

Ahsay Online Backup Manager v7 Microsoft Exchange Database Backup & Restore Guide

Ahsay Systems Corporation Limited

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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
15 July 2016	First Draft	New
3 February 2017	Added instructions and screen shots for Encryption key handling in Ch. 2.1 & Ch. 4.2	New
5 April 2017	Added Encryption Type option in Ch.2.1 & Ch. 4.2	New
14 September 2018	Added requirement of Antivirus Exclusion for Ch.1.2;	New

Table of Contents

1 Ge	etting started	1
1.1	Introduction	1
1.2	Antivirus Exclusion Requirement	1
1.3	General Best Practices and Recommendations	1
1.4 only	Best Practices and Recommendations for Exchange Server in Data Availability Group (DAC 4	3)
1.5	Overview of MS Exchange Database Backup Process	6
2 Ba	cking up Microsoft Exchange Database 2007/2010/2013/2016	7
2.1	Creating a MS Exchange Server Backup Set for Exchange Server 2007/2010/2013/2016	7
2.2	Running Backup Job for Microsoft Exchange Server 2007/2010/2013/2016	14
3 Re	estoring Microsoft Exchange Server 2007/2010/2013/2016	16
3.1	Pre-restoration Requirements	16
3.2	Restoring Exchange Database for Microsoft Exchange Server 2007/2010/2013/2016	17
4 Ba	cking up Microsoft Exchange Server in Database Availability Group (DAG)	21
4.1	License Requirement to Backup all Exchange Server 2010/2013/2016 in DAG environment	21
4.2	Creating Backup Set for Microsoft Exchange Server 2010/2013/2016 (DAG)	21
5 Re	estore Microsoft Exchange Server 2010/2013/2016 in Database Availability Group (DAG)	28
5.1	Pre-restoration requirements	28
5.2	Restore Exchange Database to the Exchange with the active database	28
6 Te	chnical Assistance	33
7 Do	ocumentation	34
Append	lix	35
Арреі	ndix A Exchange Server Backup Type	35
Арреі	ndix B Restore Activities Log	37

1 Getting started

1.1 Introduction

This user guide aims at providing detailed information for backing up and restoring Microsoft Exchange Database with AhsayOBM.

1.2 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:

http://wiki.ahsay.com/doku.php?id=public:5352_suggestion_on_antivirus_exclusions

NOTE

For AhsayOBM version 7.17 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.

1.3 General Best Practices and Recommendations

Please ensure that the following requirements are met by the Microsoft Exchange Server:

- The latest version of AhsayOBM is installed on the Exchange server / DAG member services. For Exchange Server 2010/2013/2016, Database Availability Group (DAG) backup option is available, please refer to <u>Backing up Microsoft Exchange Server in</u> <u>Database Availability Group (DAG)</u> for details.
- 2. Ensure that all MS Exchange related services have been started, particularly the **MS Exchange Information Store** and **MS Exchange System Attendant Services.**

To verify this setting, launch **Services** in Windows 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 then selecting **Start**.

	a 🗟 🖬 🛛 📷 🕨 🖩 🛯 🕪		
Services (Local)	Services (Local)		
	Microsoft Exchange Information	Name	Desc
	Store	A Microsoft Exchange IMAP4	Prov
		Microsoft Exchange IMAP4 Backend	Prov
	Stop the service Restart the service	G Microsoft Exchange Information Store	Man
	Kestart the service	A Microsoft Exchange Load Generator Monitoring Agent	Mon
		C Microsoft Exchange Load Generator Remote Agent	Enak
	Description:	A Microsoft Exchange Mailbox Assistants	Perf
	Manages the Microsoft Exchange Information Store. This includes	A Microsoft Exchange Mailbox Replication	Proc
	mailbox databases and public folder	Microsoft Exchange Mailbox Transport Delivery	This
	databases. If this service is stopped,	A Microsoft Exchange Mailbox Transport Submission	This
	mailbox databases and public folder	A Microsoft Exchange Migration Workflow	Proc
	databases on this computer are unavailable. If this service is disabled.	Microsoft Exchange POP3	Prov
	any services that explicitly depends	Microsoft Exchange POP3 Backend	Prov
	on it will fail to start.	Microsoft Exchange Replication	The
		Microsoft Exchange RPC Client Access	Man
		<	>

- 3. AhsayOBM must be installed on the Exchange server with mailbox role.
- 4. Make sure the Exchange Server has been updated to the latest roll-up patch of that specific service pack.
- 5. Make sure that circular logging is disabled for all Information Store(s) or Public Folder selected for backup.
- 6. Make sure that the Microsoft Exchange Server add-on module has been enabled for your AhsayOBM user account. Contact your backup service provider for more details.

