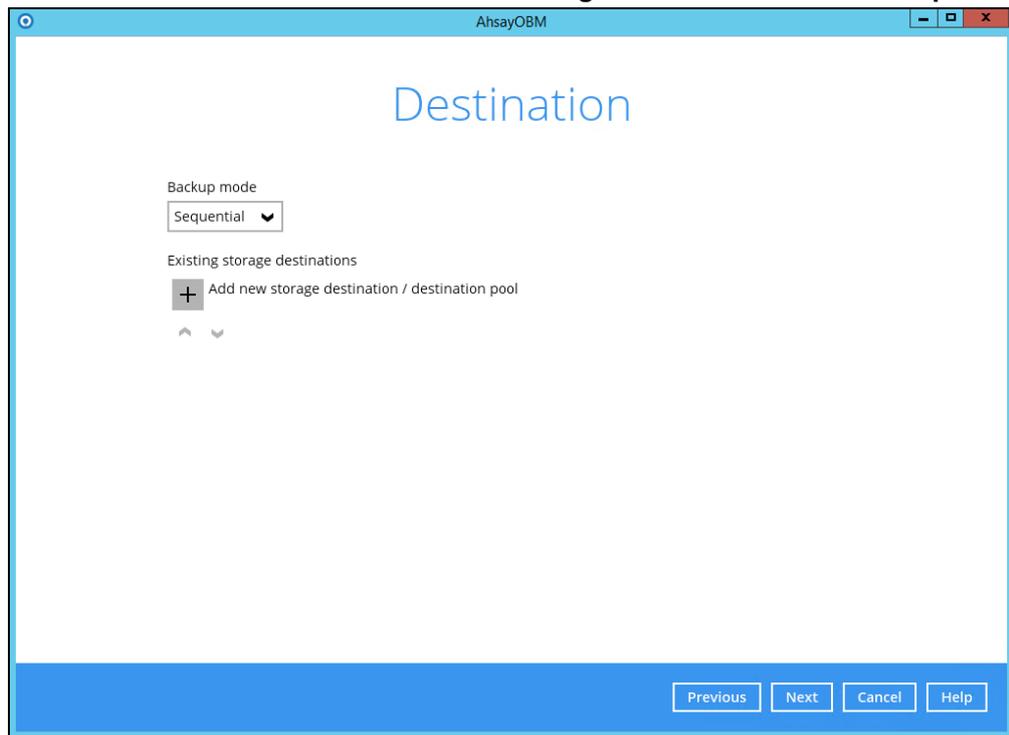
You can also click **Show mails** to select individual mail to back up. Click **Next** to proceed when you are done.



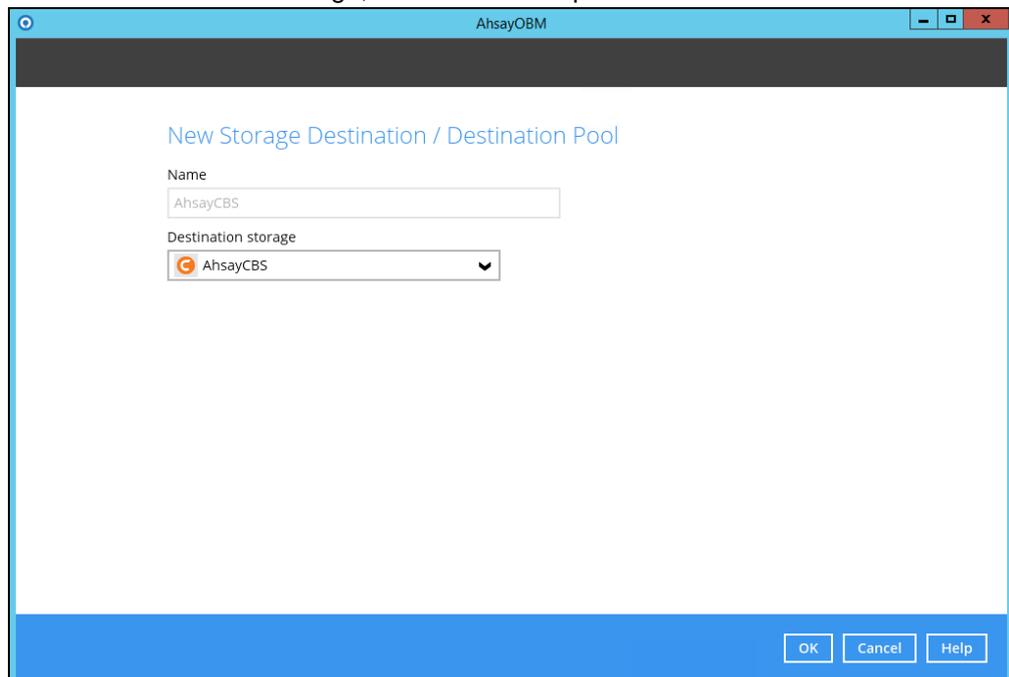
5. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default the **Run scheduled backup for this backup set** option is disabled. Enable it then click the “+” icon next to **Add new schedule**. Click **Next** to proceed when you are done setting.



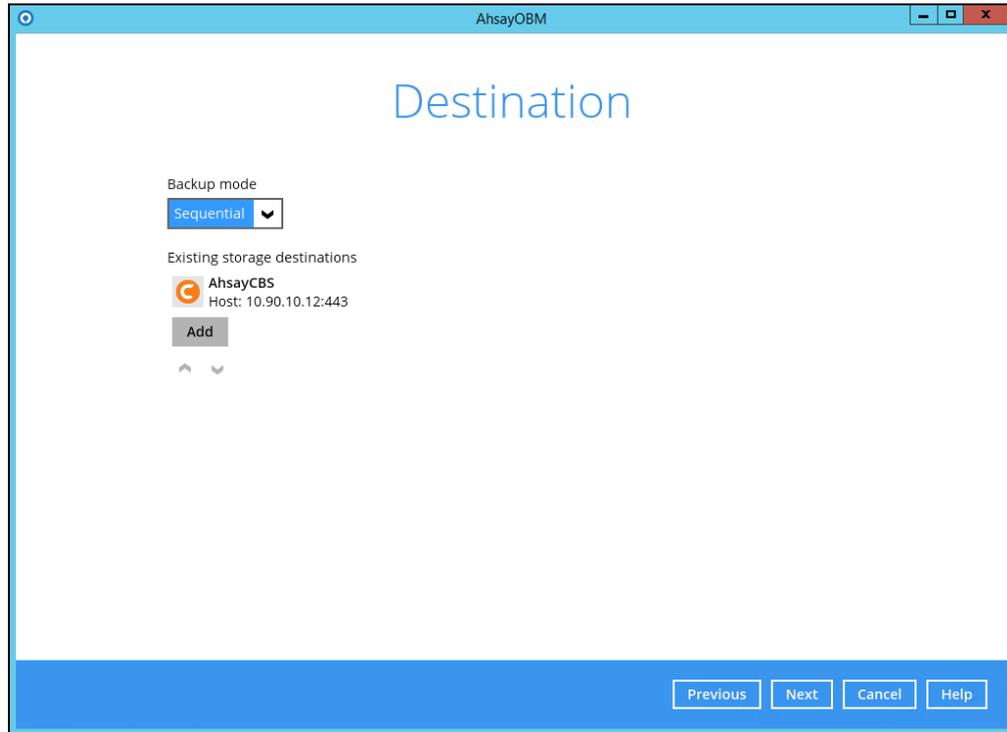
6. In the Destination menu, select a backup destination where the backup mail will be stored. Click the “+” icon next to **Add new storage destination / destination pool**.



7. Select the destination storage, then click **OK** to proceed.



8. Click **Next** on the Destination menu page to proceed.



9. In the Encryption window, the default **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



10. You can choose from one of the following three Encryption Type options:
- **Default** – an encryption key with 44 alpha numeric characters will be randomly generated by the system
 - **User password** – the encryption key will be the same as the login password of your AhsayOBM at the time when this backup set is created. Please be reminded that if you change the AhsayOBM login password later, the encryption keys of the backup sets previously created with this encryption type will remain unchanged.

- **Custom** – you can customize your encryption key, where you can set your own algorithm, encryption key, method and key length.

The screenshot shows the 'Encryption' settings page. At the top, the word 'Encryption' is displayed in a large blue font. Below it, there are several settings: 'Encrypt Backup Data' is turned 'On' with a blue slider; 'Encryption Type' is set to 'Custom' in a dropdown menu; 'Algorithm' is set to 'AES' in another dropdown menu; 'Encryption key' and 'Re-enter encryption key' are both input fields containing '*****'; 'Method' has 'CBC' selected with a radio button; and 'Key length' has '256-bit' selected with a radio button.

Note: For best practice on managing your encryption key, refer to the following article: [Best Practices for Managing Encryption Key on AhsayOBM or AhsayACB](#)

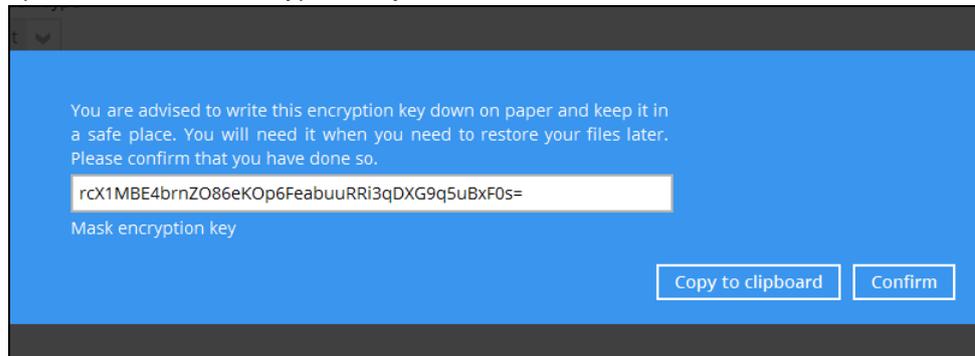
Click **Next** when you are done setting.

11. If you have enabled the Encryption Key feature in the previous step, the following pop-up window shows, no matter which encryption type you have selected.

The screenshot shows a confirmation pop-up window titled 'Encryption'. It has a dark grey header with the title in blue. The background is blue. At the top left, 'Encrypt Backup Data' is turned 'On' with a grey slider, and 'Encryption Type' is set to 'Default' in a dropdown menu. The main text reads: 'You are advised to write this encryption key down on paper and keep it in a safe place. You will need it when you need to restore your files later. Please confirm that you have done so.' Below this is an input field with '*****' and a label 'Unmask encryption key'. At the bottom right, there are two buttons: 'Copy to clipboard' and 'Confirm'.

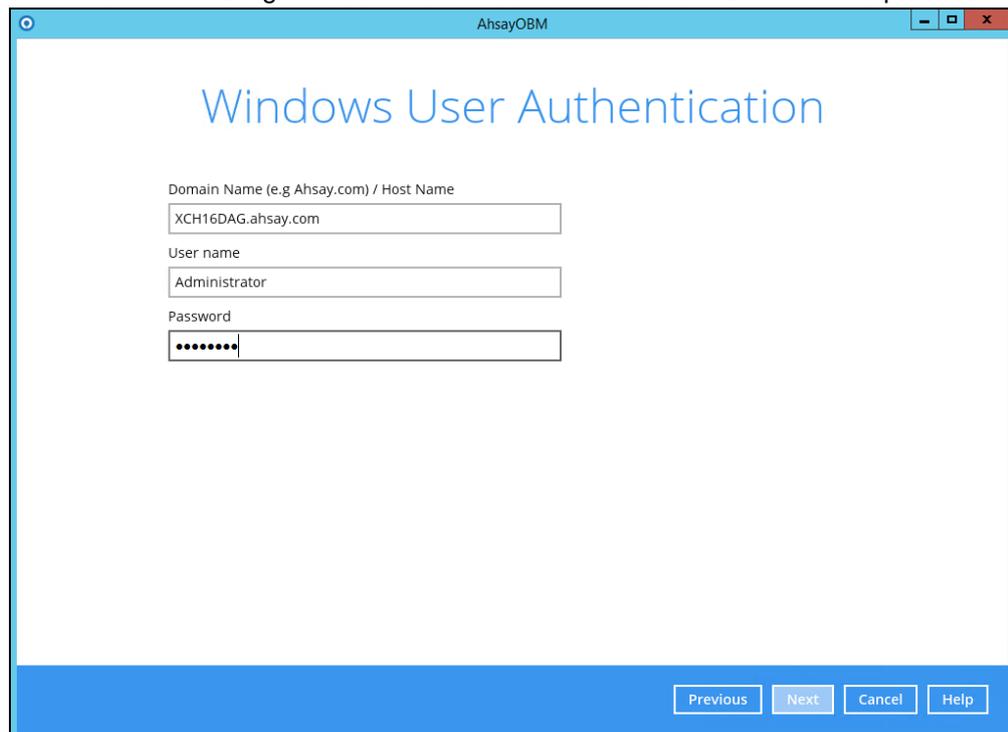
The pop-up window has the following three options to choose from:

- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.
- **Confirm** – Click to exit this pop-up window and proceed to the next step

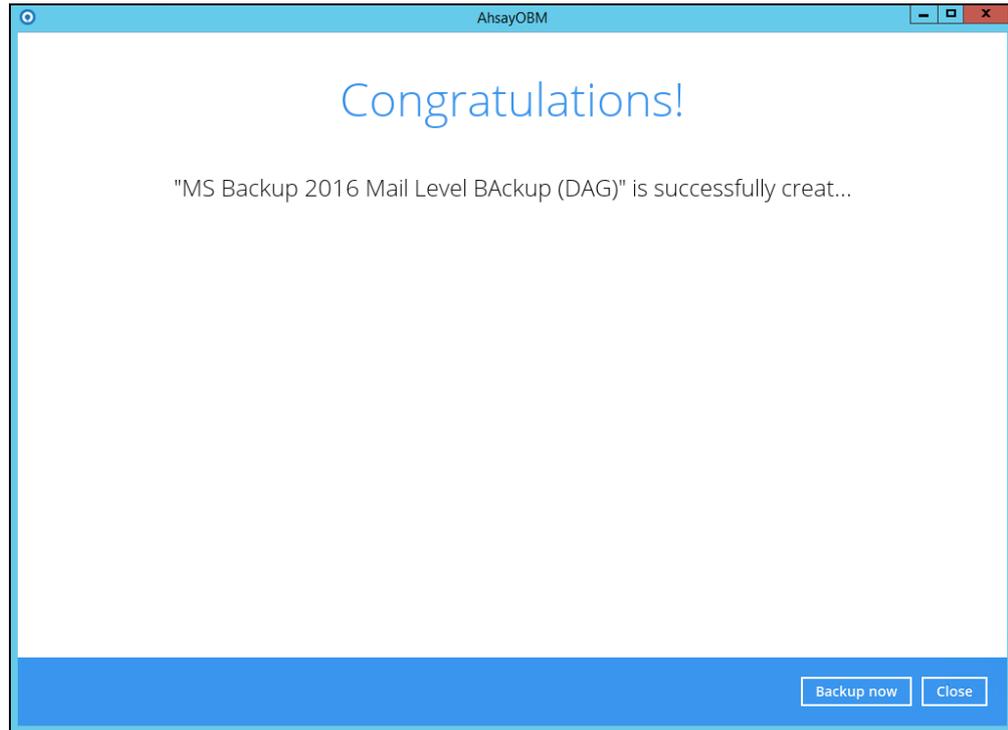
12. Enter the Windows login credentials for user authentication. Click **Next** to proceed.

A screenshot of a web browser window titled "AhsayOBM". The main content area is white and features the heading "Windows User Authentication" in blue. Below the heading are three input fields: "Domain Name (e.g Ahsay.com) / Host Name" with the value "XCH16DAG.ahsay.com", "User name" with the value "Administrator", and "Password" with a masked password of seven dots. At the bottom of the window is a blue bar containing four buttons: "Previous", "Next", "Cancel", and "Help".

Note

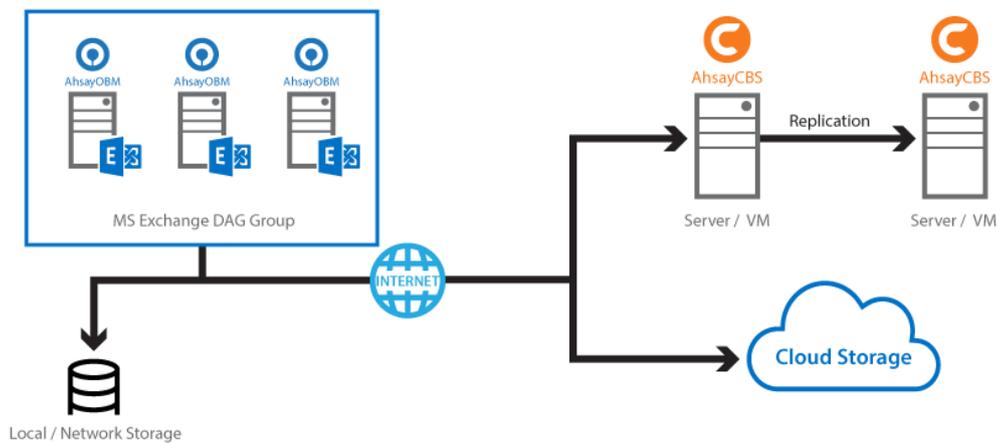
The Windows User Authentication interface will show only if scheduled backup is enabled and set successfully.

13. The following screen shows when the new backup set is created successfully.



14. Click Backup now to start a backup immediately, or you can run a backup job later by following the instructions in [Run Mail Level Backup Job](#)

4.2.2 Run Mail Level Backup Job

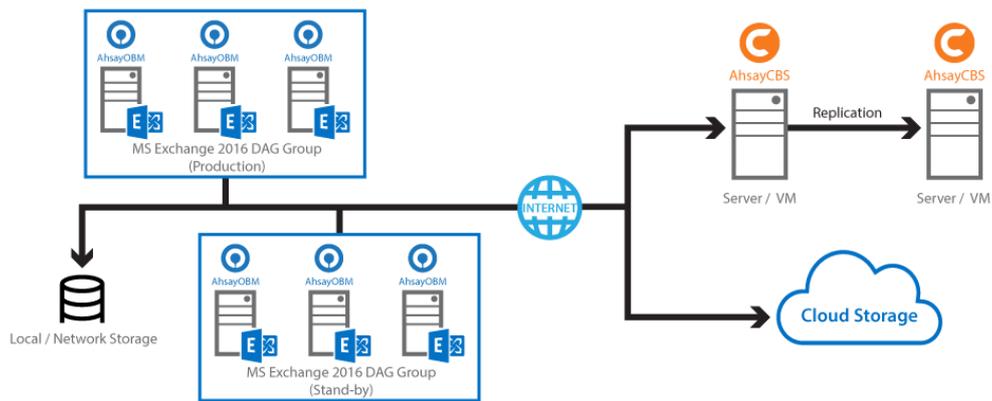


As mentioned in the [Requirement](#) section of this guide, if you choose to back up an Exchange DAG setup by installing AhsayOBM on each DAG members, only a scheduled backup that is performed on all DAG members at the scheduled time, will be considered a complete backup. AhsayOBM on all DAG members will start a backup, based on the scheduled time of the backup set at the same time.

A manual backup performed only on individual DAG member will not be considered complete.

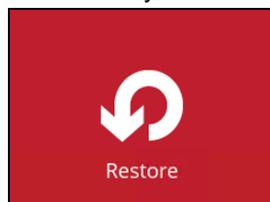
Please refer to the [Scheduled Backup for Exchange Server in Data Availability Group \(DAG\) Option](#) for details.

