Ahsay Backup

Ahsay Online Backup Manager v8

Microsoft Exchange 2007/2010/2013 (MAPI)

Mail Level Backup & Restore Guide

Ahsay Systems Corporation Limited

11 October 2021

A wholly owned subsidiary of
Ahsay Backup Software Development Company Limited
HKEx Stock Code: 8290

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Revision History

Date	Descriptions	Type of modification
6 February 2020	Added the Advisory for the Supported Protocol for Microsoft Exchange Server 2013 in Ch. 2.1; Modified the diagram for the Overview on Backup Process in Ch. 3; Modified the Creation of Mail Level Backup Set in Ch. 4.1; Modified the Running of Mail Level Backup Set in Ch. 4.2; Modified the Restoring of Mail Level Backup Set in Ch. 5.1; Modified the Performing Mail Level Backup for Microsoft Exchange 2010/2013 (MAPI) in Database Availability Group (DAG) in Ch. 6; Modified the Performing Mail Level Restoration for Microsoft Exchange 2010/2013 (MAPI) in Database Availability Group (DAG) in Ch. 7; Added the Appendix A: Creating Mail Level Backup Set for Microsoft Exchange 2013 using CBS Web Console;	New / Modifications
30 July 2020	Modified the Periodic Data Integrity Check (PDIC) diagram in Ch. 3; Added Ch. 2.2.6 Network Drive Requirement; Added Ch. 6.3 Configure Backup Schedule for Automated Backup	New / Modifications
23 September 2020	Updated PDIC diagram in Ch. 3	Modification
25 January 2021	Updated screenshot in Ch. 2.2.7; Updated PDIC diagram in Ch. 3; Added starting AhsayOBM in Ch. 4	New / Modifications
7 April 2021	Updated Ch. 3; Added sub-chapters for the detailed process diagrams in Ch. 3.1, 3.2, 3.2.1, 3.2.2 and 3.3	New / Modifications
11 October 2021	Updated login instructions in Ch. 4; Updated screenshots and removed reference to Microsoft Exchange 2010 in Ch. 7 and 8	Modifications

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1 Getting started

1.1 Introduction

This user guide aims to provide detailed information on backing up and restoring individual mail items and public folder items stored in Microsoft Exchange Server 2007/2010/2013 with AhsayOBM using the MS Exchange mail level backup set.

An MS Exchange mail level backup must be utilized in conjunction with full Information Store backup (Exchange Database backup set), as mail level backup for Microsoft Exchange Server is not designed to fully protect an Exchange Server, but to facilitate easy and fast recovery of emails, contacts, calendars for individual mailboxes and public folder items.

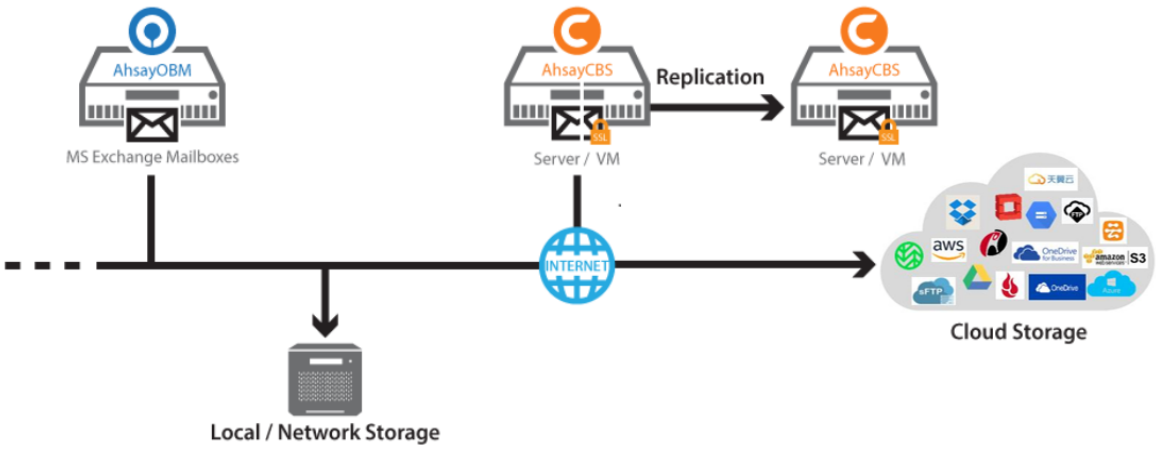
AhsayOBM supports backup of mailboxes on both MS Exchange server in backup option for Exchange Server deployed in standalone and Database Availability Group (DAG) setups.

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 2007/2010/2013. 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 2007/2010/2013 mailboxes or public folders.

1.3 System Architecture

Below is the system architecture diagram illustrating the major elements involved in the backup process among the Microsoft Exchange Server, AhsayOBM backup client, AhsayCBS backup server, and Cloud storage.



1.4 Why should I use AhsayOBM to back up my Exchange 2007/2010/2013 Mailboxes and Public Folders?

We are committed to bringing you a comprehensive Exchange 2007/2010/2013 mail level backup solution with AhsayOBM. Below are some key areas we can help make your backup experience a better one.

Easy Setup % Professional Services

Setup is a few clicks away-our enhanced AhsayOBM v8 can be easily downloaded and installed in just a few clicks. The refined user interface also provides user-friendly instruction to guide you through installation, configuration, backup and restore. The intuitive setup procedures together with instructions in this user guide makes the software installation and operation easy even for layman users. That being said, if you do run into any problems during setup, we are here to help out. Visit the URL below for details on technical assistance.

Ahsay Partner Portal

Professional Services

AhsayOBM Installation and Configuration Service

If you would like to save the time from reading through this document for setup, we have introduced this service to take care of all the installation and setup for you. On top of the installation and setup services, we also have a whole series of premium after-sales services to provide you with the best user experience possible.

Valid Maintenance

Our Valid Maintenance provides you with professional and timely customer support along the way. You are entitled to the Valid Maintenance for free during the first year of your service subscription, and recurring annual fee at 20% of your annual subscription fee.

Refer to our Professional Services webpage for further details and subscription.

Fast and Efficient

We understand that backup could be a time and resources consuming process, which is why

AhsayOBM is designed with advanced technologies to make backup a fast and efficient process.

We also understand that 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.

- **Multi-threading**–this technology utilizes the computing power of multiple CPU cores for creating multiple backup and restore threads to produce fast backup and restore performance.
- **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.

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, whether you are a system administrator or backup user. 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 backup set
- Configure user settings
- Configure backup settings
- View and download backup and restore reports
- Monitor backup and restore live activities

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. Below is a list of supported cloud destinations.

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

Cloud backup gives you two major advantages:

- **Cloud Backup for Extra Protection** – you can back up your MS Exchange mail objects to a cloud destination of your choice. Utilizing cloud 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.
- **Eliminate Hardware Investment** – with the increasingly affordable cloud storage cost, you can deploy on cloud platform and utilize cloud storage as your centralized data

repository, or simply expand your cloud storage as a backup destination without having to invest on hardware.

High Level of Security

We understand your Exchange mail objects may contain sensitive information that needs 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 by 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.

1.5 About This Document

1.5.1 Document

The document is divided into two main parts.

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

Requirements
Requirements for AhsayOBM, MS Exchange Server 2007/2010/2013, and Windows Operating System.

Part 2: Perform Mail-Level Backup and Restore on MS 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

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 2007/2010/2013 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 2007/2010/2013 mail-level backup and restore.

2 Preparation for Backup and Restore

2.1 Advisory on Supported Protocol for Microsoft Exchange Server 2013

This advisory will explain the supported protocol for the Microsoft Exchange Server 2013. It will also discuss the difference of the old and new protocol to allow users to understand more effectively.

Microsoft Exchange Server 2013 mail level backups which uses the protocol Messaging Application Programming Interface (MAPI) will no longer be supported as of MS Exchange 2013 Cumulative Update 23 and later due to limitations and functionality issues with MAPI, instead this will be replaced by EWS API.

What is the difference between Messaging Application Programming Interface (MAPI) and Exchange Web Service (EWS) API?

MAPI is a client protocol that lets users access their mailbox by using Outlook or other MAPI email clients originally designed by Microsoft in 1987.

EWS API is a newer protocol that allows programmers to access Microsoft Exchange items such as calendars, contacts, and email.

Both are protocols introduced by Microsoft intended for client applications to access information stored in MS Exchange. However, due to limitations with MAPI, it will be replaced by the EWS API.

WARNING:

If you continue to use the MAPI backup mode and the MS Exchange Server 2013 is updated to Cumulative Updated 23 and later, this will have an impact on the backup and restore:

- Microsoft Exchange 2013 Mail Level backups will stop working
- All items already backed will no longer be recoverable to Microsoft Exchange 2013

Furthermore, MAPI backup mode will not be fully functional after the MS Exchange 2013 Cumulative Update 20 or later is applied as MAPI is unable to access the Public Folder items from MS Exchange 2013 Database. The following are the result of the unfunctional MAPI:

- Inability to **backup** items in MS Exchange 2013 Public Folder Databases
- Inability to **restore** items in MS Exchange 2013 Public Folder Databases

It is highly recommended to use the EWS API to avoid the above inconveniences on your backup and restore process.

2.2 Requirement

You are strongly recommended to check all the settings below before you proceed with the MS Exchange Mail Level 2007/2010/2013 backup and restore.

2.2.1 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

2.2.2 Antivirus Exclusion Requirement

To optimize performance of AhsayOBM on Windows, and to avoid conflict with your antivirus software, refer to the following KB article the list of processes and directory paths that should be added to all antivirus software white-list / exclusion list:
https://wiki.ahsay.com/doku.php?id=public:8014_suggestion_on_antivirus_exclusions

NOTE

For AhsayOBM version 8.1 or above, 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.

2.2.3 AhsayOBM Installation

The latest version of AhsayOBM must be installed on the MS Exchange Server hosting the mailbox database.

For backup of mailboxes on MS Exchange Server 2013 Database Availability Group (DAG), ensure the same AhsayOBM version is installed on all member servers.

For MS Exchange Server 2013, Database Availability Group (DAG) backup option is available, please refer to Performing Mail Level Backup for Microsoft Exchange 2013 in Database Availability Group (DAG) for details.

2.2.4 AhsayOBM Licenses

AhsayOBM licenses are calculated on a per device basis.

i. For backup of mailboxes on a standalone Microsoft Exchange 2007/2010/2013 Server, one AhsayOBM license is required.

ii. For backup of mailboxes on a Microsoft Exchange Server 2013 DAG setup, the number of AhsayOBM licenses required is equal to the number of members (nodes) in the DAG. For example, if there are three members then three AhsayOBM licenses are required.

Please contact your backup service provider for more details

2.2.5 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.
Please contact your backup service provider for more details.

2.2.6 Network Drive Requirement

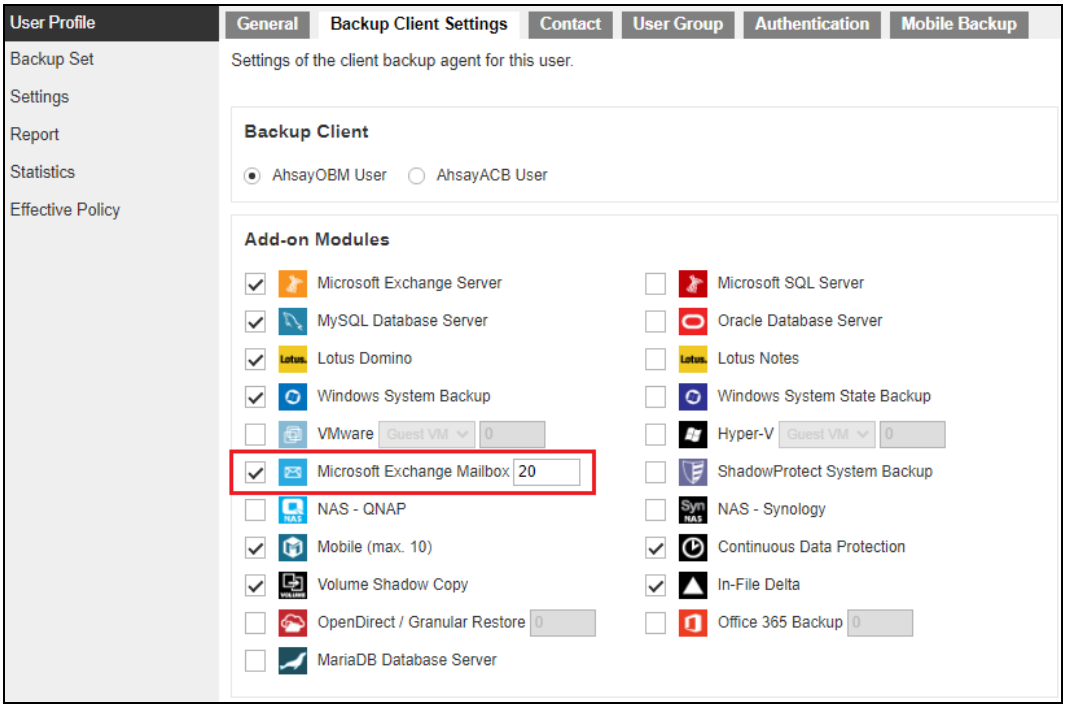
The login accounts for network drives must have read and write access permission to ensure that backup and restore would be successful.

2.2.7 Microsoft Exchange Mailbox Add-On Module

One Microsoft Exchange Mailbox license is required for the backup of each user mailbox.

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.



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

Scheduled backup is required if you choose to backup MS Exchange server 2013 setup in DAG option, as AhsayOBM on all DAG members will use the scheduled backup time to start backups on all individual DAG members at the same time.

An MS Exchange server 2013 DAG backup cycle is considered complete only when scheduled backup on all DAG members have been run successfully. A backup report will be generated and emailed to the recipients when a complete MS Exchange server 2013 DAG backup cycle has taken place.

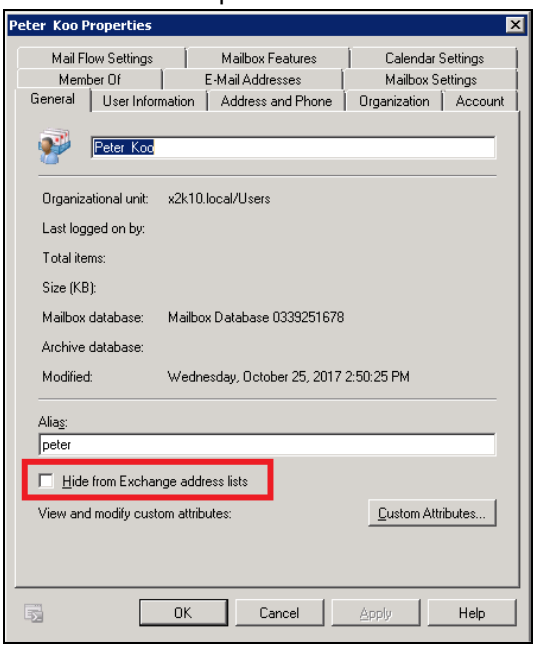
Please keep in mind that manual backup will only be considered as individual mail level backup, and therefore will not be counted as part of the DAG backup cycle.

2.2.9 Temporary Directory Folder

The 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, the temporary directory folder is located on a local drive with plenty of free disk space.

2.2.10 Backup Source

Ensure **"Hide from Exchange address list"** is unchecked for user mailboxes, otherwise the mailbox will not be visible in the AhsayOBM backup source and therefore cannot be selected for backup.



2.2.11 Mailbox Access Permission

The Active Directory account used to authenticate the backup must have full access to the mailboxes. To grant full access right for the account, enter the following command in Exchange Management Shell.

Open the Exchange Management Shell by clicking **Start** > **Microsoft Exchange Server** > **Exchange Management Shell**.

Exchange Server 2007

Enter the following command in Exchange Management Shell

```
Get-MailboxServer | Add-ADPermission -User "%os_username%" -
AccessRights GenericAll -ExtendedRights ms-exch-store-
admin,receive-as,send-as -InheritanceType All
```

%os_username% is the username of the operating system account for backup.

Example: granting permission to local account "system"

```
Get-MailboxServer | Add-ADPermission -User "system" -
AccessRights GenericAll -ExtendedRights ms-exch-store-
admin,receive-as,send-as -InheritanceType All
```

Other useful commands:

- To show added permission for an AD account

```
Get-MailboxServer | Get-ADPermission -User "%os_username%"
```

Example, to show added permission for local account "system"

```
Get-MailboxServer | Get-ADPermission -User "system"
```

- To remove permission from an AD account

```
Get-MailboxServer | Remove-ADPermission -User "%os_username%"
- AccessRights GenericAll -ExtendedRights ms-exch-store-
admin,receive-as,send-as -InheritanceType All
```

Example, to remove permission from local account "system"

```
Get-MailboxServer | Remove-ADPermission -User "system" -
AccessRights GenericAll -ExtendedRights ms-exch-store-
admin,receive-as,send-as -InheritanceType All
```

Reboot the Exchange Server after executing the command.

Exchange Server 2010 / 2013

Enter the following command in Exchange Management Shell

```
Get-Mailbox | Add-MailboxPermission -User "%os_username%"
-AccessRights FullAccess
```

%os_username% is the username of the operating system account for backup.

Example: granting permission to local account "system"

```
Get-Mailbox | Add-MailboxPermission -User "system" -
AccessRights FullAccess
```

Other useful commands:

- Remove permission from an AD account

```
Get-Mailbox | Remove-MailboxPermission -User "%os_username%" -
AccessRights FullAccess
```

Example:

```
Get-Mailbox | Remove-MailboxPermission -User "system" -
AccessRights FullAccess
```

- To view the mailbox permission of a user

```
Get-Mailbox | Get-MailboxPermission -User "%os_username%"
```

Example:

```
Get-Mailbox | Get-MailboxPermission -User "system"
```

Reboot the Exchange Server after executing the command.

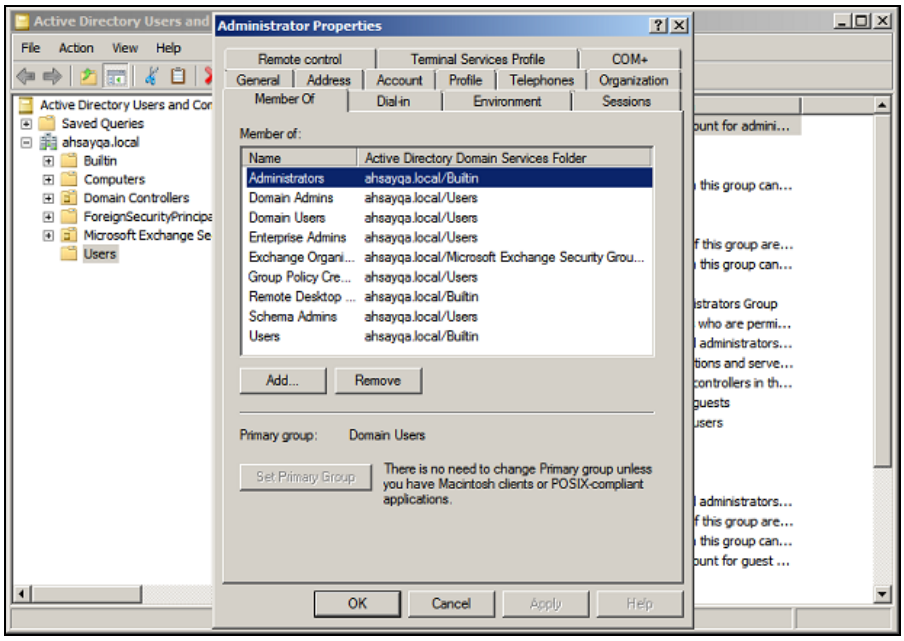
2.2.12 Windows User Account Permission

The Active Directory account used to authenticate the backup must be a member of the following security groups.

Exchange Server 2007

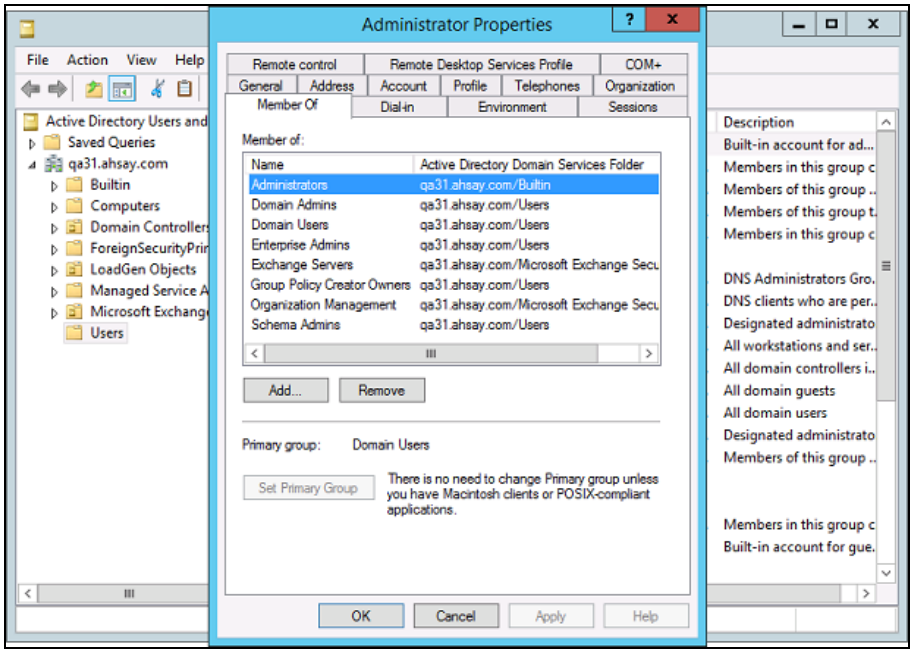
- Microsoft Exchange Security \ Exchange Organization Administrators
- Microsoft Exchange Security \ Exchange Servers

- Users \ Domain Admins



Exchange Server 2010 / 2013

- Microsoft Exchange Security \ Organization Management
- Users \ Administrator
- Users \ Domain Admins
- Users \ Enterprise Admins



Steps to check the current settings

1. Click **Start** > **Control Panel** > **Administrative Tools**, and then click **Active Directory Users and Computers**.

2. Browse to the organization unit containing the corresponding operating system account.
3. Right click on the user and select **Properties**.
4. Select the **Member Of** tab to check on the membership setting.

2.2.13 Enabling Mailbox on Windows User Account

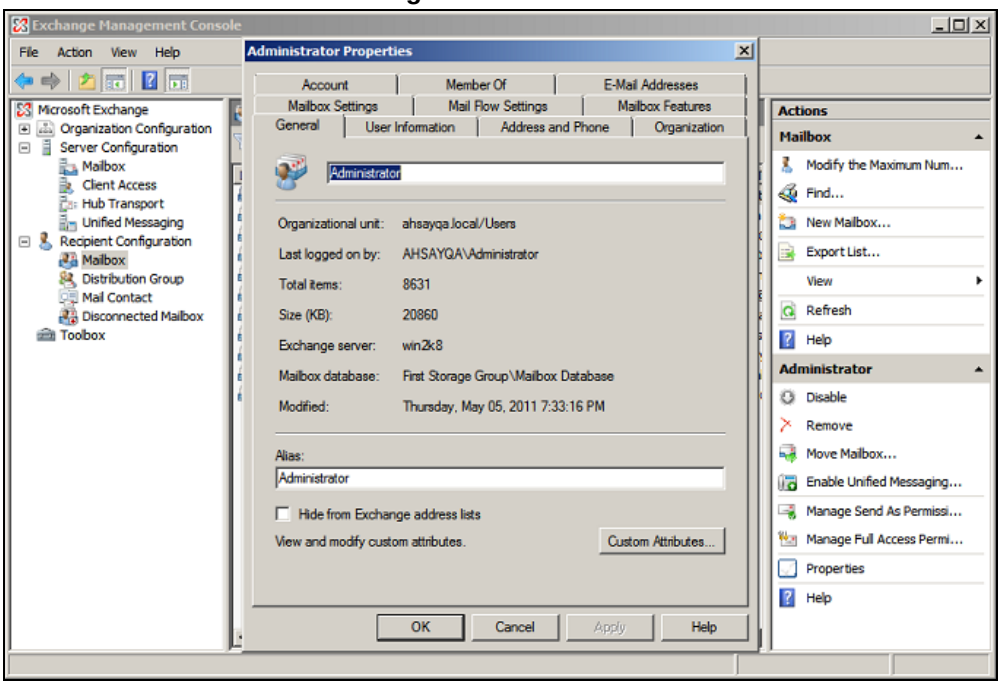
Make sure the Windows account used to authenticate the backup has a mailbox enabled.

Follow the steps below to verify.

Exchange Server 2007 / 2010

1. Click **Start** > **Microsoft Exchange Server 2007/2010**, and then **click Exchange Management Console**.
2. Click to expand the **Recipient Configuration** menu tree, and then select **Mailbox**.
3. Right click on the user and select **Properties**.
4. Select the **General** tab to check the settings.

Make sure the **Hide from Exchange address lists** box is not checked.



***Note**: A mailbox-enabled user is a Windows Active Directory user that has one or more Exchange Server mailboxes associated with it.*

Exchange Server 2013

Refer to the following article from Microsoft for more details on how to check if an account is mailbox enabled.
https://docs.microsoft.com/en-us/exchange/create-user-mailboxes-exchange-2013-help

2.2.14 Remote Exchange Management Shell

For setup on MS Exchange Server 2010 / 2013, the Remote Exchange Management Shell must be enabled for the operating system account used for the backup.

Enter the following command in Exchange Management Shell to enable this feature.

```
>Set-User "%os_username%" -RemotePowerShellEnabled $True
```

Reboot the Exchange Server after executing the command.

Note: *Remote Shell in Microsoft Exchange Server enables you to manage your server running Exchange.*

2.2.15 Collaboration Data Objects (CDO) 1.2.1

The latest version of CDO must be installed on the Exchange Server for the mail level backup job to work properly.

Download and install the latest version CDO via the URL below. If you already have CDO installed on the Exchange Server but are not sure if it is the latest version, you are recommended to uninstall the current version and re-install via the URL below.

Exchange Server 2007 / 2010

- Exchange Server with MS Outlook 2007
  https://www.microsoft.com/en-us/download/details.aspx?id=3671
- Exchange Server without MS Outlook 2007
  https://www.microsoft.com/en-gb/download/details.aspx?id=42040

Exchange Server 2013

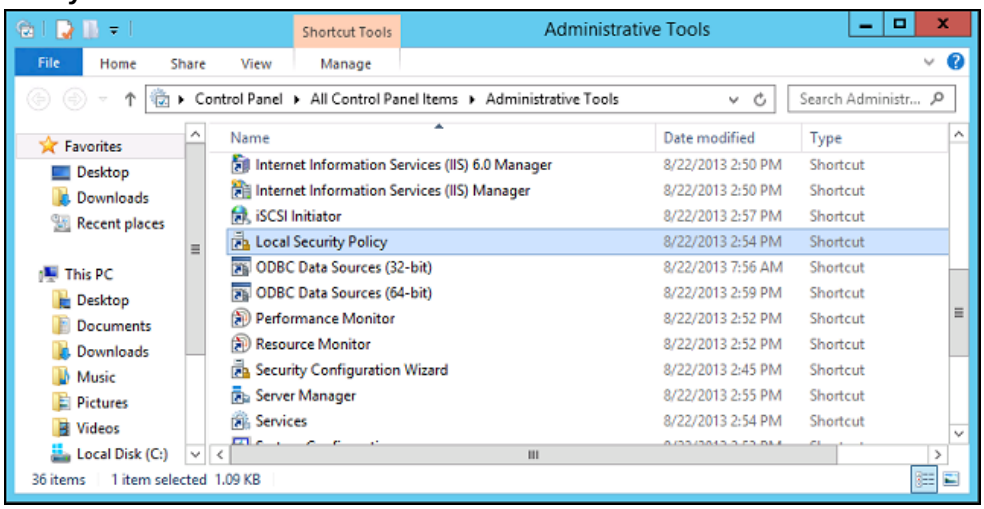
https://www.microsoft.com/en-gb/download/details.aspx?id=42040

2.2.16 LAN Manager Authentication Level

Exchange Server 2013

The LAN Manager Authentication level configured on the Exchange Server must be level 3 or above. Follow the steps below to check the settings.

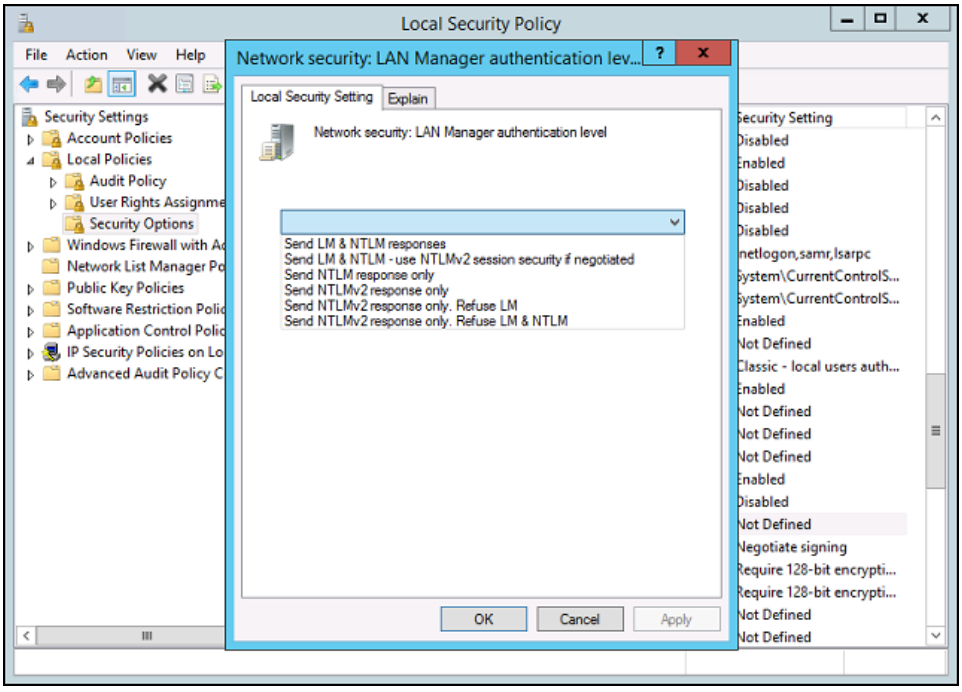
1. Click **Start** > **Control Panel** > **Administrative Tools**, and then click **Local Security Policy.**



2. Under **Security Settings**, expand **Local Policies** > **Security Options**, then click **Network security: LAN Manager authentication level**.