User Profile	General	Backup Client Settings	Contact	User Group
Backup Set	Settings of f	the client backup agent for this	user.	
Settings				
Report	Backup	Client		
Statistics	Ahsay(DBM User 🛛 AhsayACB User	r	
Effective Policy	Add-on	Modules		
	🖌 Mic	crosoft Exchange Server		
	🖌 My	SQL Database Server		
	Lot	us Domino		
	Vir Wir	ndows System Backup		
		1ware Guest ∨M ▼ 10		
	Mic Mic	crosoft Exchange Mailbox 10		
	V NA	S		
	Vol	ume Shadow Copy		
	🖌 In-F	File Delta		

- 7. The Exchange Server 2010/2013/2016 database files are no longer stored in the temporary directory during backup. However, the VSS-based Exchange backup will still require certain amount of disk space to operate. Microsoft suggested that certain shadow copy mechanism may require free space around 100% of the original database. Refer to the following URL for more information. http://msdn.microsoft.com/enus/library/exchange/aa579091%28v=exchg.140%29.aspx
- 8. 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/restore performance, it is recommended that the folder is located on a local drive with plenty of free disk space.
- 9. Ensure that the **Microsoft Exchange Writer** is installed and running on the Exchange Server, and the writer state is **Stable**. This can be verified by running the **vssadmin list writers** command.

Example:

```
C:\Users\Administrator>vssadmin list writers
vssadmin 1.1 - Volume Shadow Copy Service administrative
command-line tool
(C) Copyright 2001-2005 Microsoft Corp.
Writer name: 'System Writer'
Writer Id: {e8132975-6f93-4464-a53e-1050253ae220}
```



Writer Instance Id: {a2f2507d-b348-493a-9685-da3f20959e9d} State: [1] Stable Last error: No error Writer name: 'COM+ REGDB Writer' Writer Id: {542da469-d3e1-473c-9f4f-7847f01fc64f} Writer Instance Id: {60b9b261-ab81-4c4d-be0f-5d432a4dea64} State: [1] Stable Last error: No error Writer name: 'ASR Writer' Writer Id: {be000cbe-11fe-4426-9c58-531aa6355fc4} Writer Instance Id: {1aab9829-3b91-46bc-a7f1-ae9e1123c2fe} State: [1] Stable Last error: No error Writer name: 'Microsoft Exchange Writer' Writer Id: {76fe1ac4-15f7-4bcd-987e-8e1acb462fb7} Writer Instance Id: {2e8409fa-1dd8-483c-ba95-5c9277be0509} State: [1] Stable Last error: No error Writer name: 'IIS Metabase Writer' Writer Id: {59b1f0cf-90ef-465f-9609-6ca8b2938366} Writer Instance Id: {3303e28e-afae-4c99-8f1a-2ce23e6455a7} State: [1] Stable Last error: No error Writer name: 'FRS Writer' Writer Id: {d76f5a28-3092-4589-ba48-2958fb88ce29} Writer Instance Id: {d35e3901-f9b9-4fa6-86af-36b8a4872933} State: [1] Stable Last error: No error Writer name: 'Shadow Copy Optimization Writer' Writer Id: {4dc3bdd4-ab48-4d07-adb0-3bee2926fd7f} Writer Instance Id: {8e19e851-95ca-4c97-813d-4bc51898c7ac} State: [1] Stable Last error: No error Writer name: 'WMI Writer' Writer Id: {a6ad56c2-b509-4e6c-bb19-49d8f43532f0} Writer Instance Id: {0619e684-14f3-495b-be59-e35fc0ec212b} State: [1] Stable Last error: No error Writer name: 'BITS Writer' Writer Id: {4969d978-be47-48b0-b100-f328f07ac1e0} Writer Instance Id: {94991e66-e5c7-47a4-a0c9-3771e4761262} State: [1] Stable Last error: No error Writer name: 'Registry Writer' Writer Id: {afbab4a2-367d-4d15-a586-71dbb18f8485} Writer Instance Id: {73c66436-c2e8-4d46-b88a-d866617eb95d} State: [1] Stable Last error: No error Writer name: 'NTDS' Writer Id: {b2014c9e-8711-4c5c-a5a9-3cf384484757} Writer Instance Id: {14cedc8b-4c51-4a12-85c4-8cf8aa3545b6}

```
State: [1] Stable
Last error: No error
Writer name: 'IIS Config Writer'
Writer Id: {2a40fd15-dfca-4aa8-a654-1f8c654603f6}
Writer Instance Id: {5939e29f-bf43-4a39-a6b7-e3a838e75e3e}
State: [1] Stable
Last error: No error
```

- 10. For Exchange server with Active Directory installed, a Windows System State backup must be performed regularly with the MS Exchange Server backup.
- 11. (Applicable to Microsoft Exchange Server 2013/2016 only) If you are using Microsoft Exchange Server 2013/2016 on Windows Server 2012, please install .Net Framework 3.5 Features under Server Manager > Dashboard > Add Roles and Features Wizard > Feature Page