4.2.3 Restore Mail Level Backup

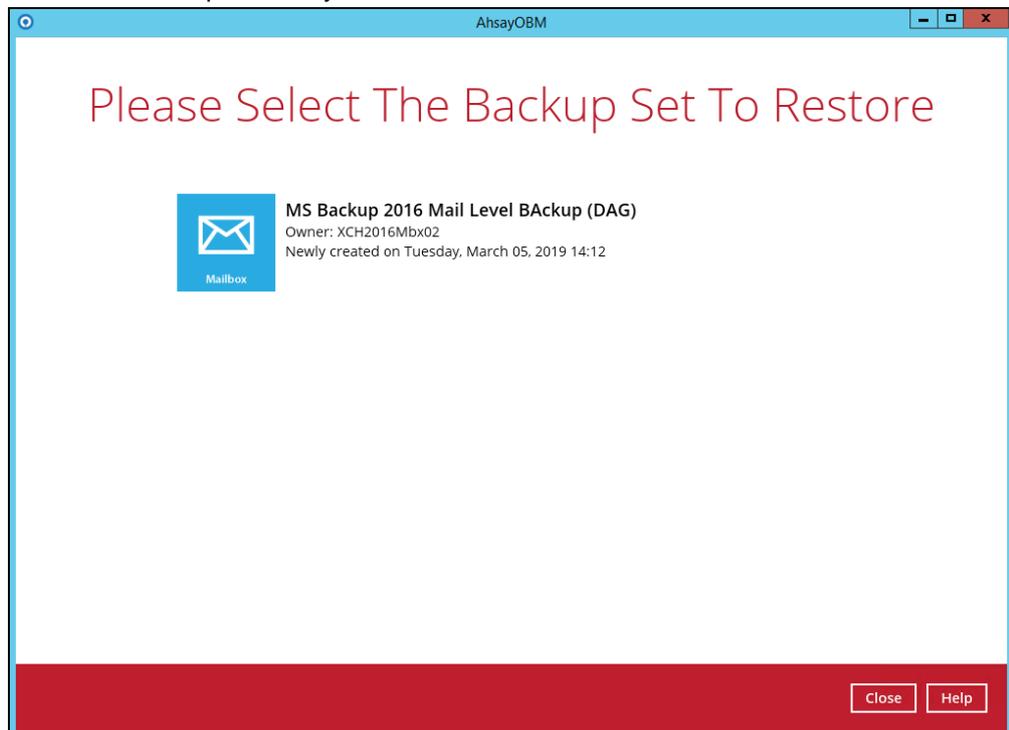


Below are the steps of the restore process.

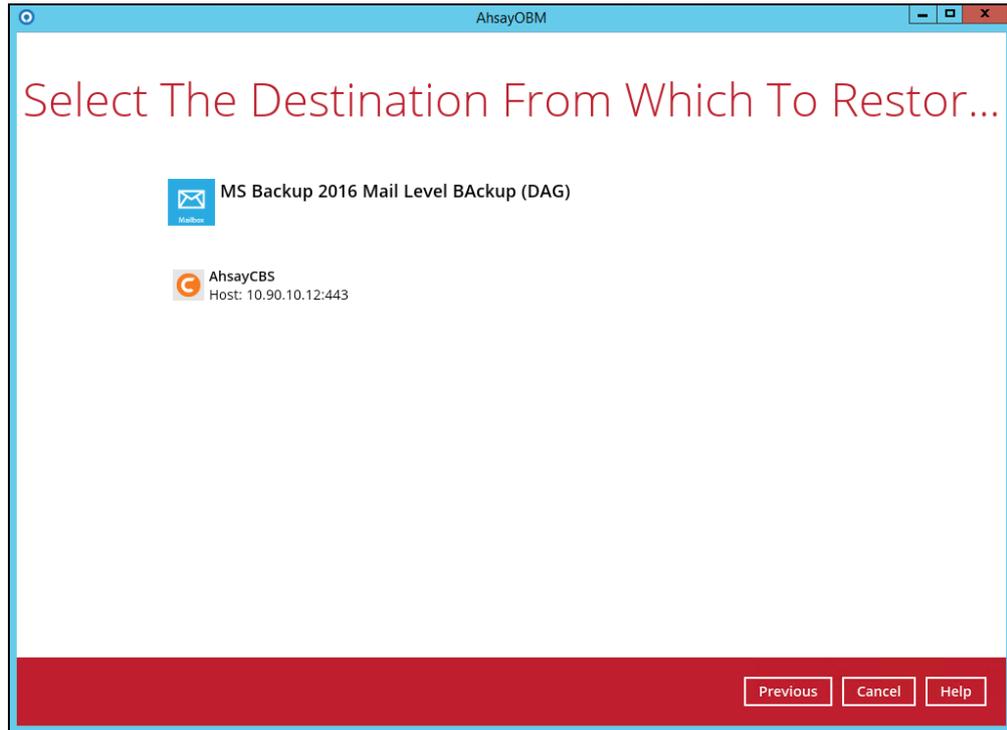
1. In the AhsayOBM main interface, click the **Restore** icon.



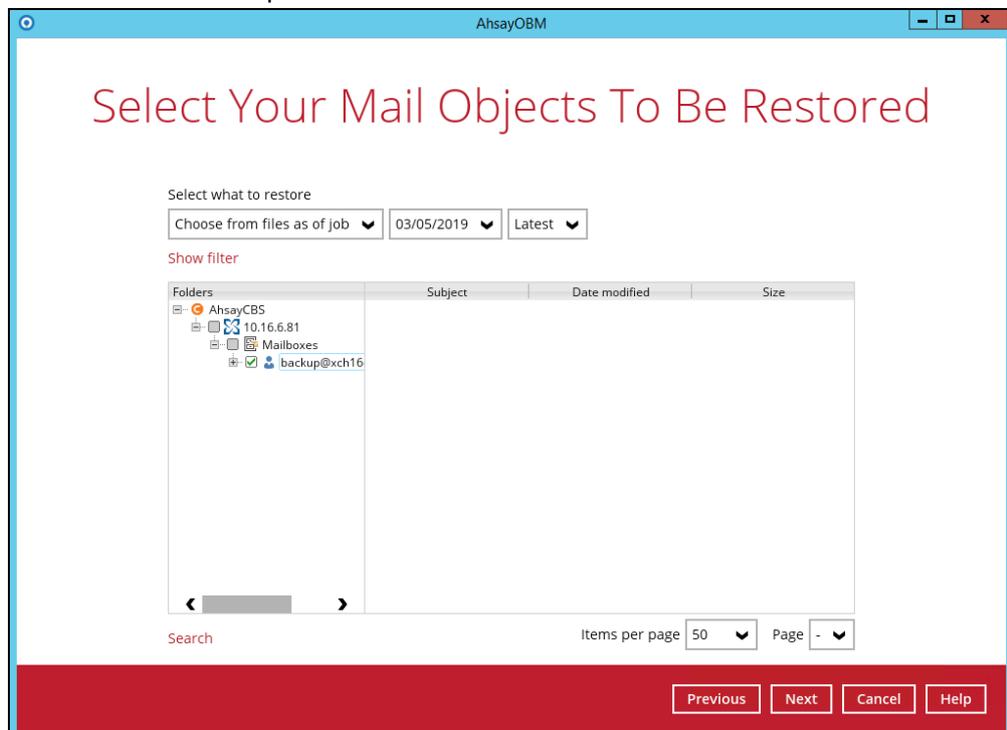
2. Select the backup set that you would like to restore mail from.



3. Select the backup destination that contains the mail(s) that you would like to restore.



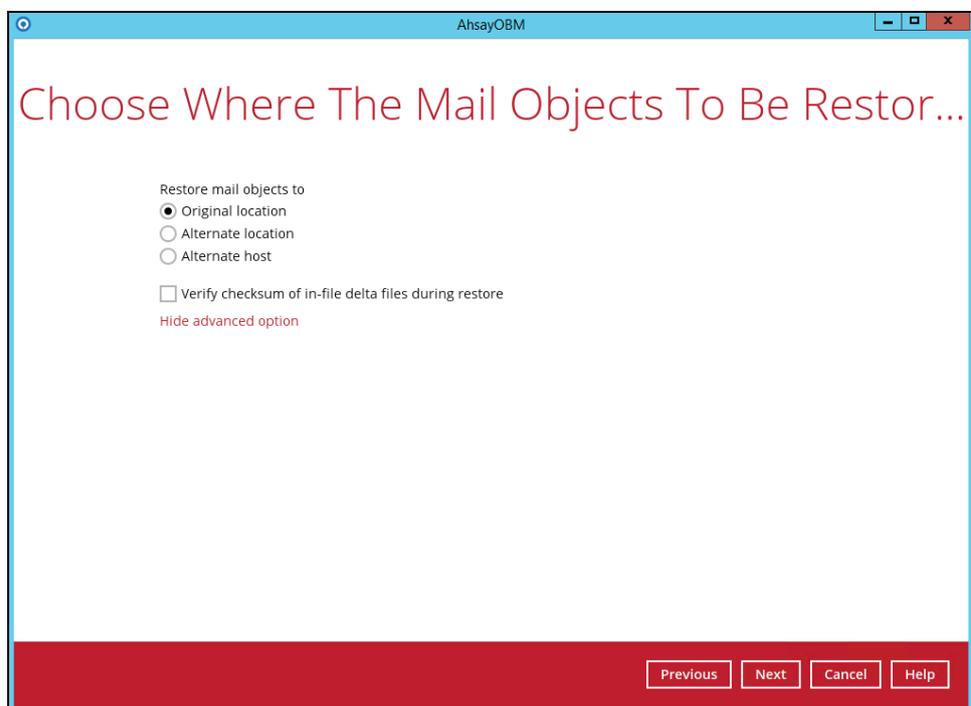
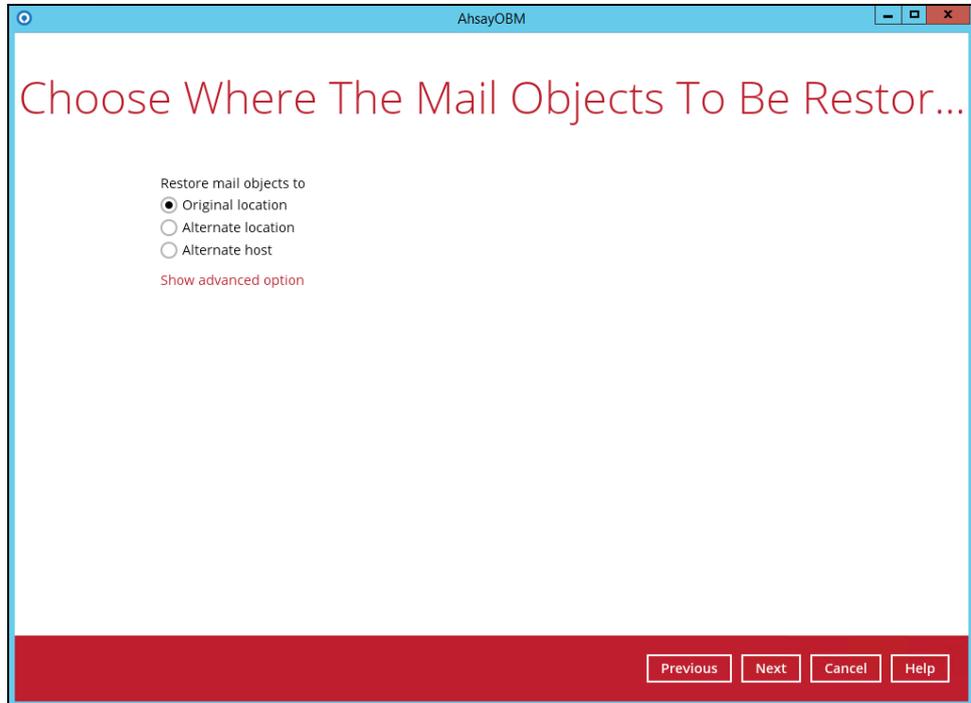
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



5. Select to restore the mail to their Original location, Alternate location or to an Alternate host.

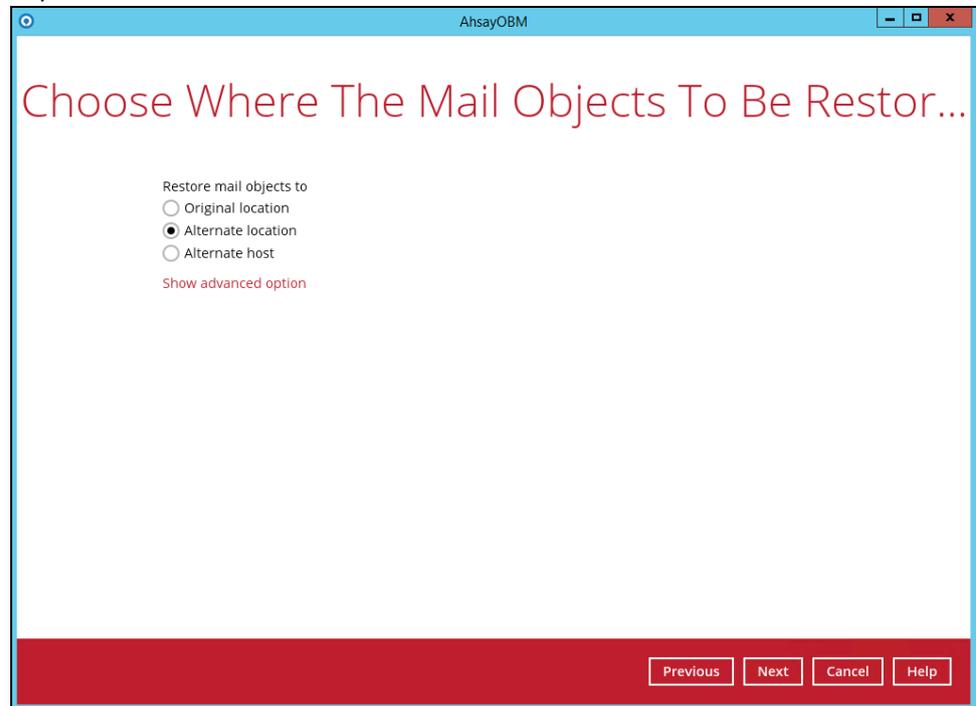
⦿ **Restore to Original Location**

Select the **Original location** option. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**. Then press **Next** to proceed.

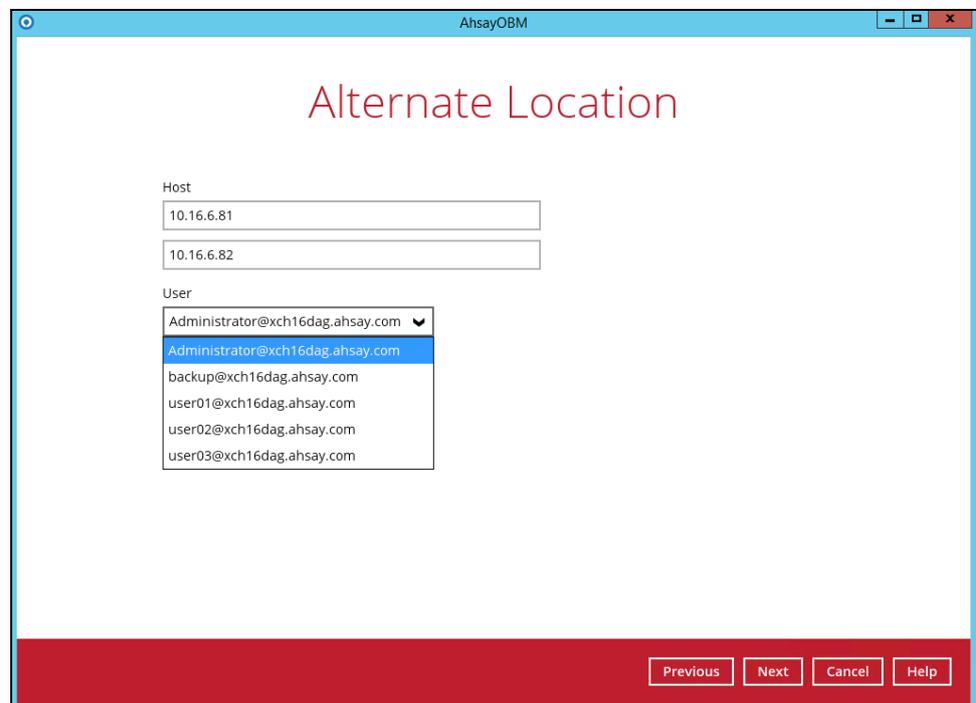


Restore to Alternate Mailbox

You can choose to restore mailbox item(s) to another mailbox in the same Exchange server. Select the **Alternate location** option. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option** then press **Next**. Select the desired mailbox destination, then press **Next** to proceed.



The screenshot shows a dialog box titled "Choose Where The Mail Objects To Be Restor...". It contains three radio button options under the heading "Restore mail objects to": "Original location", "Alternate location" (which is selected), and "Alternate host". Below these options is a link labeled "Show advanced option". At the bottom right, there are four buttons: "Previous", "Next", "Cancel", and "Help".



The screenshot shows a dialog box titled "Alternate Location". It has two input fields for "Host" with the values "10.16.6.81" and "10.16.6.82". Below these is a "User" dropdown menu with a list of email addresses: "Administrator@xch16dag.ahsay.com" (selected), "Administrator@xch16dag.ahsay.com", "backup@xch16dag.ahsay.com", "user01@xch16dag.ahsay.com", "user02@xch16dag.ahsay.com", and "user03@xch16dag.ahsay.com". At the bottom right, there are four buttons: "Previous", "Next", "Cancel", and "Help".

Restore to Alternate Host

You can also choose to restore mailbox item(s) to another mailbox in another Exchange server of the same version. Select the **Alternate host** option. Enter the host, username and password of the alternate Exchange server. If you will access the internet through proxy, check the box beside it and set the configuration for the proxy server and click **Save**. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**.

Choose Where The Mail Objects To Be Restor...

Restore mail objects to

Original location

Alternate location

Alternate host

Host

10.16.6.81

Username

backup

Password

•••••

Access the Internet through proxy

Test

Show advanced option

Previous Next Cancel Help

Proxy (HTTP)

IP address Port

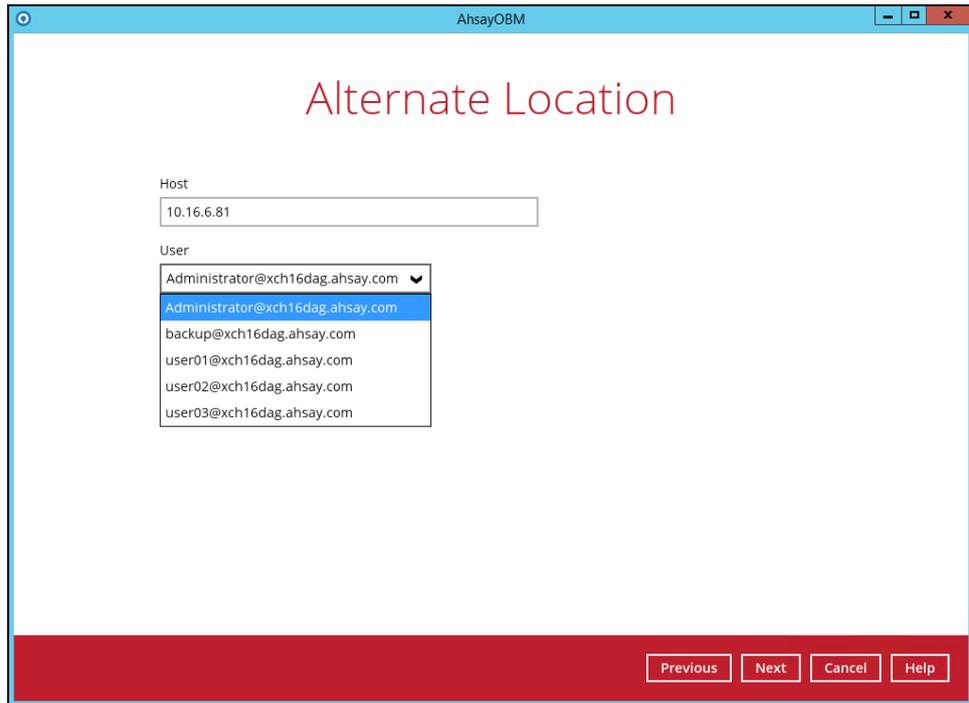
Login ID

Password

Test connection

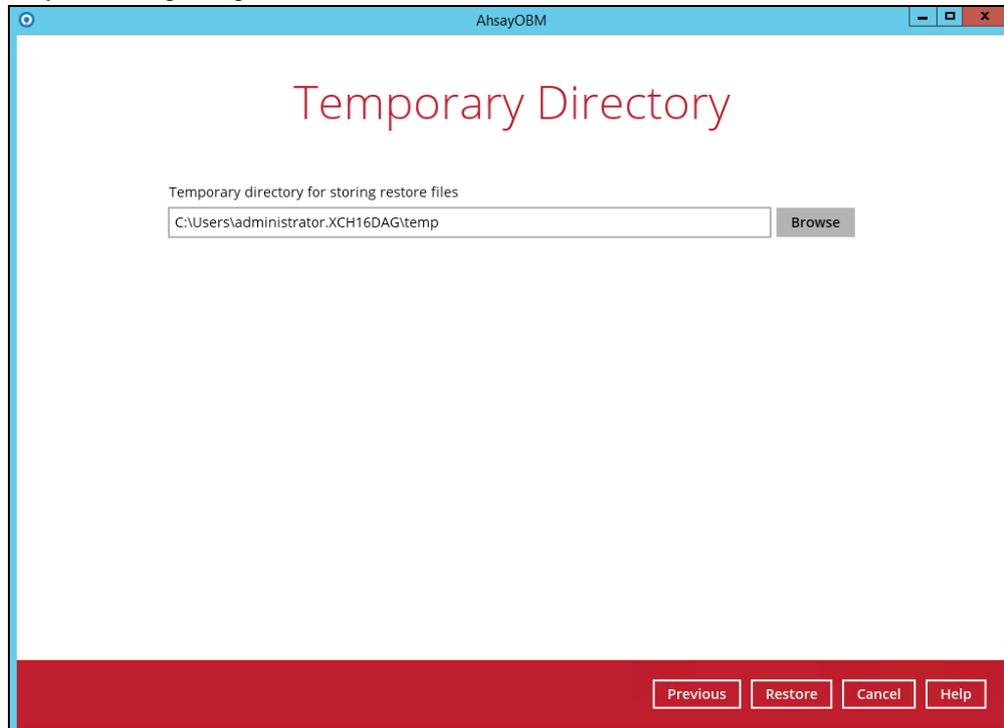
Save Cancel

Select the desired mailbox destination then press **Next** proceed.