3. Make sure that the setting is configured to use NTLMv2, for example:

   - Send NTLMv2 response only
   - Send NTLMv2 response only. Refuse LM
   - Send NTLMv2 response only. Refuse LM & NTLM



2.2.17 Windows PowerShell 2.0 Engine

Make sure the Windows PowerShell 2.0 Engine is installed.

Exchange Server 2013

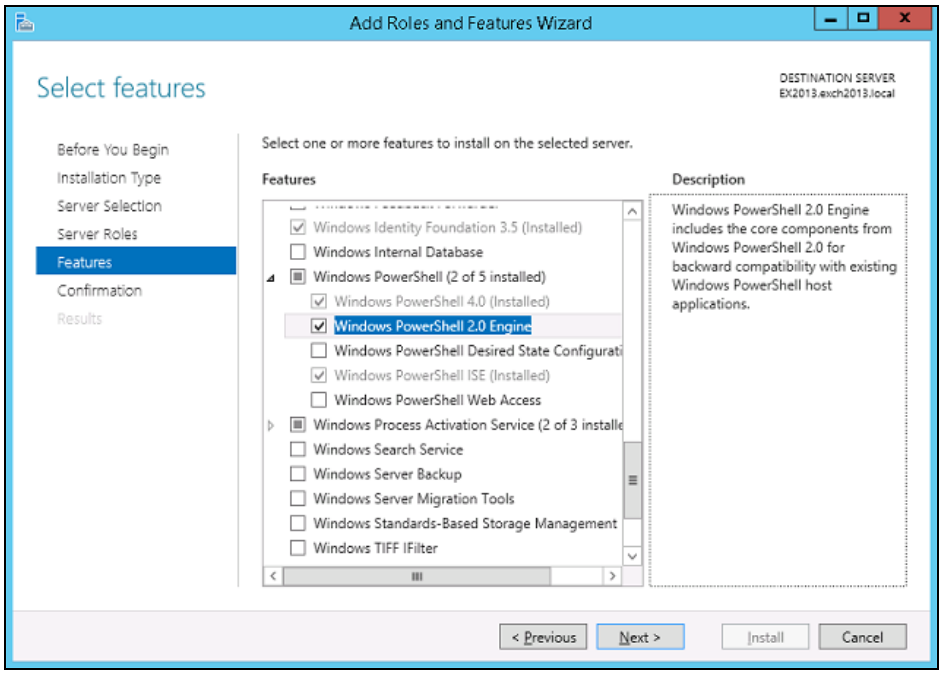
To install the feature:

1. Navigate to **Server Manager** > **Manage**, then select **Add Roles and Features**.

2. On the **Select installation type** screen, select **Role-based or feature-based** installation.

3. Select the target server.

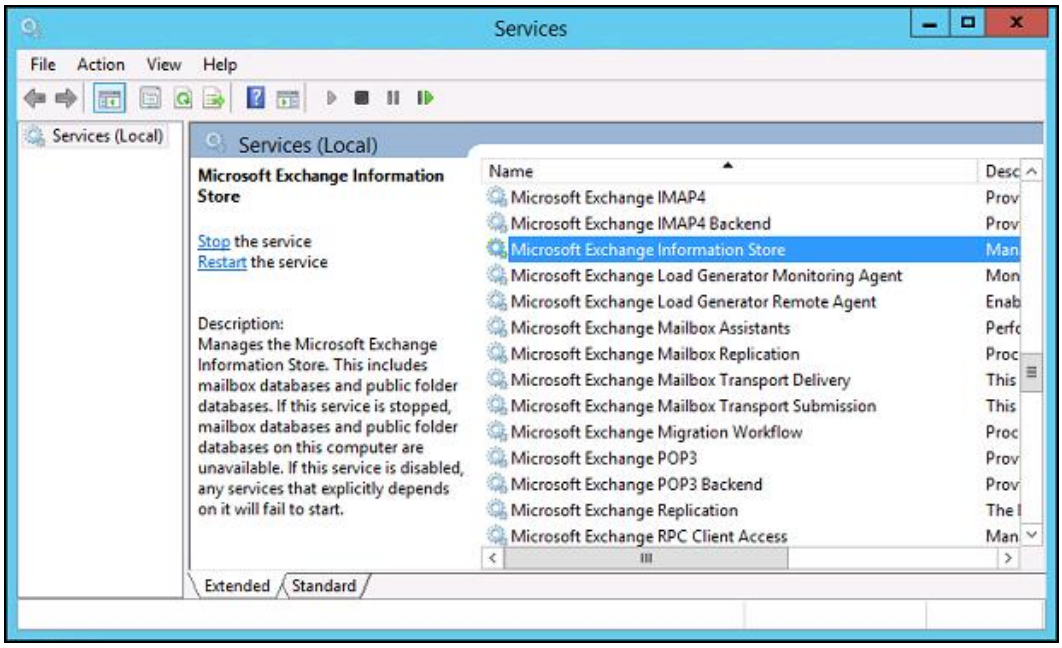
4. On the **Select features** screen, go to the **Features** option, check the box next to **Windows PowerShell 2.0 Engine**.



2.2.18 MS Exchange related Windows Services

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

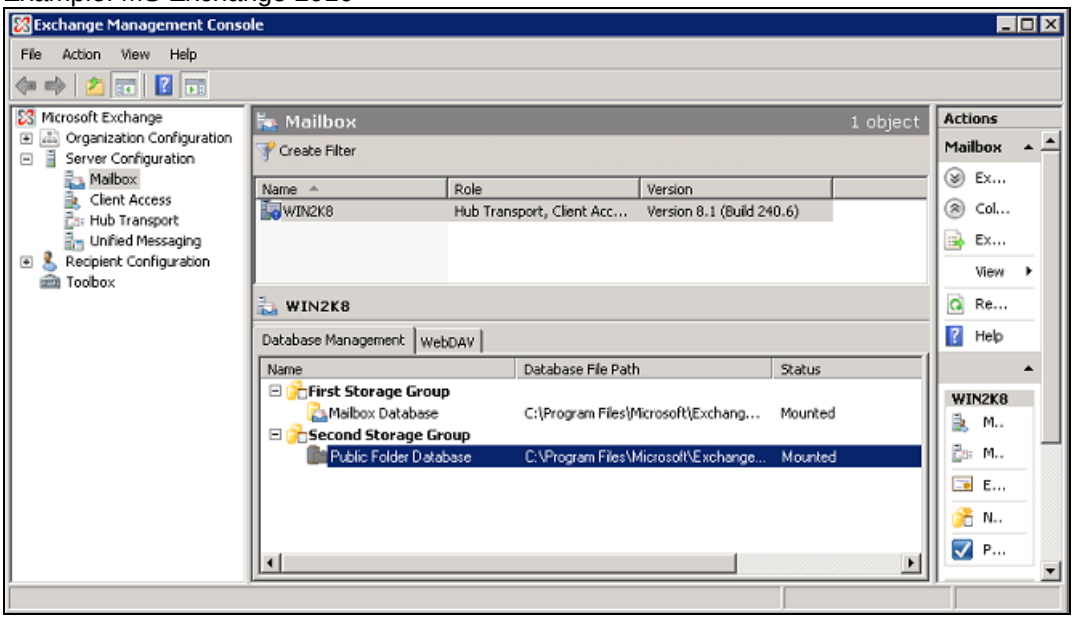
To verify this setting, launch the **Services** menu by clicking **Start** then typing “Services” in the search box. All Exchange related services should be started by default, in case if it is not, turn it on by right clicking the item and then select **Start**.



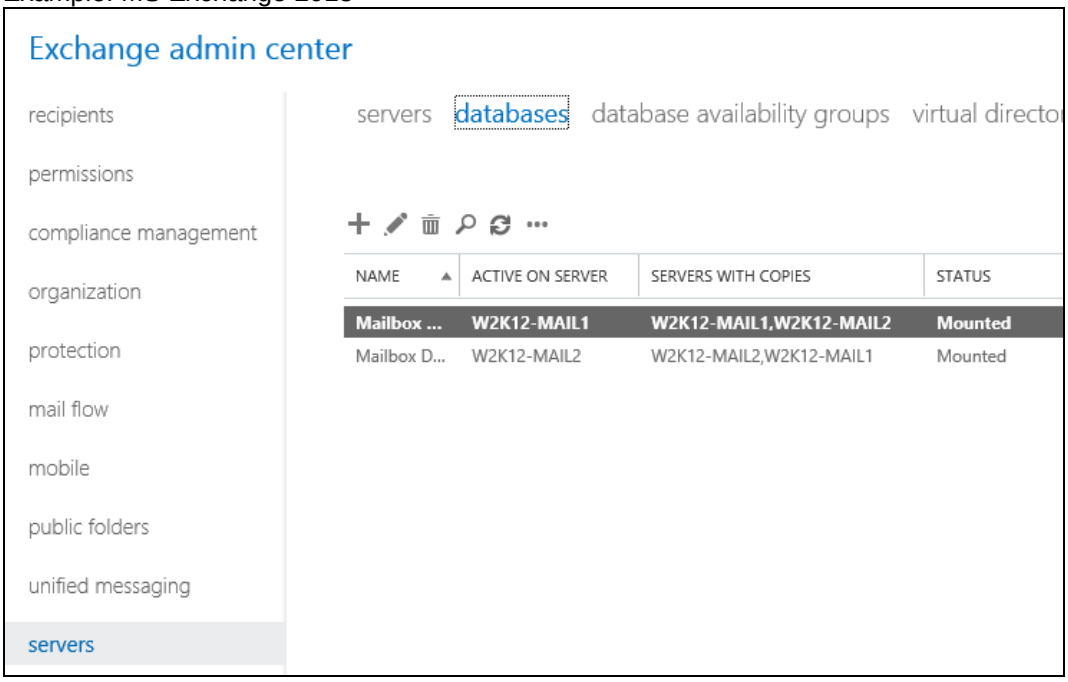
2.2.19 MS Exchange Database Status

Ensure the MS Exchange Mailbox and Public Folder databases are mounted.

Example: MS Exchange 2010



Example: MS Exchange 2013



2.2.20 IISAuthenticationMethods Setting

Verify if the IISAuthenticationMethods is set to **Basic** only. If so, change the setting with the commands below.

Exchange Server 2013

1. Click **Start** > **Microsoft Exchange Server** > **Exchange Management Shell**.

2. Enter the following command to check on the IISAuthenticationMethods setting:

```
>Get-OutlookAnywhere
```

3. If it is set to {Basic} only, enter the following command to modify the setting:

```
>Set-OutlookAnywhere -Identity:"%Server%\Rpc (Default Web
Site)" -IISAuthenticationMethods Basic,NTLM,Negotiate
```

4. Reboot the Exchange server.

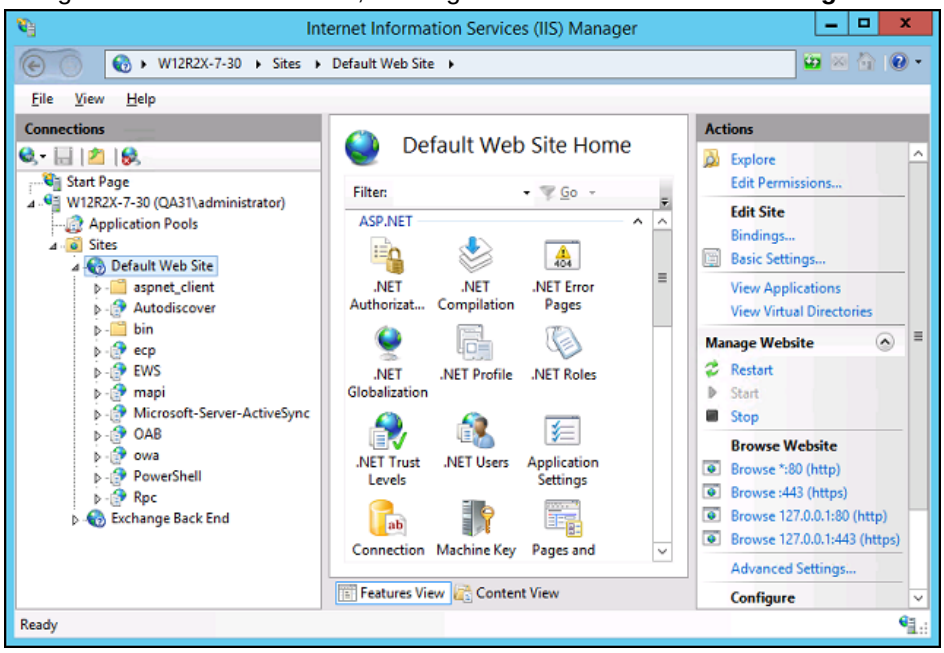
2.2.21 Connection to Exchange Management Shell (EMS) or Exchange Management Console (EMC)

Confirm on the connection to the Exchange Management Shell (EMS) or Exchange Management Console (EMC).

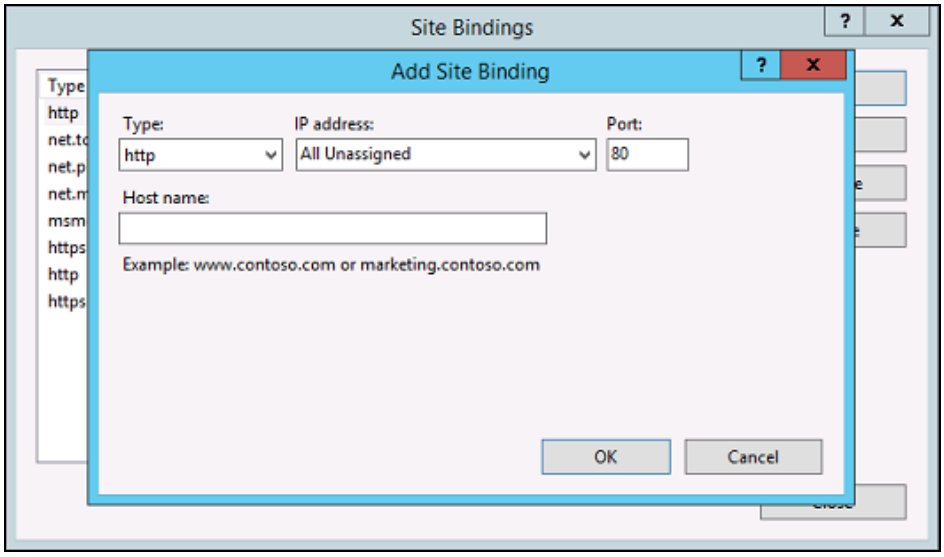
Ensure that the HTTP binding on the Default Web Site in Internet Information Services (IIS) is correctly configured by following the steps below.

1. Click **Start** > **Control Panel** > **Administrative Tools**, and then click **Internet Information Services (IIS) Manager**.

2. Navigate to **Default Web Site**, then right-click and select **Edit Bindings**.



3. Create a new binding that has no host name and a value of **All Unassigned** for the IP address.

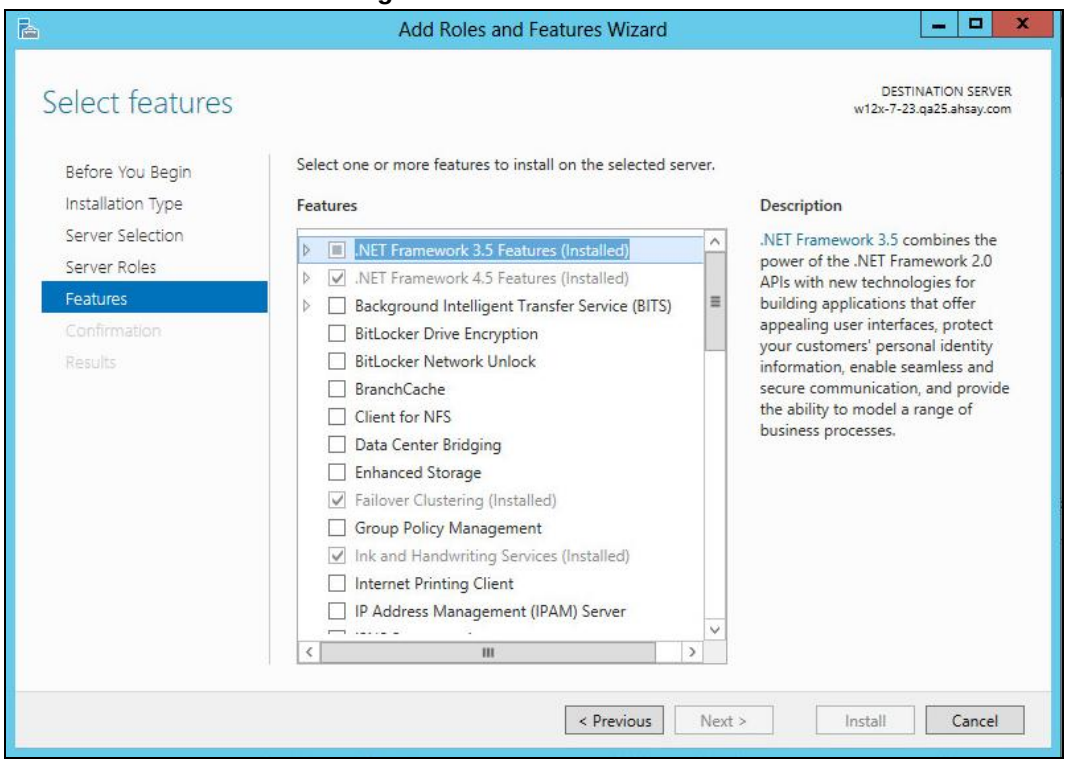


4. Restart IIS.

2.2.22 Net Framework 3.5 Features

If you are using Exchange server 2013 on Windows Server 2012, please install **.Net Framework 3.5 Features**.

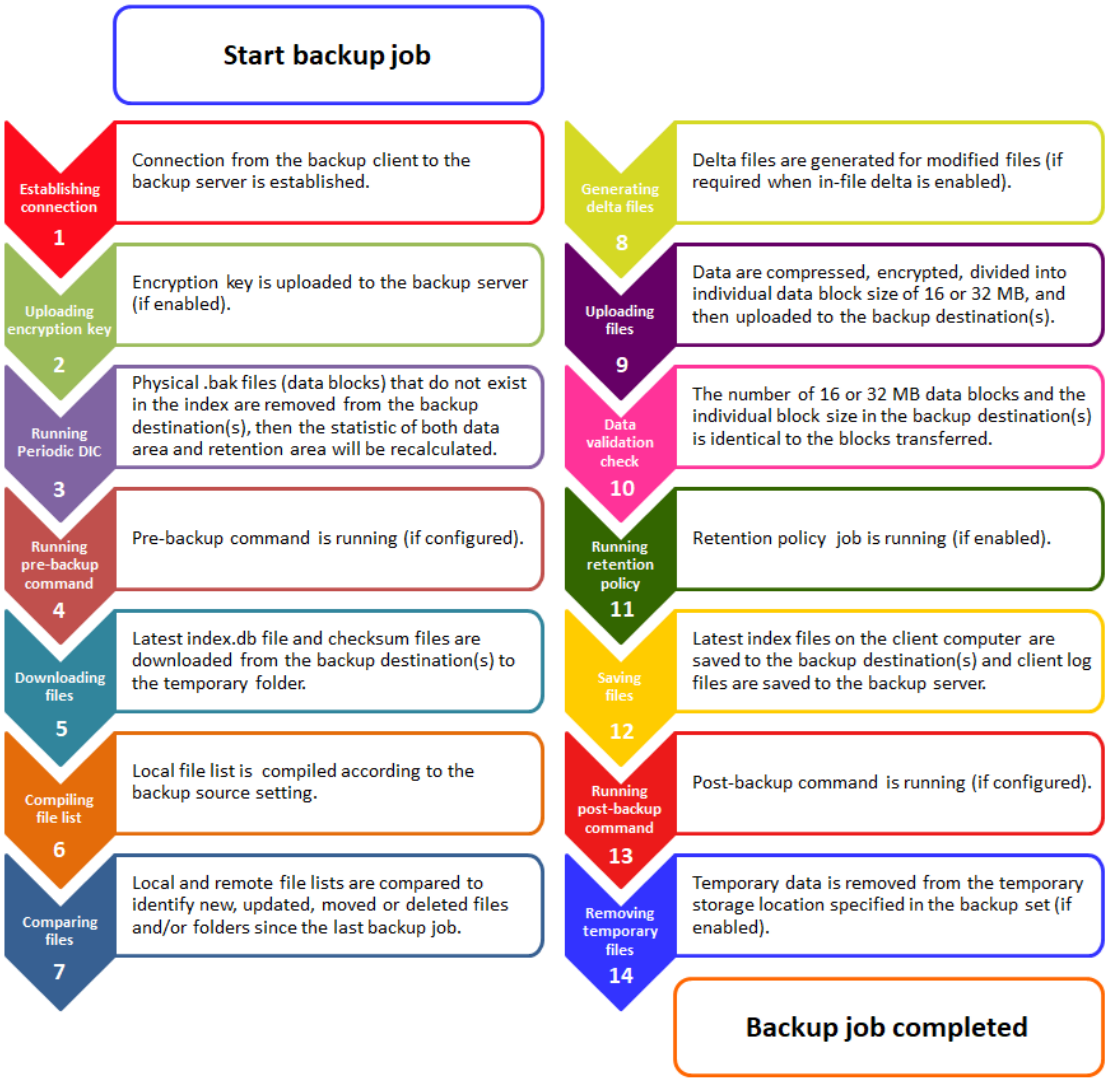
This feature can be enabled by accessing **Server Manager** > **Dashboard** > **Add Roles and Features Wizard** > **Feature Page**.



3 Overview of MS Exchange Mail Level Backup Process

The following steps are performed during an Exchange Mail Level backup job. For an overview of the detailed process for Steps **3**, **5**, **10**, and **12**, refer to the following chapters:

- Periodic Data Integrity Check (PDIC) Process **(Step 3)**
- Backup Set Index Handling Process
  - Start Backup Job **(Step 5)**
  - Completed Backup Job **(Step 12)**
- Data Validation Check **(Step 10)**



3.1 Periodic Data Integrity Check (PDIC) Process

For AhsayOBM v8.3.6.0 (or above), the PDIC will run on the first backup job that falls on the corresponding day of the week from **Monday to Friday**.

To minimize the impact of the potential load of large number of PDIC jobs running at the same time on the AhsayCBS server, the schedule of a PDIC job for each backup set is automatically determined by the result of the following formula:

PDIC schedule = ***%BackupSetID% modulo 5***
or
%BackupSetID% mod 5

The calculated **result** will map to the corresponding day of the week (i.e., from Monday to Friday).

0	**Monday**
1	**Tuesday**
2	**Wednesday**
3	**Thursday**
4	**Friday**

NOTE: The PDIC schedule cannot be changed.

Example:

Backup set ID: 1594627447932

Calculation*:* 1594627447932 *mod 5* = ***2***

2	**Wednesday**

In this example:

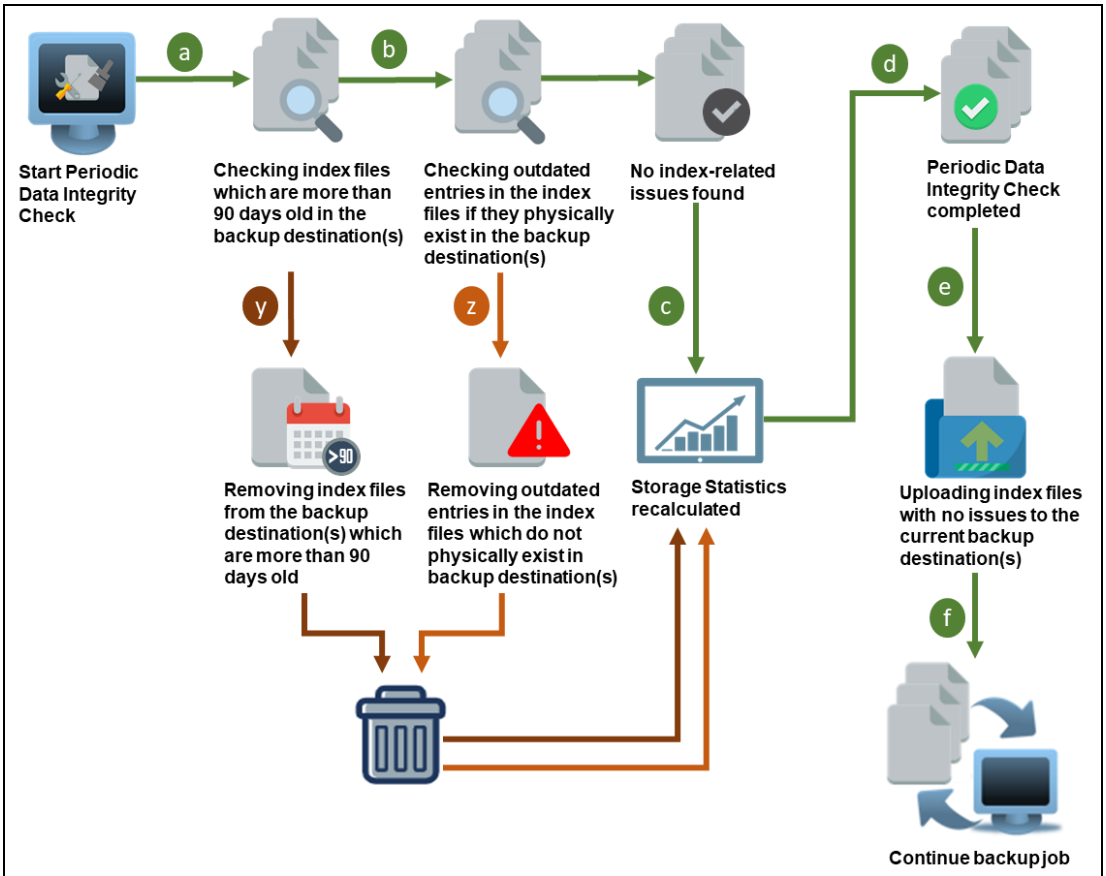
- the PDIC will run on the first backup job that falls on Wednesday; or
- if there is no active backup job(s) running from Monday to Friday, then the PDIC will run on the next available backup job.

NOTE

Although according to the PDIC formula for determining the schedule is ***%BackupSetID% mod 5***, this schedule only applies if the previous PDIC job was actually run more than 7 days prior.

Under certain conditions, the PDIC may not run strictly according to this formula. For example:

1. If AhsayOBM was upgraded to v8.5 (or above) from an older version v6, v7, or pre-8.3.6.0 version. In this case, the PDIC job will run on the first backup job after upgrade.
2. If backup jobs for a backup set are not run on a regular daily backup schedule (for example: on a weekly or monthly schedule), then the PDIC job will run if it detects that the previous PDIC job was run more than 7 days ago.



a Check the index files in the backup destination(s) to determine if they were more than 90 days old.

→ If **YES**, proceed to y

→ If **NO**, proceed to b

b Check the outdated entries in the index files for files and/or folders if they physically exist in the backup destination(s).

→ If **YES**, proceed to c

→ If **NO**, proceed to z

c Storage Statistics for Data area and Retention area usage will be recalculated.

d Periodic Data Integrity check is completed.

e Index files with no issues will be uploaded to the current backup destination(s).

f The backup job process will continue.