	Add Roles and Features Wizard	
Select features Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Select one or more features to install on the selected server. Features INET Framework 3.5 Features (installed) INTP Activation INOn-HTTP INON-INON-INON-INON-INON-INON-INON-INON	DESTINATION SERVER w12x-7-23.qa25.ahray.com Description .NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identify information, enable seamless and secure communication, and provide the ability to model a range of business processes.
		> Install Cancel

1.4 Best Practices and Recommendations for Exchange Server in Data Availability Group (DAG) only

- 1. System State backup must be performed regularly for the domain controller of the Exchange DAG setup.
- Scheduled backup is required if you choose to back up with DAG option, as AhsayOBM on all DAG members will base on the scheduled backup time to start backups on individual DAG member at the same time.

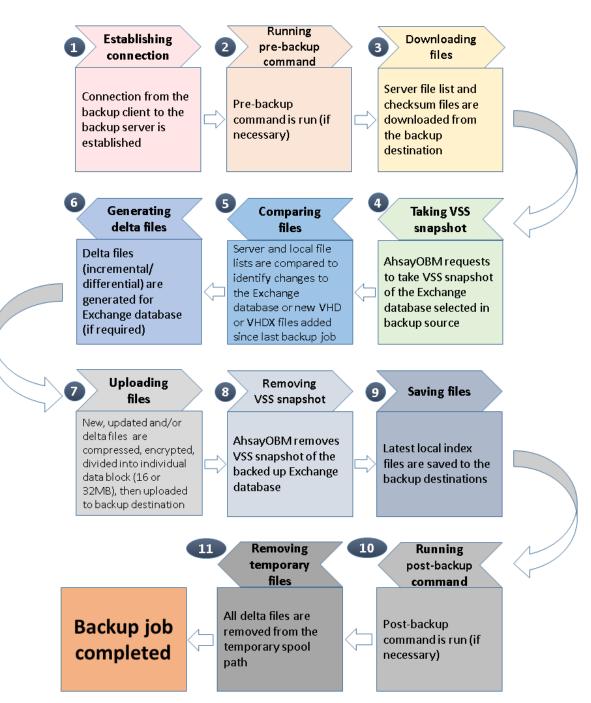
A DAG backup cycle is considered complete only when scheduled backup on all DAG members have been carried out. An email report will be generated when a complete DAG backup cycle is taken place.

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.

- 3. The MS Exchange Server Backup module will protect the Exchange server at the database level. If a full system backup (for bare-metal recovery) is required, please consider setting up a MS System Backup for each DAG member server.
- 4. To back up mailbox database within an Exchange DAG, AhsayOBM is required to be installed on each DAG member with mailbox role (e.g. servers that are hosting the mailbox databases). It is not necessary to install AhsayOBM on Exchange server with CAS (Client Access Server) role only.

1.5 Overview of MS Exchange Database Backup Process

The following steps are performed during an Exchange Database backup job:



2 Backing up Microsoft Exchange Database 2007/2010/2013/2016

2.1 Creating a MS Exchange Server Backup Set for Exchange Server 2007/2010/2013/2016

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 Server 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.

Name default-backup-set-name-1
Backup set type
MS Exchange Server Backup
Version
Microsoft Exchange Server 2010
Microsoft Exchange Server 2007
Microsoft Exchange Server 2010
Microsoft Exchange Server 2013
Microsoft Exchange Server 2016
Microsoft Exchange Server 2010 (Database Availability Group)
Microsoft Exchange Server 2013 (Database Availability Group)
Microsoft Exchange Server 2016 (Database Availability Group)

4. In the **Backup Source** menu, select the Information Store for backup. Click **Next** to proceed.

O AhsayOBM		
	Backup Source	
	Comparison in the server Comparison in the server Comparison in the server Comparison in the server is a server is a server in the server is a server	
	Previous Next Cancel H	Help

5. In the **Schedule** menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. Click **Add** to add a new schedule, then click **Next** to proceed when you are done with the settings.

AhsayOBM
Schedule
Run scheduled backup for this backup set On
Existing schedules
Database Backup Schedule Database:Weekly - Friday (Every week at 22:00)
Transaction Log Backup Schedule Log File:Weekly - Monday,Tuesday.Wednesday&Thursday (Every week at 22:00)
Add
Previous Next Cancel Help

Note: By default, a database backup scheduled for every Friday at 22:00 and a log backup scheduled daily (except Friday) at 22:00 are created automatically.



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

O AhsayOBM	× 0_
	Destination
	Backup mode Sequential ✓ Existing storage destinations Add new storage destination / destination pool ✓ ✓
	Previous Next Cancel Help

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

New Storage Destination / Destination Pool
Name
CBS
Туре
 Single storage destination Destination pool
Destination storage
G CBS
OK Cancel Help

- When you are done with settings, 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.