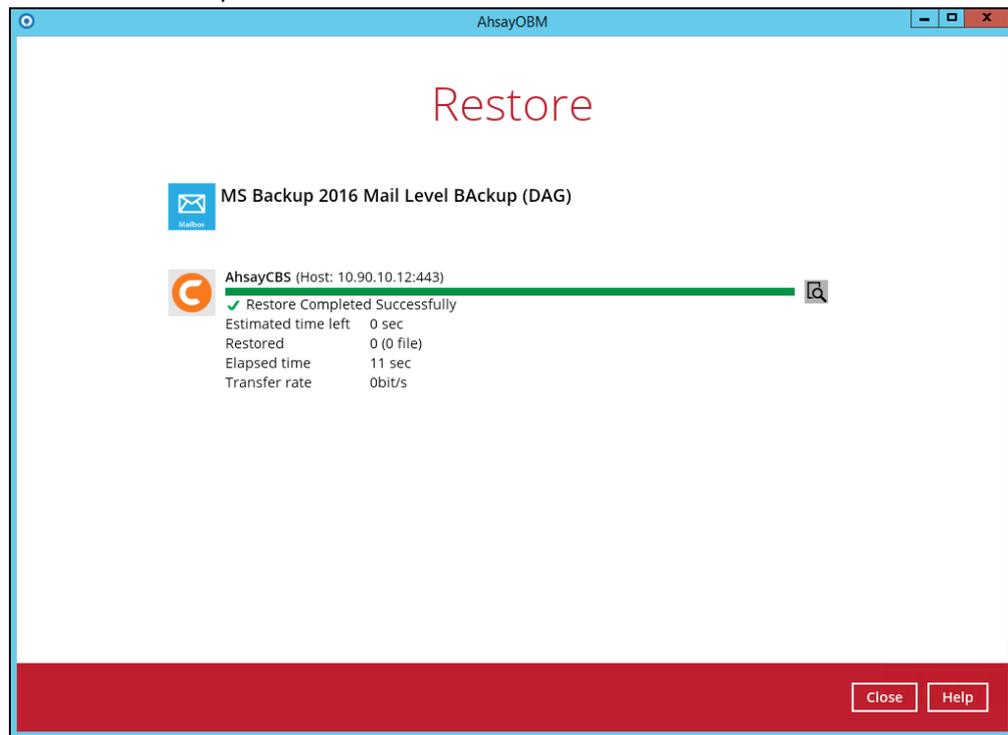


Please refer to the [Limitation](#) part to check for the limitation of the restore process.

6. Select the temporary directory for storing temporary files, such as delta files when they are being merged, click **Restore** to start the restoration.



7. The following screen with the text **Restore Completed Successfully** shows when the restoration is completed.

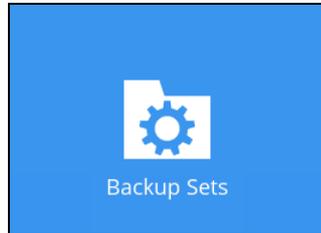


5 On Remote Backup Machine

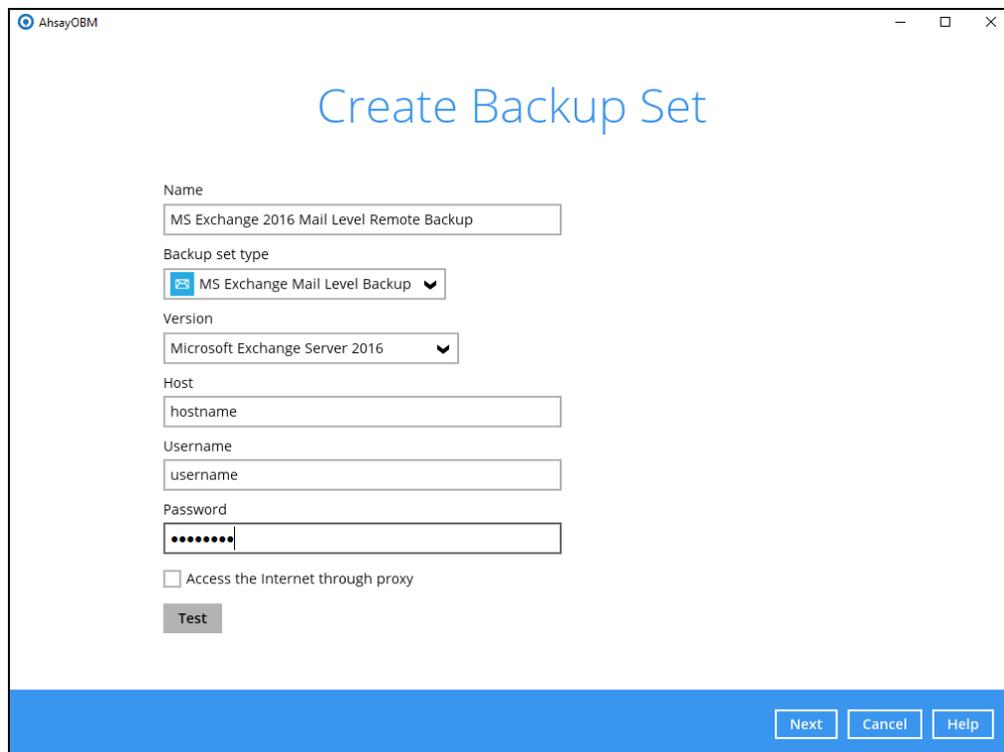
5.1 Standalone Backup Option

5.1.1 Create Mail Level Backup Set

1. Click the **Backup Sets** icon on the main interface of AhsayOBM.

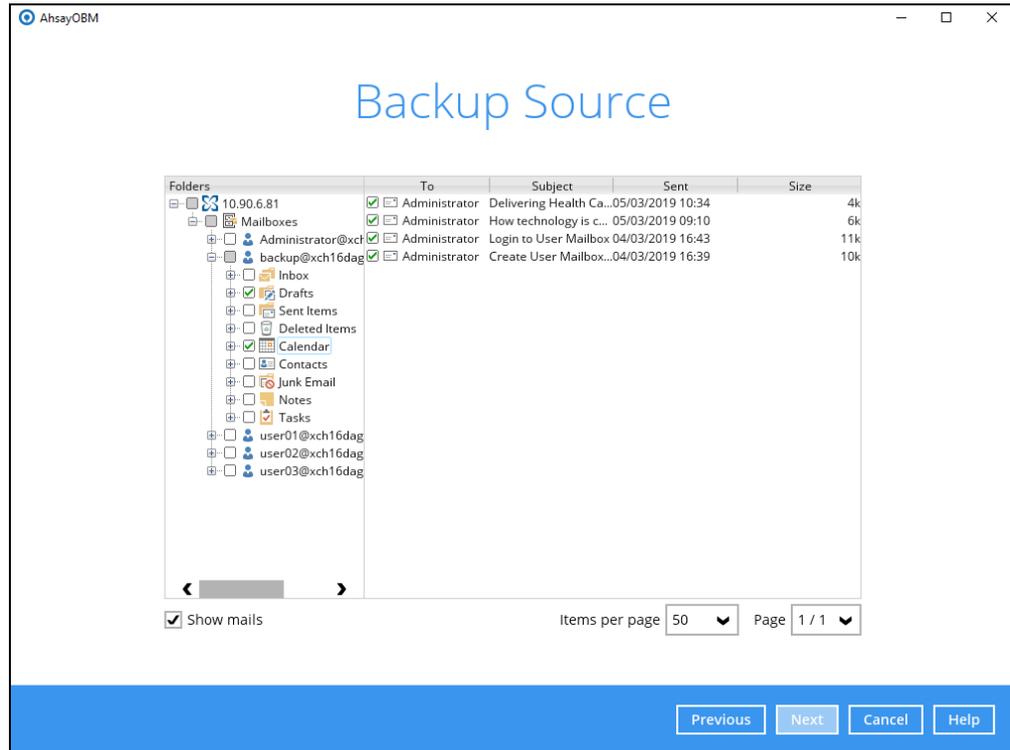


2. Create a new backup set by clicking the “+” icon next to **Add new backup set**.
3. Select the Backup set type as **MS Exchange Mail Level Backup**.
 - ⦿ Select Microsoft Exchange Server version as **Microsoft Exchange Server 2016**.
 - ⦿ Name your new backup set.
 - ⦿ Enter the hostname of Exchange Server 2016.
 - ⦿ Enter the username and password of the Windows user account used for backup.
 - ⦿ Check the “Access the Internet through proxy” if required. Then click **Next** to proceed.

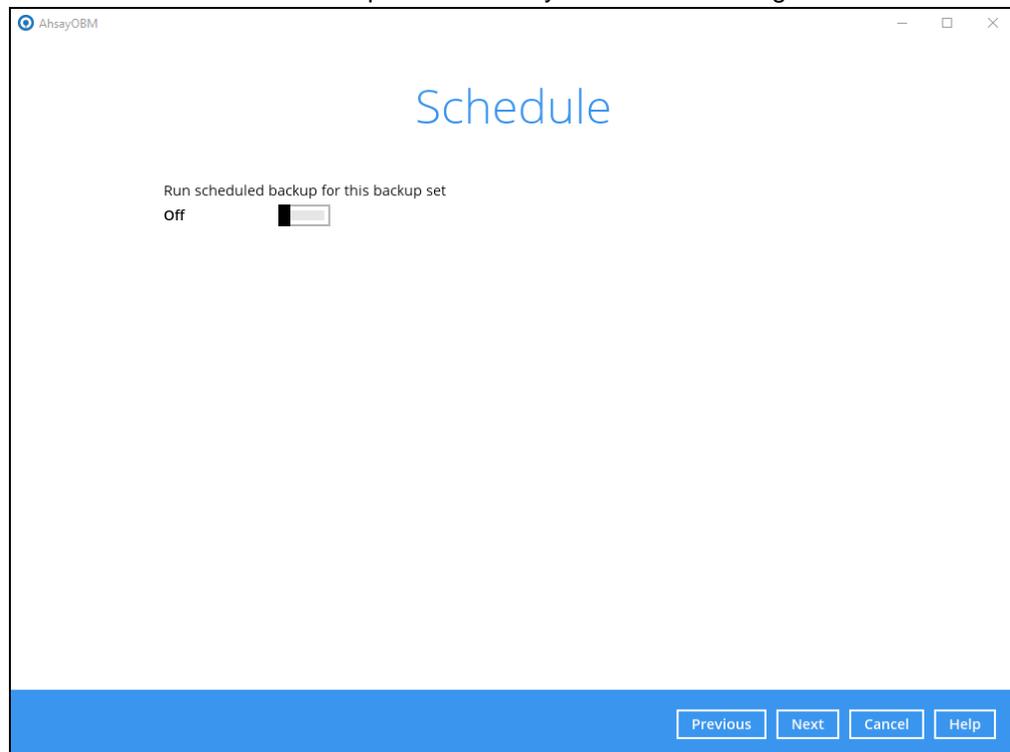


4. In the **Backup Source** menu, select the mailboxes or public folders for backup. You can click to expand the mailbox or public folder to select which mail folder to back up. You can also click **Show mails** to select individual mail to back up. Click **Next** to

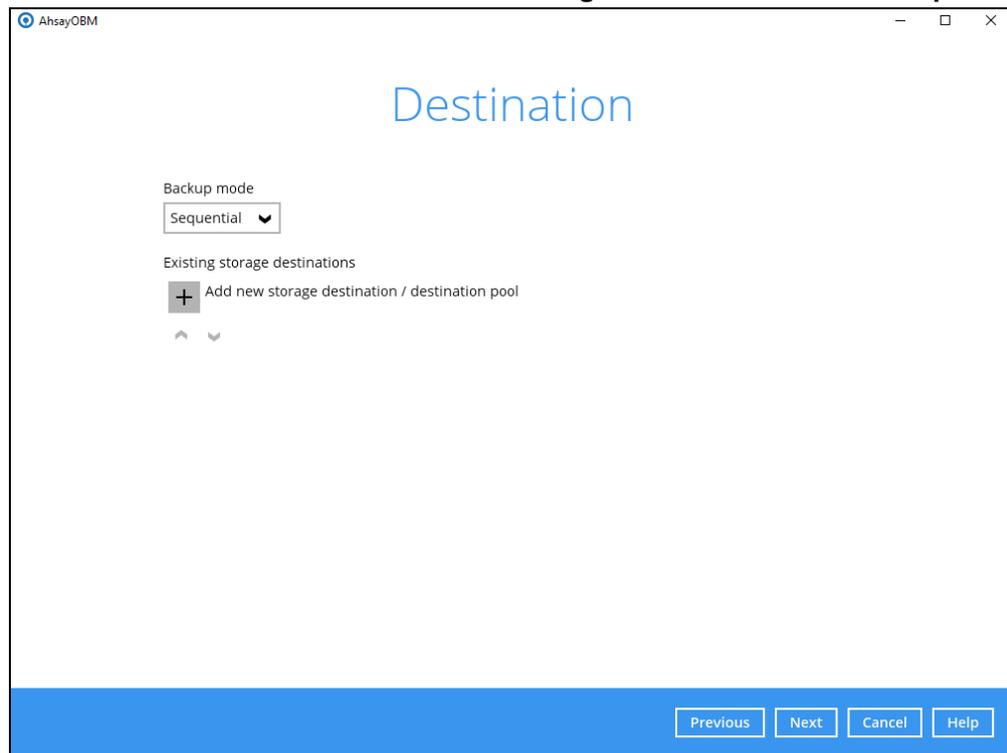
proceed when you are done.



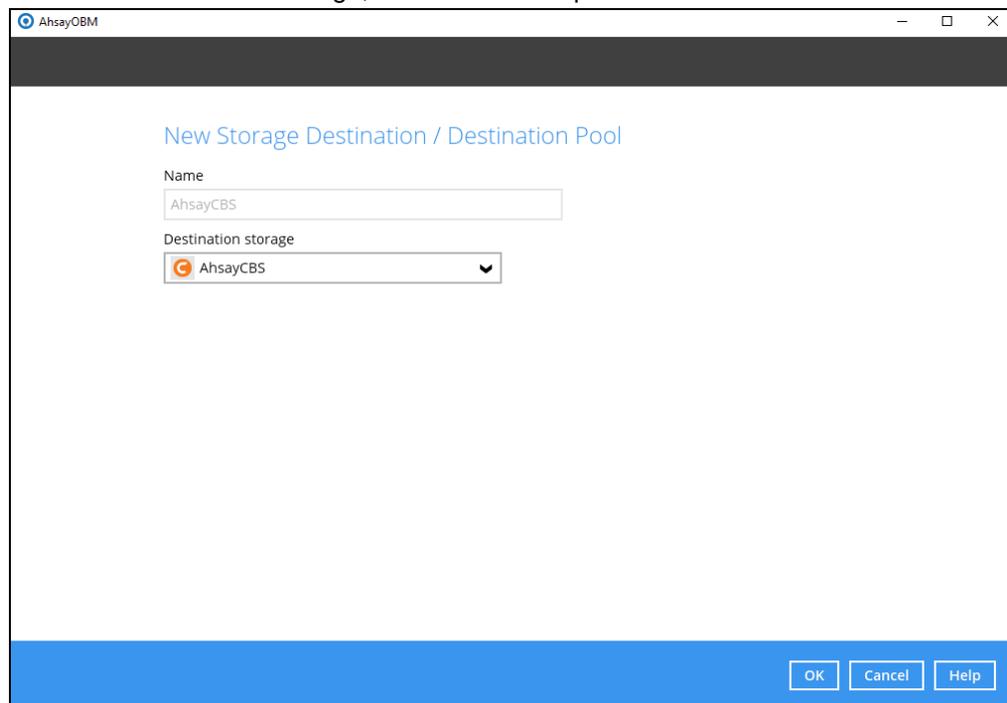
5. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default the **Run scheduled backup for this backup set** option is disabled. Enable it then click the “+” icon next to **Add new schedule**. Click **Next** to proceed when you are done setting.



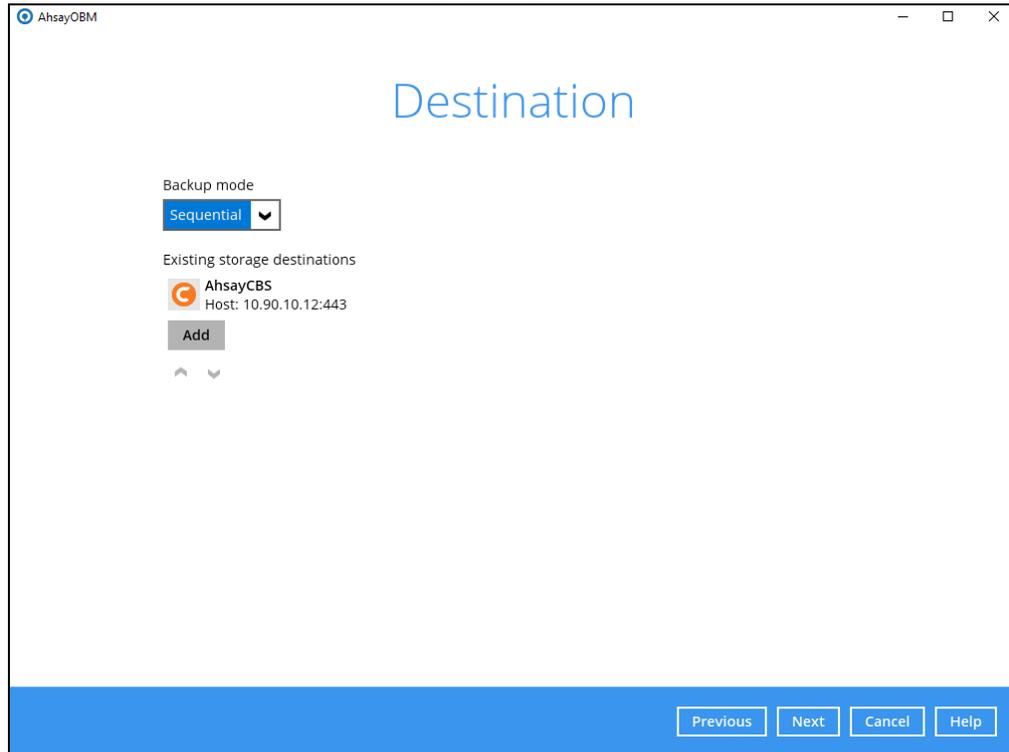
6. In the Destination menu, select a backup destination where the backup mail will be stored. Click the “+” icon next to **Add new storage destination / destination pool**.