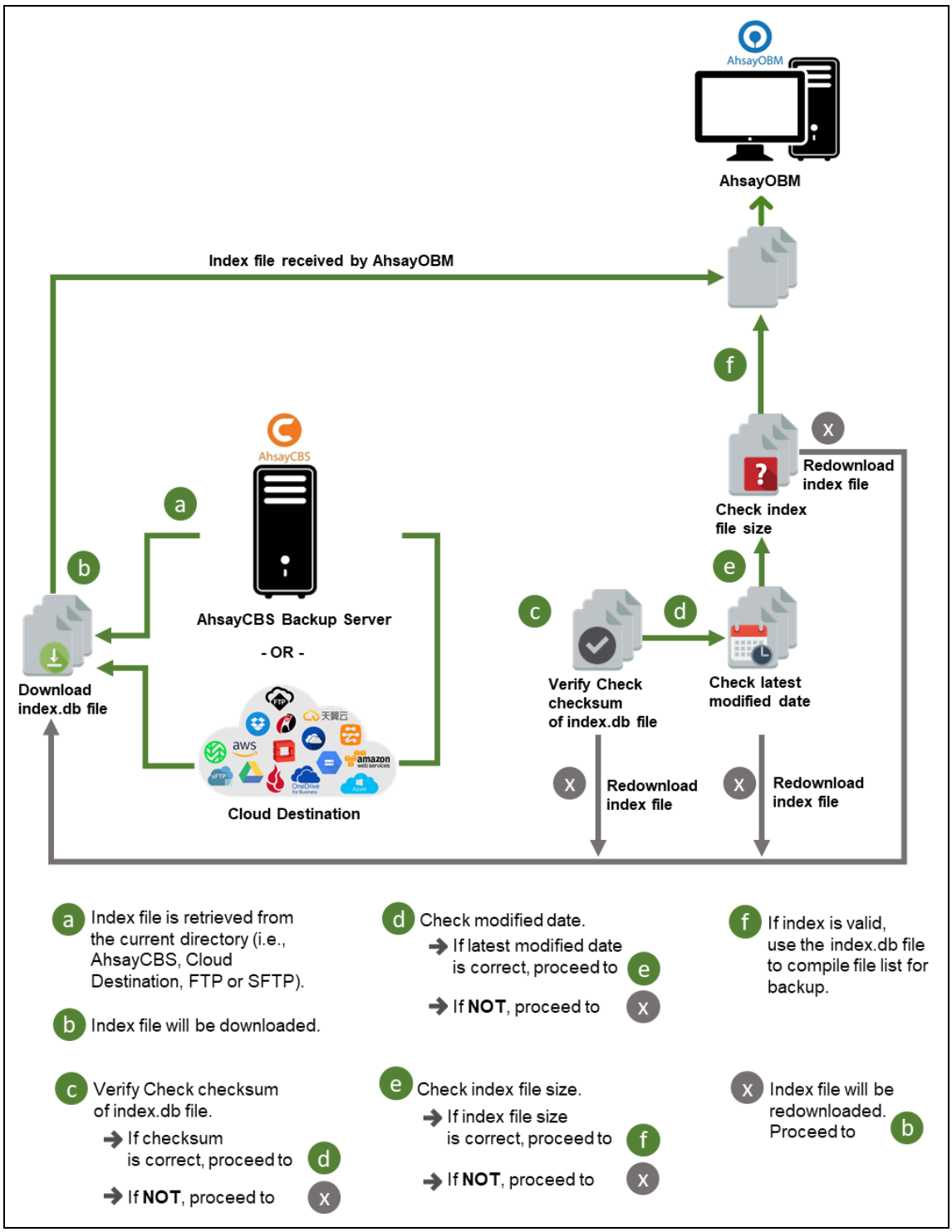
y Index files which are more than 90 days old will be removed from the backup destination(s).

z Outdated entries in the index files for files and/folders which do not physically exist in backup destination(s) will be removed.

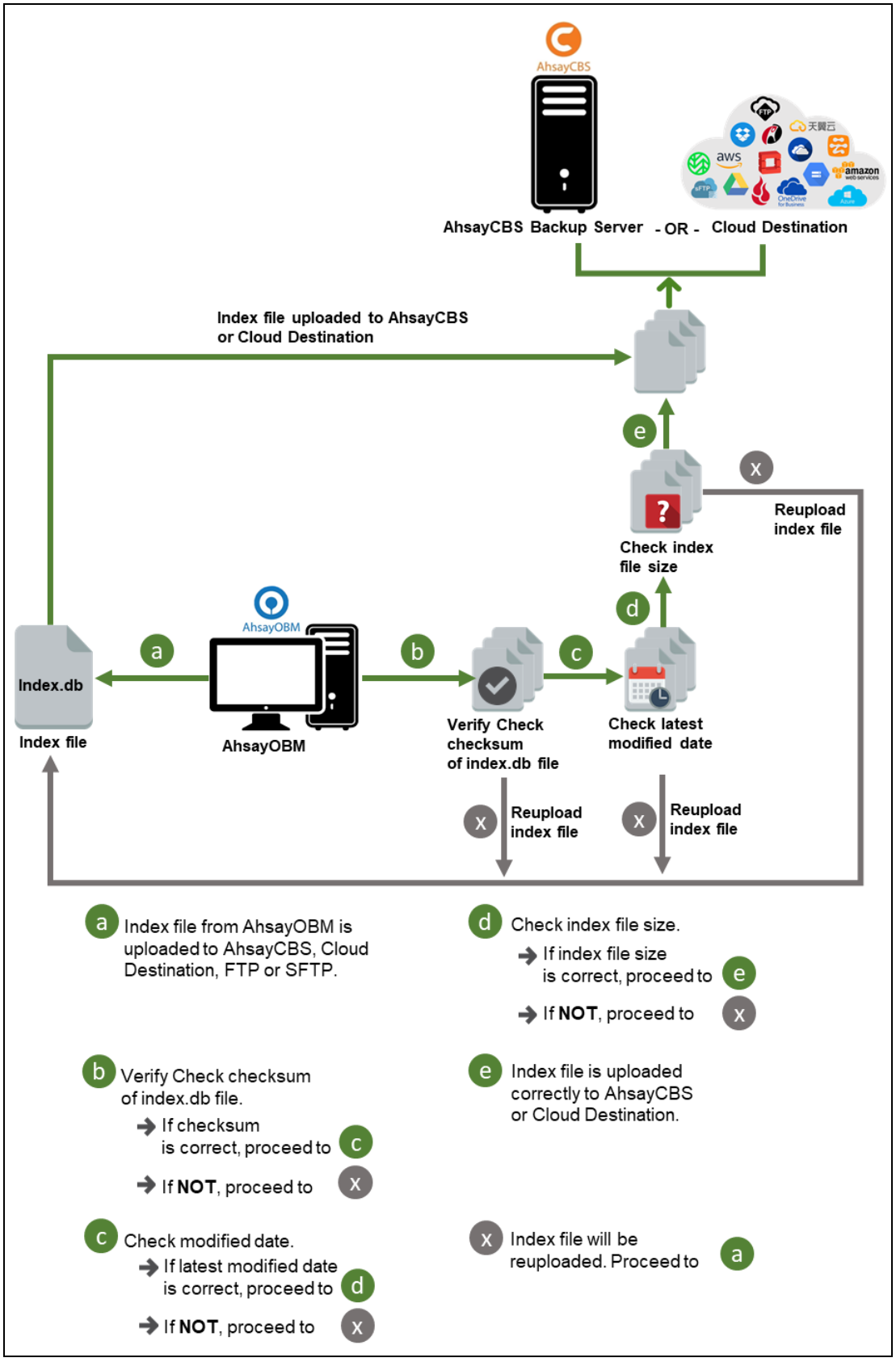
3.2 Backup Set Index Handling Process

To minimize the possibility of index related issues affecting backups, each time index files are downloaded from and uploaded to backup destination(s); the file size, last modified date, and checksum is verified to ensure index file integrity.

3.2.1 Start Backup Job

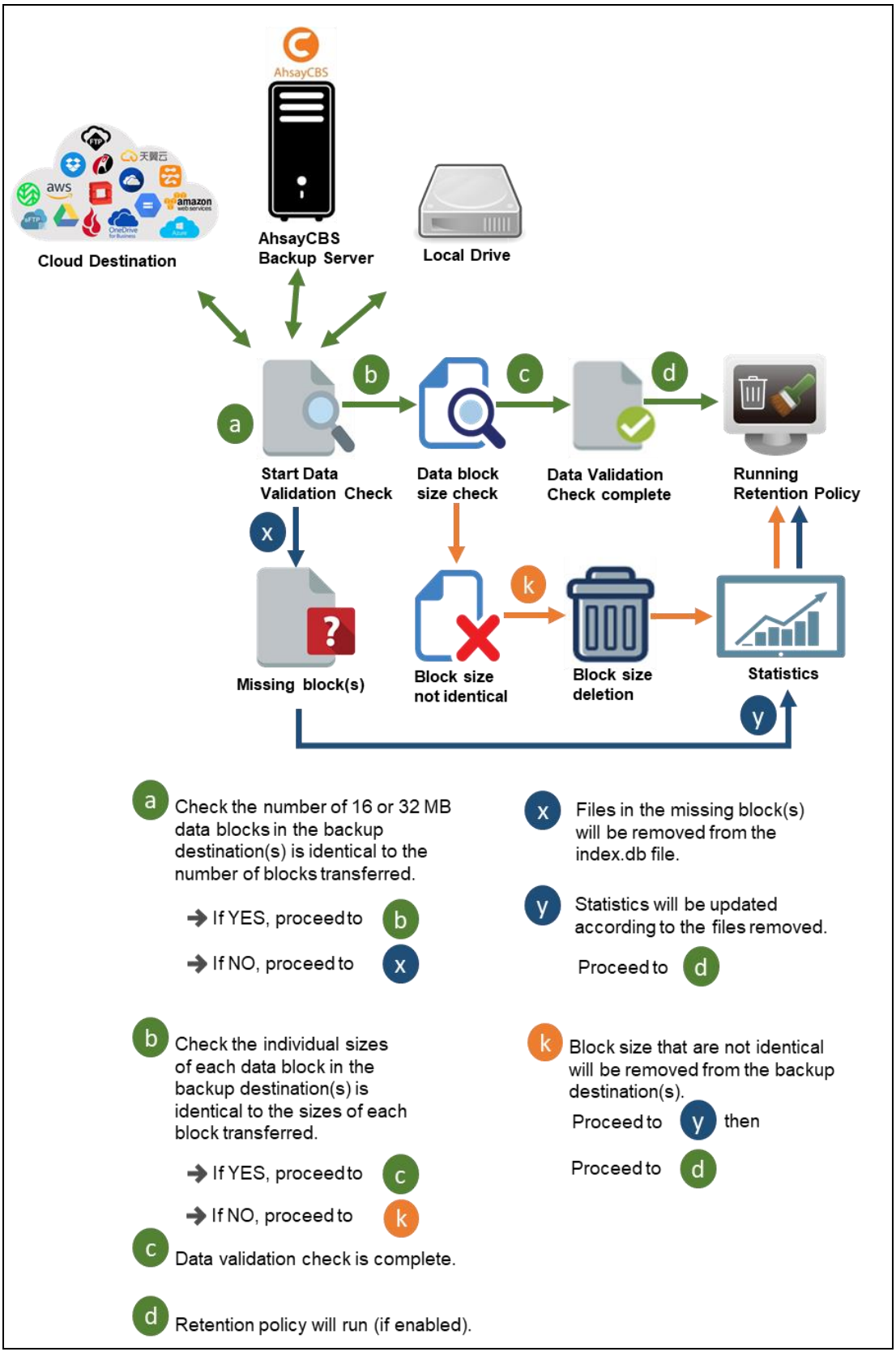


3.2.2 Completed Backup Job



3.3 Data Validation Check Process

As an additional measure to ensure that all files transferred to the backup destination(s) are received and saved correctly, both the number of 16 or 32 MB data block files and the size of each block file are checked again after the files are transferred.



4 Logging in to AhsayOBM

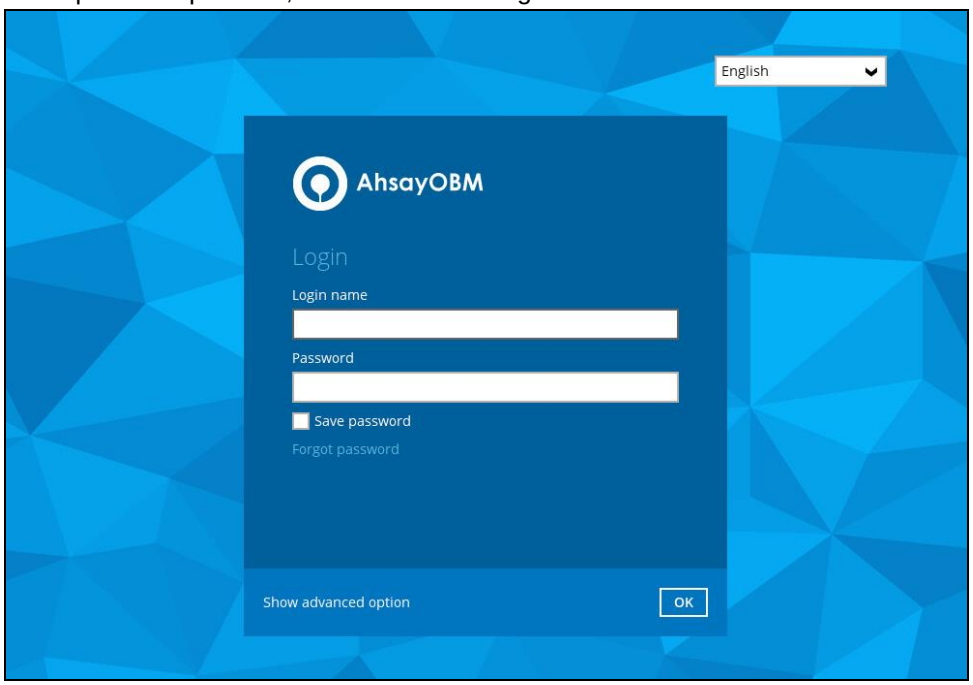
Starting with AhsayOBM v8.5.0.0 there are several login scenarios depending on the setting of the account you are using. The different scenarios will be discussed below:

- Login without 2FA
- Login with 2FA using authenticator app
- Login with 2FA using Twilio

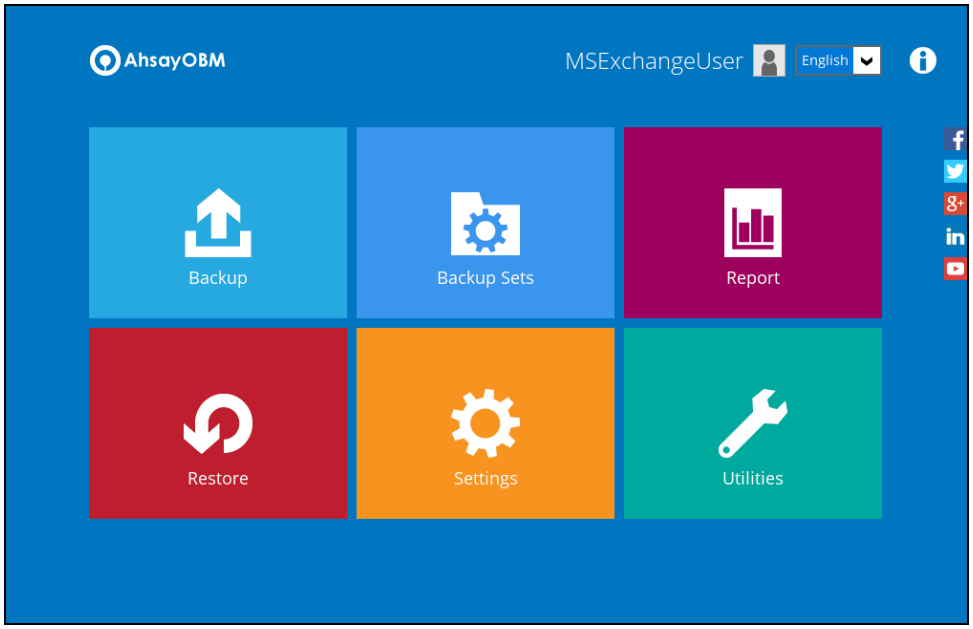
4.1 Login to AhsayOBM without 2FA

1. A shortcut icon of AhsayOBM should have been created on your Windows desktop after installation. Double click the icon to launch the application.

2. Enter the **Login name** and **Password** of your AhsayOBM account provided by your backup service provider, then click **OK** to login.



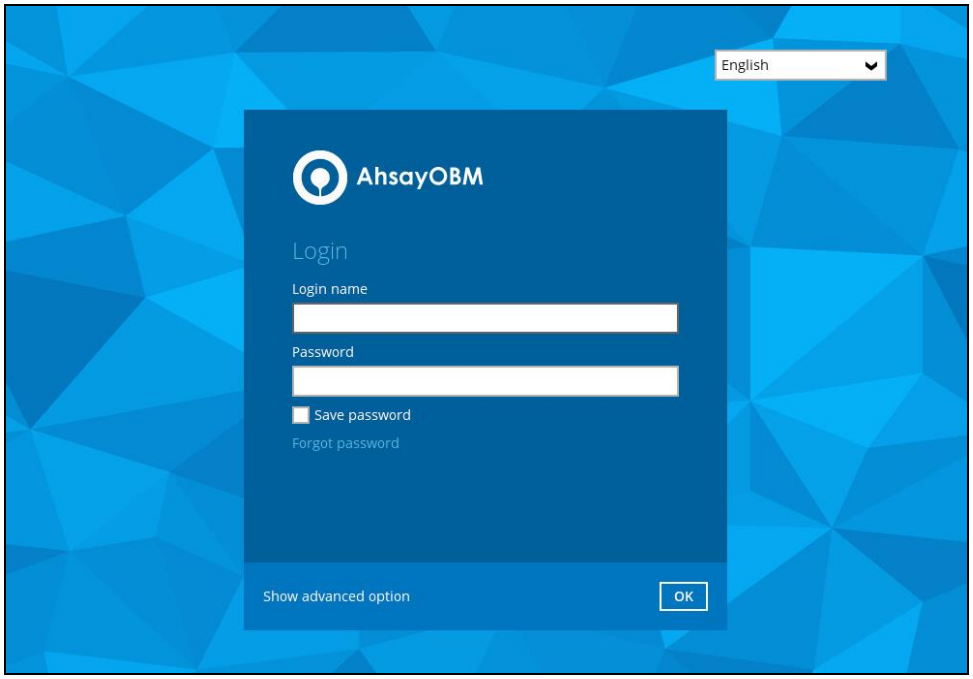
3. After successful login, the following screen will appear.



4.2 Login with 2FA using authenticator app

1. A shortcut icon of AhsayOBM should have been created on your Windows desktop after installation. Double click the icon to launch the application.

2. Enter the **Login name** and **Password** of your AhsayOBM account provided by your backup service provider, then click **OK** to login.

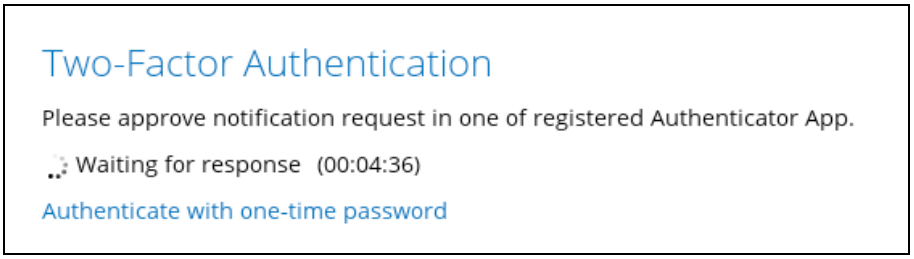


3. One of the two authentication methods will be displayed to continue with the login:

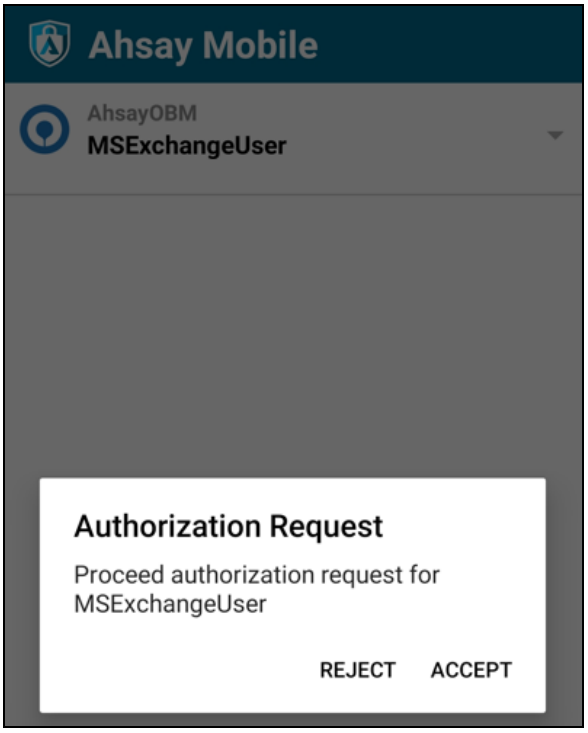
- Push Notification and TOTP when using Ahsay Mobile app
- TOTP only

- If **Ahsay Mobile app** was configured to use Push Notification and TOTP then there are two 2FA modes that can be used:
  - Push Notification (default)

    Push notification is the default 2FA mode. Accept the login request on Ahsay Mobile to complete the login.

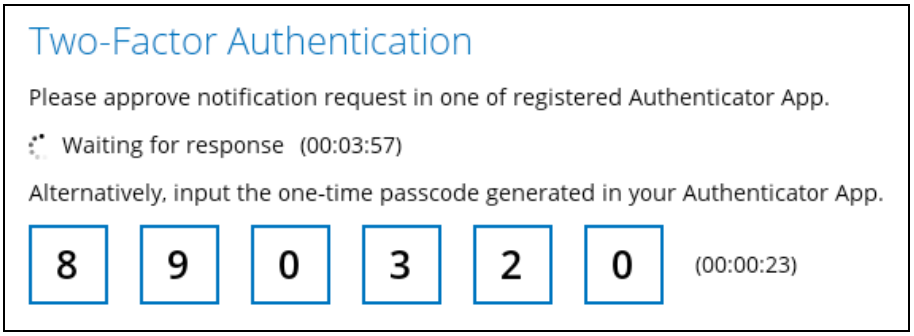


Example of the login request sent to the Ahsay Mobile app.

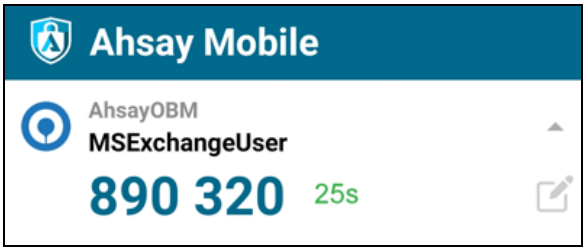


- TOTP

However, if push notification is not working or you prefer to use one-time passcode, click the Authenticate with one-time password link, then input the one-time passcode generated by Ahsay Mobile to complete the login.

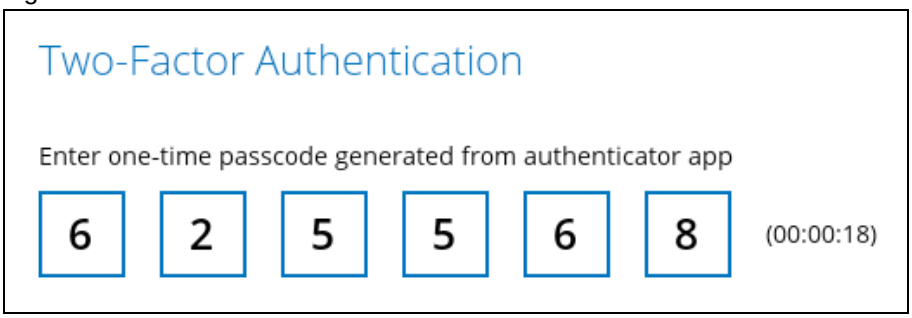


Example of the one-time passcode generated in Ahsay Mobile.

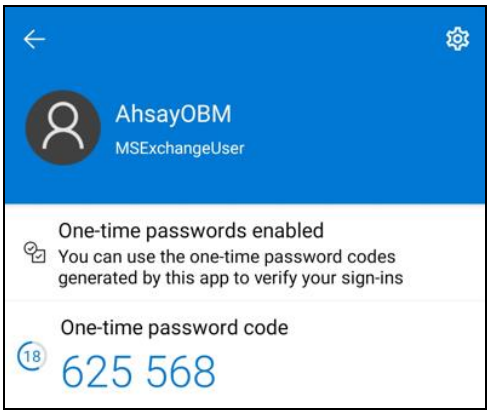


- TOTP only

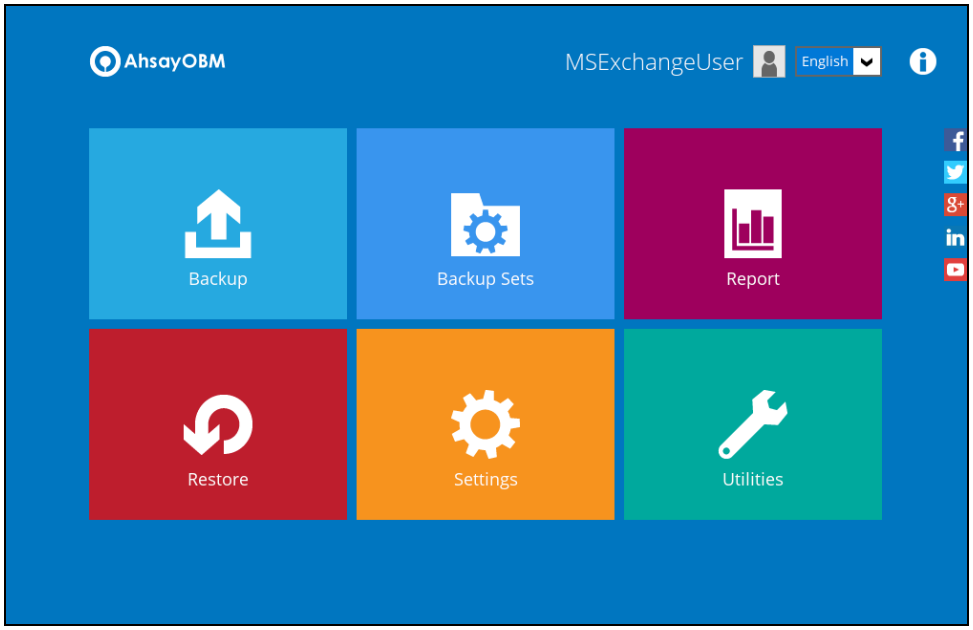
  Enter the one-time passcode generated by the authenticator app to complete the login.



  Example of the one-time passcode generated in the third party authenticator app Microsoft Authenticator.



4. After successful login, the following screen will appear.



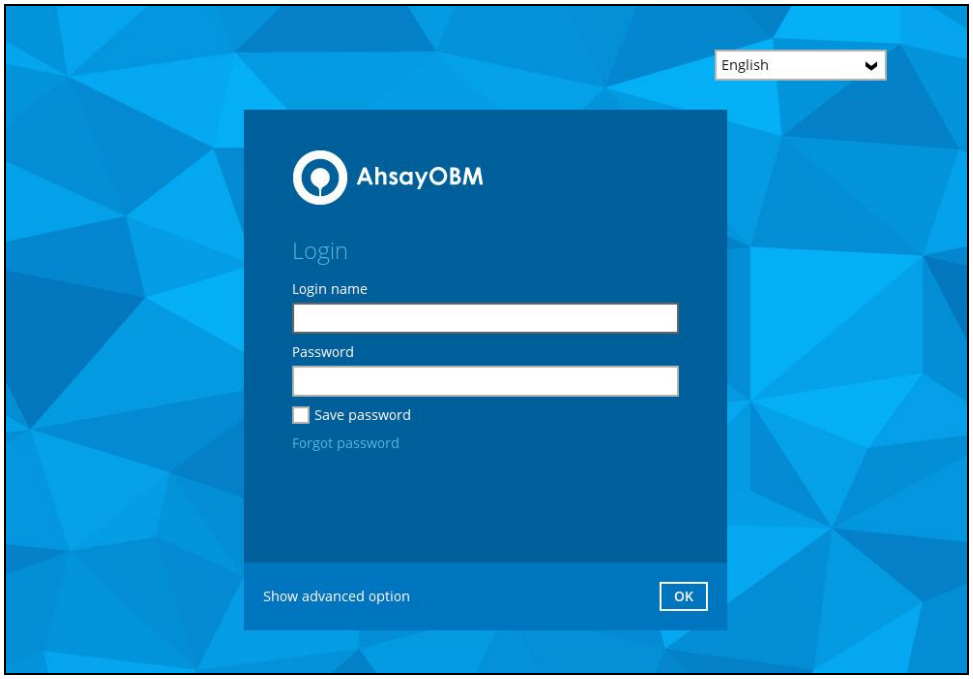
NOTE

If you have trouble logging in using the authenticator app please refer to Chapter 9 of the AhsayOBM Quick Start Guide for Windows for more information.

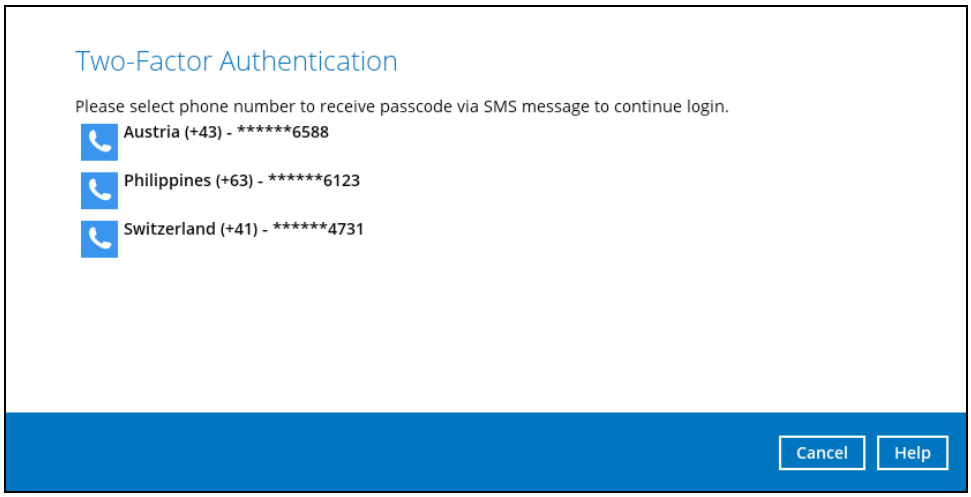
4.3 Login with 2FA using Twilio

1. A shortcut icon of AhsayOBM should have been created on your Windows desktop after installation. Double click the icon to launch the application.