	Encryption	
Encrypt Backup Data On		
Encryption Type		
Default 🖌 🖌		
Default		
User password		
Custom		

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.

8.

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

	Encryptic	on
Encrypt Backup Data On Encryption Type		
Algorithm AES Encryption key		
Re-enter encryption key		
Method ECB • CBC Key length 128-bit • 256-bit		

Note: For best practice on managing your encryption key, refer to the following KB article. <u>https://forum.ahsay.com/viewtopic.php?f=169&t=14090</u>

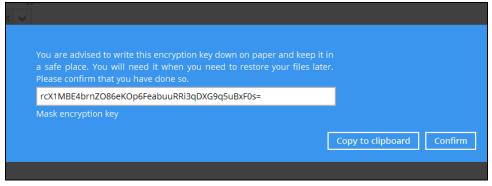
Click Next when you are done setting.

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.

Encryption		
Encrypt Backup Data On Encryption Type Default		
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.		
Unmask encryption key		
L	Copy to clipboard	Confirm

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

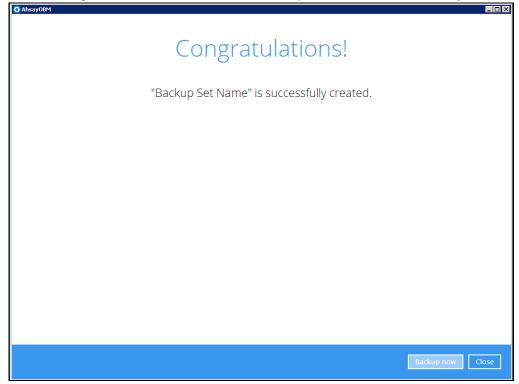
Unmask encryption key – The encryption key is masked by default. Click this option to show the encryption key.



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

Windows User Authentication
Windows Oser Addrendedion
Domain Name (e.g Ahsay.com) / Host Name
qa17.ahsay.com
User name
username
Password

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



13. You can click **Backup now** to start a backup immediately, or you can run a backup job later by following the instructions in <u>Running Backup Job for Microsoft Exchange Server</u> 2007/2010/2013/2016.

2.2 Running Backup Job for Microsoft Exchange Server 2007/2010/2013/2016

- 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.

O Ansayubm	크비스
Please Select The Backup Set To Backup	
Backup Set Name Owner: w08x-1-26 Newly created on 04-July-2016, Monday, 17:27	
Close	Help

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

O AhsayOBM		×
	Choose Your Backup Options	
	Backup Set Name	
	Backup set type Database Log File Show advanced option	
	Previous Backup Cancel Help]
O AhsayOBM		×
AhsayOBM	Choose Your Backup Options	×
AhsayOBM		×
Ahsay08M	Choose Your Backup Options Backup Set Name Backup set type O Log File	×
Ahsay08M	Choose Your Backup Options	×
Ahsay08M	Choose Your Backup Options Backup Set Name Backup set type Database Database Database Differential Differential Differential Differential Destinations	X
Ahsay08M	Choose Your Backup Options	×
Ahsay08M	Backup Set Name Backup Set Name Backup Set type Database Ug File In-File Delta type In-File Delta type Uifferential Differential Destinations Incremental Destinations Incremental Destinations Image: Cise (Host: 10.3.1.8:443) Retention Policy Image: Cise (Host: 10.3.1.8:443)	

Refer to <u>Appendix A Exchange Server Backup Type</u> for more information regarding the backup set type. .

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

3 Restoring Microsoft Exchange Server 2007/2010/2013/2016

3.1 Pre-restoration Requirements

Before you get started with restoring your database using the AhsayOBM, there are a couple of steps you may need to perform first.

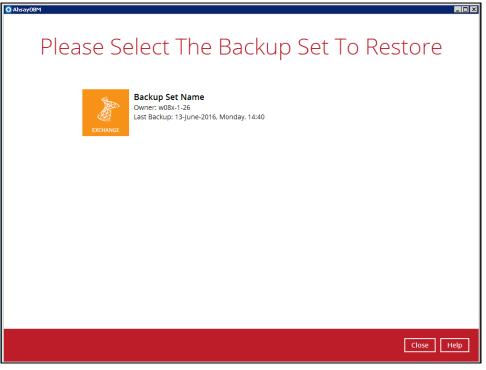
- 1. Prepare the operating system for the Exchange Server restore (if required). Install the original version of Windows and Exchange Server (with the same level of service pack installed as in the original system).
- 2. Restore Windows Active Directory (if required). Restore the System State data from the backup server, and then restore the System State using WBAdmin.exe.
- Install AhsayOBM (if required). Refer to the Ahsay Online Backup Manager v7 Quick Start Guide for Windows via the URL below. <u>http://ahsay.com/download/download_document_obm-quickstart-windows.jsp</u>
- 4. Make sure the **Microsoft Exchange Information Store** services from Windows Services is started.