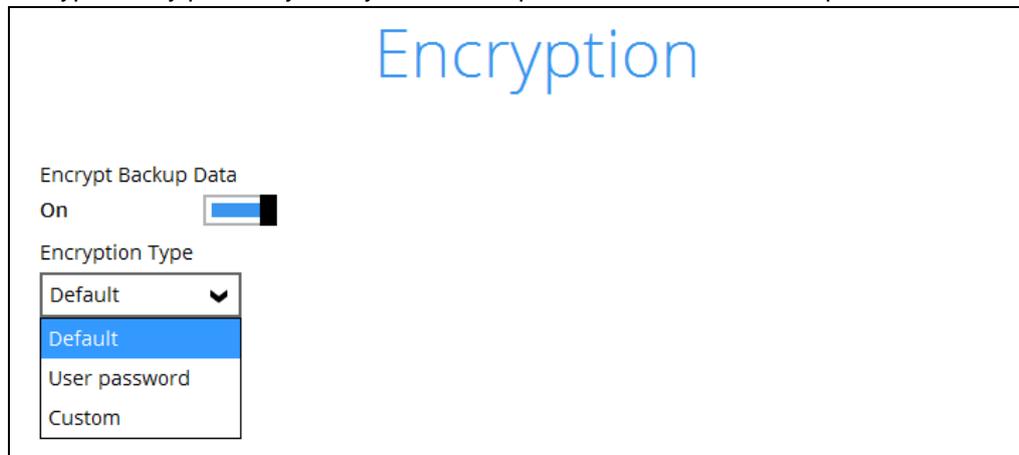
7. Select the destination storage, then click **OK** to proceed.



8. Click **Next** on the Destination menu page to proceed.



9. In the Encryption window, the default **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



10. You can choose from one of the following three Encryption Type options:
- **Default** – an encryption key with 44 alpha numeric characters will be randomly generated by the system
 - **User password** – the encryption key will be the same as the login password of your AhsayOBM at the time when this backup set is created. Please be reminded that if you change the AhsayOBM login password later, the encryption keys of the backup sets previously created with this encryption type will remain unchanged.

- **Custom** – you can customize your encryption key, where you can set your own algorithm, encryption key, method and key length.

The screenshot shows the 'Encryption' settings page. At the top, the word 'Encryption' is displayed in a large blue font. Below it, there are several settings: 'Encrypt Backup Data' is turned 'On' with a blue slider; 'Encryption Type' is set to 'Custom' in a dropdown menu; 'Algorithm' is set to 'AES' in another dropdown menu; 'Encryption key' and 'Re-enter encryption key' are both masked with '*****' in text input fields; 'Method' has radio buttons for 'ECB' and 'CBC', with 'CBC' selected; and 'Key length' has radio buttons for '128-bit' and '256-bit', with '256-bit' selected.

Note: For best practice on managing your encryption key, refer to the following article: [Best Practices for Managing Encryption Key on AhsayOBM or AhsayACB](#)

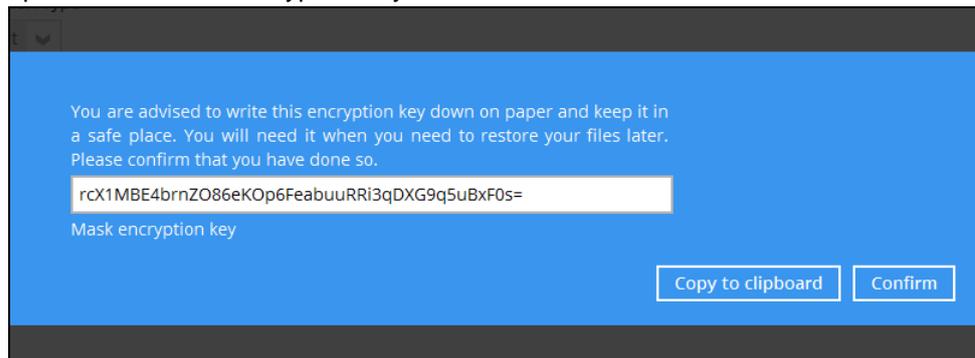
Click **Next** when you are done setting.

11. If you have enabled the Encryption Key feature in the previous step, the following pop-up window shows, no matter which encryption type you have selected.

The screenshot shows a pop-up window titled 'Encryption' with a dark grey header. The main content area has a blue background. It contains a warning message: 'You are advised to write this encryption key down on paper and keep it in a safe place. You will need it when you need to restore your files later. Please confirm that you have done so.' Below the message is a text input field with six black dots representing the masked encryption key. Underneath the field is the text 'Unmask encryption key'. At the bottom right, there are two buttons: 'Copy to clipboard' and 'Confirm'.

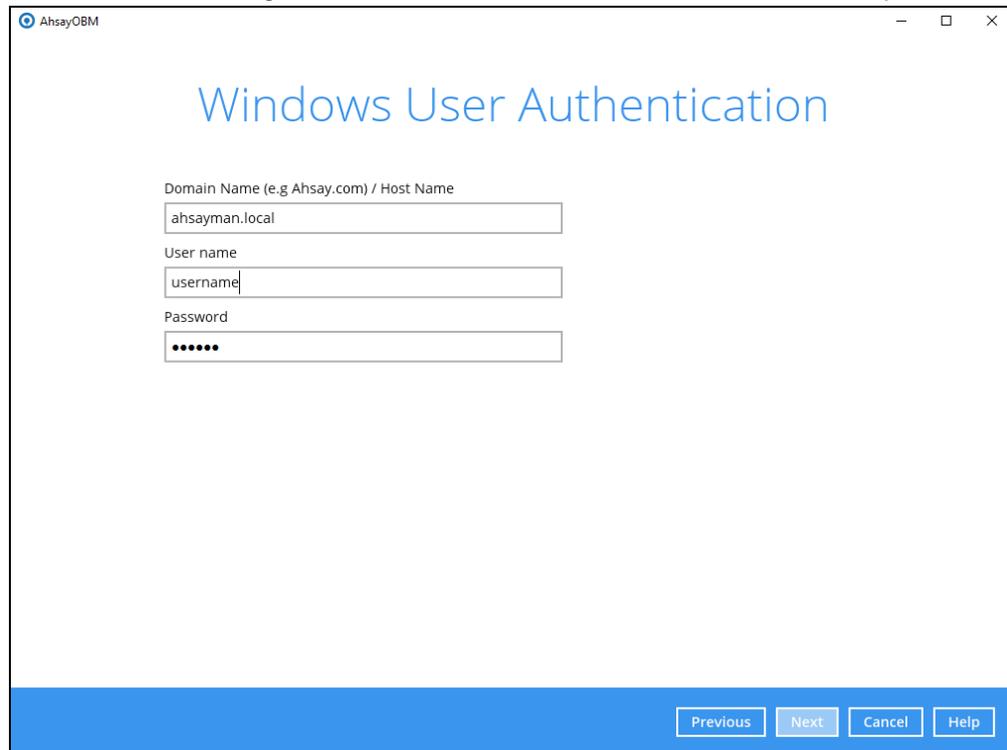
The pop-up window has the following three options to choose from:

- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.
- **Confirm** – Click to exit this pop-up window and proceed to the next step

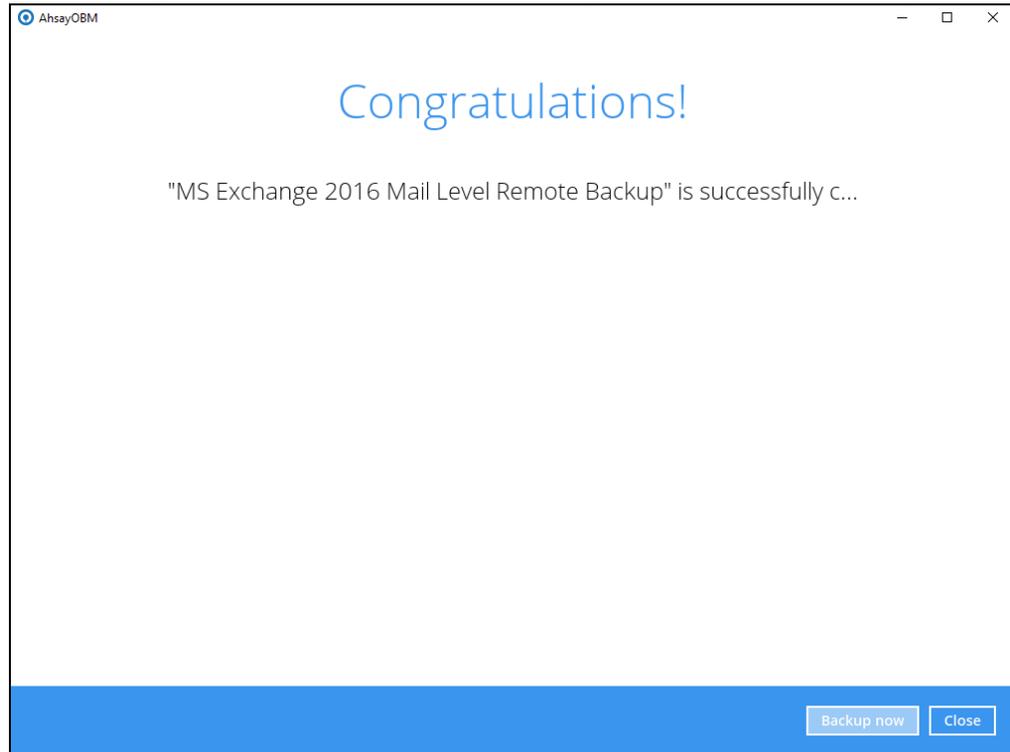
12. Enter the Windows login credentials for user authentication. Click **Next** to proceed.



Note

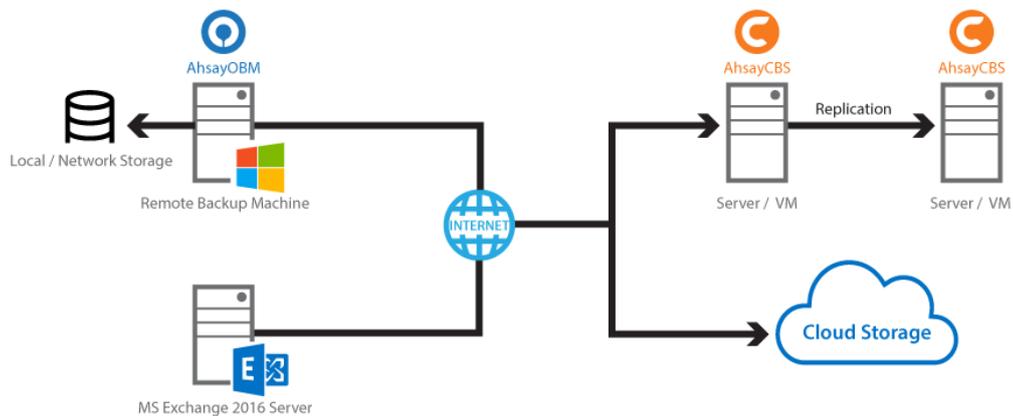
The Windows User Authentication interface will show only if scheduled backup is enabled and set successfully.

13. The following screen shows when the new backup set is created successfully.



14. Click **Backup now** to start a backup immediately, or you can run a backup job later by following the instructions in [Run Mail Level Backup Job](#)

5.1.2 Run Mail Level Backup Job

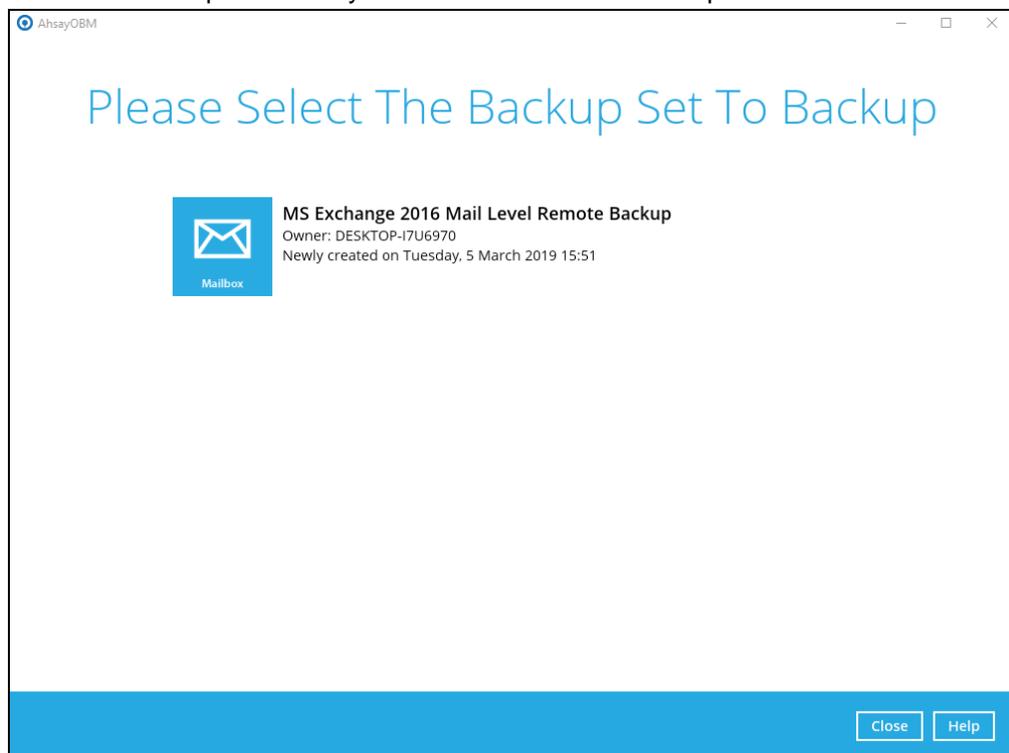


Below is the steps of backup process.

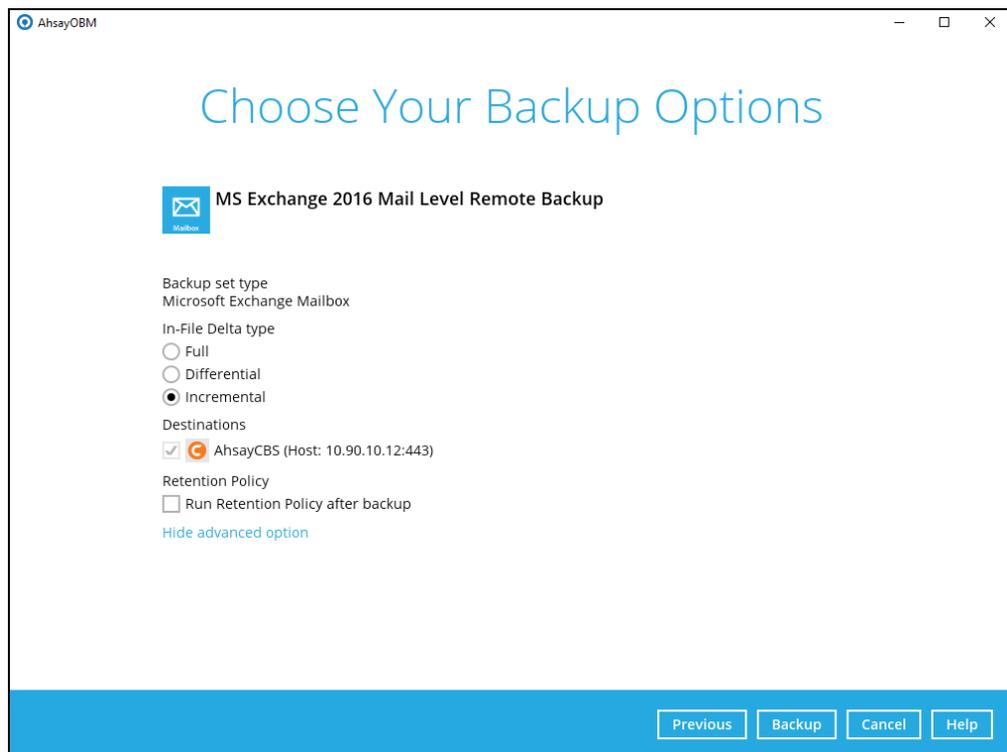
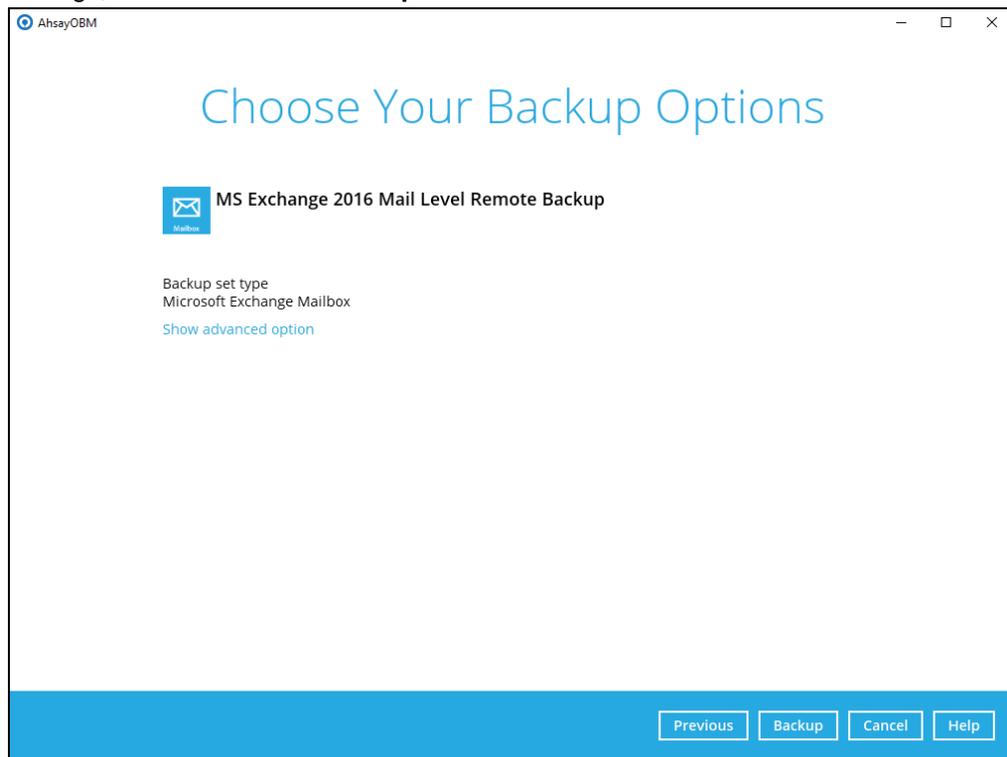
1. Log in to AhsayOBM.
2. Click the Backup icon on the main interface of AhsayOBM.



3. Select the backup set which you would like to start a backup for.

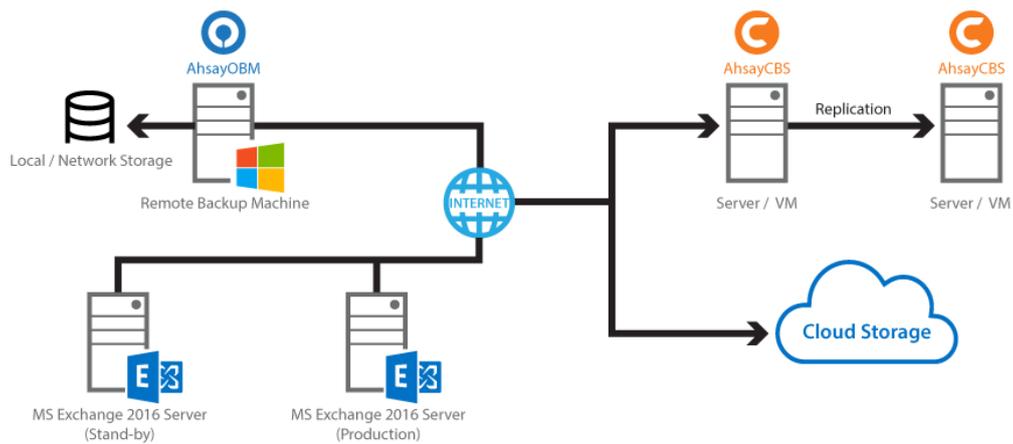


If you would like to modify the In-File Delta type, Destinations and Retention Policy settings, click **Show advanced option**.



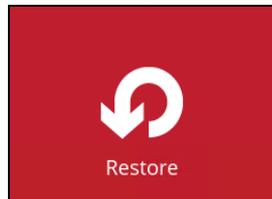
4. Click **Backup** to start the backup.