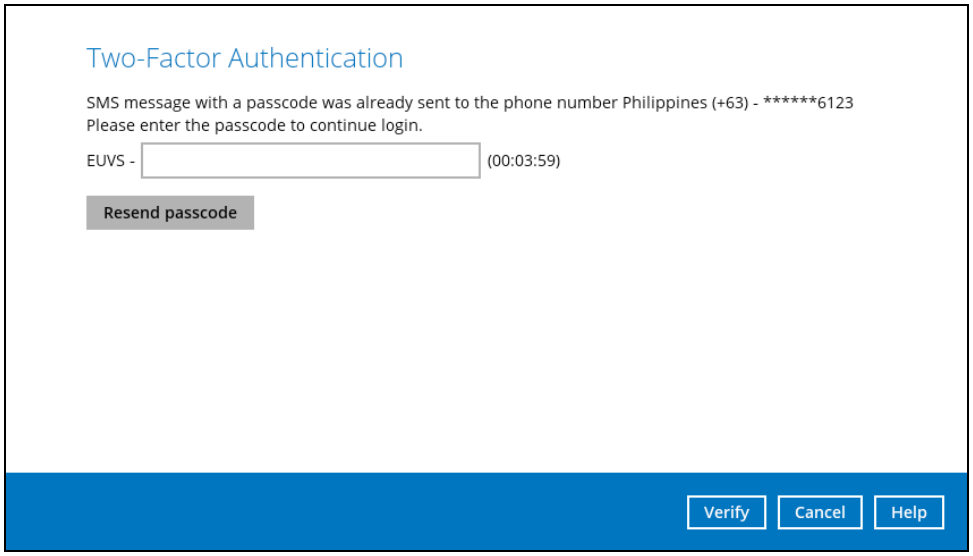
2. Enter the **Login name** and **Password** of your AhsayOBM account provided by your backup service provider, then click **OK** to login.



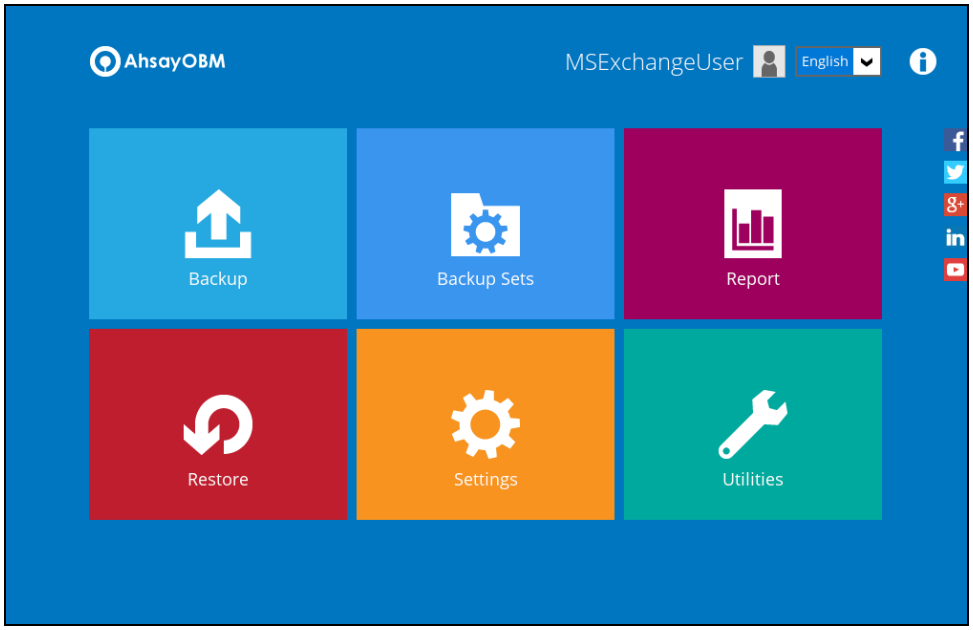
3. Select your phone number.



4. Enter the passcode and click **Verify** to login.



5. After successful login, the following screen will appear.



5 Performing Mail Level Backup for Microsoft Exchange 2007/2010/2013 (MAPI Mode)

5.1 Creating Mail Level Backup Set for Microsoft Exchange 2007/2010/2013 (MAPI Mode)

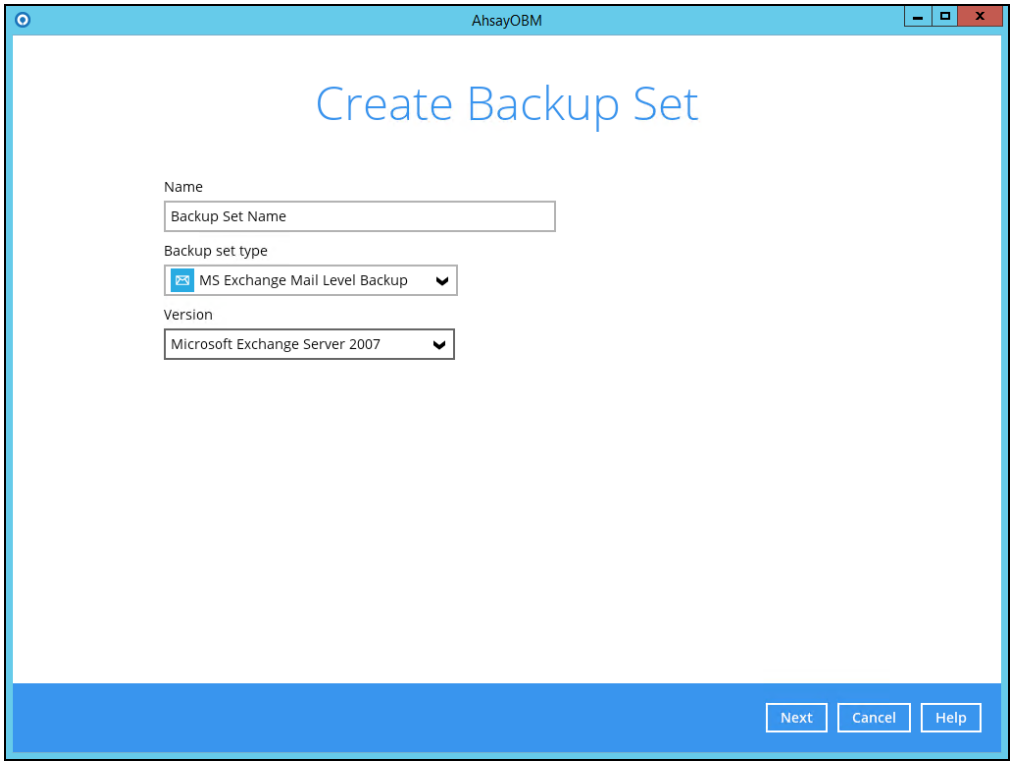
IMPORTANT NOTE:

- Creation of MAPI Mail Level Backup Set for Microsoft Exchange 2013 Cumulative Update 23 or later is no longer supported, to backup MS Exchange 2013 Cumulative Update 23 or later, an EWS backup set must be created. Please refer to the **Microsoft Exchange 2013/2016/2019 (EWS) Mail Level Backup and Restore Guide**.
- Creation of MAPI Mail Level Backup Set for Microsoft Exchange 2013 Cumulative Update 23 or earlier is still supported for AhsayOBM v8.1.0.24 to v8.1.1.174 and v8.3.0.30 to v8.3.0.110.
- From AhsayOBM v8.3.0.111 or later the default backup mode for all versions of MS Exchange 2013 is EWS mode. There is no option on AhsayOBM to select MAPI mode. If MAPI mode is required for Microsoft Exchange 2013 Cumulative Update 23 or earlier, then the backup set can only be created using the AhsayCBS Web Console. Please see the instructions on **Appendix A: Creating Mail Level Backup Set for Microsoft Exchange 2013 using CBS Web Console**.

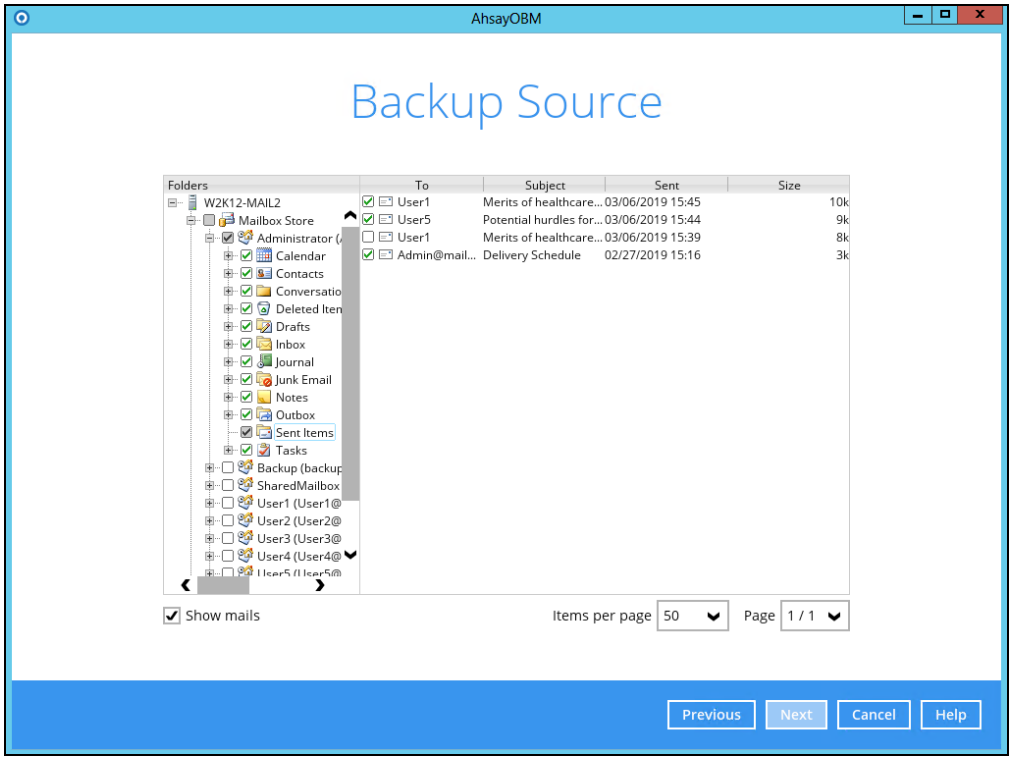
1. Click the **Backup Sets** icon on the main interface of AhsayOBM.

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 and then click **Next** to proceed.

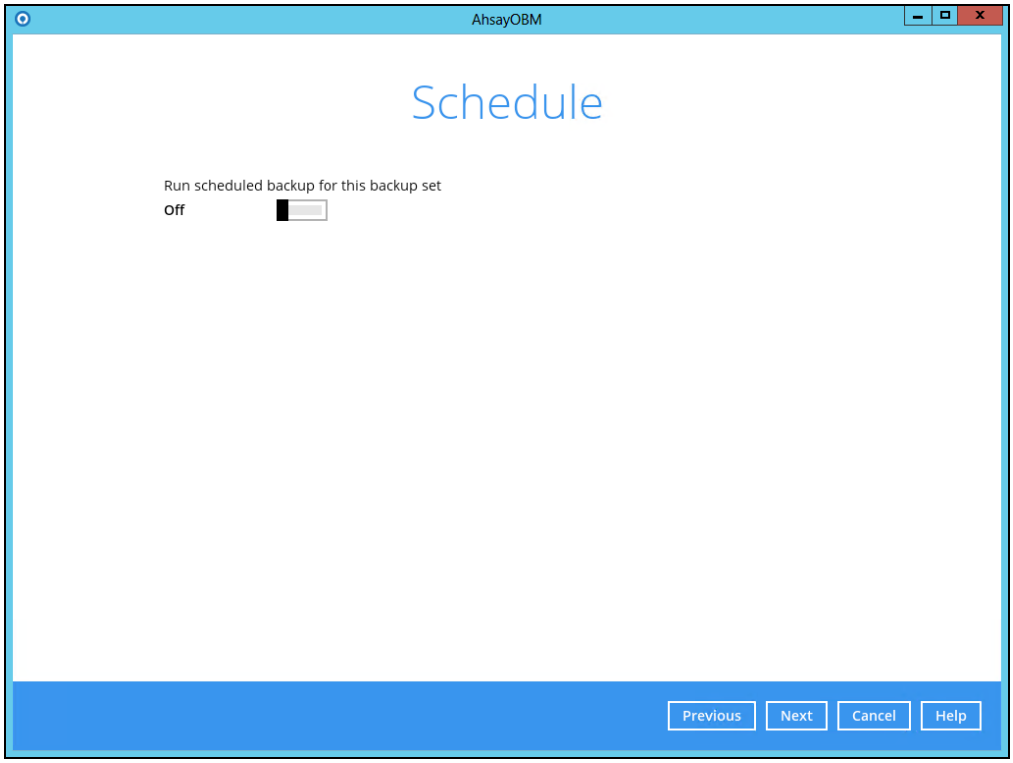


4. In the **Backup Source** menu, select the Mailbox Store and/or Public Folder Store for backup. You can click to expand the mailbox/public folder store to select which mailbox/folder to backup. You can also click **Show mails** to select individual mail to backup. Click **Next** to proceed when you are done.

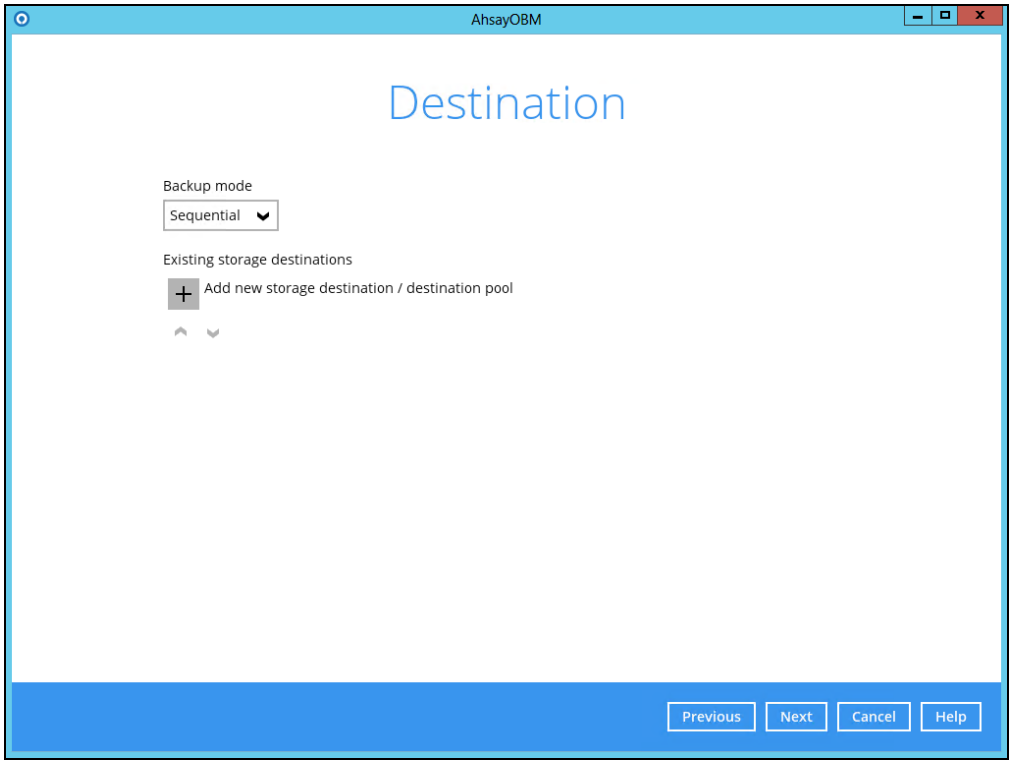


5. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default, the **Run scheduled backup for this backup set** option is disabled. Enable it, then click the "**+**" icon next to **Add new**

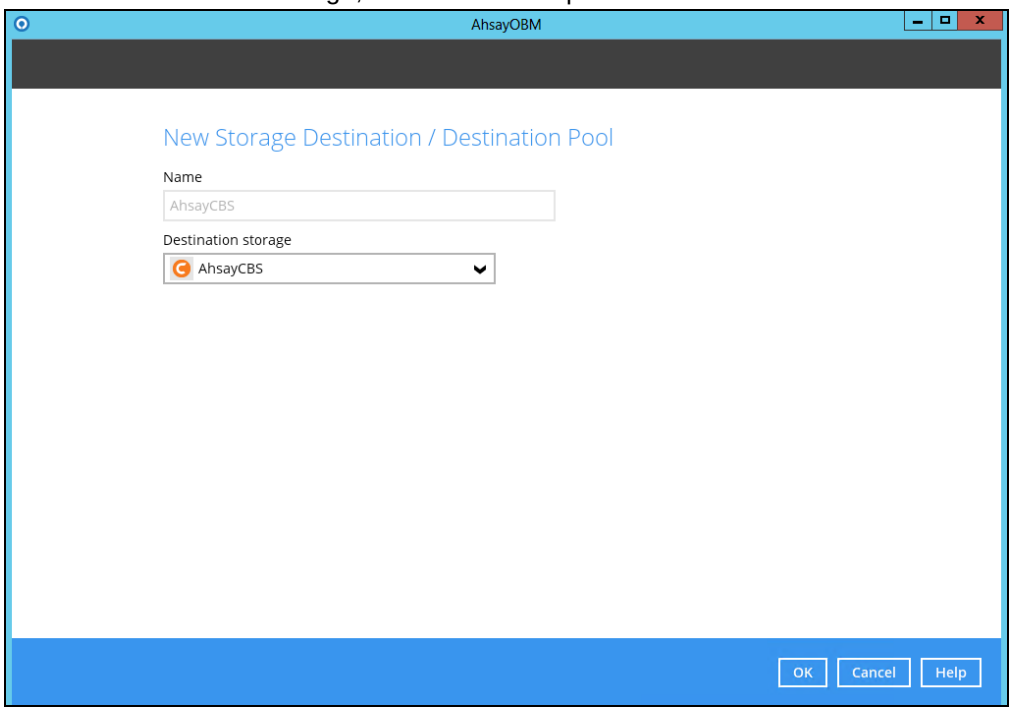
schedule. Click **Next** to proceed when you are done setting.



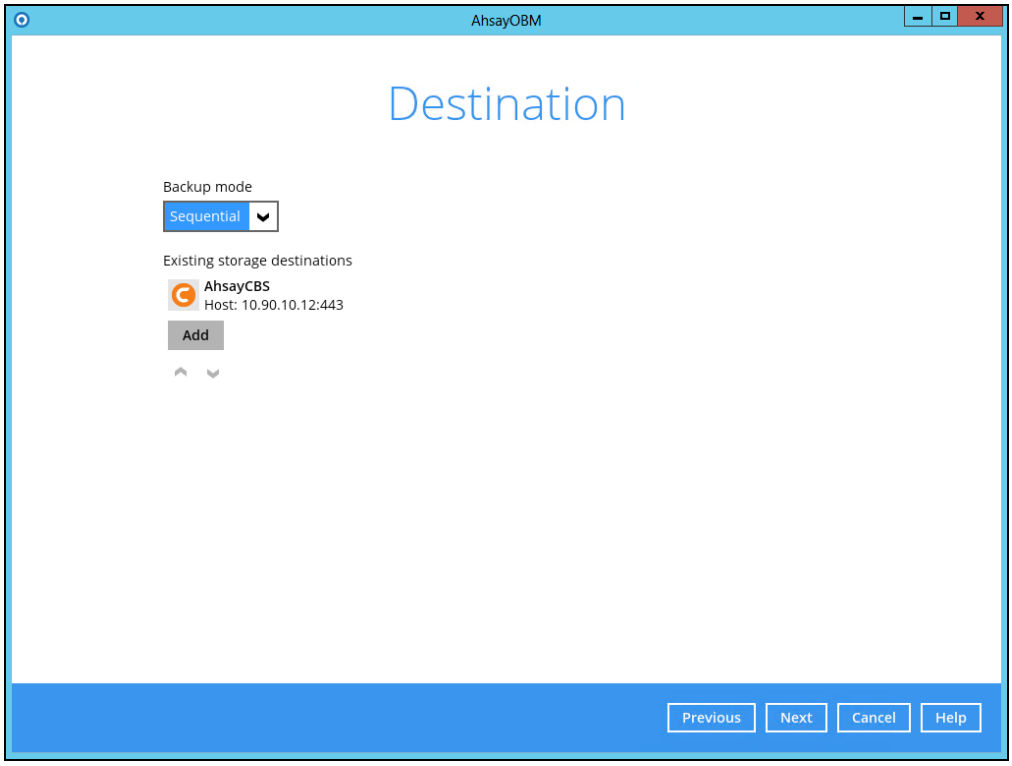
6. In the Destination menu, select a backup destination where the backup mail will be stored. Click the "**+**" icon next to **Add new storage destination / destination pool**.



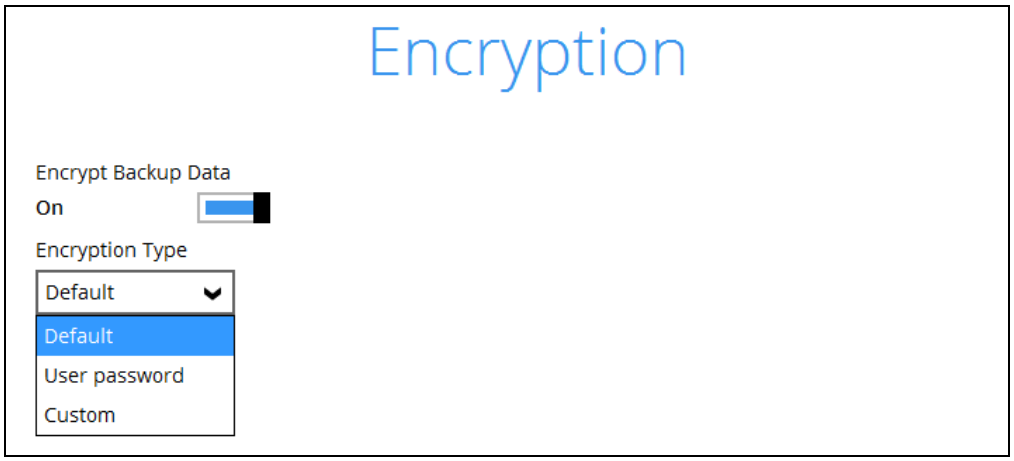
7. Select the destination storage, then click **OK** to proceed.



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

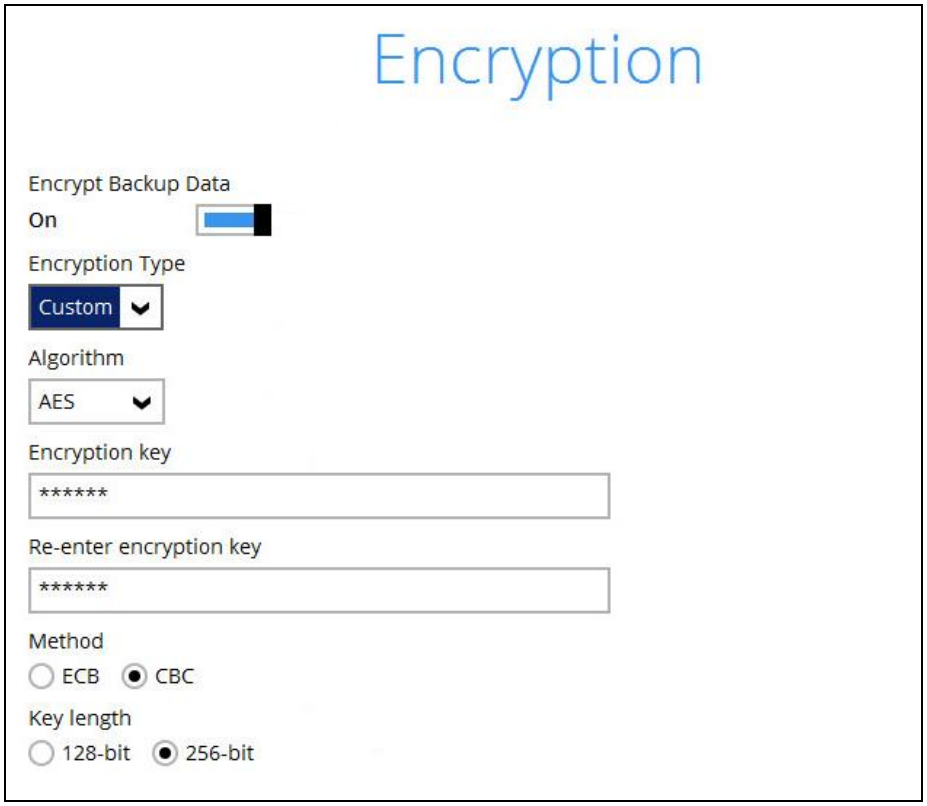


9. In the Encryption window, by default the **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



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.

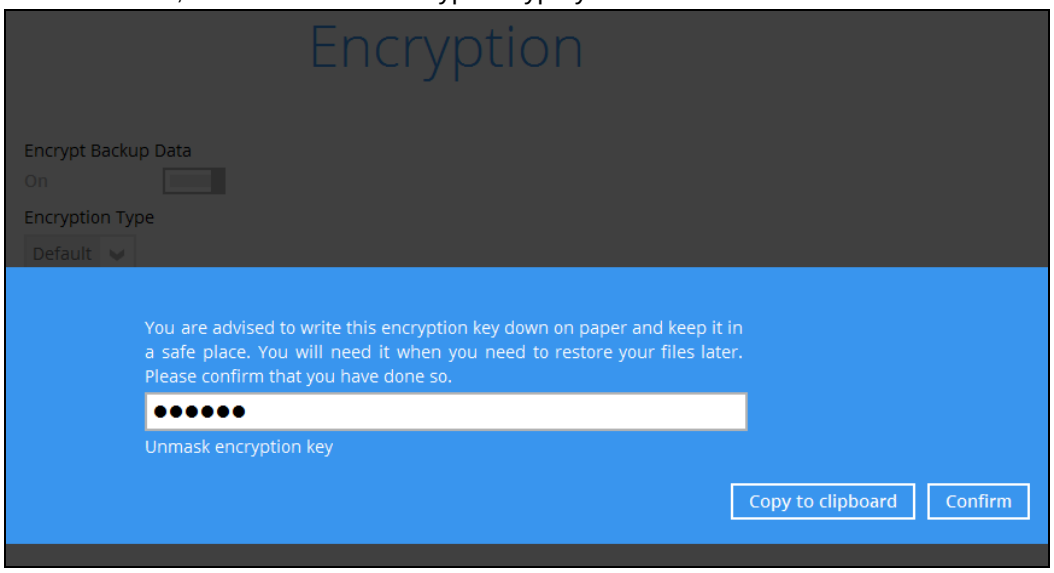


NOTE

For best practice on managing your encryption key, refer to the following article.
https://wiki.ahsay.com/doku.php?id=public:8015_faq:best_practices_for_managing_encryption_key

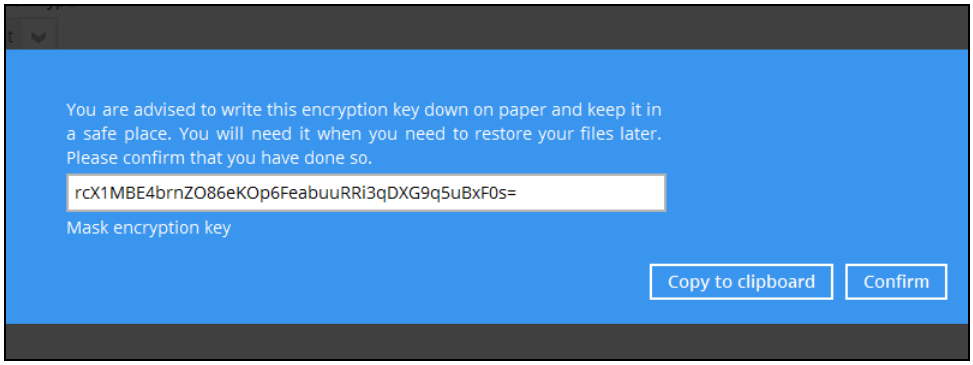
Click **Next** when you are done setting.

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

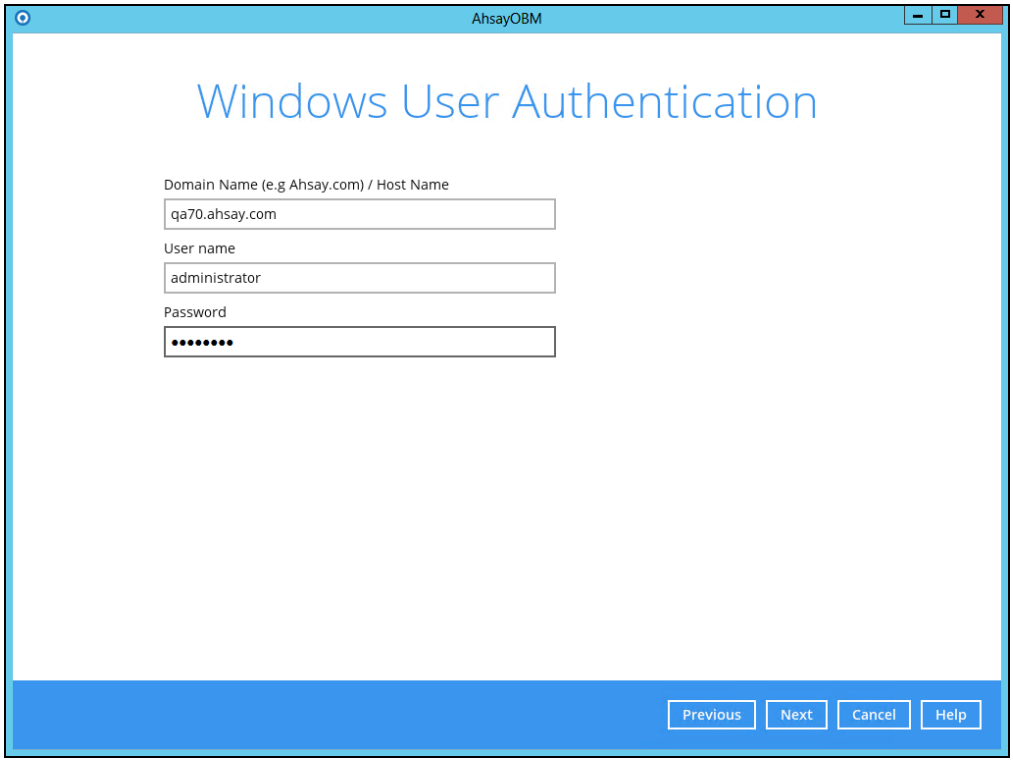
- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.