Launch **Services** in Windows by clicking **Start** then typing "Services" in the search box. After launching the Services window, look for **Microsoft Exchange Information Store** and check the Status column to confirm if it is started. If it is not, right click the item then select **Start**.

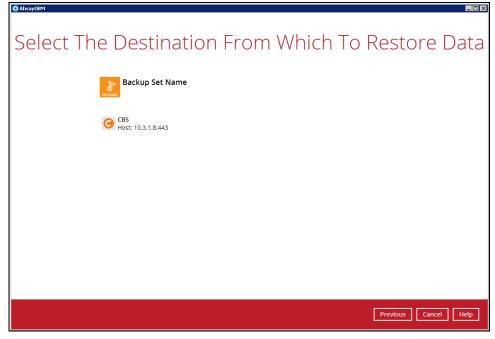
ile Action View	Help				
 (Lerrar) can a 					
Services (Local)	🖏 Services (Local)				
		#			
	Microsoft Exchange Information	Name A	Description	Status	Startup Typ
	Store	Microsoft Exchange IMAP4	Provides In		Manual
		Microsoft Exchange Information Store	Manages t	Started	Automatic
	Stop the service	Microsoft Exchange Load Generator Remote	Enables dis	Started	Automatic
	Restart the service	Microsoft Exchange Mail Submission	Submits me	Started	Automatic
		Kicrosoft Exchange Mailbox Assistants	Performs b	Started	Automatic
	Description:	Microsoft Exchange Monitoring	Allows appl		Manual
	Manages the Microsoft Exchange Information Store, This includes mailbox	Microsoft Exchange POP3	Provides P		Manual
	stores and public folder stores. If this	Microsoft Exchange Replication Service	The Micros	Started	Automatic
	service is stopped, mailbox stores and	Microsoft Exchange Search Indexer	Drives inde	Started	Automatic
	public folder stores on this computer are unavailable. If this service is disabled.	Microsoft Exchange Server Extension for Win	Enables Wi		Manual
	any services that explicitly depend on it	Microsoft Exchange Service Host	Provides a	Started	Automatic
	will fail to start.	Altendant System Attendant	Forwards d	Started	Automatic
		Kicrosoft Exchange Transport	The Micros	Started	Automatic
		Alicrosoft Exchange Transport Log Search	Provides re	Started	Automatic
		Microsoft Fibre Channel Platform Registration	Registers t		Manual
		Microsoft iSCSI Initiator Service	Manages I		Manual
		Alicrosoft Search (Exchange)	Quickly cre	Started	Manual
		Microsoft Software Shadow Copy Provider	Manages s		Manual
		Aultimedia Class Scheduler	Enables rel		Manual
		🔅 Net.Msmg Listener Adapter	Receives a		Disabled
		🔍 Net.Pipe Listener Adapter	Receives a		Disabled
		🔍 Net. Tcp Listener Adapter	Receives a		Disabled
		Net.Tcp Port Sharing Service	Provides a		Disabled
		Q Netlogon	Maintains a	Started	Automatic
		ौ			F

3.2 Restoring Exchange Database for Microsoft Exchange Server 2007/2010/2013/2016

- 1. Make sure you have followed the steps in Section 3.1 before proceeding to this section.
- 2. In the AhsayOBM main interface, click the **Restore** icon.
- 3. Select the backup set that you would like to restore database from.



4. Select the backup destination that contains the database you would like to restore.





5. Click to expand the menu tree to select which Information Store to restore. You can also select individual database file to restore by clicking the **Restore raw file** checkbox at the left bottom corner.

In addition, you can also choose to restore backup item(s) from a specific backup job using the drop-down menu at the top. Click **Next** to proceed when you are done with the selection.

5	elect what to restore				
[Choose from files as of job 🖌 🛛 20	16-07-14 🖌 Latest 🖌			
	Folders	Name	Size	Date modified	
	G CBS	🖉 🚳 E02.chk	8 KB	2016-07-14 04:15	
	- 🔲 🔀 Microsoft Exchange Server	E020000CD1.log	1,024	2016-03-18 14:02	^
	🗄 🔲 🏪 Microsoft Information Store	E020000CD2.log	1,024	2016-03-18 14:02	
	📥 🔲 🚪 W08X-1-22	E020000CD3.log	1,024	2016-03-18 14:02	
	- 🖉 🔒 First Storage Group	E020000CD4.log	1,024	2016-03-18 14:02	
	- Second Storage Group	E020000CD5.log	1,024	2016-03-18 14:02	
	🔲 🔒 Storage Group 64char_	23. 🗌 📄 E0200000CD6.log	1,024	2016-03-18 14:02	
		E020000CD7.log	1,024	2016-03-18 14:02	
		E020000CD8.log	1,024	2016-03-18 14:02	
		E020000CD9.log	1,024	2016-03-18 14:06	
		E020000CDA.log	1,024	2016-03-18 14:09	
		E020000CDB.log	1,024	2016-03-18 14:11	
		E020000CDC.log		2016-03-18 14:13	
		E0200000CDD.log	1,024	2016-03-18 14:14	
		E020000CDE.log	1,024	2016-03-18 14:16	
		E020000CDF.log	1,024	2016-03-18 14:17	U
	()	E020000CE0.log	1,024	2016-03-18 14:20	
	Restore raw file	ltems pe	r page 50	 Page 1 / 6 	