5.1.3 Restore Mail Level Backup

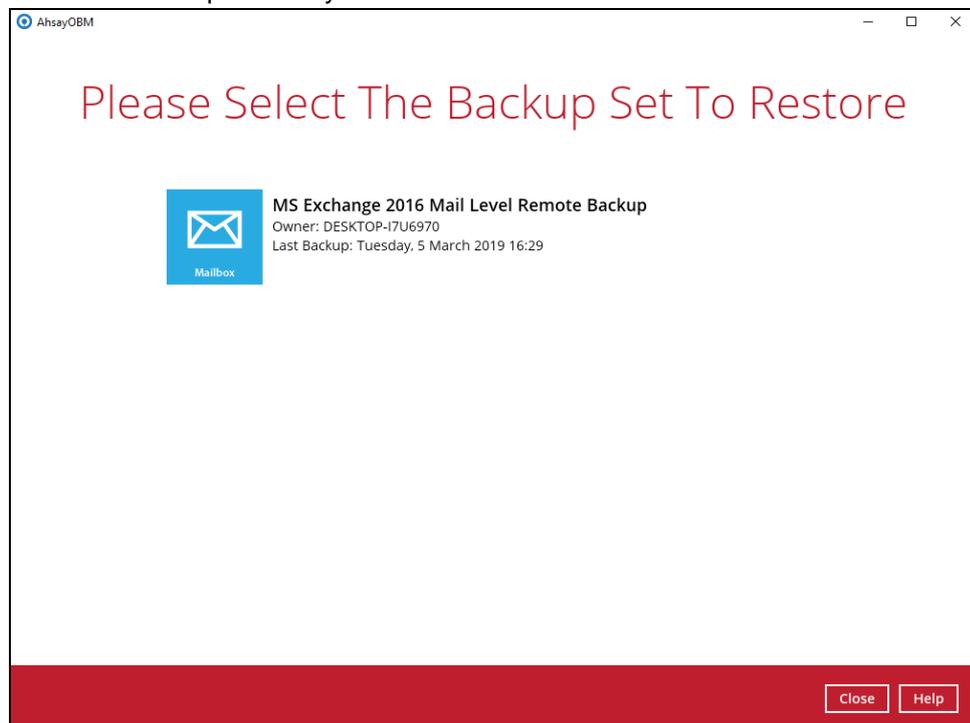


Below are the steps of the restore process.

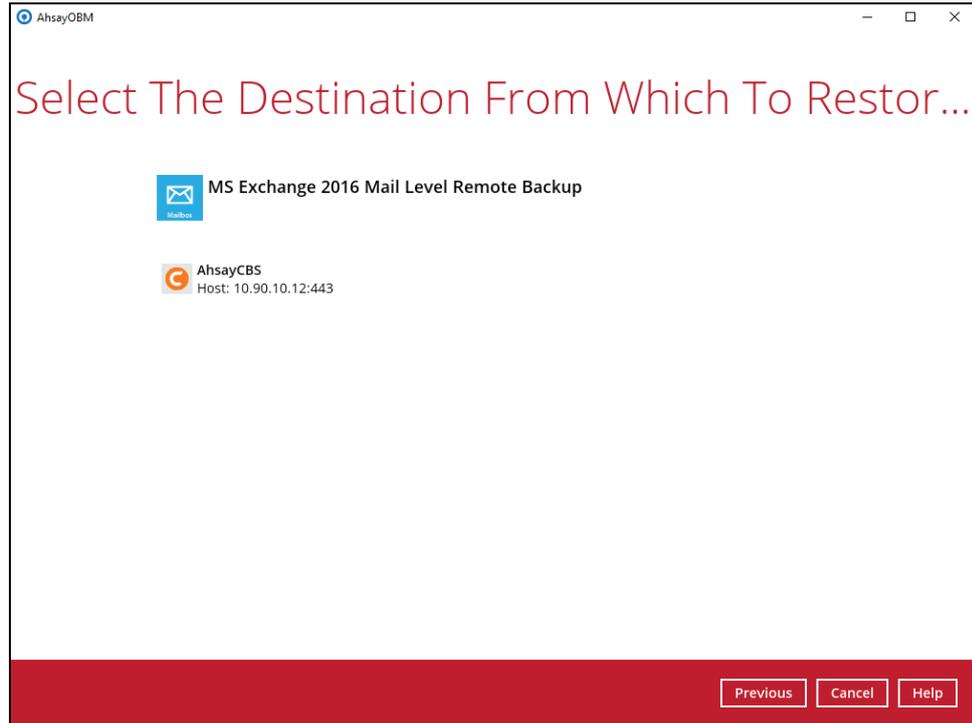
1. In the AhsayOBM main interface, click the **Restore** icon.



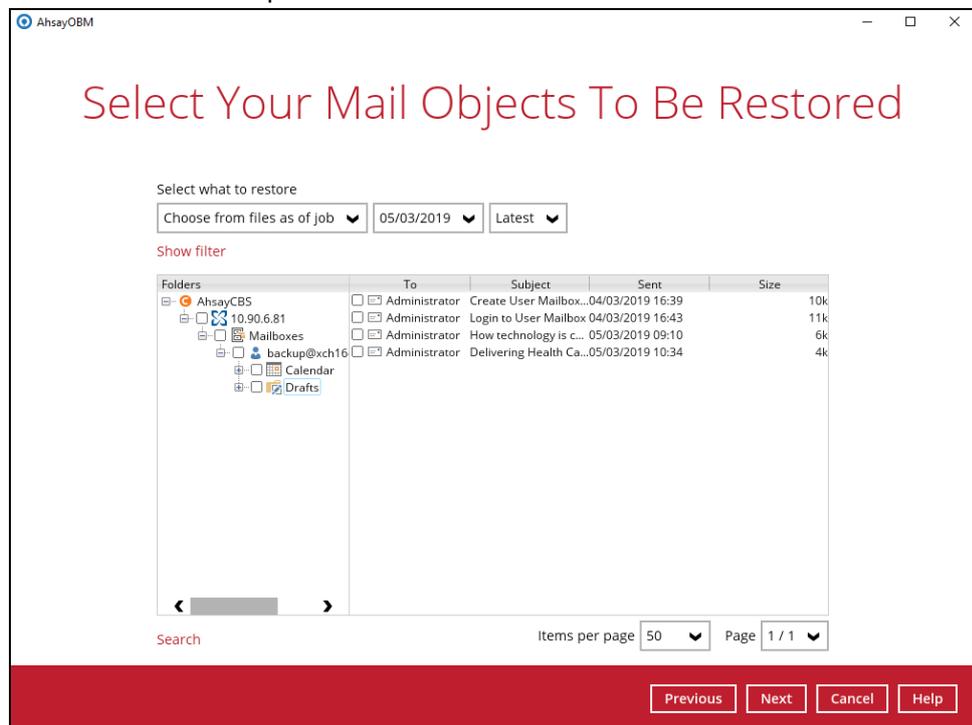
2. Select the backup set that you would like to restore mail from.



3. Select the backup destination that contains the mail(s) that you would like to restore.



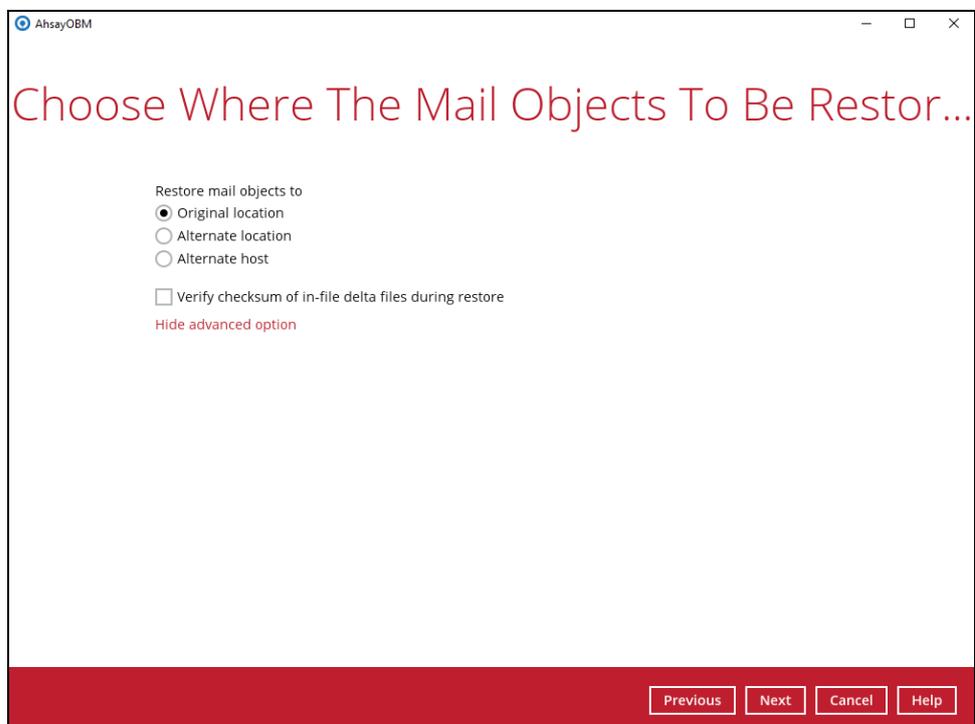
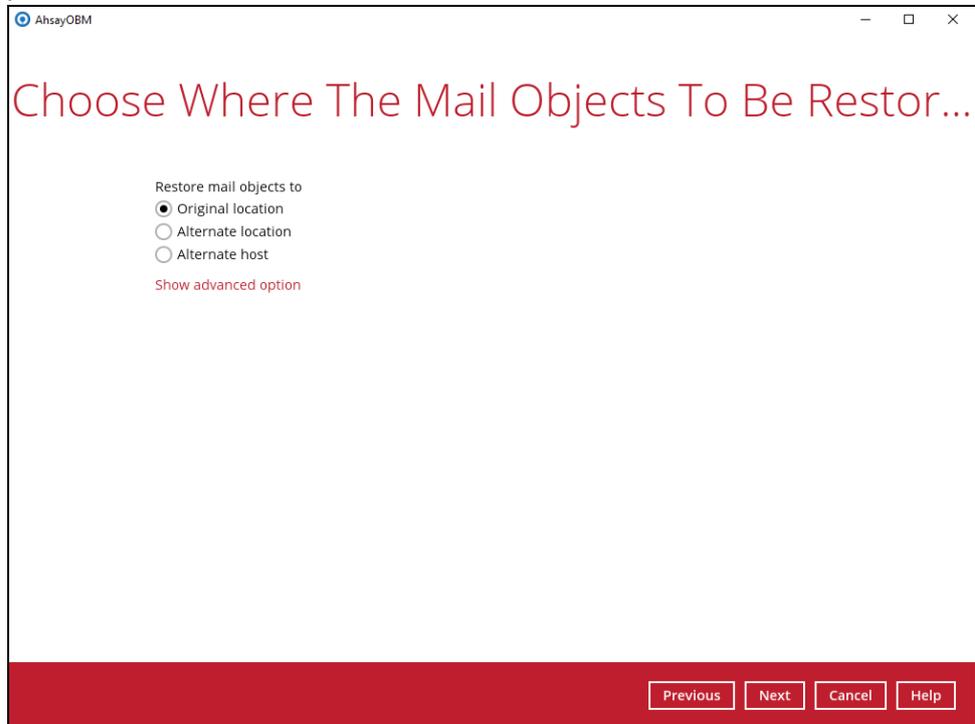
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



5. Select to restore the mail to their Original location, Alternate location or to an Alternate host.

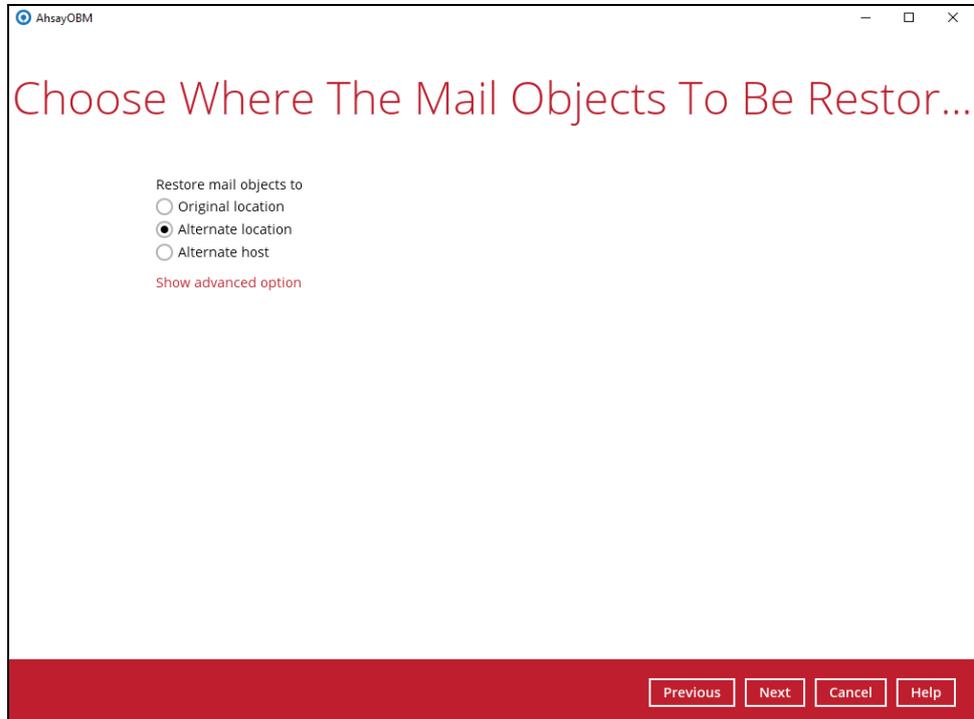
• **Restore to Original Location**

Select the **Original location** option. If you want to modify the Verify checksum of in-file delta setting, click the **Show advanced option**. Press **Next** to proceed.



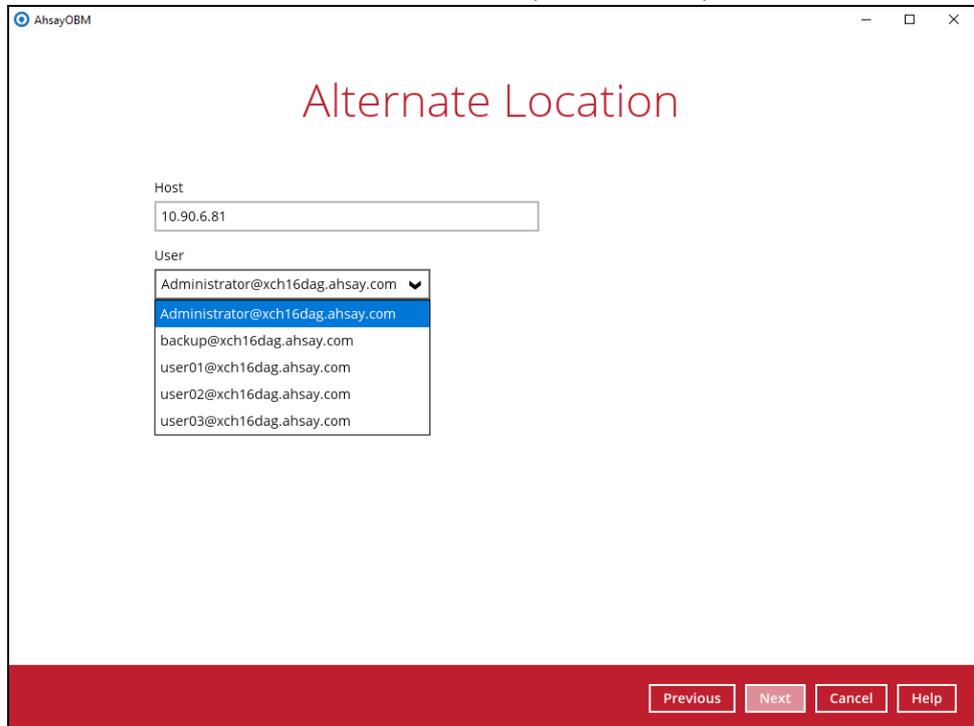
Restore to Alternate Location

You can choose to restore mailbox item(s) to another mailbox in the same Exchange server. Select the **Alternate location** option. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option** then press **Next**.



A screenshot of a dialog box titled "Choose Where The Mail Objects To Be Restor...". The dialog box has a title bar with "AhsayOBM" and standard window controls. The main content area contains the text "Restore mail objects to" followed by three radio button options: "Original location", "Alternate location" (which is selected), and "Alternate host". Below these options is a link that says "Show advanced option". At the bottom of the dialog box, there is a red bar containing four buttons: "Previous", "Next", "Cancel", and "Help".

Select the desired mailbox destination, then press **Next** to proceed.



A screenshot of a dialog box titled "Alternate Location". The dialog box has a title bar with "AhsayOBM" and standard window controls. The main content area contains a "Host" field with the value "10.90.6.81" and a "User" dropdown menu. The dropdown menu is open, showing a list of email addresses: "Administrator@xch16dag.ahsay.com" (highlighted), "backup@xch16dag.ahsay.com", "user01@xch16dag.ahsay.com", "user02@xch16dag.ahsay.com", and "user03@xch16dag.ahsay.com". At the bottom of the dialog box, there is a red bar containing four buttons: "Previous", "Next", "Cancel", and "Help".

Restore to Alternate Host

You can choose to restore mailbox item(s) to another mailbox in a different Exchange server. Select the **Alternate host** option and enter the host, username and password. If you will access the internet through proxy, check the box beside it and set the configuration for the proxy server and click **Save**. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option**.

Choose Where The Mail Objects To Be Restor...

Restore mail objects to

Original location

Alternate location

Alternate host

Host

10.90.6.81

Username

backup

Password

•••••

Access the internet through proxy

Test

Show advanced option

Previous Next Cancel Help

Proxy (HTTP)

IP address Port

•••••

Login ID

•••••

Password

•••••

Test connection

Save Cancel

Select the desired mailbox destination, then press **Next** to proceed.

AhsayOBM

Alternate Location

Host
10.90.6.81

User
Administrator@xch16dag.ahsay.com
Administrator@xch16dag.ahsay.com
backup@xch16dag.ahsay.com
user01@xch16dag.ahsay.com
user02@xch16dag.ahsay.com
user03@xch16dag.ahsay.com

Previous Next Cancel Help

Please refer to the [Limitation](#) part to check the limitation of restore process.

6. Select the temporary directory for storing temporary files, such as delta files when they are being merged, click **Restore** to start the restoration.

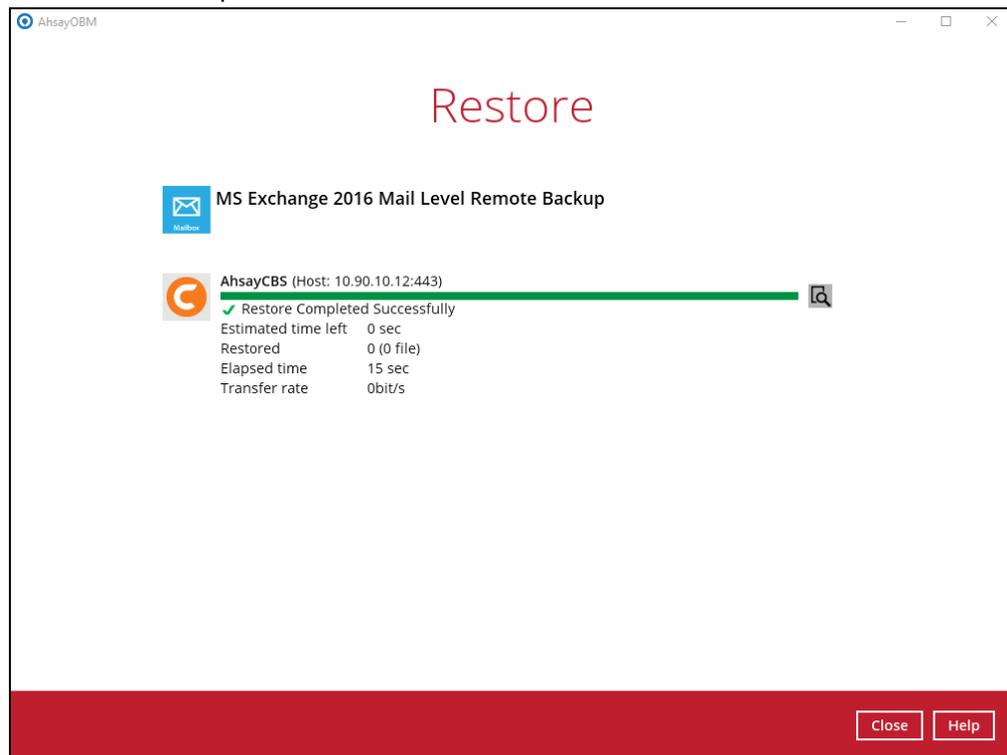
AhsayOBM

Temporary Directory

Temporary directory for storing restore files
C:\Users\lanam.gumba\temp Browse

Previous Restore Cancel Help

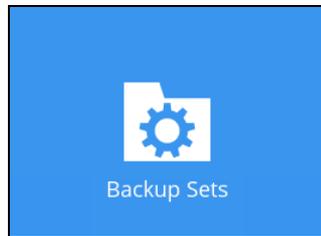
7. The following screen with the text **Restore Completed Successfully** shows when the restoration is completed.