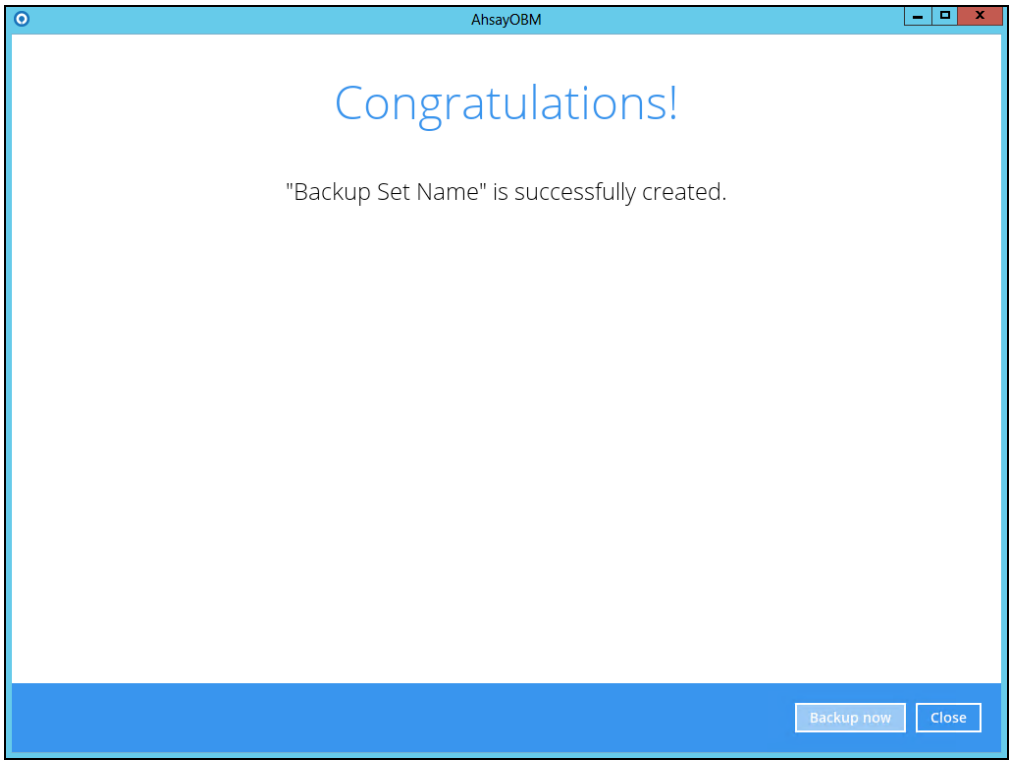
- **Confirm** – Click to exit this pop-up window and proceed to the next step

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



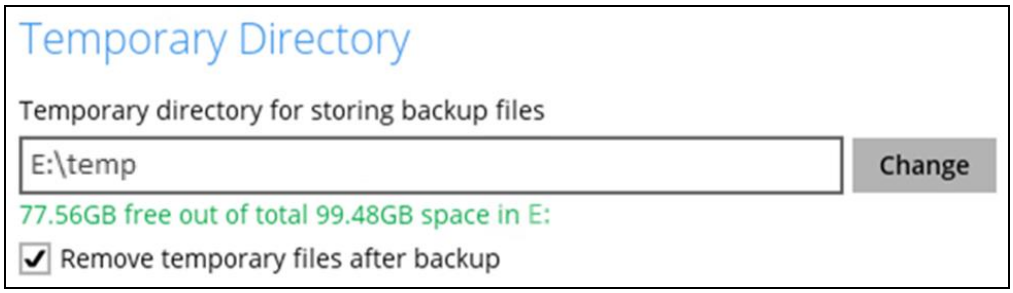
NOTE
The Windows User Authentication interface will show only if scheduled backup is enabled and set successfully.

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



13. Click **Backup now** to start a backup immediately, or you can run a backup job later by following the instructions in Running Mail Level Backup Job for Microsoft Exchange 2007/2010/2013.

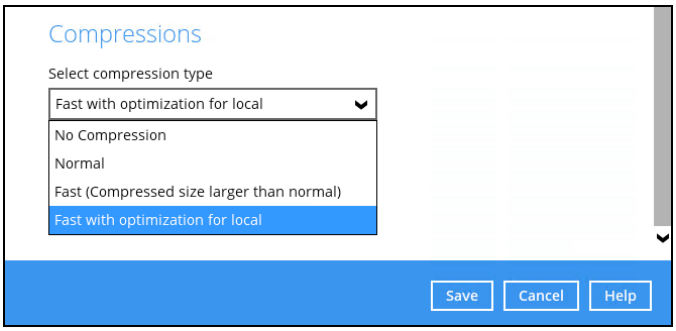
14. It is highly recommended to set the **temporary directory** to another location other than Drive C: (e.g. Drive E:). To do this, go to **Backup Sets > Others > Temporary Directory** and click the **Change** button to browse for another location.



15. Optional: Select your preferred **Compression** type. By default, the compression type is Fast with optimization for local.

    Go to **Others > Compressions**, then select from the following:

    - No Compression
    - Normal
    - Fast (Compressed size larger than normal)
    - Fast with optimization for local



5.2 Running Mail Level Backup Job for Microsoft Exchange 2007/2010/2013

IMPORTANT NOTE:

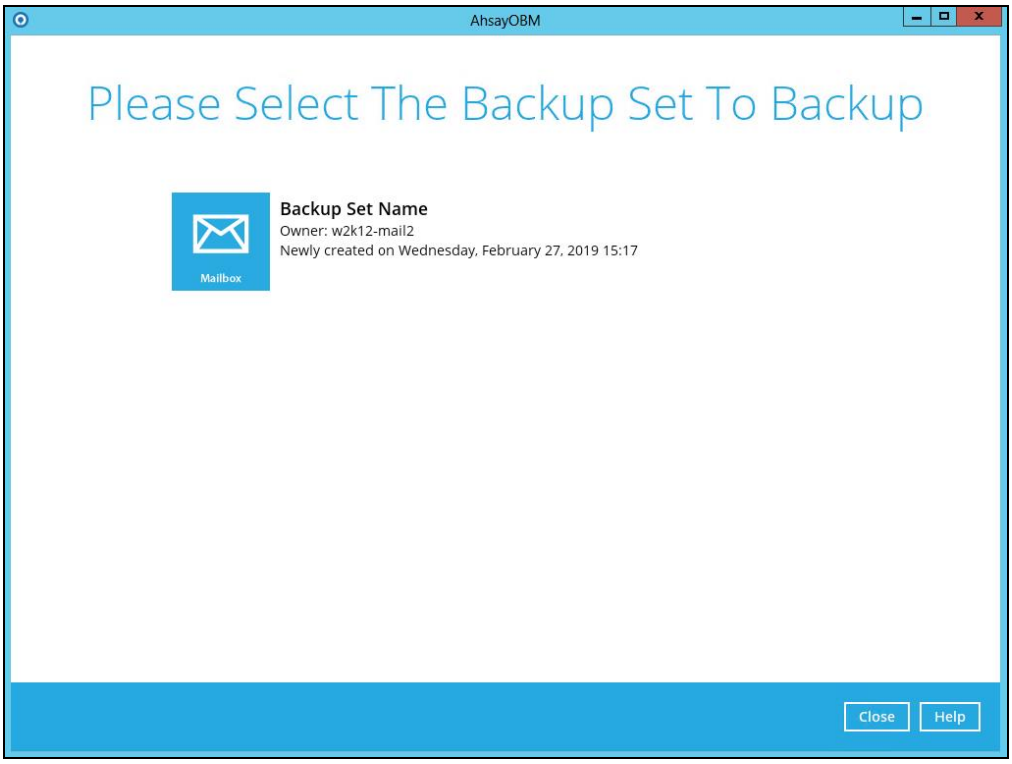
- Due to limitations with MAPI, MAPI backup mode is no longer supported on the MS Exchange Server 2013 Cumulative Updated 23 and later, this will have an impact on the backup and restore:
  - Microsoft Exchange 2013 Mail Level backups will stop working.
  - All items already backed will no longer be recoverable to Microsoft Exchange 2013.

- Furthermore, MAPI backup mode will not be fully functional after the MS Exchange 2013 Cumulative Update 20 or later is applied as MAPI is unable to access the Public Folder items from MS Exchange 2013 Database. This will have an impact on the backup and restore of public folder items:
  - Inability to **backup** items in MS Exchange 2013 Public Folder Databases
  - Inability to **restore** items in MS Exchange 2013 Public Folder Databases

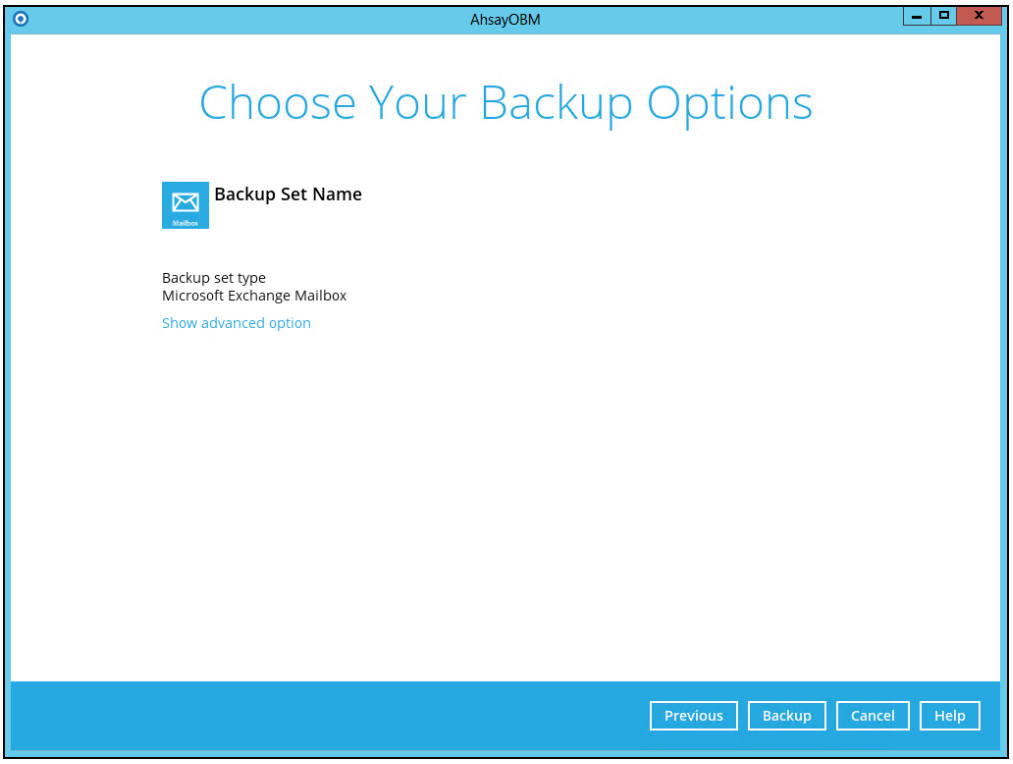
1. Log in to AhsayOBM.

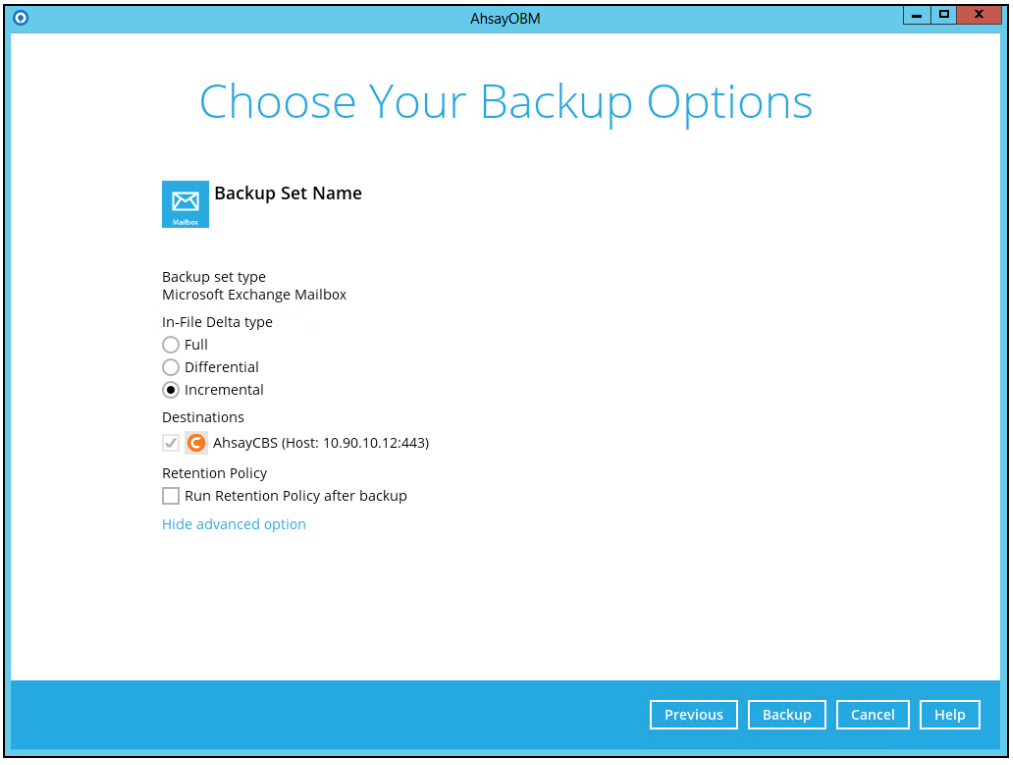
2. Click the Backup icon on the main interface of AhsayOBM.

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 the **Backup** button to start the backup job.

6 Performing Mail Level Restoration for Microsoft Exchange 2007/2010/2013

6.1 Restoring Mail Level Backup for Microsoft Exchange 2007/2010/2013

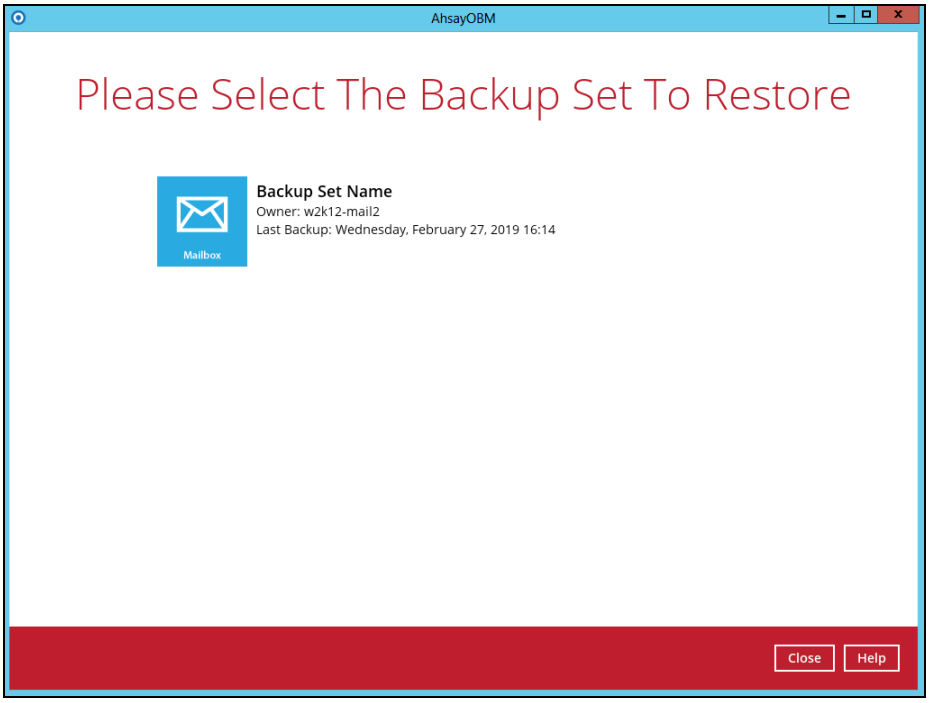
IMPORTANT NOTE:

- Due to limitations with MAPI, MAPI backup mode is no longer supported on the MS Exchange Server 2013 Cumulative Updated 23 and later, this will have an impact on the backup and restore:
  - Microsoft Exchange 2013 Mail Level backups will stop working.
  - All items already backed will no longer be recoverable to Microsoft Exchange 2013.

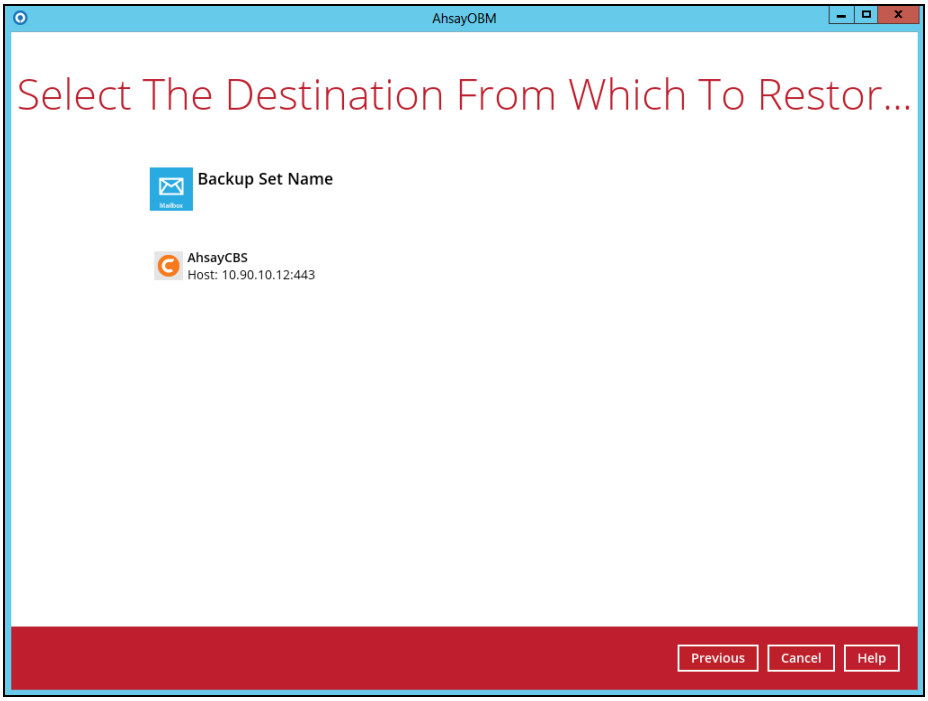
- Furthermore, MAPI backup mode will not be fully functional after the MS Exchange 2013 Cumulative Update 20 or later is applied as MAPI is unable to access the Public Folder items from MS Exchange 2013 Database. This will have an impact on the backup and restore of public folder items:
  - Inability to backup items in MS Exchange 2013 Public Folder Databases
  - Inability to **restore** items in MS Exchange 2013 Public Folder Databases

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

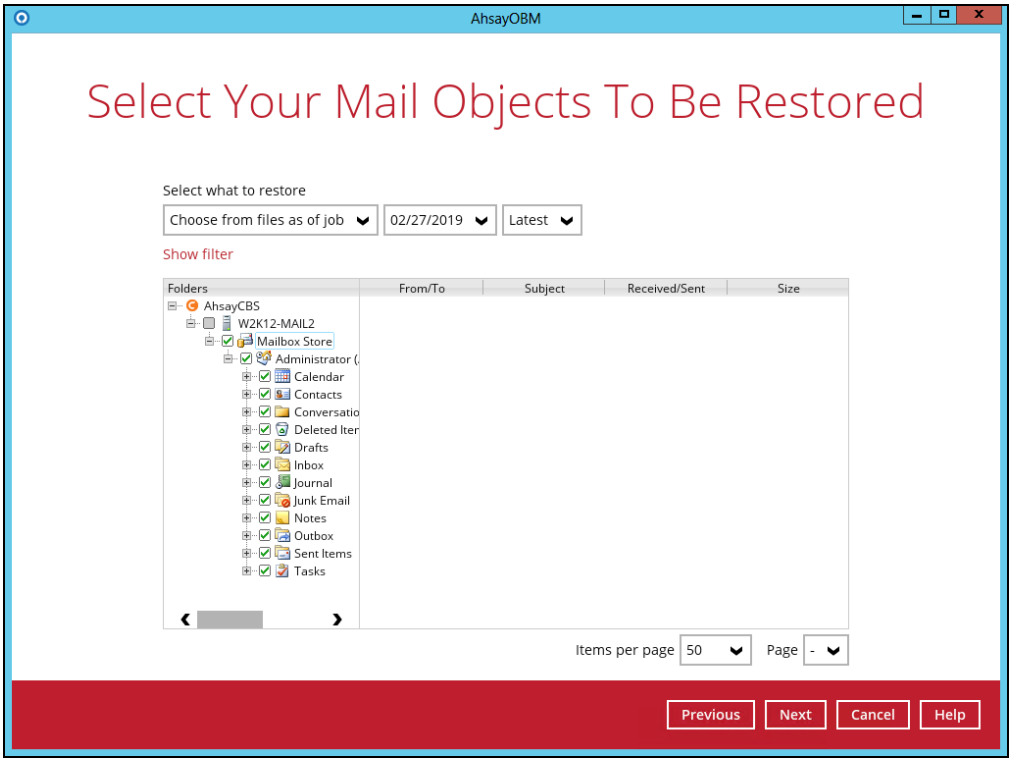
2. Select the backup set that you would like to restore mail from.



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



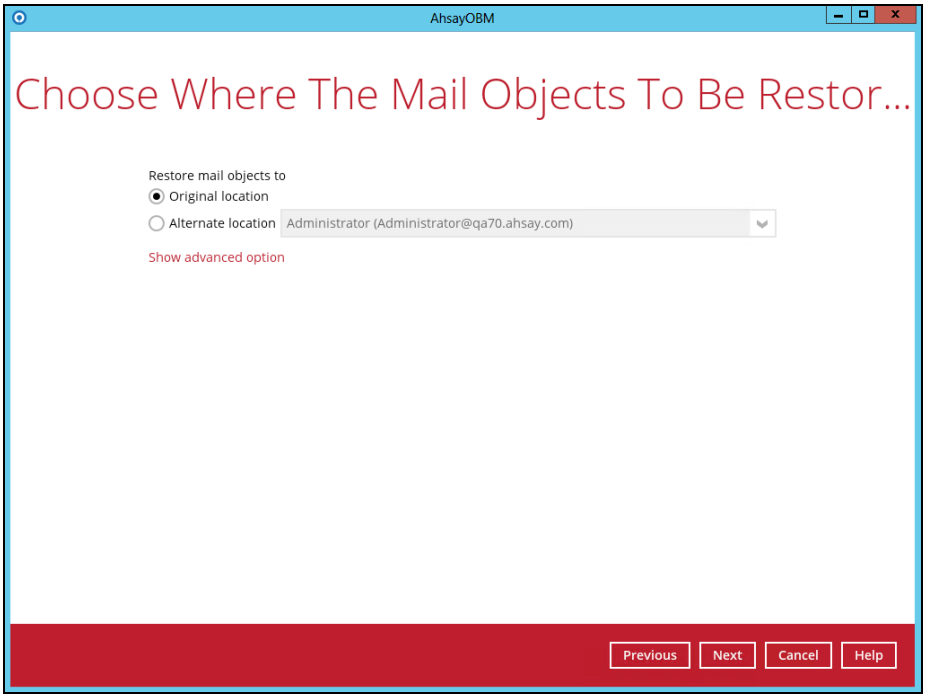
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



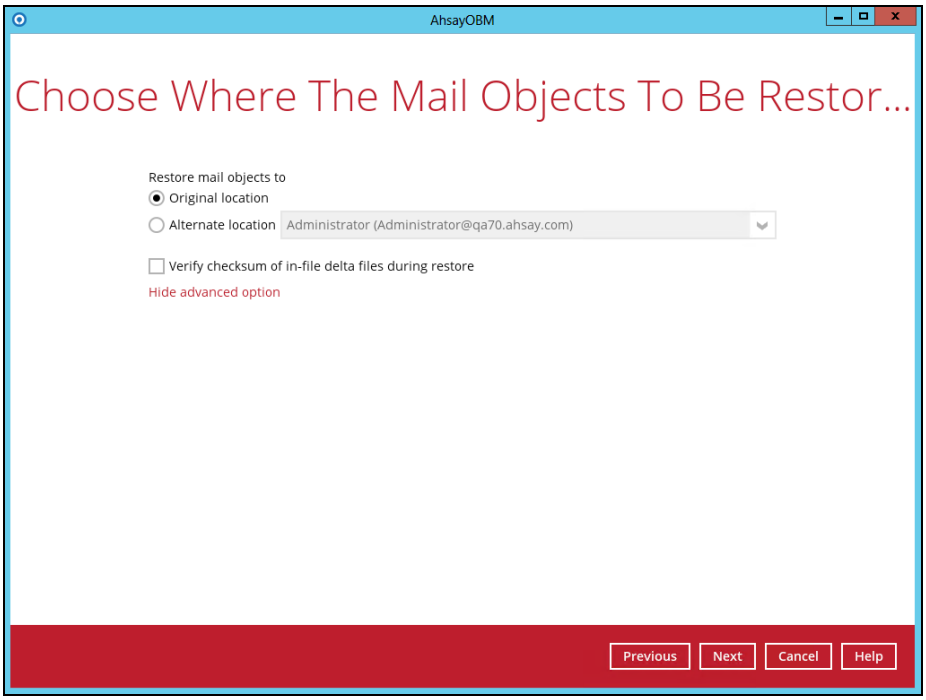
5. Select to restore the mail to their Original mailbox, or to an Alternate mailbox.

- Restore to Original Mailbox

Select the **Original location** option, then press **Next** to proceed.



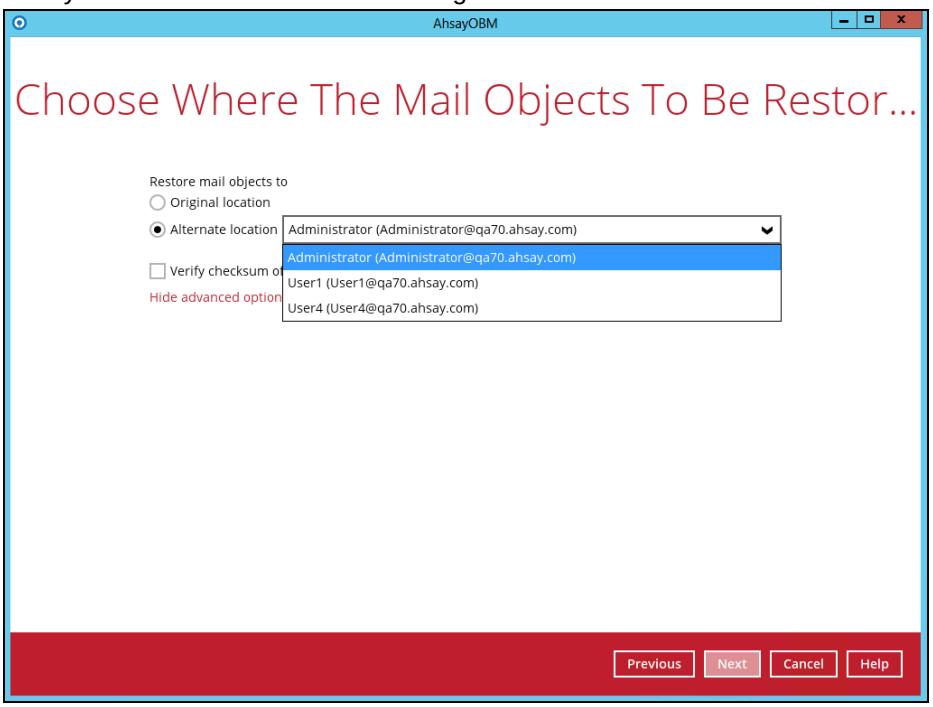
Click **Show advanced option** if you want to modify the Verify checksum of in-file delta files setting.



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

  In addition, you can also restore mailbox item(s) to a different Exchange server of the same version. In this case, the restoration should be triggered by the AhsayOBM on the destination Exchange server.