- 6. Select to restore the database to its Original location, or to an Alternate location.
 - Restore to Original location

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

Choose Where The Databases To Be Restored
Restore databases to Original location Alternate location
Previous Next Cancel Help

www.ahsay.com

Restore to Alternate location

a) Select the Alternate location option, then press Next to proceed.



b) Select the locations where you would like to restore the database to. Name the new mailbox store, then click **Browse** to modify the database, log and checksum file location if necessary. Click **Next** to proceed when you are done with the settings.

O Ahsay0BM			
Д	lternate database		
Database name			
Mailbox Database 2-1			
Original Name	New Location		
Mailbox Database 2.edb	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
E02*.log	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
E02.chk	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
	Previous	Next	Cancel Help

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



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

O AhsayOBM	_ 🗆 🗙
Restore	
Backup Set Name	
CBS (Host: 10.3.1.8:443) Restore Completed Successfully Estimated time left 0 sec Restored 7.98M (9 files) Elapsed time 44 sec Transfer rate 1.60Mbit/s	G,
	Close Help

For details regarding verifying the restoration activities log between AhsayOBM and the Exchange Server, refer to <u>Appendix B Restore Activities</u> <u>Log</u>.

4 Backing up Microsoft Exchange Server in Database Availability Group (DAG)

4.1 License Requirement to Backup all Exchange Server 2010/2013/2016 in DAG environment

One AhsayOBM license CAL with one Exchange Server Add-on Module is deducted from each installation of the AhsayOBM on the DAG environment. Please check with your backup service provider if more AhsayOBM with Exchange backup is required.

4.2 Creating Backup Set for Microsoft Exchange Server 2010/2013/2016 (DAG)

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 Server Backup.** Make sure you choose the correct Exchange Server version with "Database Availability Group". Name your new backup set and then click **Next** to proceed.

O Ahsay08M	
Create Backup Set	
Name	
Backup Set Name (DAG)	
Backup set type	
Version	
Microsoft Exchange Server 2010 (Database Availability Group) 🗸	
	Next Cancel Help



4. In the Backup Source menu, select the Information Store for backup. Click **Next** to proceed.

O AhsayOBM		
	Backup Source	
	Microsoft Exchange Server Wotsv1-22 Wotsv1-22 Wotsv1-22 Second Storage Group Storage Group Storage Group 64char_23456789D123456789E1234578_64char	
	Previous Next Cancel Help	2

In the Schedule menu, you can configure a backup schedule for backup job to run automatically at your specified time interval. Click **Add** to add a new schedule, then click **Next** to proceed when you are done setting.

O AhsayOBM		_ 🗆 🗙
	Schedule	
	Run scheduled backup for this backup set On	
	Existing schedules	
	Database Backup Schedule Database;Weekly - Friday (Every week at 22:00)	
	Transaction Log Backup Schedule Log File;Weekly - Monday,Tuesday,Wednesday&Thursday (Every week at 22:00)	
	Add	
	Previous Next Cancel H	lelp

Note: By default, a database backup scheduled for every Friday at 22:00 and a log backup scheduled daily (except Friday) at 22:00 are created.



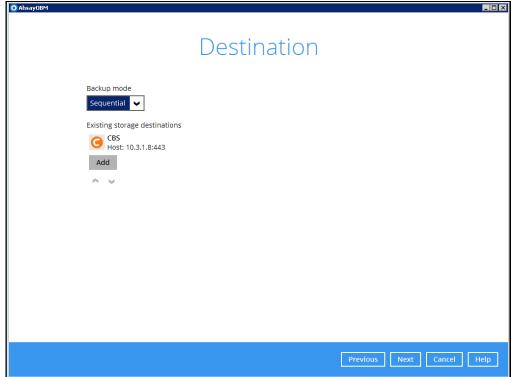
5. In the Destination menu, select a backup destination where the backup data will be stored. Click the "+" icon next to **Add new storage destination / destination pool**.

I	O AhsayOBM	
	Destination	
	Backup mode Sequential Existing storage destinations Image: Add new storage destination / destination pool Image: Market of the storage destination / destination pool	
	Previous Next Cancel Help	>

6. Select the destination type and destination storage, then click **OK** to proceed.

O AhsayOBM	
New Storage Destination / Destination Pool	
Name	
CBS	
Туре	
 Single storage destination Destination pool 	
Destination storage	
G CBS ✓	
	OK Cancel Help
	Cancer Help

7. When you are done with the settings, click **Next** on the Destination menu page to proceed.



8. 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.