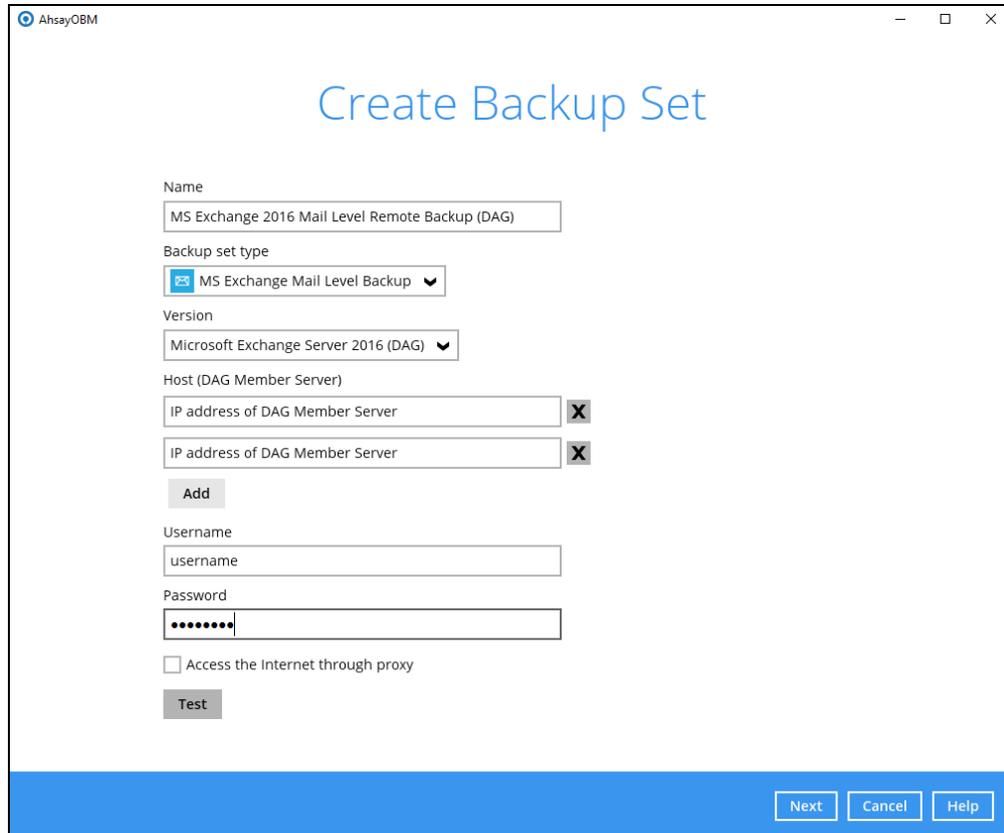
5.2 Database Availability Group (DAG) Backup Option

5.2.1 Create Mail Level Backup Set

1. Click the **Backup Sets** icon on the main interface of AhsayOBM.



2. Create a new backup set by clicking the “+” icon next to **Add new backup set**.
3. Select the Backup set type as **MS Exchange Mail Level Backup**.
 - ⦿ Select Microsoft Exchange Server version as **Microsoft Exchange Server 2016 (DAG)**
 - ⦿ Name your new backup set.
 - ⦿ Enter the hostname of all the DAG Member Server.
 - ⦿ Enter the username and password of the Windows user account used for backup.
 - ⦿ Check the “Access the Internet through proxy” if required. Then click **Next** to proceed.



AhsayOBM

Create Backup Set

Name
MS Exchange 2016 Mail Level Remote Backup (DAG)

Backup set type
MS Exchange Mail Level Backup

Version
Microsoft Exchange Server 2016 (DAG)

Host (DAG Member Server)
IP address of DAG Member Server X
IP address of DAG Member Server X

Add

Username
username

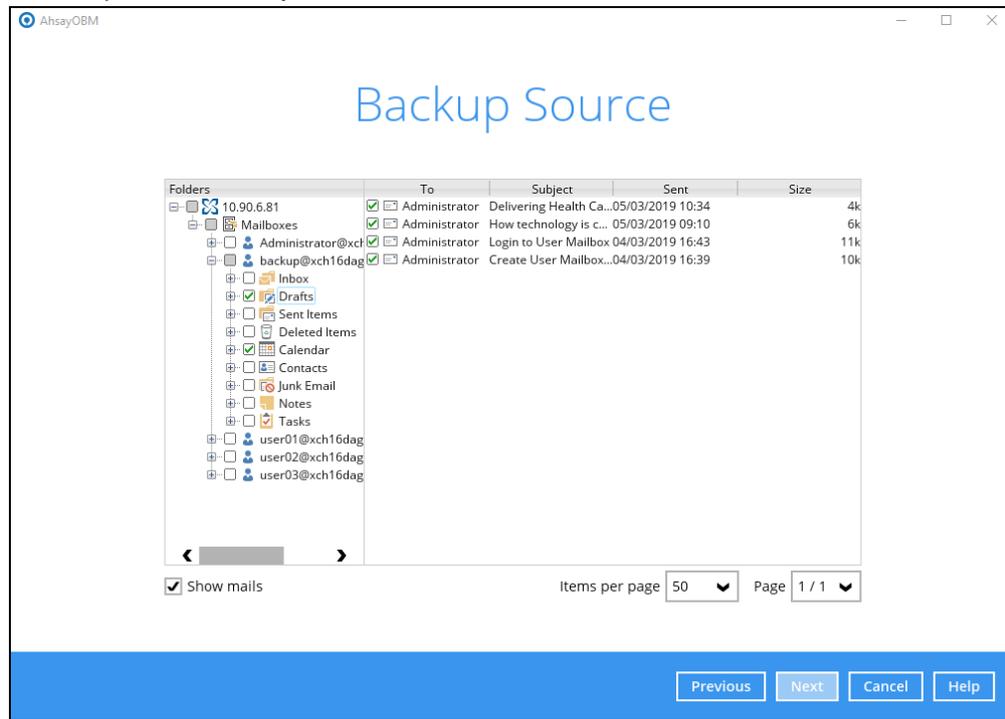
Password
.....

Access the Internet through proxy

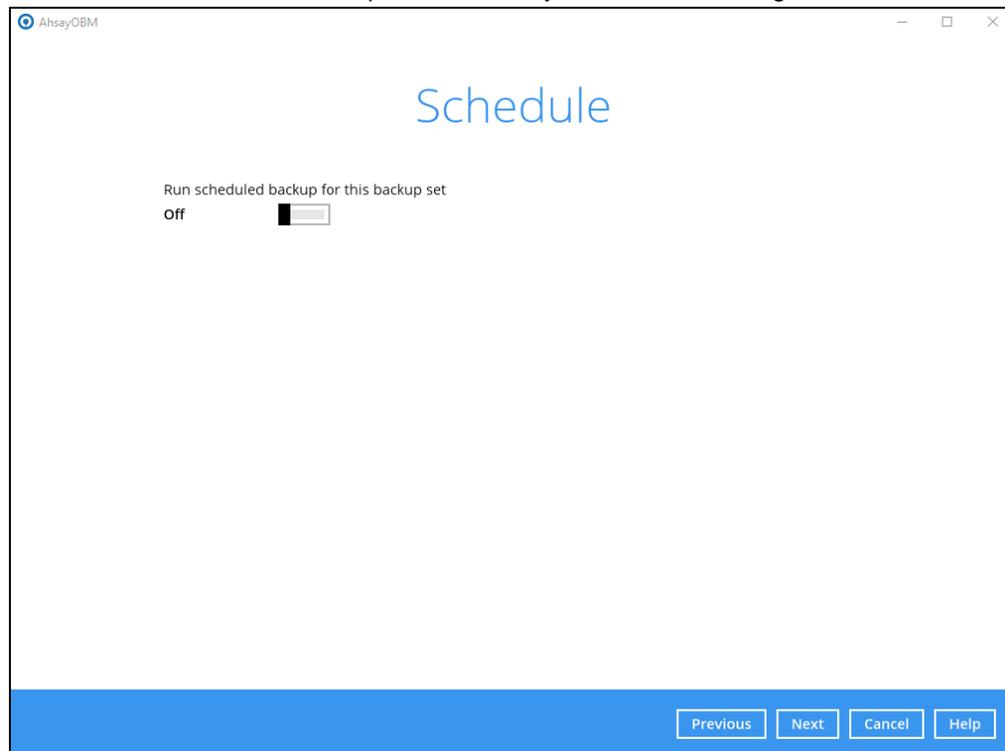
Test

Next Cancel Help

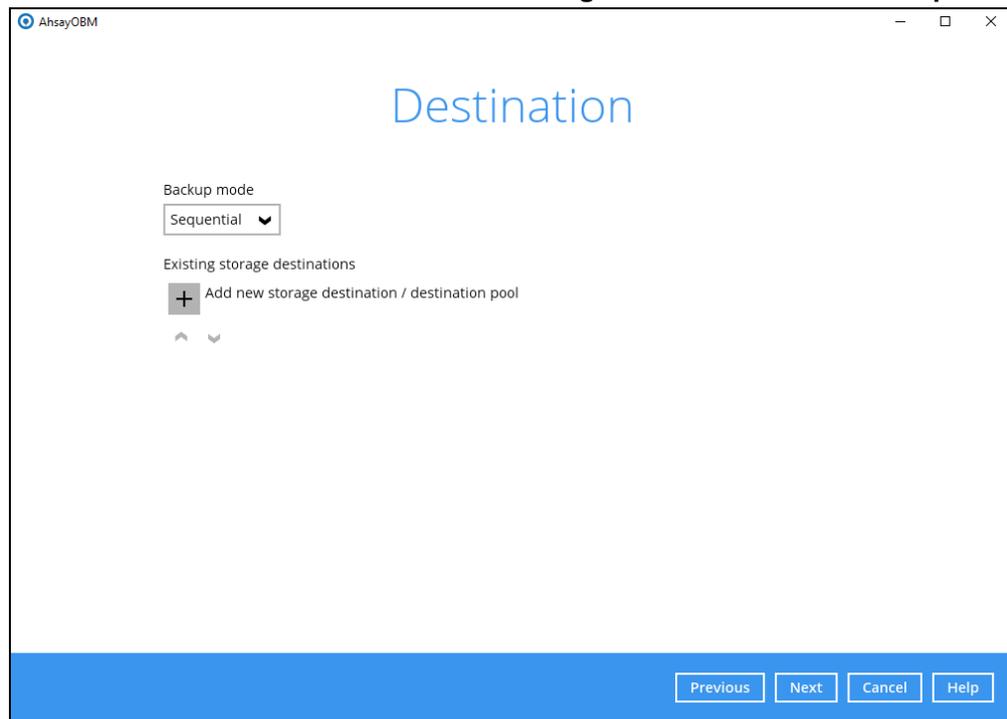
- In the **Backup Source** menu, select the mailboxes or public folders for backup. You can click to expand the according mailbox or public folder to select which mail folder to back up. You can also click **Show mails** to select individual mail to back up. Click **Next** to proceed when you are done.



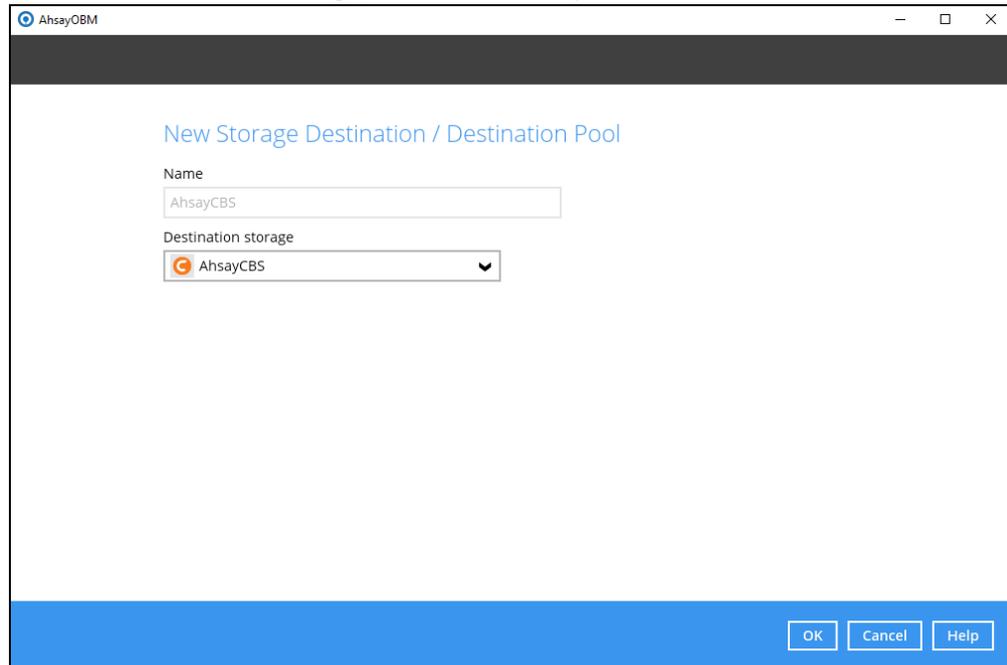
- In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default the **Run scheduled backup for this backup set** option is disabled. Enable it then click the “+” icon next to **Add new schedule**. Click **Next** to proceed when you are done setting.



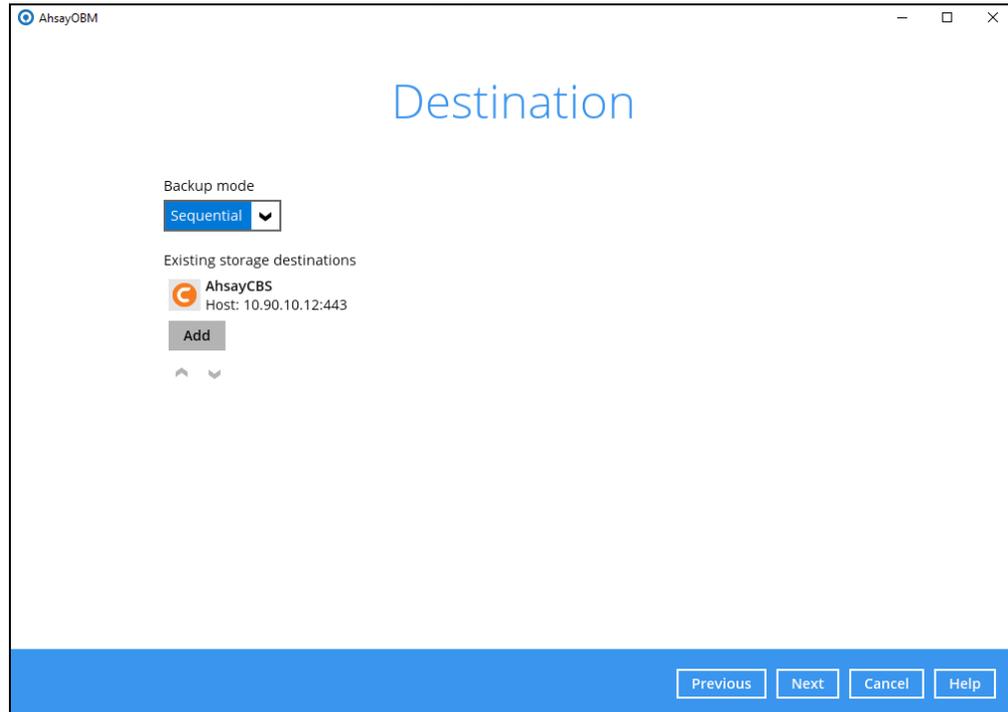
6. In the Destination menu, select a backup destination where the backup mail will be stored. Click the “+” icon next to **Add new storage destination / destination pool**.



7. Select the destination storage, then click **OK** to proceed.



8. Click **Next** on the Destination menu page to proceed.



9. In the Encryption window, the default **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



10. You can choose from one of the following three Encryption Type options:
- **Default** – an encryption key with 44 alpha numeric characters will be randomly generated by the system
 - **User password** – the encryption key will be the same as the login password of your AhsayOBM at the time when this backup set is created. Please be reminded that if you change the AhsayOBM login password later, the encryption keys of the backup sets previously created with this encryption type will remain unchanged.

- **Custom** – you can customize your encryption key, where you can set your own algorithm, encryption key, method and key length.

The screenshot shows the 'Encryption' settings page. At the top, the word 'Encryption' is displayed in a large blue font. Below it, there are several settings: 'Encrypt Backup Data' is turned 'On' with a blue slider; 'Encryption Type' is set to 'Custom' in a dropdown menu; 'Algorithm' is set to 'AES' in a dropdown menu; 'Encryption key' and 'Re-enter encryption key' are both masked with '*****' in text input fields; 'Method' has 'CBC' selected with a radio button; and 'Key length' has '256-bit' selected with a radio button.

Note: For best practice on managing your encryption key, refer to the following article: [Best Practices for Managing Encryption Key on AhsayOBM or AhsayACB](#)

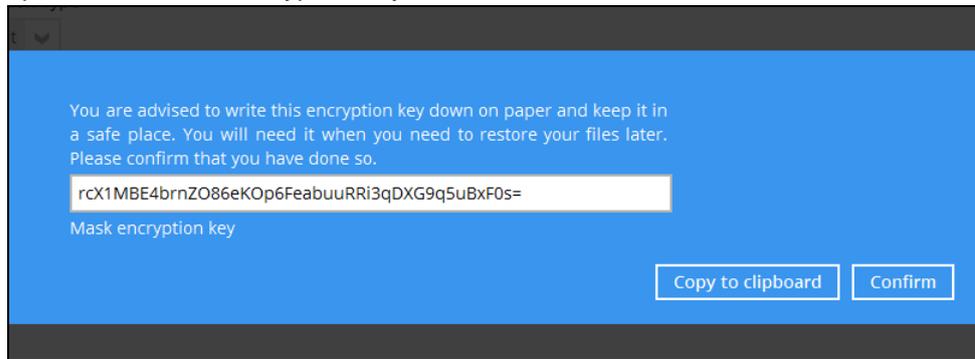
Click **Next** when you are done setting.

11. If you have enabled the Encryption Key feature in the previous step, the following pop-up window shows, no matter which encryption type you have selected.

The screenshot shows a confirmation pop-up window titled 'Encryption'. It has a dark grey header with the title in blue. The background is blue. At the top left, 'Encrypt Backup Data' is 'On' and 'Encryption Type' is 'Default'. The main text reads: 'You are advised to write this encryption key down on paper and keep it in a safe place. You will need it when you need to restore your files later. Please confirm that you have done so.' Below this is a text input field with '*****' and a label 'Unmask encryption key'. At the bottom right, there are two buttons: 'Copy to clipboard' and 'Confirm'.