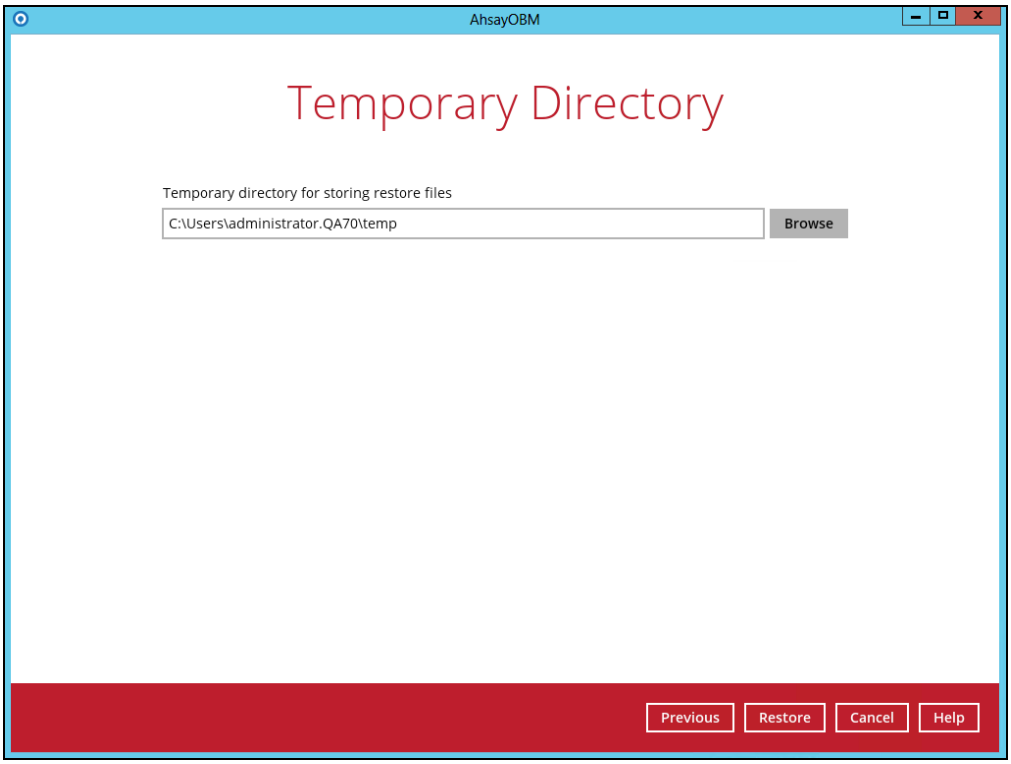
Limitation

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 attempt to restore mailbox item(s) to their respective destination folder based on the translation listed below.

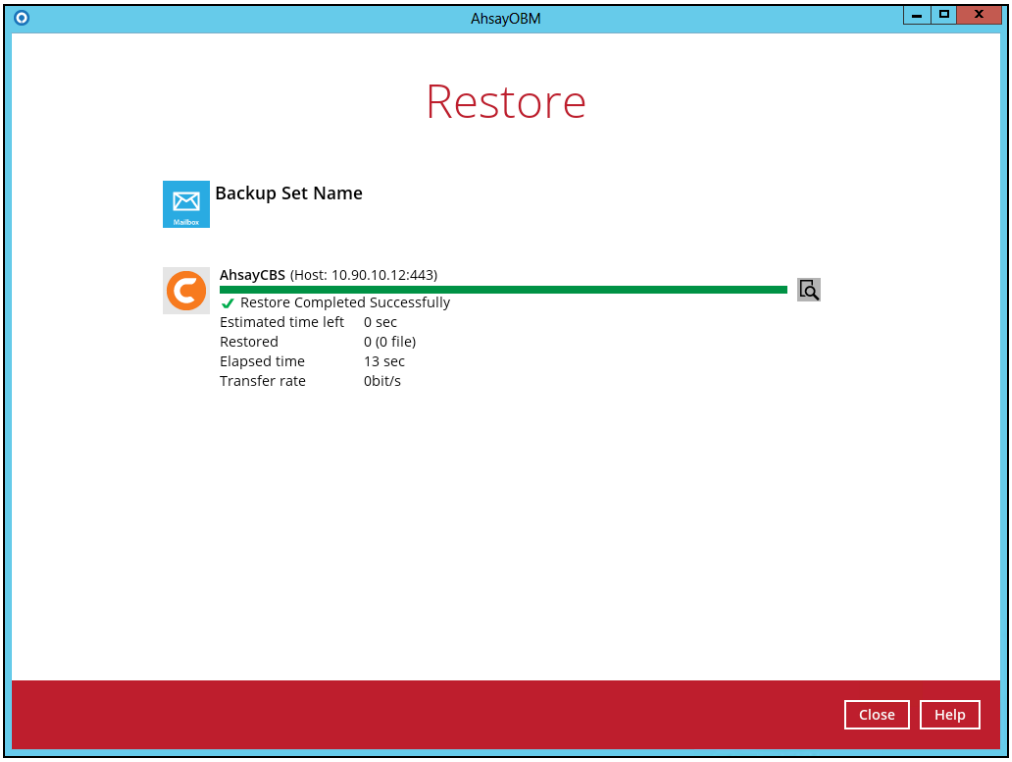
For folders such as 'Calendar' or 'Notes', a new folder 'Calendar' or 'Notes' will be created.

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

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.



7 Performing Mail Level Backup for Microsoft Exchange 2013 (MAPI) in Database Availability Group (DAG)

7.1 License Requirement to Back up Exchange Mailboxes in DAG environment

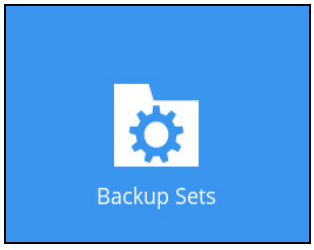
Each member in the DAG requires separate license for Microsoft Exchange Mailbox Add-on Module. One license will be deducted from each installation of the AhsayOBM on the DAG environment. Please check with your backup service provider if more Microsoft Mailbox Add-On module is required.

7.2 Creating Mail Level Backup Set for Microsoft Exchange 2013 in Database Availability Group (DAG)

IMPORTANT NOTE:

- Creation of MAPI Mail Level Backup Set for Microsoft Exchange 2013 Cumulative Update 23 or later is no longer supported, to backup MS Exchange 2013 Cumulative Update 23 or later, an EWS backup set must be created. Please refer to the **Microsoft Exchange 2013/2016/2019 (EWS) Mail Level Backup and Restore Guide**.
- Creation of MAPI Mail Level Backup Set for Microsoft Exchange 2013 Cumulative Update 23 or earlier is still supported for AhsayOBM v8.1.0.24 to v8.1.1.174 and v8.3.0.30 to v8.3.0.110.
- From AhsayOBM v8.3.0.111 or later the default backup mode for all versions of MS Exchange 2013 is EWS mode. There is no option on AhsayOBM to select MAPI mode. If MAPI mode is required for Microsoft Exchange 2013 Cumulative Update 23 or earlier, then the backup set can only be created using the AhsayCBS Web Console. Please see the instructions on **Appendix A: Creating Mail Level Backup Set for Microsoft Exchange 2013 using CBS Web Console**.
- From AhsayOBM v8.5.4.x or later, creation of mail level backup set for Microsoft Exchange 2010 in Database Availability Group has been desupported. However if there are existing backup sets created prior to upgrading to AhsayOBM v8.5.4.x or later, the existing Microsoft Exchange 2010 DAG backup set will still be available.

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

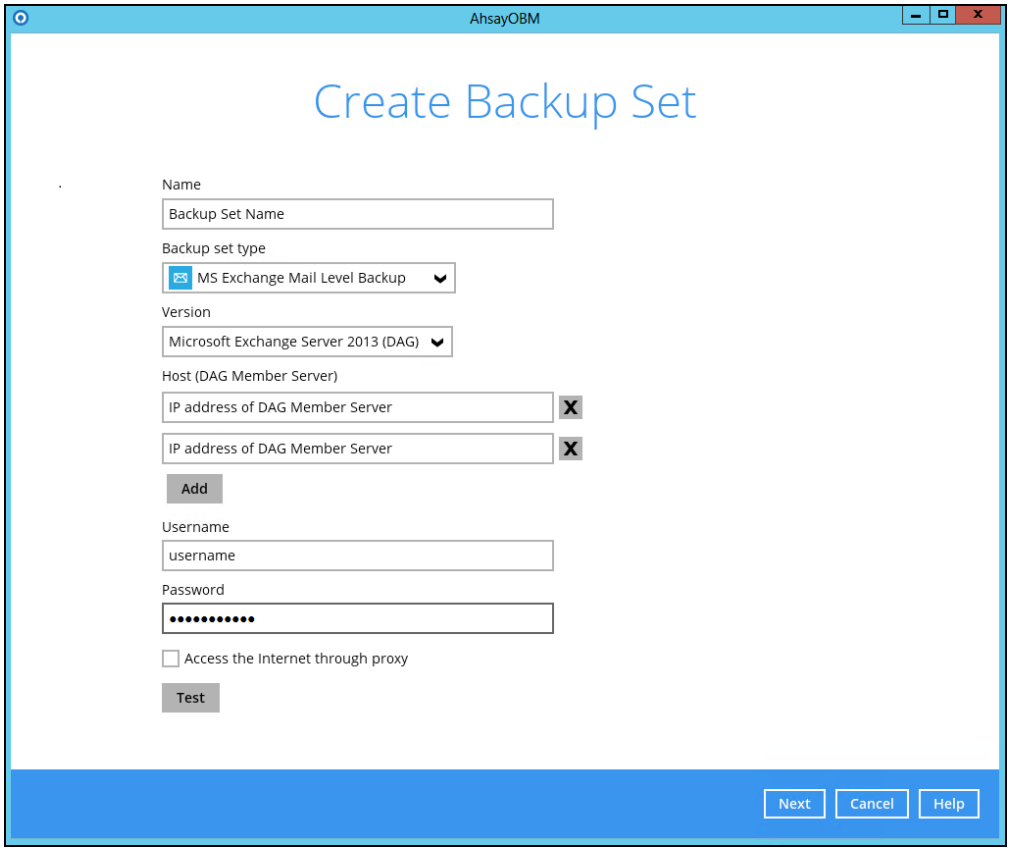


2. Create a new backup set by clicking the "**+**" icon next to **Add new backup set**.

3. Select the Backup set type as **MS Exchange Mail Level Backup** and choose the correct Exchange Server version with "Database Availability Group". Enter the following:

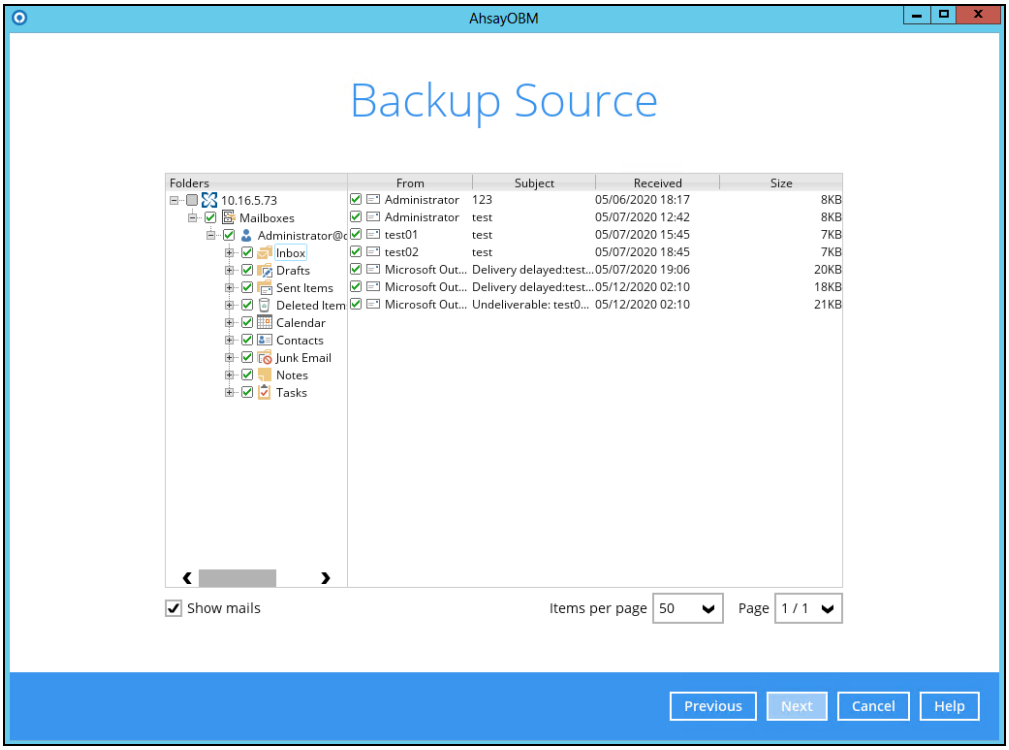
   - name of your new backup set
   - hostname of all the DAG Member Server
   - username and password of the Windows user account used for backup

   Check "Access the internet through proxy" if required. Click **Next** to proceed.

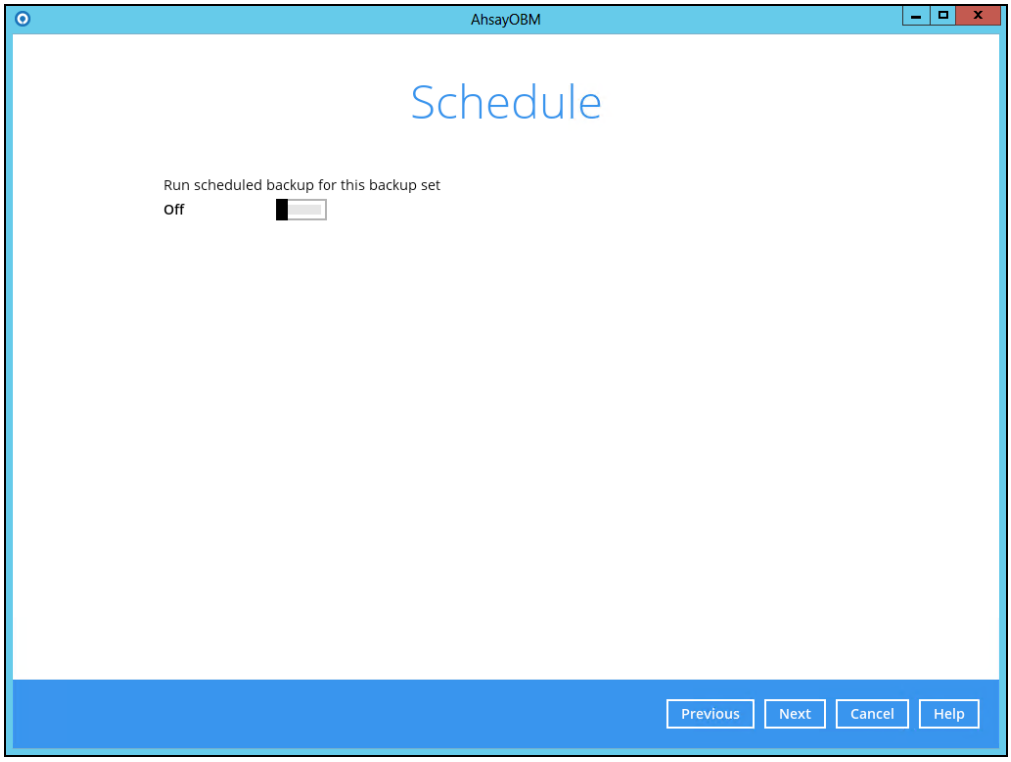


4. In the **Backup Source** menu, select the Mailbox Database for backup.

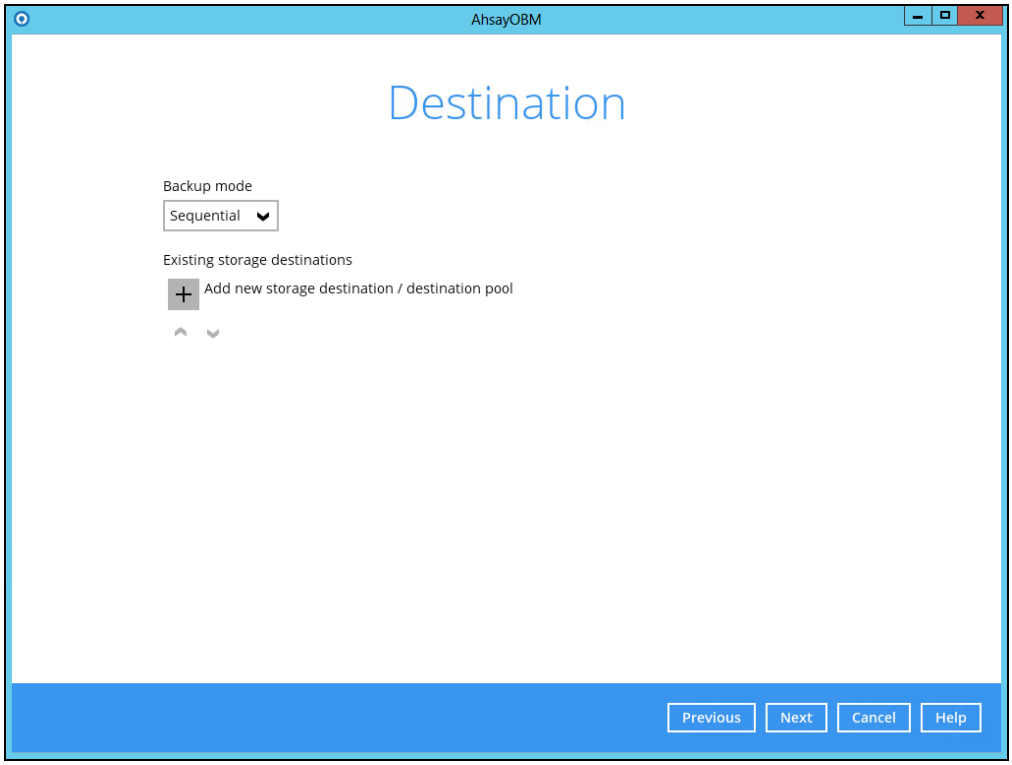
   You can click to expand the mailbox database to select which mailbox to back up, and then click **Show mails** to select individual mail to back up. Click **Next** to proceed when you are done.



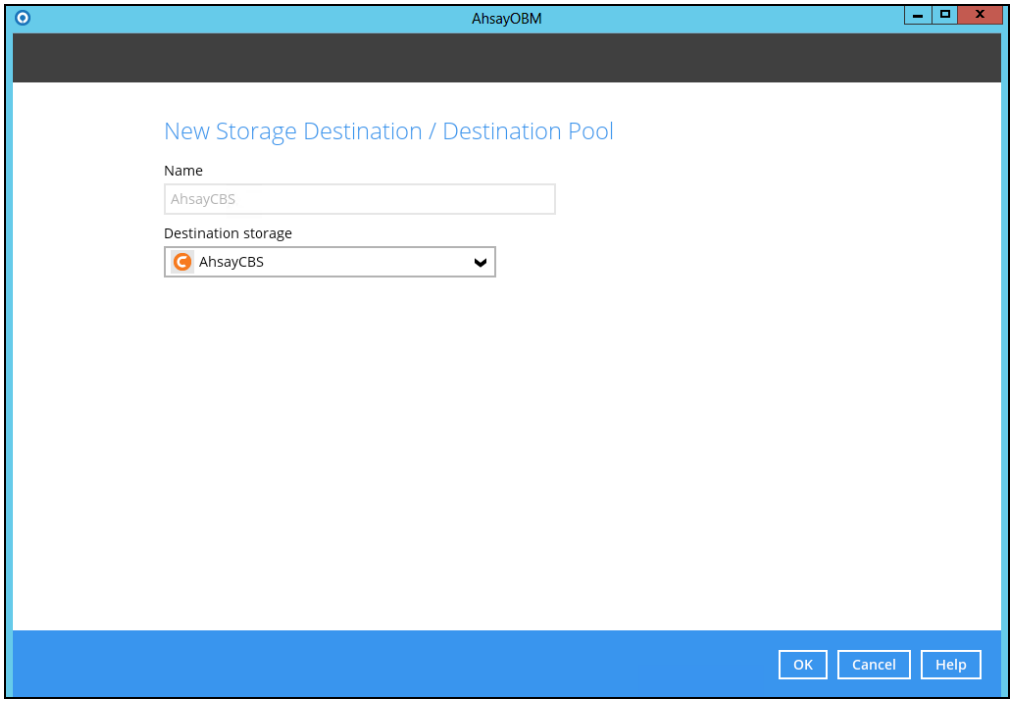
5. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default the **Run scheduled backup for this backup set** option is disabled. Enable it then click the "**+**" icon next to **Add new schedule**. Click **Next** to proceed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



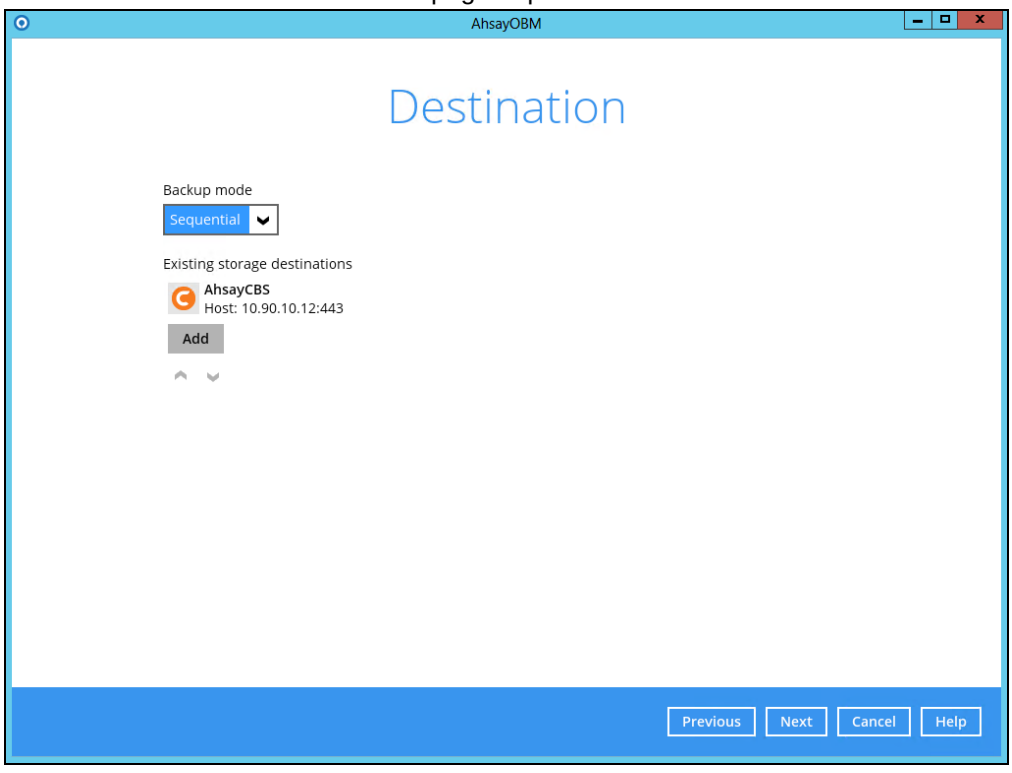
6. In the Destination menu, select a backup destination where the backup email will be stored. Click the "**+**" icon next to **Add new storage destination / destination pool**.



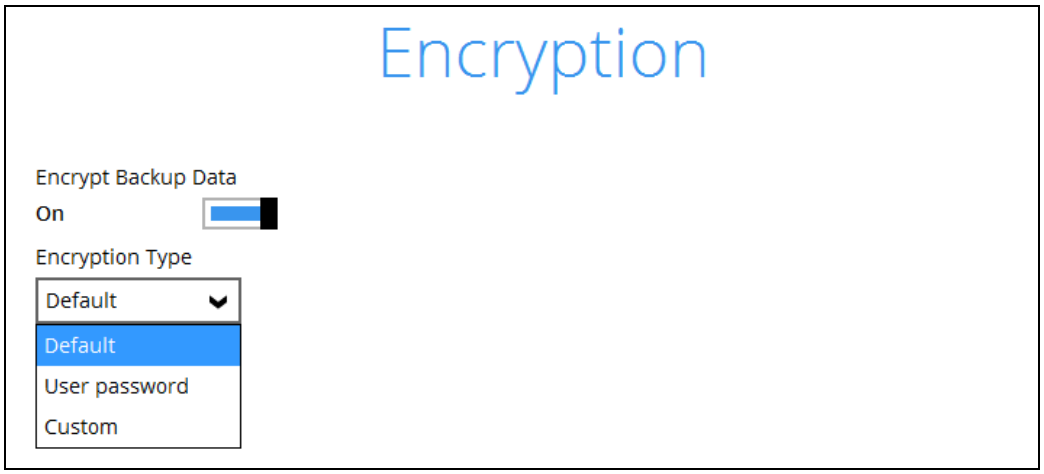
7. Select the destination storage, then click **OK** to proceed.



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

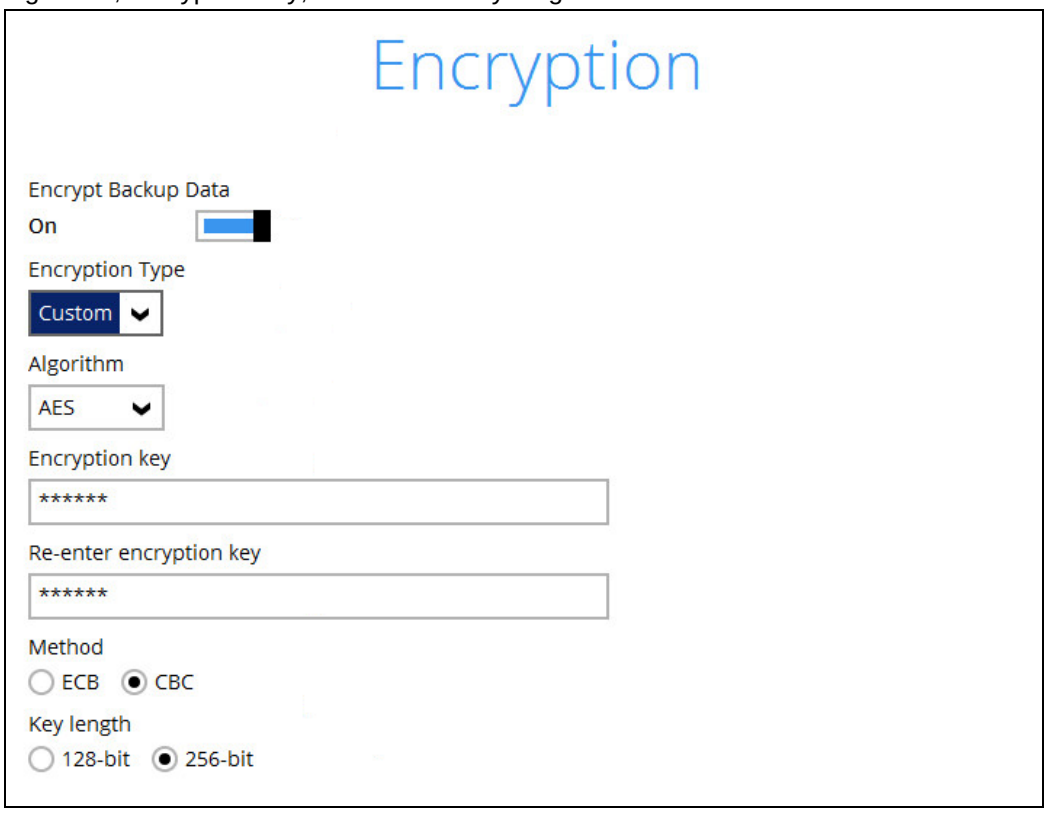


9. In the Encryption window, by default the **Encrypt Backup Data** option is enabled with an encryption key preset by the system which provides the most secure protection.



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.

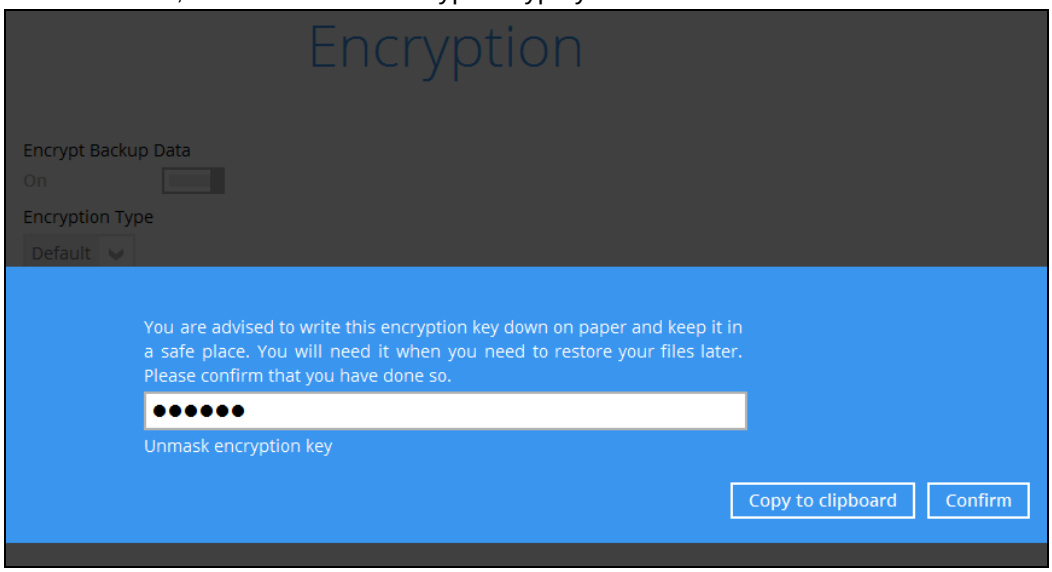


Note: *For best practice on managing your encryption key, refer to the following article.*

http://wiki.ahsay.com/doku.php?id=public:8015_faq:best_practices_for_managing_encryption_key

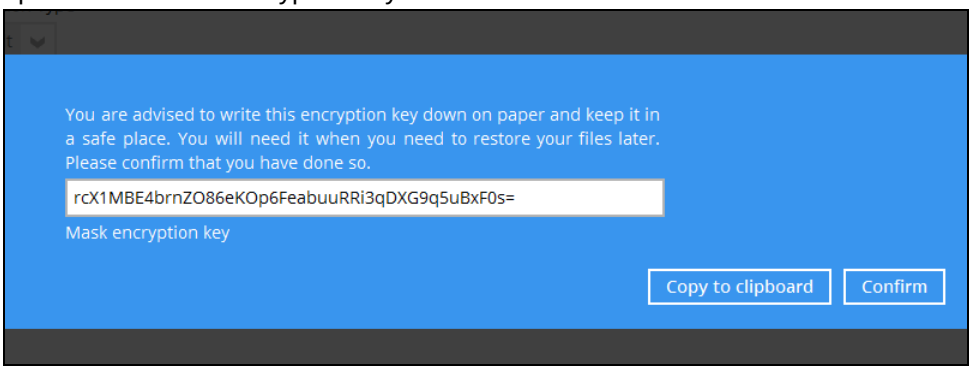
Click **Next** when you are done setting.