	Encryption	
Encrypt Backup Data On		
Encryption Type		
Default		
User password Custom		

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.

	Encryptio	n	
Encrypt Backup Data On Encryption Type			
Custom V Algorithm AES V Encryption key			

Re-enter encryption key			
Method ECB CBC Key length			
○ 128-bit			

Note: For best practice on managing your encryption key, refer to the following KB article. <u>https://forum.ahsay.com/viewtopic.php?f=169&t=14090</u>

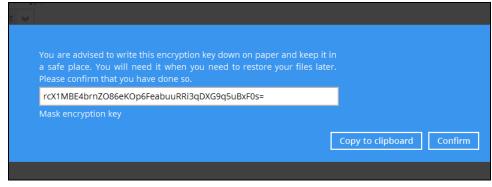
Click Next when you are done setting.

9. 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.

	Encryption
Encrypt Back On Encryption T Default	ype
	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.
	●●●●●● Unmask encryption key
	Copy to clipboard 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.

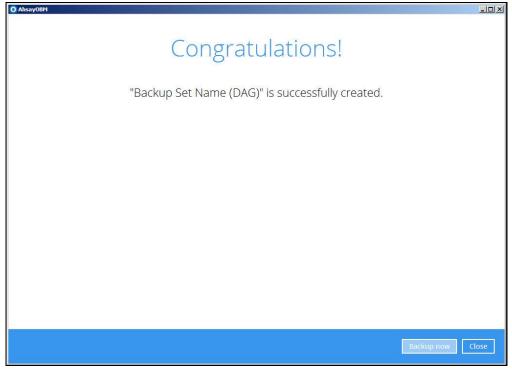


- Copy to clipboard Click to copy the encryption key, then you can paste it in another location of your choice.
- > Confirm Click to exit this pop-up window and proceed to the next step
- 10. Enter the Windows login credentials for user authentication. Click **Next** to proceed.

O Ahsay08M	
Windows User Authentication	
Domain Name (e.g Ahsay.com) / Host Name	
qa17.ahsay.com	
User name	
username	
Password	

Previous Next	Cancel Help

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



12. On all other Exchange Servers within the same DAG, logon to AhsayOBM using the same login account. Click the same backup set, and make sure the Run scheduled backup for this backup set is turned on the Backup Schedule menu page. Make sure you save the setting before exiting the application.

O AhsayOBM	
Backup Set Name (D	Schedule
General Source	Run scheduled backup for this backup set On Existing schedules Database Backup Schedule Database:Weekly - Friday (Every week at 22:00)
Backup Schedule	Transaction Log Backup Schedule Log File;Weekly - Monday,Tuesday,Wednesday&Thursday (Every week at 22:00)
Continuous Backup	Add
Destination Show advanced settings	
Delete this backup set	Save Cancel Help

5 Restore Microsoft Exchange Server 2010/2013/2016 in Database Availability Group (DAG)

5.1 Pre-restoration requirements

Refer to the following instructions to restore your Exchange database in Database Availability Group (DAG).

The database restoration is required to restore on the active database only. You can identify the Exchange server with the active database from the Exchange Management Shell.

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, i.e. Mailbox Database 01 and 03 are hosted on EX1, while Mailbox Database 02 and 04 are hosted on EX2.

```
[PS] C:\>Get-MailboxDatabase | ft name, server
Name Server
----
Mailbox Database 02 EX2
Mailbox Database 01 EX1
Mailbox Database 03 EX1
Mailbox Database 04 EX2
```

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

5.2 Restore Exchange Database to the Exchange with the active database

1. In the AhsayOBM main interface, click Restore.



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

O AhsayOBM	_ 🗆 🗙
Please Select The Backup Set To Restore	Ĵ
Backup Set Name Owner: w08x-1-26 Last Backup: 13-June-2016, Monday, 14:40	
Close	Help

3. Select the backup destination that contains the files or folders that you would like to restore.

O AhsayOBM	
Select The Destination From Which To F	Restore Data
Backup Set Name	
CBS Host: 10.3.1.8:443	
	Previous Cancel Help

4. Click to expand the menu tree to select which Information Store to restore. You can also select individual database file to restore by clicking the **Restore raw file** checkbox at the left bottom corner.

In addition, you can also choose to restore backup item(s) from a specific backup job using the drop-down menu at the top. Click **Next** to proceed when you are done with the settings.