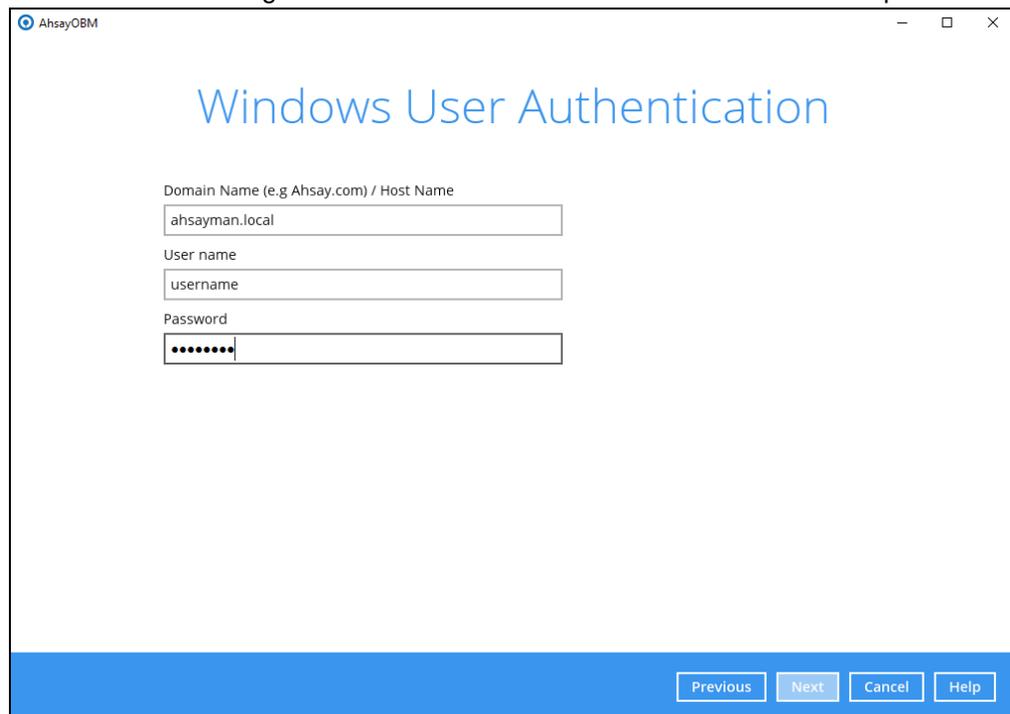
The pop-up window has the following three options to choose from:

- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.
- **Confirm** – Click to exit this pop-up window and proceed to the next step

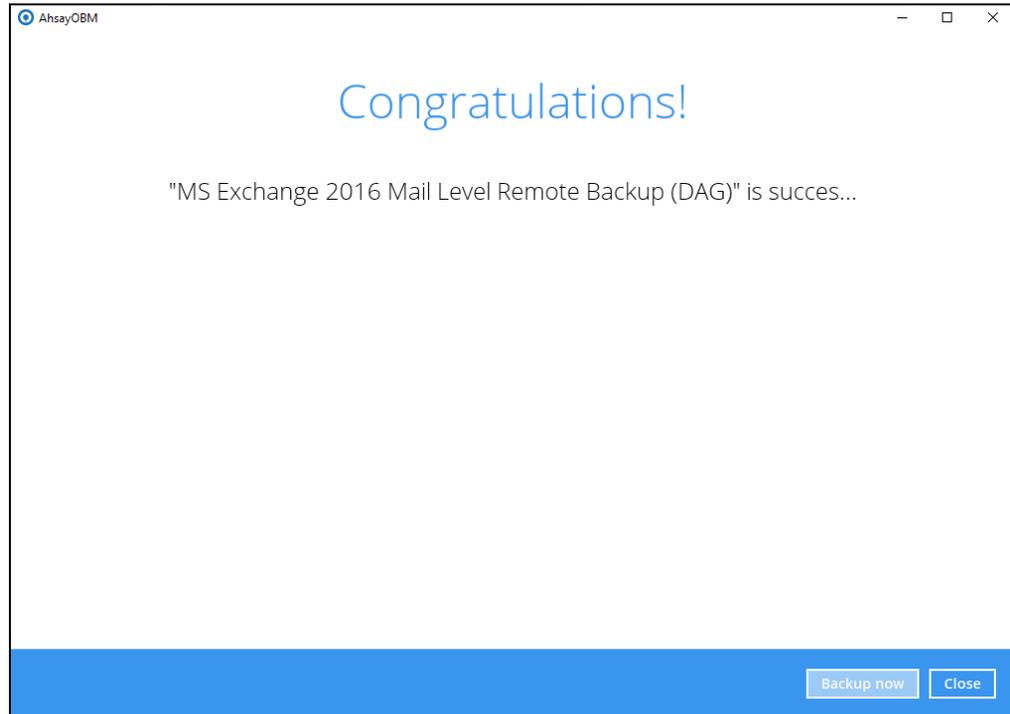
12. Enter the Windows login credentials for user authentication. Click **Next** to proceed.



Note

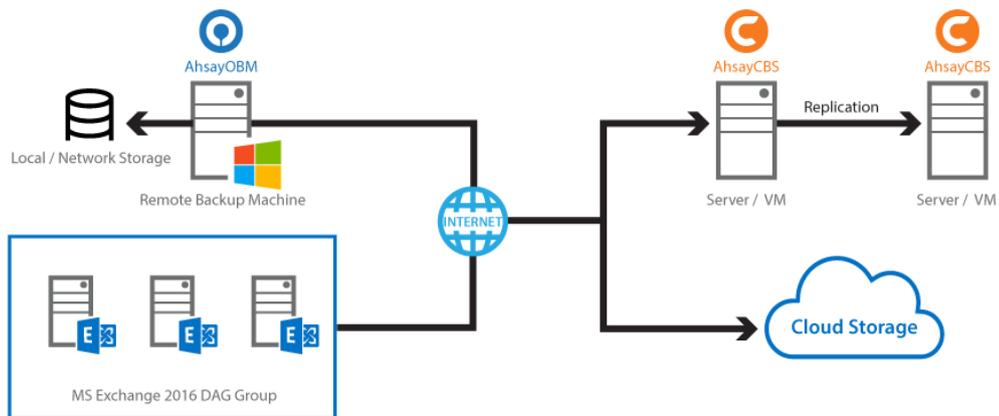
The Windows User Authentication interface will show only if scheduled backup is enabled and set successfully.

13. The following screen shows when the new backup set is created successfully.



14. Click Backup now to start a backup immediately, or you can run a backup job later by following the instructions in [Run Mail Level Backup Job](#)

5.2.2 Run Mail Level Backup Job

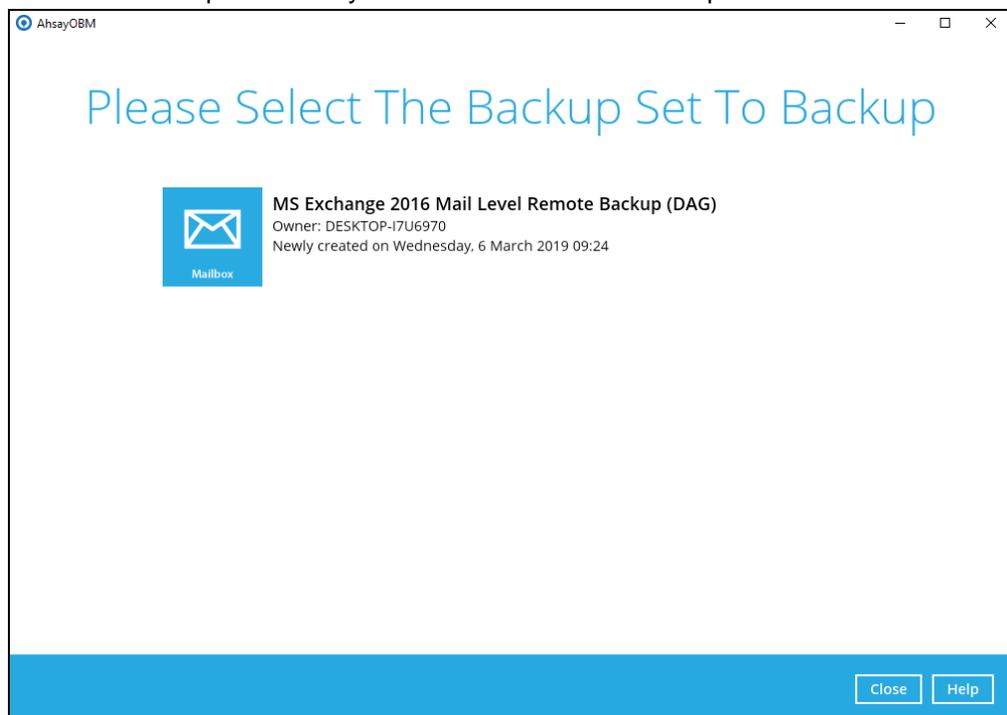


Below are the steps of the backup process.

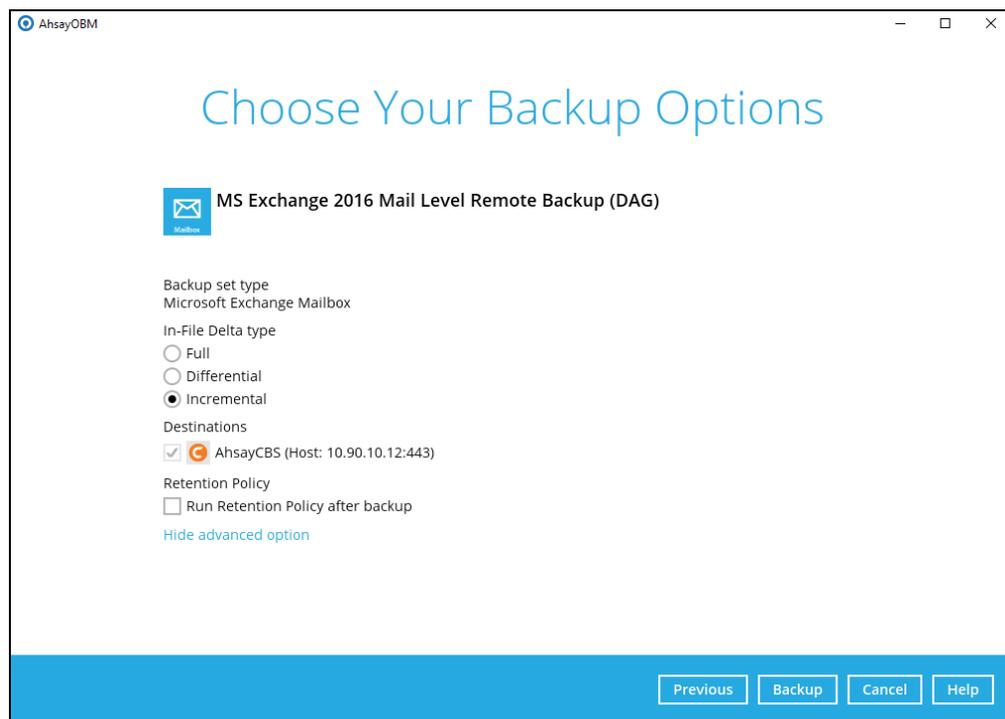
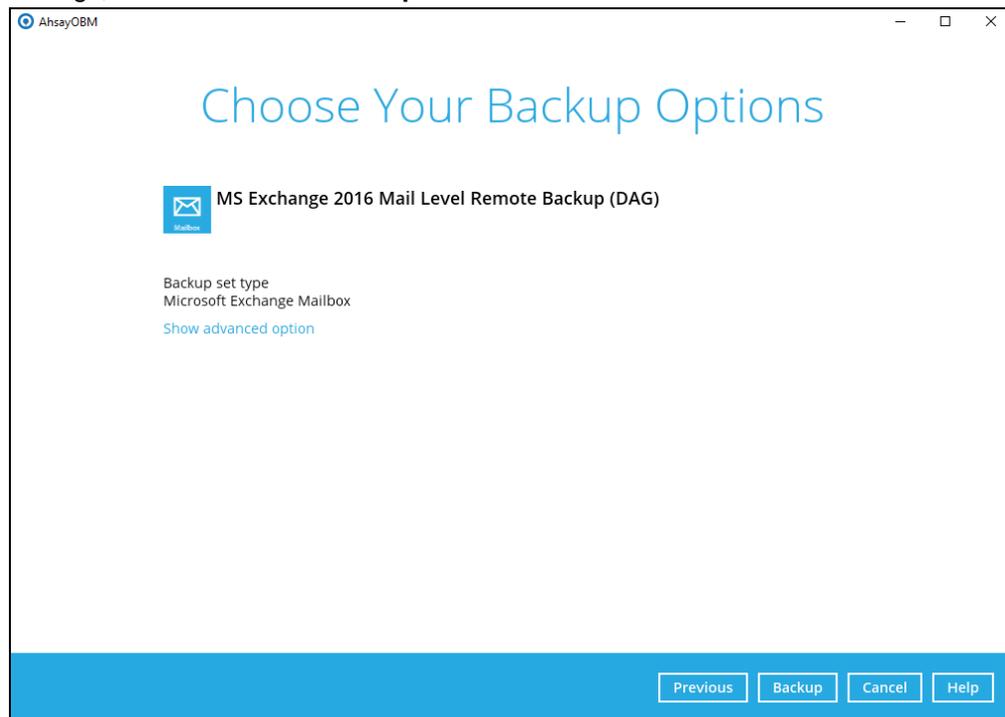
1. Log in to AhsayOBM.
2. Click the Backup icon on the main interface of AhsayOBM.



3. Select the backup set which you would like to start a backup for.

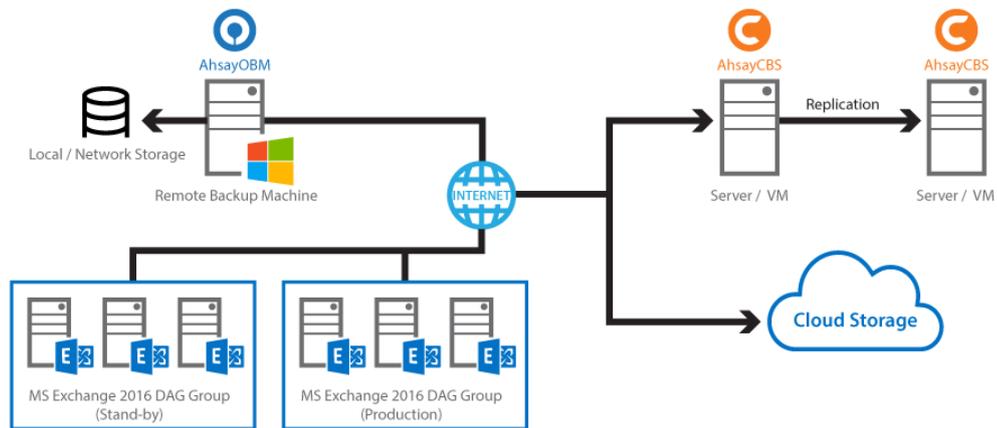


4. If you would like to modify the In-File Delta type, Destinations and Retention Policy settings, click **Show advanced option**.



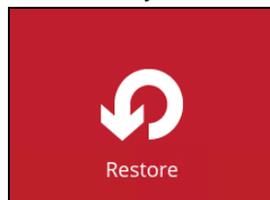
5. Click **Backup** to start the backup.

5.2.3 Restore Mail Level Backup

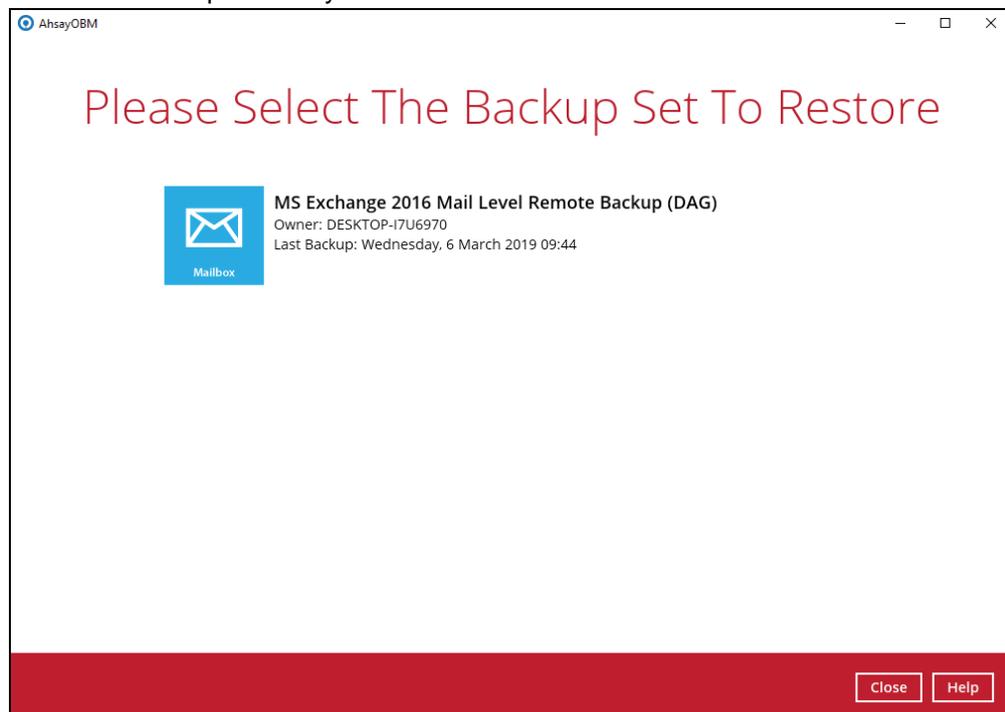


Below are the steps of the restore process.

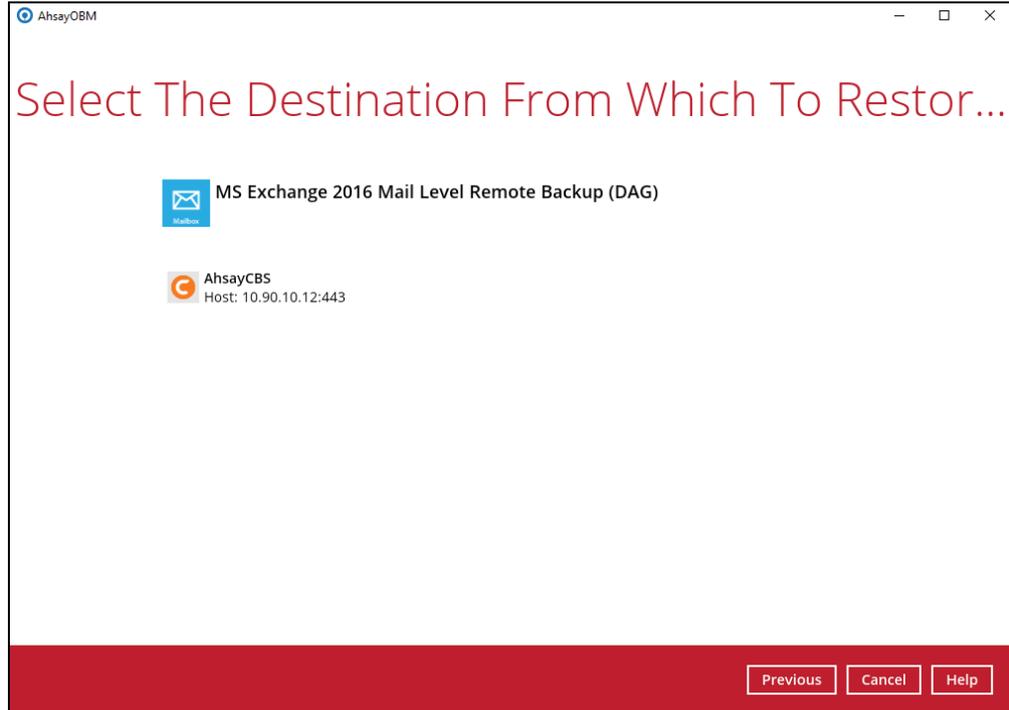
1. In the AhsayOBM main interface, click the **Restore** icon.