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

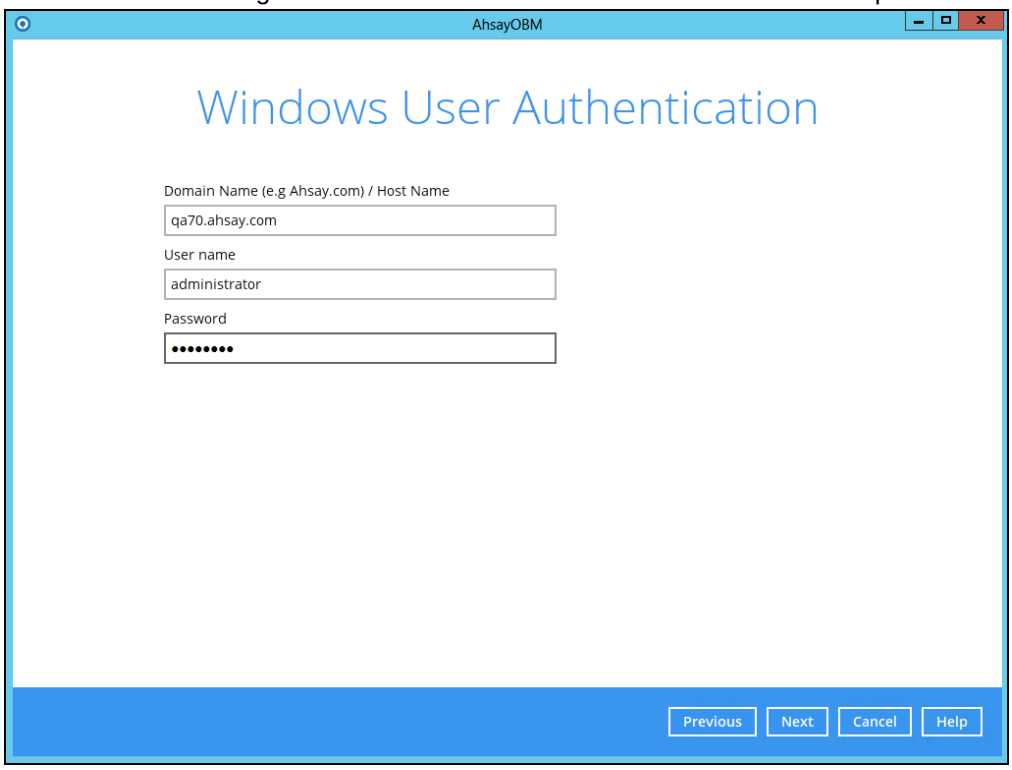
- **Unmask encryption key** – The encryption key is masked by default. Click this option to show the encryption key.



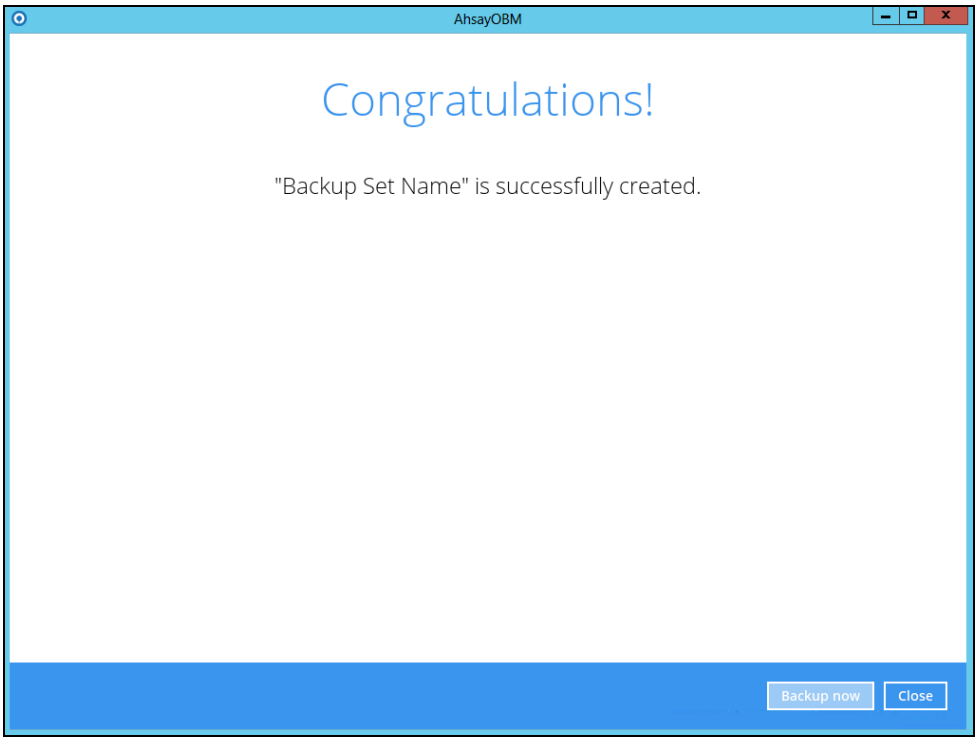
- **Copy to clipboard** – Click to copy the encryption key, then you can paste it in another location of your choice.

- **Confirm** – Click to exit this pop-up window and proceed to the next step

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

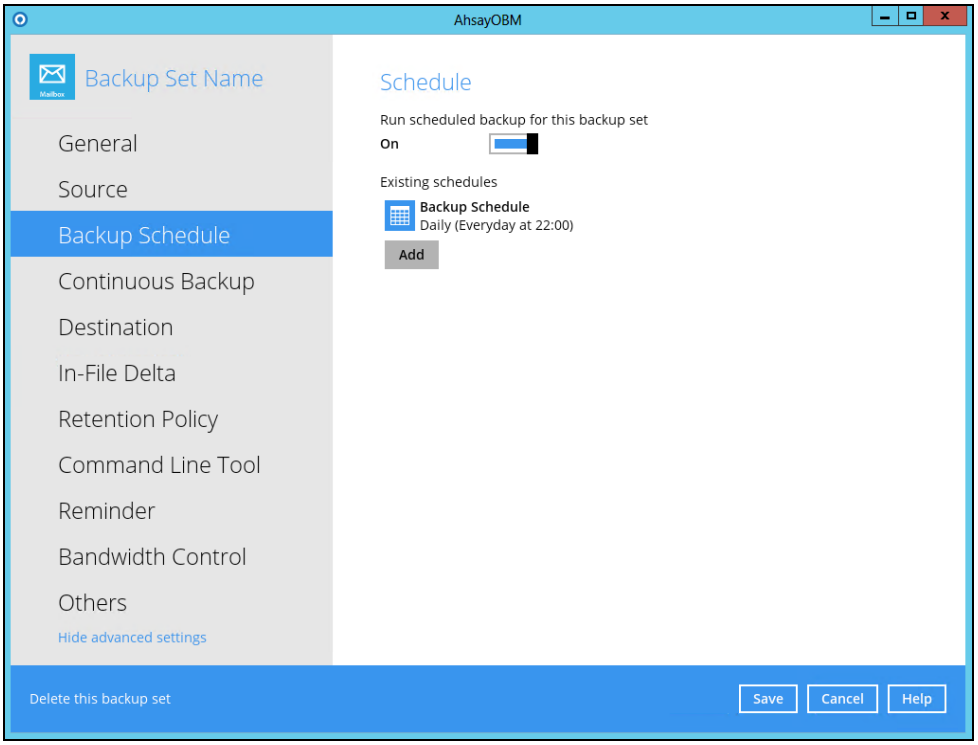


12. The following screen shows when the new backup set is created successfully. Backup will run automatically at the configured scheduled time.

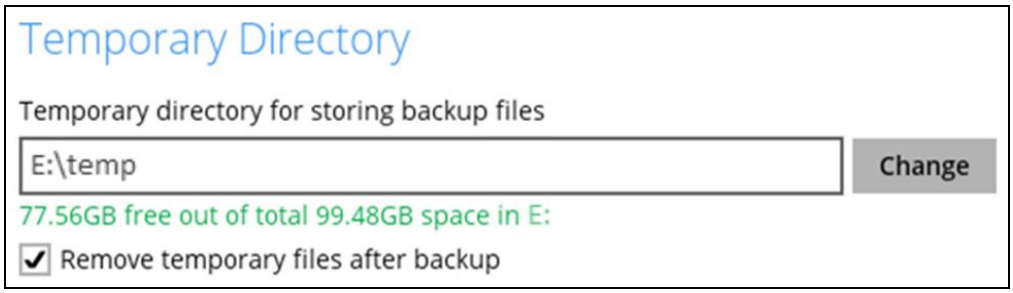


You may click **Backup now** to start a backup immediately, however, manual backup will not be counted as part of the DAG backup cycle. For more information, refer to Scheduled Backup for Data Availability Group (DAG) Option.

13. On all other Exchange Servers within the same DAG, open the AhsayOBM and click the same backup set, and make sure the **Run scheduled backup for this backup set** is turned on in the **Backup Schedule** menu. Make sure you save the setting before exiting the application.



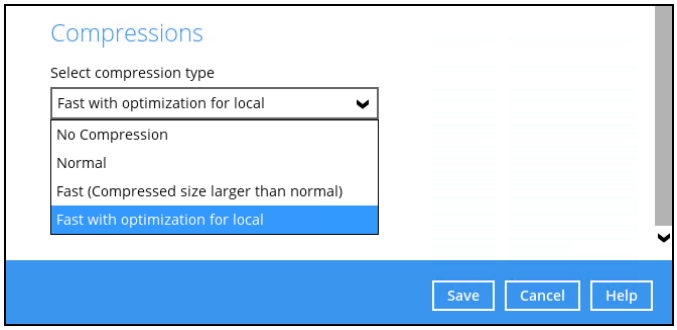
14. It is highly recommended to set the **temporary directory** to another location other than Drive C: (e.g. Drive E:). To do this, go to **Backup Sets > Others > Temporary Directory** and click the **Change** button to browse for another location.



15. Optional: Select your preferred **Compression** type. By default, the compression type is Fast with optimization for local.

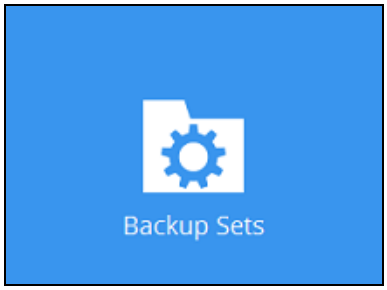
    Go to **Others > Compressions**, then select from the following:

    - No Compression
    - Normal
    - Fast (Compressed size larger than normal)
    - Fast with optimization for local



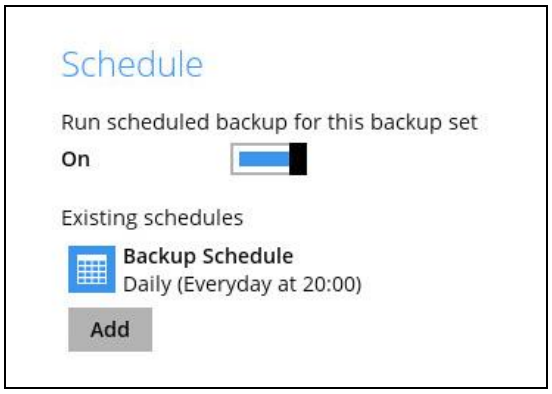
7.3 Configure Backup Schedule for Automated Backup

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

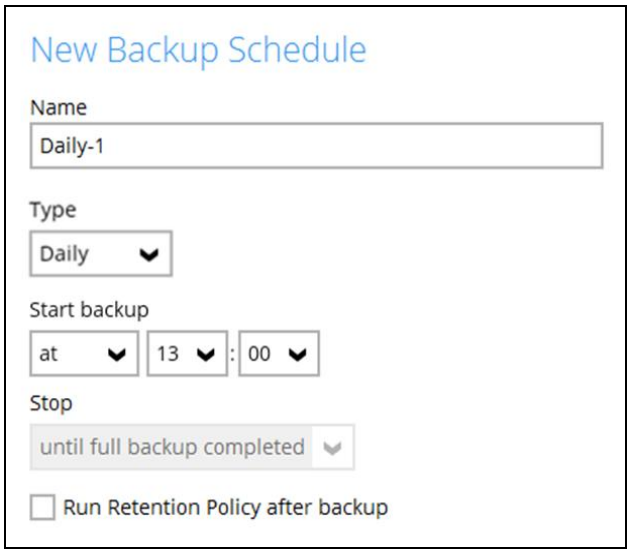


2. All backup sets will be listed. Select the backup set that you would like to create a backup schedule for.

3. Go to the **Backup Schedule** tab. If the **Run scheduled backup for this backup set** option is off, switch it **On**. Existing schedules will be listed if there is any. Click the **Add** button to add a new backup schedule.



4. The New Backup Schedule window will appear.

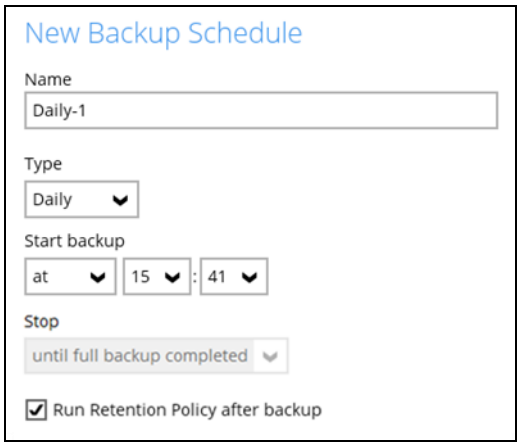


5. In the New Backup Schedule window, configure the following backup schedule settings.

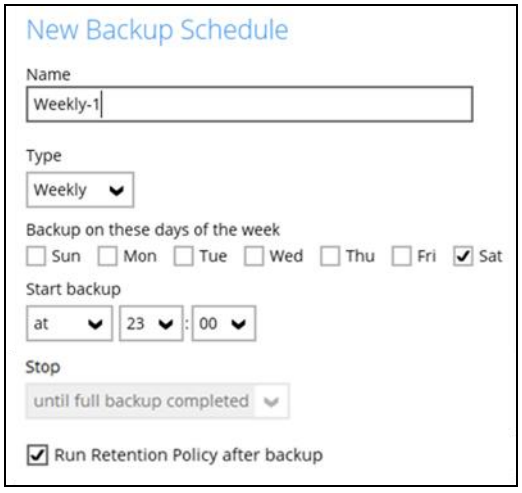
   - **Name** – the name of the backup schedule.

- **Type** – the type of backup schedule. There are four (4) different types of backup schedule: Daily, Weekly, Monthly and Custom.

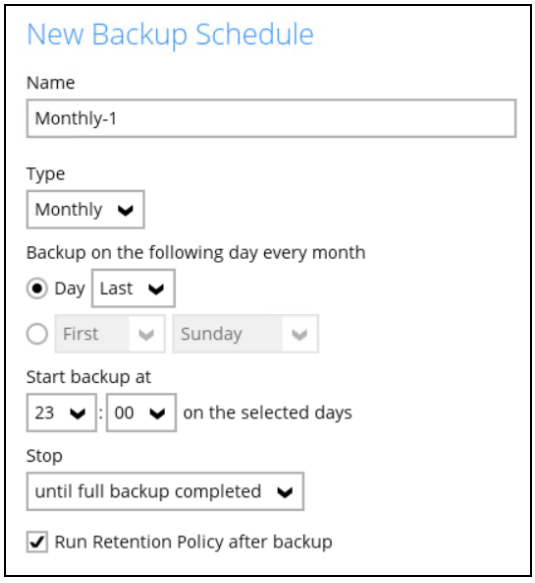
  - **Daily** – the time of the day or interval in minutes/hours which the backup job will run.



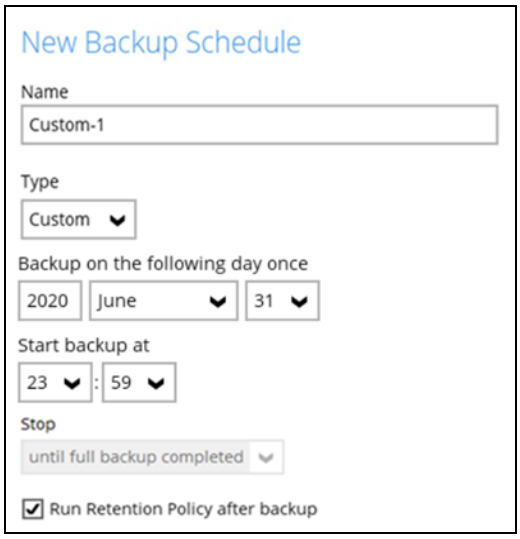
  - **Weekly** – the day of the week and the time of the day or interval in minutes/hours which the backup job will run.



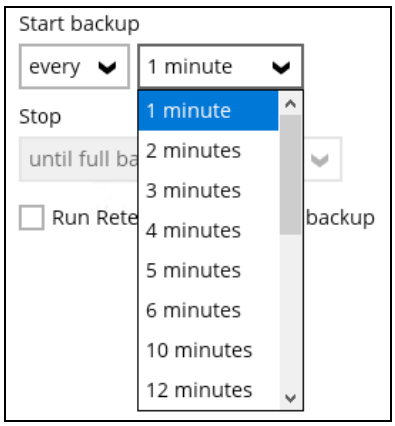
  - **Monthly** – the day of the month and the time of that day which the backup job will run.

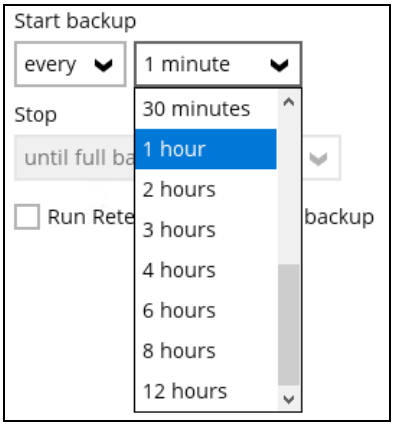


- **Custom** – a specific date and the time of that date which the backup job will run.



- **Start backup** – the start time of the backup job.
  - **at** – this option will start a backup job at a specific time.
  - **every** – this option will start a backup job in intervals of minutes or hours.





Here is an example of a backup set that has a periodic and normal backup schedule.

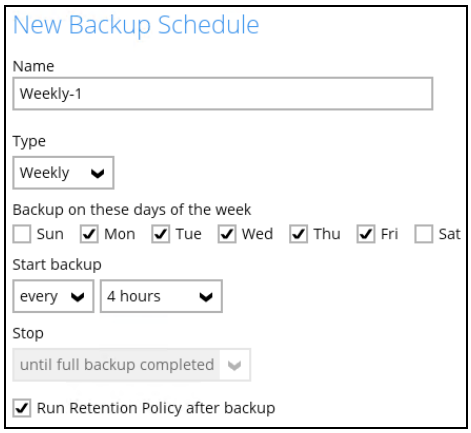


Figure 1.1

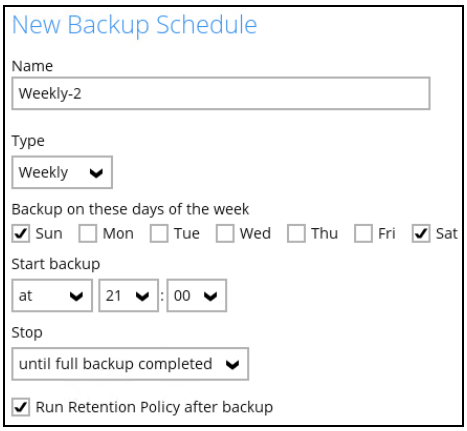


Figure 1.2

Figure 1.1 – Periodic backup schedule runs every 4 hours from Monday – Friday during business hours

Figure 1.2 – Normal backup schedule runs at 21:00 or 9:00 PM on Saturday and Sunday on weekend non-business hours

- **Stop** – the stop time of the backup job. This only applies to schedules with start backup "at" and is not supported for periodic backup schedule (start backup "every")
  - **until full backup completed** – this option will stop a backup job once it is complete. This is the configured stop time of the backup job by default.
  - **after (defined no. of hrs.)** – this option will stop a backup job after a certain number of hours regardless of whether the backup job has completed or not. This can range from 1 to 24 hrs.

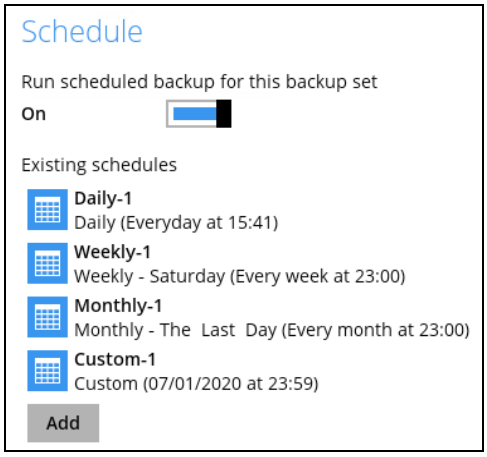
    The number of hours must be enough to complete a backup of all files in the backup set. For small files in a backup, if the number of hours is not enough to back up all files, then the outstanding files will be backed up in the next backup job. However, if the backup set contains large files, this may result in partially backed up files.

    For example, if a backup has 100GB file size which will take approximately 15 hours to complete on your environment, but you set the "stop" after 10 hours, the file will be partially backed up and cannot be restored. The next backup will upload the files from scratch again.

    The partially backed up data will have to be removed by running the data integrity check.

    As a general rule, it is recommended to review this setting regularly as the data size on the backup machine may grow over time.
- **Run Retention Policy after backup** – if enabled, the AhsayOBM will run a retention policy job to remove files from the backup destination(s) which have exceeded the retention policy after performing a backup job. To save hard disk quote in the long run, it is recommended to enable this option.

As an example, the four types of backup schedules may look like the following:



6. Click **Save** to confirm your settings once done.

8 Performing Mail Level Restoration for Microsoft Exchange 2013 (MAPI) in Database Availability Group (DAG)

IMPORTANT NOTE:

- Due to limitations with MAPI, MAPI backup mode is no longer supported on the MS Exchange Server 2013 Cumulative Updated 23 and later, this will have an impact on the backup and restore:
  - Microsoft Exchange 2013 Mail Level backups will stop working.
  - All items already backed will no longer be recoverable to Microsoft Exchange 2013.

- Furthermore, MAPI backup mode will not be fully functional after the MS Exchange 2013 Cumulative Update 20 or later is applied as MAPI is unable to access the Public Folder items from MS Exchange 2013 Database. This will have an impact on the backup and restore of public folder items:
  - Inability to backup items in MS Exchange 2013 Public Folder Databases
  - Inability to **restore** items in MS Exchange 2013 Public Folder Databases

8.1 Pre-restoration requirements

Refer to the following steps to restore individual items to the active database on the relevant Microsoft Exchange server within the DAG.

The mail level restoration should be performed on the active database only. You can identify the Exchange server with the active database from the Exchange Management Shell by following the steps below.

Type the following command in the Exchange Management Shell.

```
Get-MailboxDatabase | ft name, server
```

It will show which Exchange server is hosting the active mailbox database. In the following case, Mailbox Database 0225652647 is hosted on W2K12-MAIL1, while Mailbox Database 1667435441 is hosted on W2K12-MAIL2.

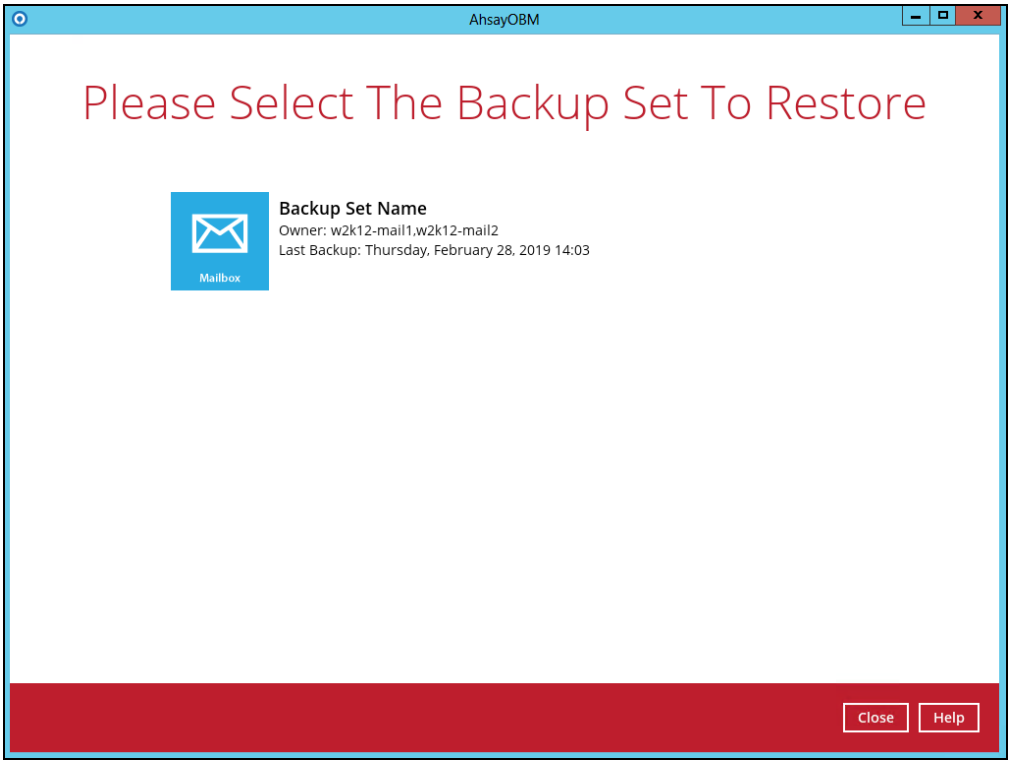
```
[PS] C:\>Get-MailboxDatabase | ft name, server

Name                            Server
----                            ----
Mailbox Database 0225652647     W2K12-MAIL1
Mailbox Database 1667435441     W2K12-MAIL2
```

When you can identify which Exchange server hosted the active database, you can logon to that Exchange server to restore the database.

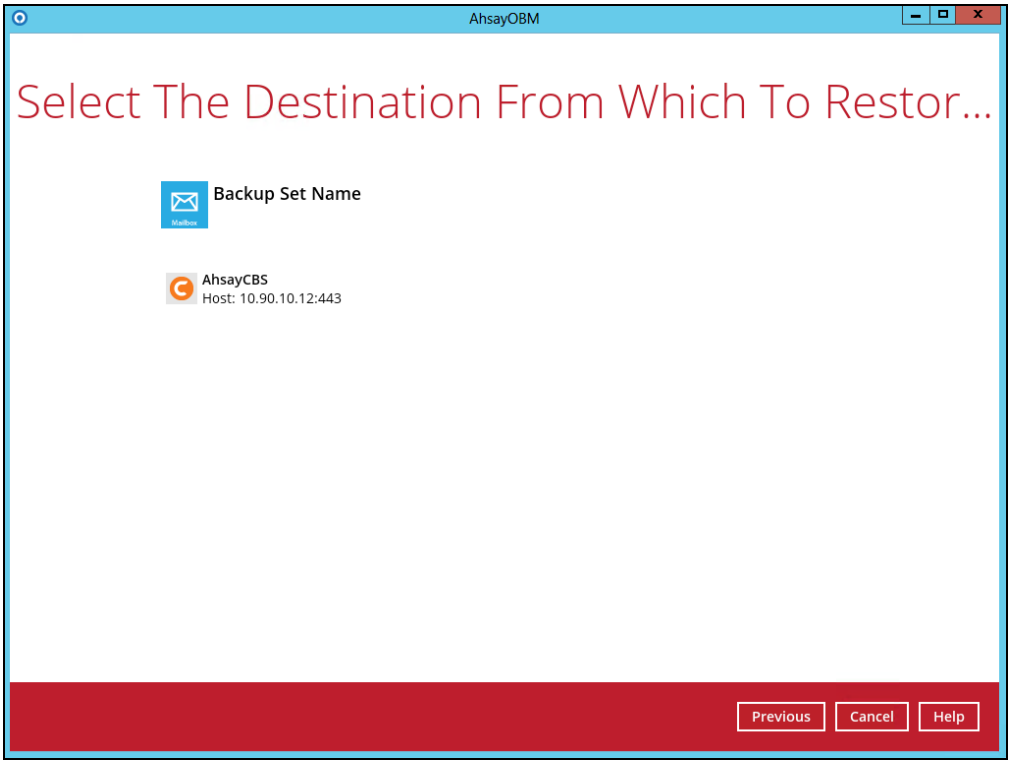
8.2 Restoring Mail for Exchange Server in DAG

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

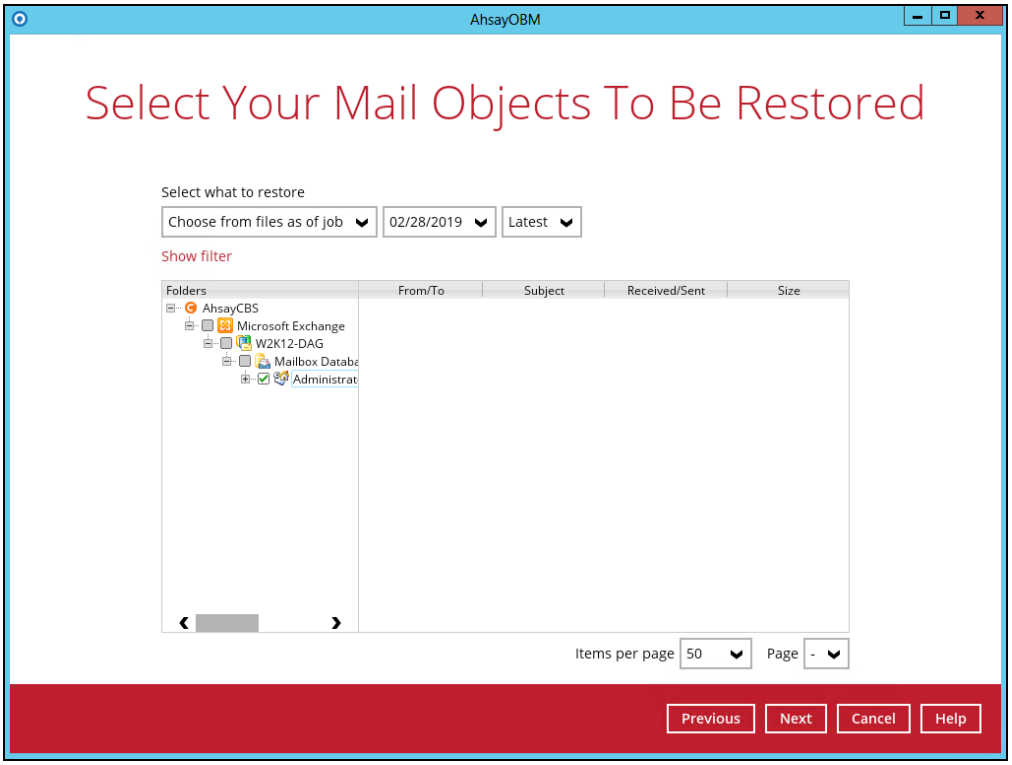
2. Select the backup set that you would like to restore mail from.



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



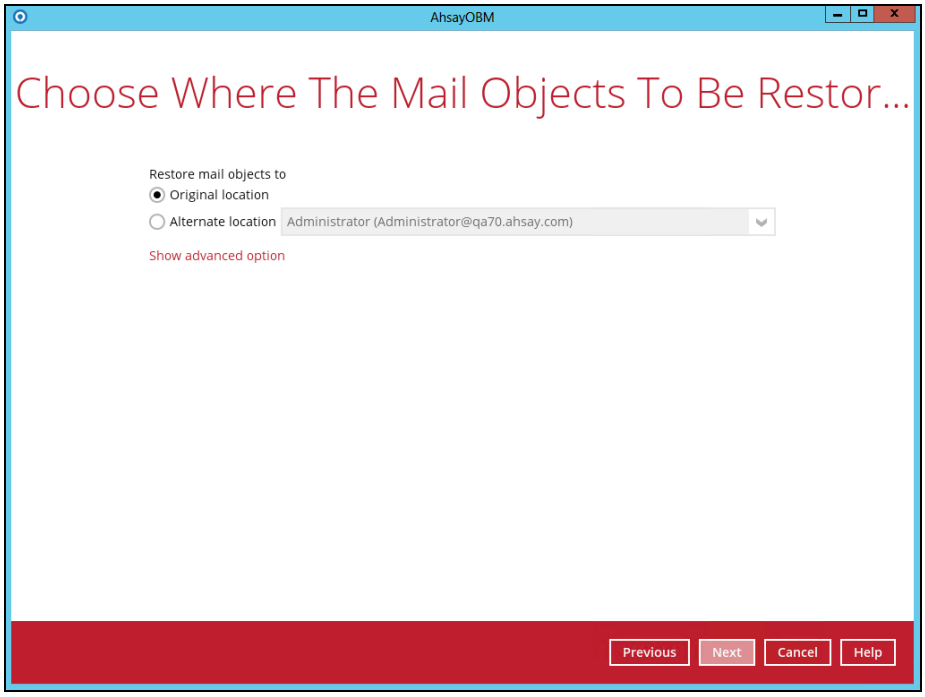
4. Click to expand the menu tree to select which mailbox to restore. You can also select mail item(s) from a specific backup job or all mail items that you have backed up to restore. Click **Next** to proceed.



5. Select to restore mail to their Original mailbox, or to an Alternate mailbox.

Restore to Original Mailbox

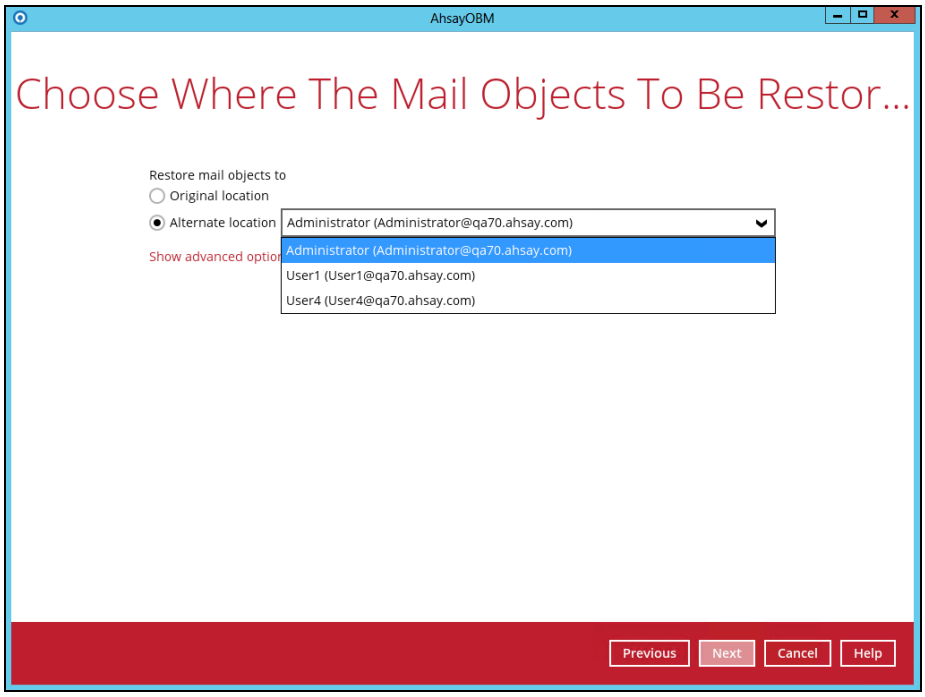
Select the **Original location** option, then press **Next** to proceed.



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 and the desired mailbox destination, then press Next to proceed.

In addition, you can also restore mailbox item(s) to a different Exchange server with the same version of Exchange server installed. In this case, the restoration should be triggered by the AhsayOBM on the destination Exchange server.



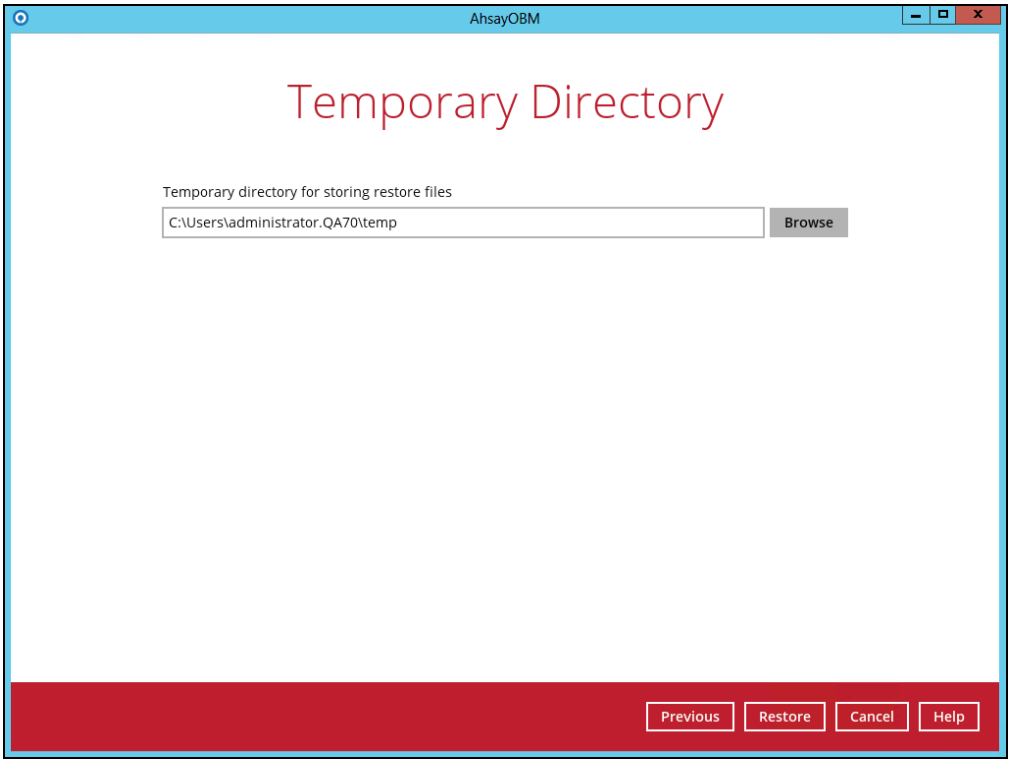
Limitation

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 attempt to restore item(s) to their respective destination folder based on the translation listed below.

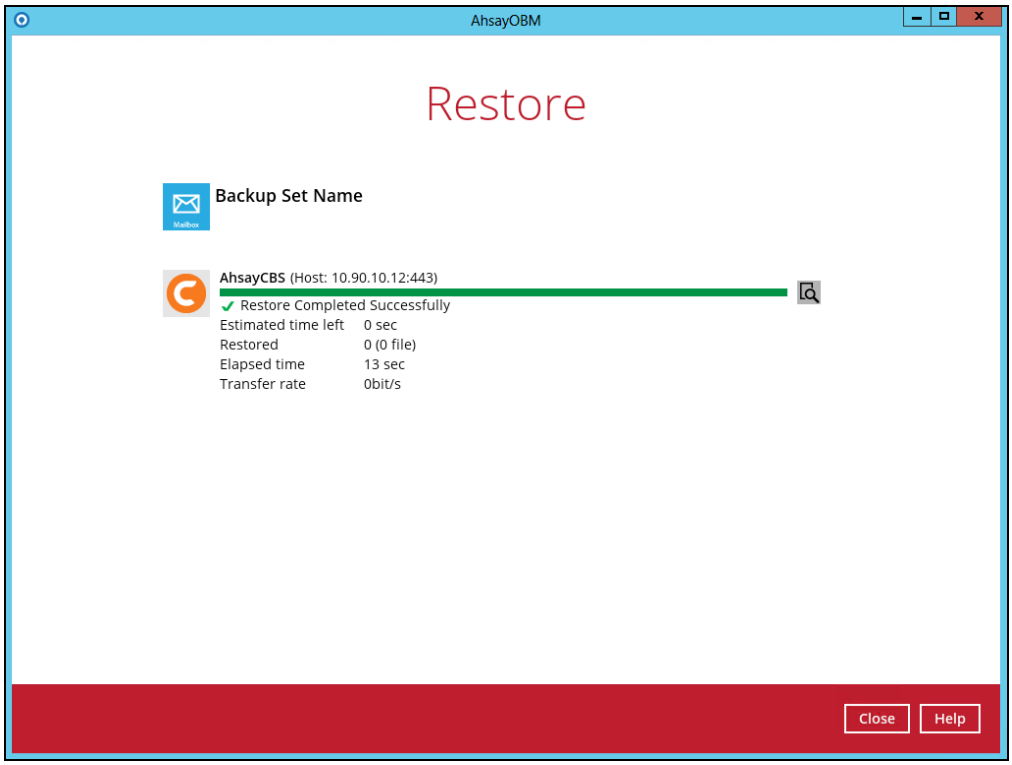
For folders such as 'Calendar' or 'Notes', a new folder 'Calendar' or 'Notes' will be created.

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

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.



9 Contact Ahsay

9.1 Technical Assistance

To contact Ahsay support representatives for technical assistance, visit the Partner Portal:
https://www.ahsay.com/partners/

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

9.2 Documentation

Documentations for all Ahsay products are available at:
https://www.ahsay.com/jsp/en/downloads/ahsay-downloads_documentation_guides.jsp

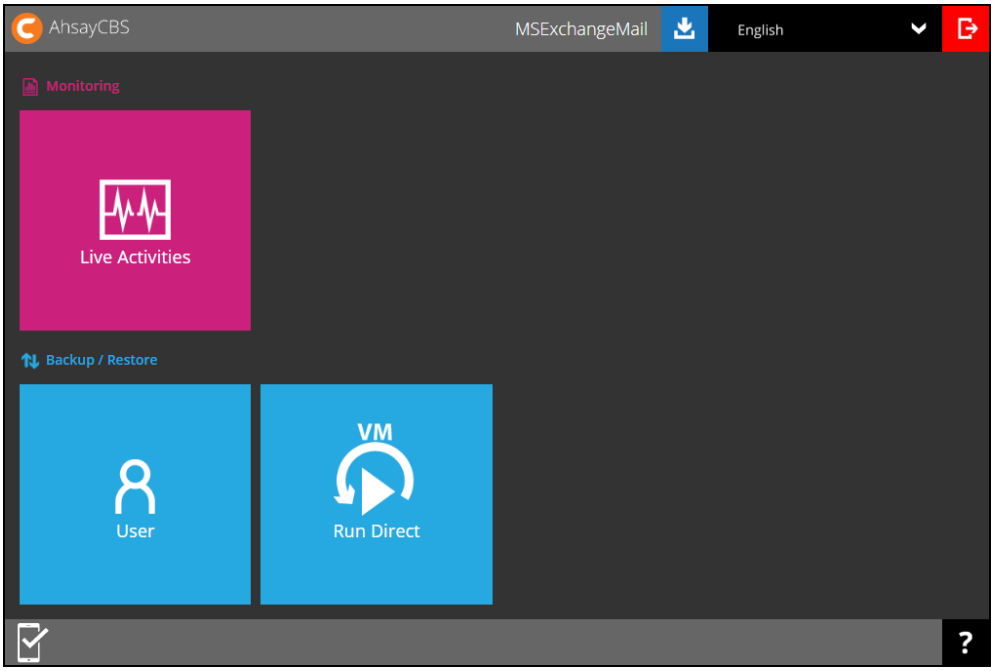
You can send us suggestions for improvements or report on issues in the documentation by contacting us at:
https://www.ahsay.com/partners/

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

Appendix

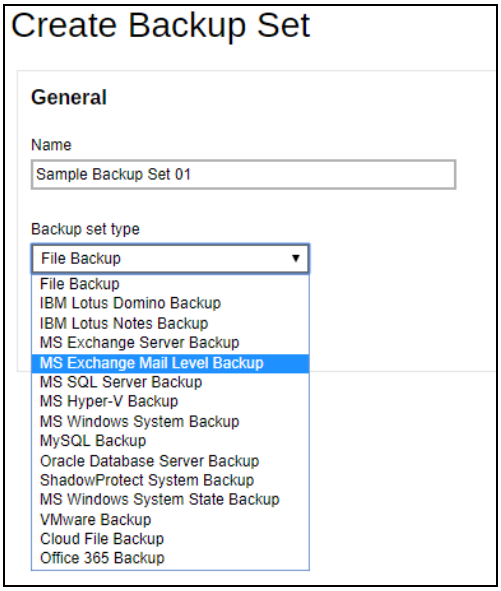
Appendix A: Creating Mail Level Backup Set for Microsoft Exchange 2013 using CBS Web Console

1. Log in to the User Web Console.
2. Click the User icon on the User Web Console landing page.

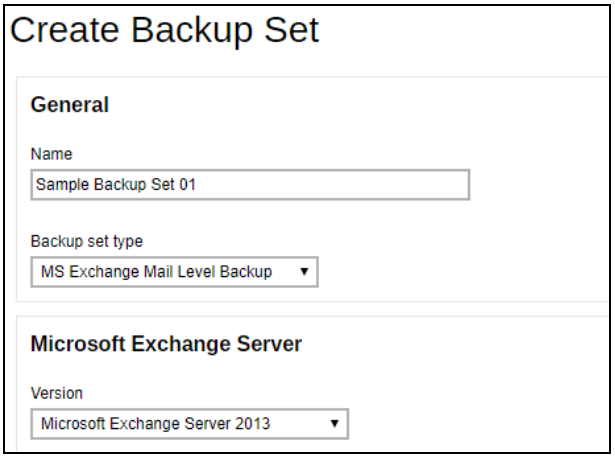


3. On the **Backup Set** menu, click the **+** icon highlighted to create a bcakup set.

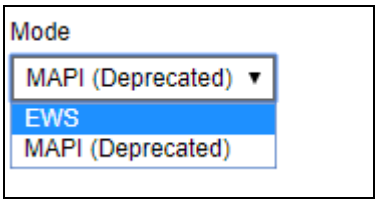
4. Select the type as **MS Exchange Mail Level Backup**, then name the backup set



5. Select the Exchange Server version. Make sure the version selected is correct.

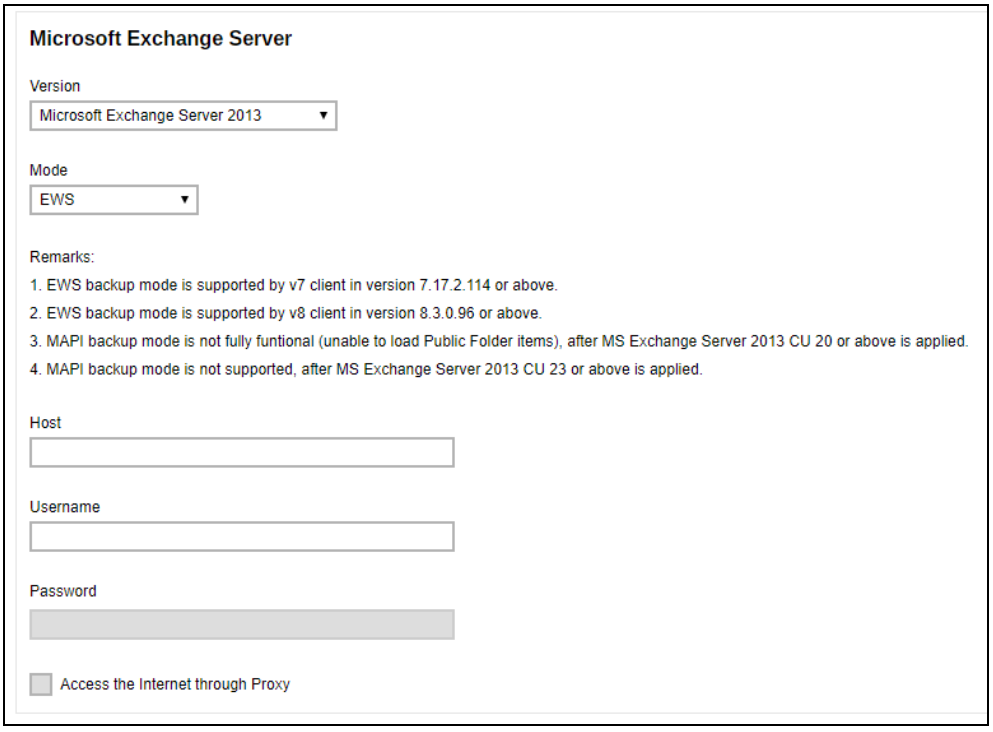


For Microsoft Exchange Server 2013, you can pick a Mode, **EWS** and **MAPI (Deprecated)**. There are also available remarks for using the backup modes.

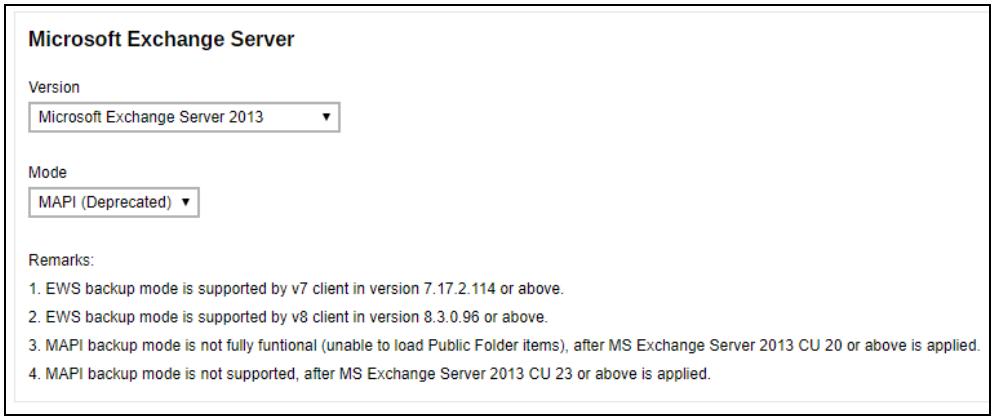


If you pick the EWS backup mode, the following fields will be available:

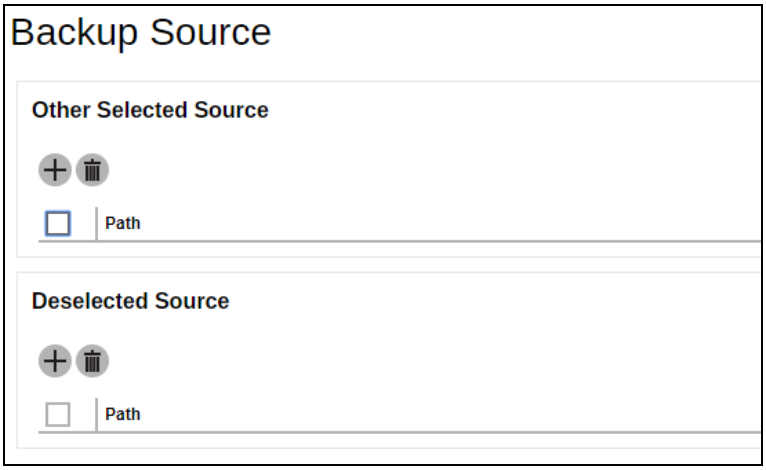
- Host
- Username
- Password (Disabled)

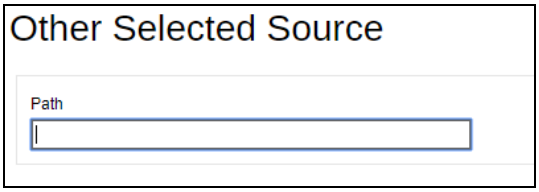


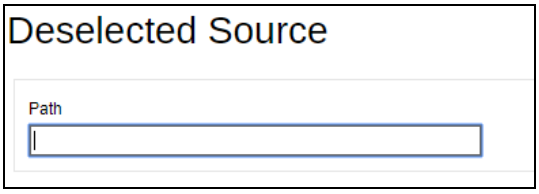
However, if you pick the MAPI (Deprecated) the availale fields for EWS will not be avaialble.



6. Select the Backup Source. Input the path on Other Select Source by clicking the [+] sign. On the other hand, if you want to include a path where it will not be included in the backup, input the path on the Deselected Source by clicking the [+].





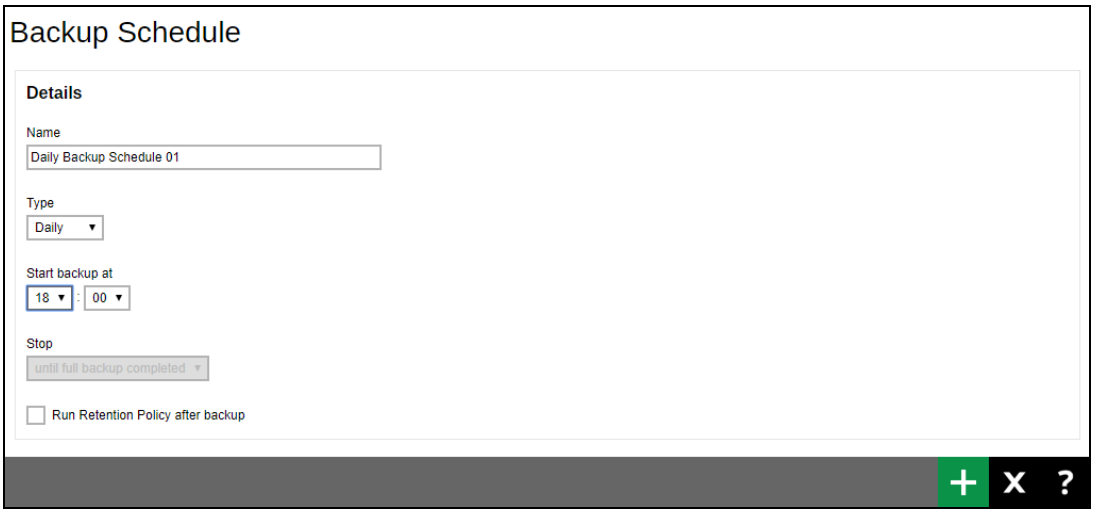


Press the Save button at the bottom right corner to proceed when you are done with the selection.

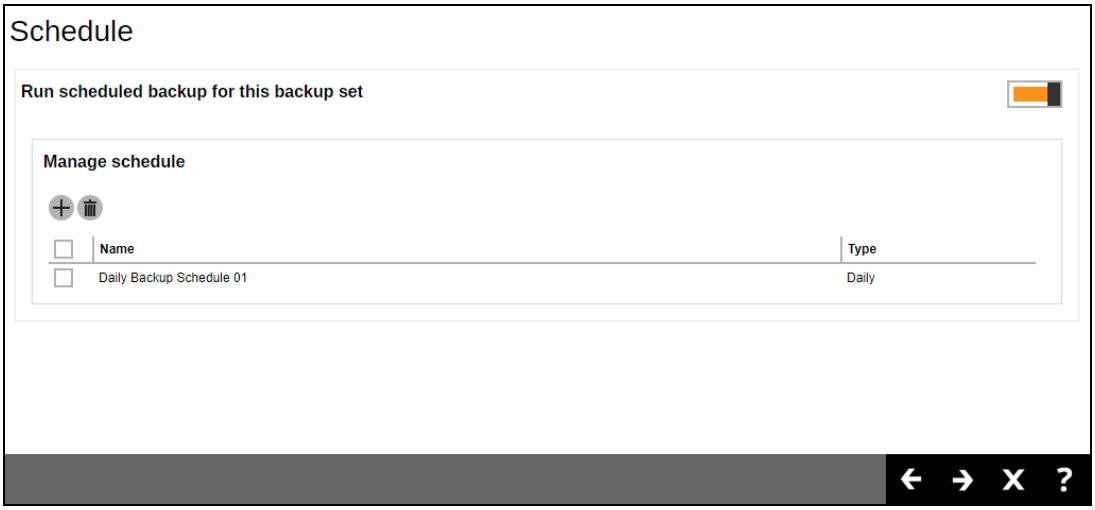
7. In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. By default, the Run scheduled backup for this backup set option is disabled. Enable it, then click the “+” icon next to Add new schedule. Click Next to proceed when you are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

If you choose to turn this feature on, you may configure the following items.

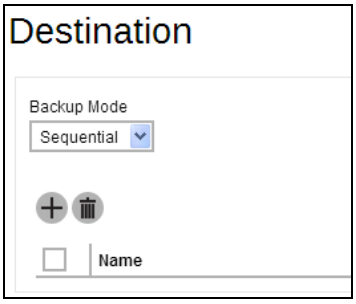
- Name of the scheduled backup
- Backup schedule type
- Backup start time
- Run Retention Policy after backup



Click at the bottom right corner to confirm the backup schedule once you finish setting.

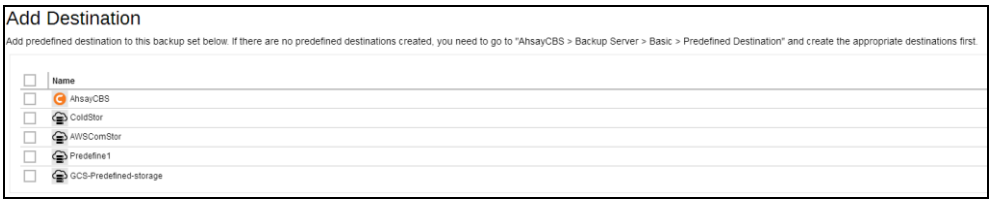


8. If you have chosen to Run the backup set on Client.



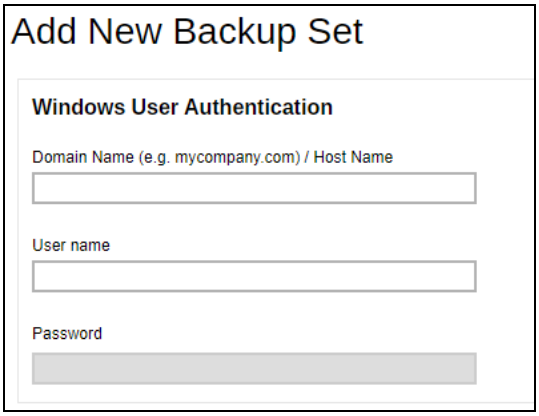
To define the backup destination, there are two options:

- In this menu, you can choose the Predefined Destination set by your backup service provider. Click ⊕ to display the available destinations. Mark the checkbox of your desired destination.



  Click + at the bottom right corner to confirm your selection.

- If you would like to choose other backup destination other than the Predefined Destination, proceed to the next step without making any setting here. You will have to complete this backup set creation first, then log in to the AhsayOBM and configure the backup destination from there. For further details, refer to **Appendix A Set Backup Destination on AhsayOBM for Backup Sets Created on AhsayCBS User Web Console** in the AhsayCBS User's Guide.

  Press → at the bottom right corner to proceed when you are done with the setting.

9. Windows User Authentication