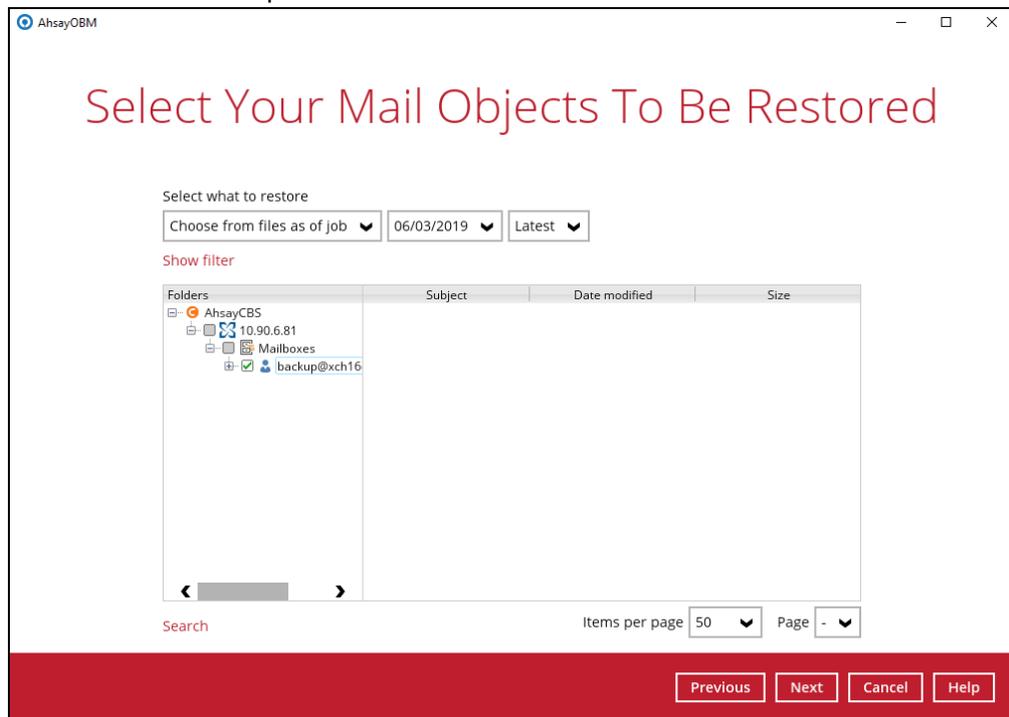
2. Select the backup set that you would like to restore mail from.



3. Select the backup destination that contains the mail(s) that you would like to restore.



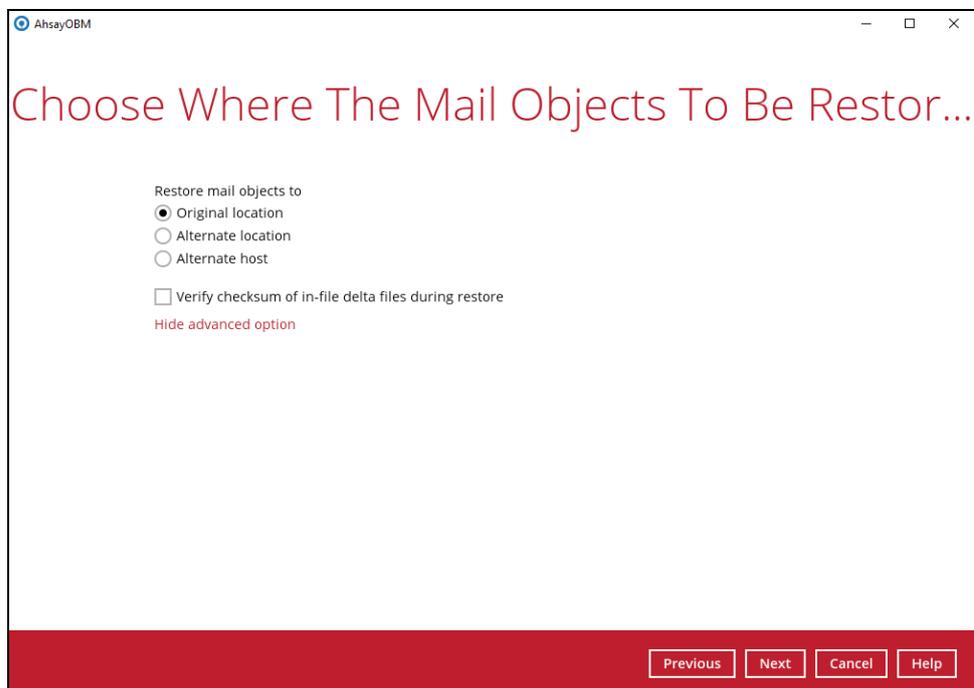
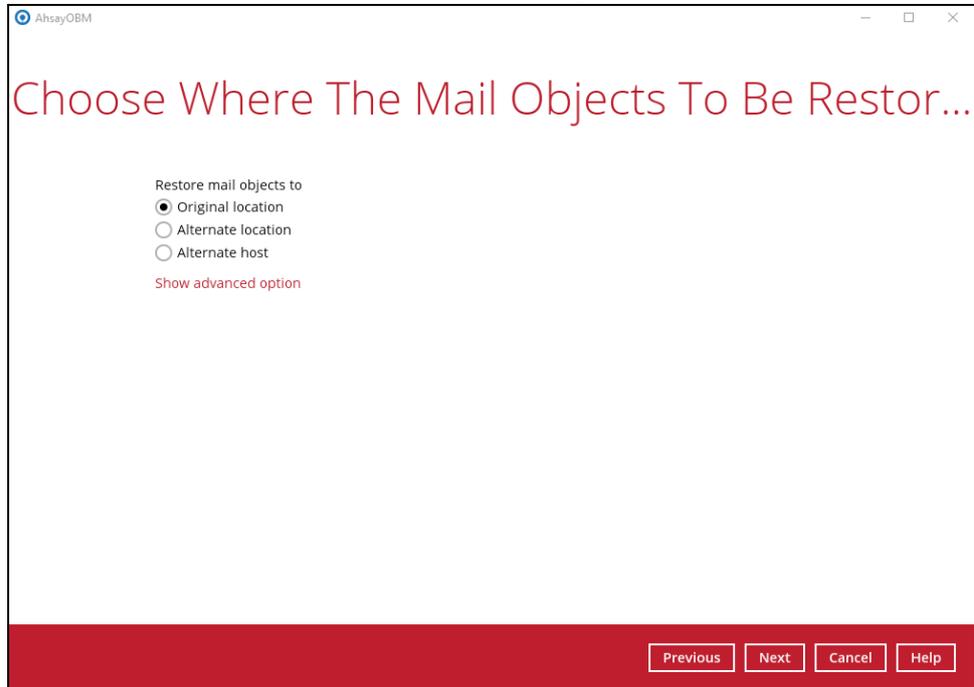
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



5. Select to restore the mail to their Original location, Alternate location or to an Alternate host.

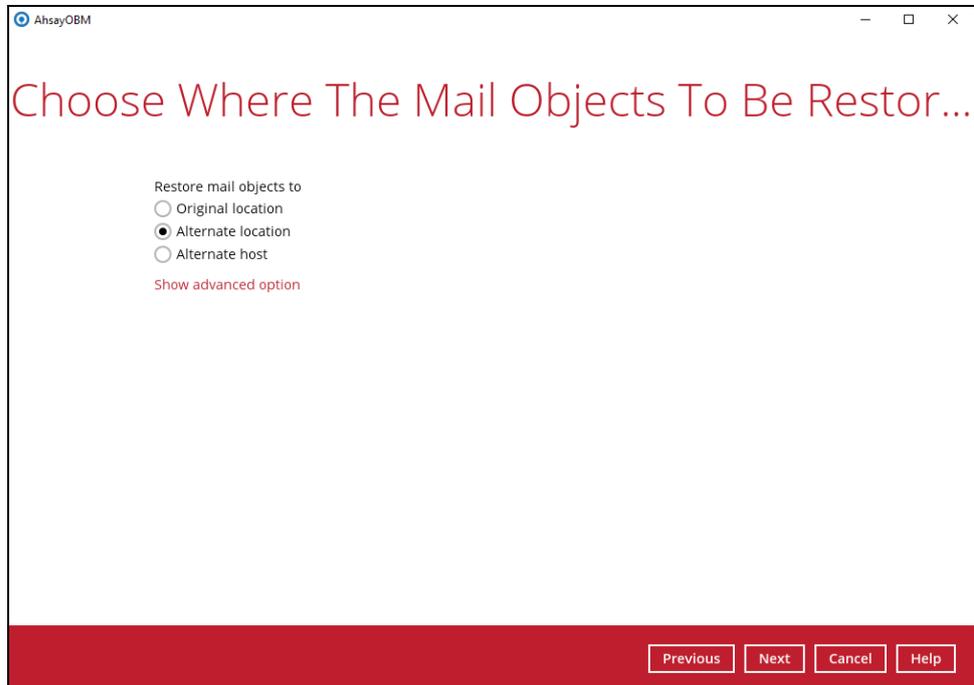
④ **Restore to Original Location**

Select the **Original location** option. If you want to modify the Verify checksum of in-file delta files setting, click **Show advanced option**. Press **Next** to proceed.

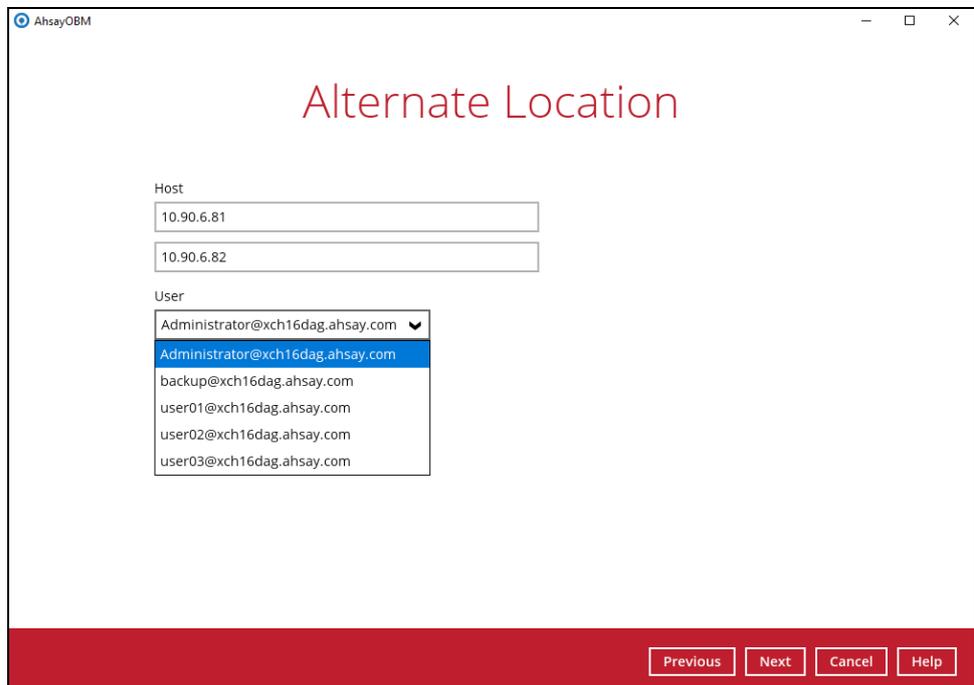


Restore to Alternate Location

You can choose to restore mailbox item(s) to another mailbox in the same Exchange server. Select the **Alternate location** option. If you want to modify the Verify checksum of in-file delta files setting, click **Show advanced option** and press **Next**. Select the desired mailbox destination, then press **Next** to proceed.



A screenshot of the AhsayOBM application window titled "Choose Where The Mail Objects To Be Restor...". The window contains three radio button options under the heading "Restore mail objects to": "Original location", "Alternate location" (which is selected), and "Alternate host". Below these options is a link labeled "Show advanced option". At the bottom right of the window, there are four buttons: "Previous", "Next", "Cancel", and "Help".



A screenshot of the AhsayOBM application window titled "Alternate Location". The window contains two input fields for "Host" with the values "10.90.6.81" and "10.90.6.82". Below these is a "User" dropdown menu with a list of email addresses: "Administrator@xch16dag.ahsay.com" (selected), "backup@xch16dag.ahsay.com", "user01@xch16dag.ahsay.com", "user02@xch16dag.ahsay.com", and "user03@xch16dag.ahsay.com". At the bottom right of the window, there are four buttons: "Previous", "Next", "Cancel", and "Help".

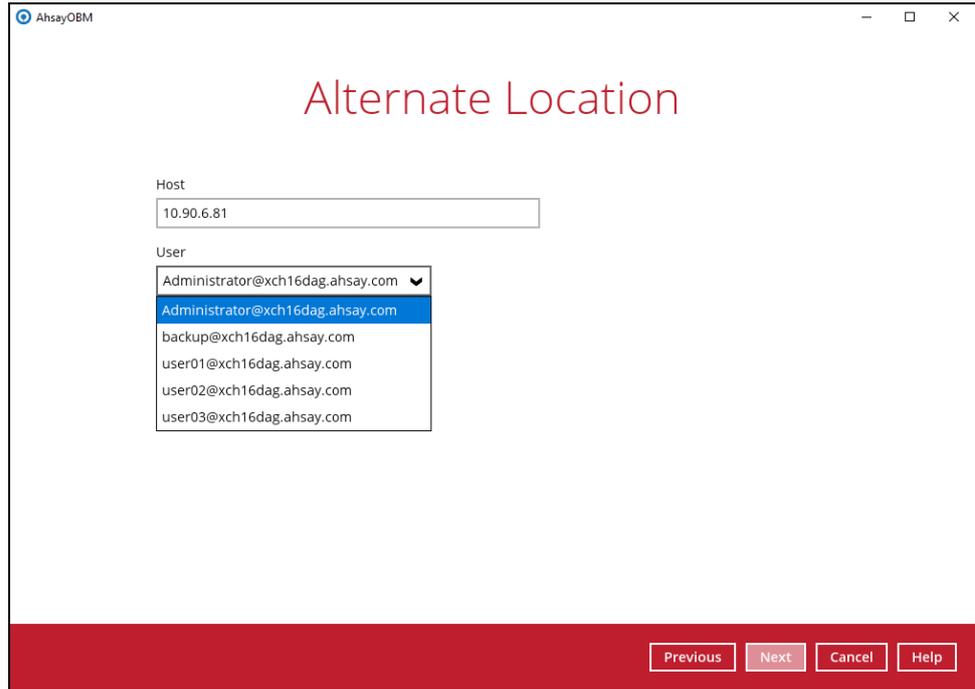
Restore to Alternate Host

You can choose to restore mailbox item(s) to another mailbox in the same Exchange server. Select the **Alternate host** option and enter the host, username and password. If you will access the internet through proxy, check the box beside it and set the configuration for the proxy server and click **Save**. If you would like to modify the Verify checksum of in-file delta files setting, click **Show advanced option** then press **Next**.

A screenshot of a software window titled "AhsayOBM" with a red header bar. The main content area has a red title "Choose Where The Mail Objects To Be Restored...". Below the title, there are three radio button options: "Original location", "Alternate location", and "Alternate host" (which is selected). Under "Alternate host", there are three text input fields: "Host" (containing "10.90.6.81"), "Username" (containing "backup"), and "Password" (containing six dots). Below these fields is a checkbox labeled "Access the Internet through proxy" which is unchecked. A "Test" button is located below the checkbox. At the bottom left, there is a link "Show advanced option". At the bottom right, there is a red bar containing four buttons: "Previous", "Next", "Cancel", and "Help".

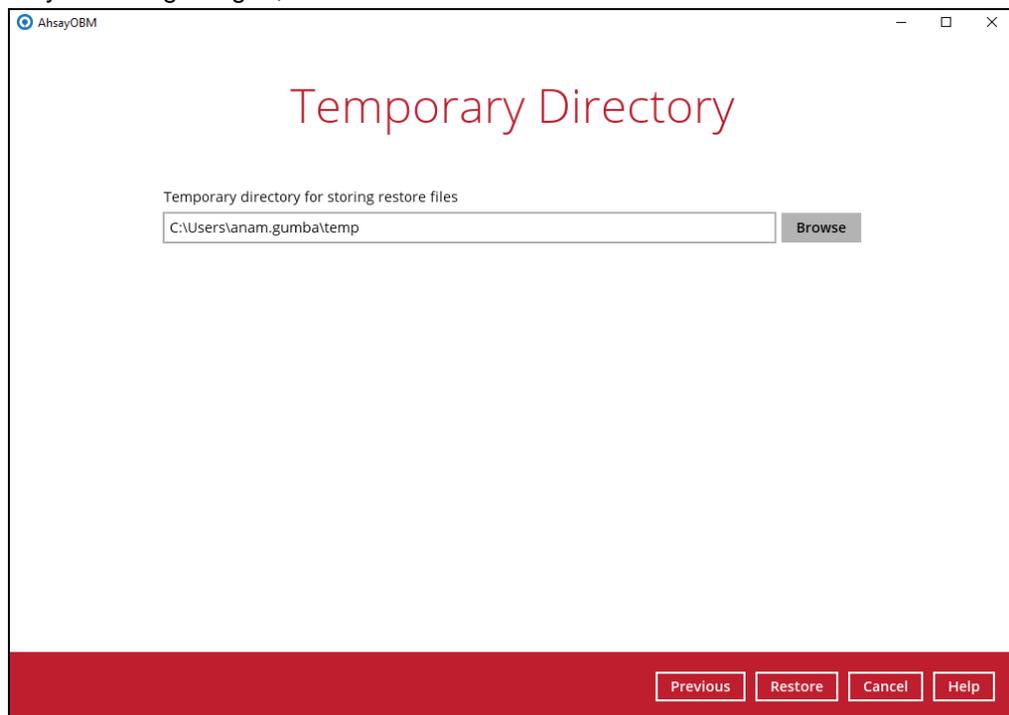
A screenshot of a software window titled "Proxy (HTTP)". It contains four text input fields: "IP address" and "Port" (side-by-side), "Login ID", and "Password" (containing six dots). Below these fields is a "Test connection" button. At the bottom right, there is a red bar containing two buttons: "Save" and "Cancel".

Select the desired mailbox destination, then press **Next** to proceed.

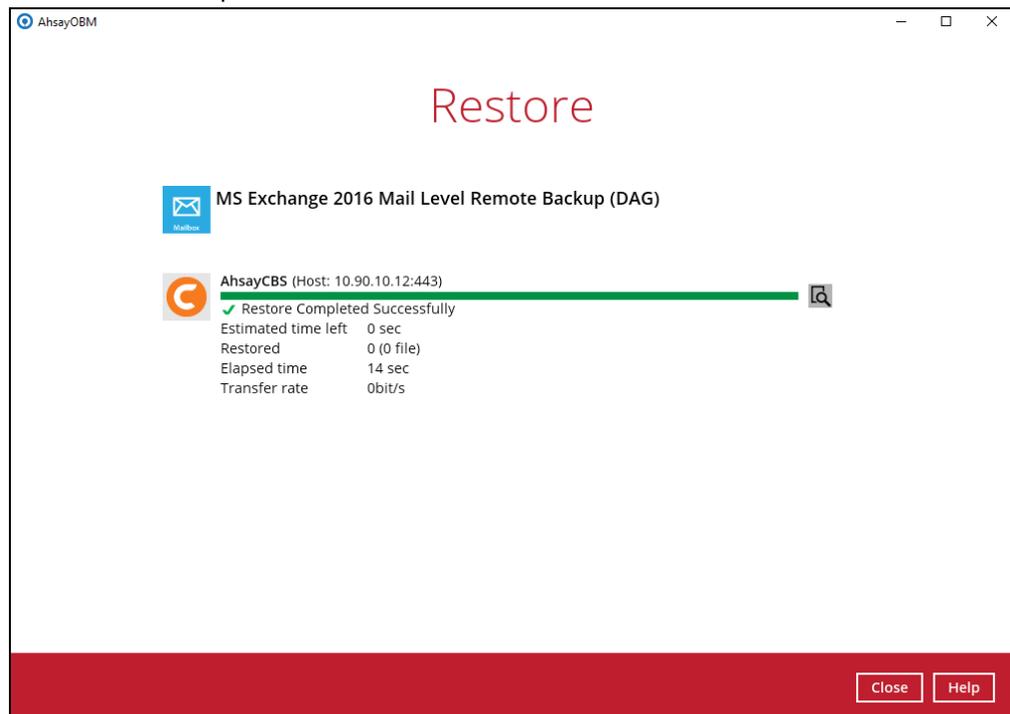


Please refer to the [Limitation](#) part to check the limitation of restore process.

6. Select the temporary directory for storing temporary files, such as delta files when they are being merged, click **Restore** to start the restoration.



7. The following screen with the text **Restore Completed Successfully** shows when the restoration is completed.



6 Contact Ahsay

6.1 Technical Assistance

To contact Ahsay support representatives for technical assistance, visit the following website:

<https://www.ahsay.com/jsp/en/contact/kbQuestion.jsp>

Also use the Ahsay Knowledge Base for resource such as Hardware Compatibility List, Software Compatibility List, and other product information:

<https://wiki.ahsay.com>

6.2 Documentation

Documentations for all Ahsay products are available at:

https://www.ahsay.com/jsp/en/home/index.jsp?pageContentKey=ahsay_downloads_documentation_guides

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

<https://www.ahsay.com/jsp/en/contact/kbQuestion.jsp>

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