50	lect Your Da	labo	1363 10	De	NESIC	Лец
	Select what to restore					
	Choose from files as of job 🖌 20	016-07-14 ¥	Latest 🖌			
	Folders		Name	Size	Date modified	
	G CBS	E02.chk		8 KB	2016-07-14 04:15	
			00CD1.log	1,024	2016-03-18 14:02	^
	Microsoft Information Store		00CD2.log	1.024	2016-03-18 14:02	
	È-□		00CD3.log	1.024	2016-03-18 14:02	
	First Storage Group		00CD4.log	1,024	2016-03-18 14:02	
	Second Storage Group		00CD5.log	1.024	2016-03-18 14:02	
	Storage Group 64char		00CD6.log	1,024	2016-03-18 14:02	
			00CD7.log	1.024	2016-03-18 14:02	
			00CD8.log	1.024	2016-03-18 14:02	
			00CD9.log	1.024	2016-03-18 14:06	
			00CDA.log	1,024	2016-03-18 14:09	
			00CDB.log	1,024	2016-03-18 14:11	
		E02000	00CDC.log	1,024	2016-03-18 14:13	
		E02000	00CDD.log	1,024	2016-03-18 14:14	
			00CDE.log	1,024	2016-03-18 14:16	
		C E02000	00CDF.log	1,024	2016-03-18 14:17	1.000
	>	E02000	00CE0.log	1,024	2016-03-18 14:20	~
	Restore raw file		Items per page	50	Page 1/6	~
						10000
	Search					

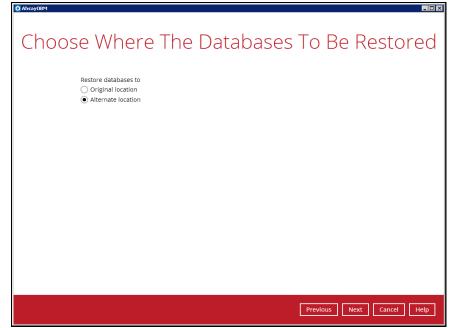
- 5. Select to restore the files to their Original location, or to an Alternate location.
 - Restore to Original location

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

O AhsayOBM	
	The Detabases To De Destared
Choose where	The Databases To Be Restored
Restore databases to Original location 	
Alternate location	
	Previous Next Cancel Help

Restore to Alternate location

a) Select the Alternate location option, then press Next.



b) Select the locations where you would like to restore the database to. Name the new mailbox store, then click **Browse** to modify the database, log and checksum file location if necessary. Click **Next** to proceed.

💽 AhsayOBM				_ 🗆 ×
	Δ	lternate database		
	P-4-6			
	Database name			
	Mailbox Database 2-1			
	Original Name	New Location		
	Mailbox Database 2.edb	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
	E02*.log	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
	E02.chk	E:\Microsoft Exchange Server\V14\Mailbox\Mailbox Database 2	Browse	
			Nort	Cancel
		Previous	Next	Cancel Help

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

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

O AhsayOBM			
		Restore	
DOMAG	Backup Set Nam	ne	
G	CBS (Host: 10.3.1.8:4	ed Successfully	۵.
			Close Help

For details regarding verifying the restoration activities log between AhsayOBM and the Exchange Server, refer to <u>Appendix B Restore Activities</u> <u>Log</u>.

6 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: <u>https://forum.ahsay.com</u>

7 Documentation

Documentations for all Ahsay products are available at:

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

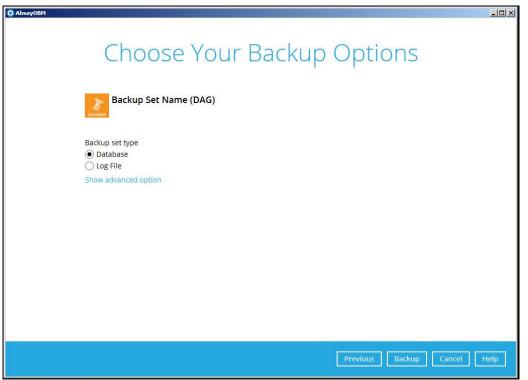
Appendix

Appendix A Exchange Server Backup Type

AhsayOBM utilizes the Volume Shadow Copy Service and the Microsoft Exchange Server 2010 Writers for backup of MS Exchange 2010 databases. It offers the following types of backup options:

Database backup

Backs up the databases (EDB), transaction logs (LOG), checkpoint files (CHK), and then truncates the transaction logs for a specific database.



A full backup of an Exchange database creates and stores a complete copy of the database file, transaction logs, and checkpoint files. A Microsoft Exchange Server 2010 database has one set of transaction log files dedicated to that one database.

After the database has been backed up, the transaction log files on the disk are truncated so that only database changes that occur after the backup was made will remain. During this process, either the Store Writer or the Replication Service deletes all log entries up to the checkpoint, based on the assumption that the databases have now been backed up in a consistent state that contains all changes up to the most recent checkpoint.

If the database being backed up is dismounted during the backup operation, Exchange Server 2010 will not truncate the transaction logs and the result will be the equivalent of a copy backup operation, not a Full backup operation.

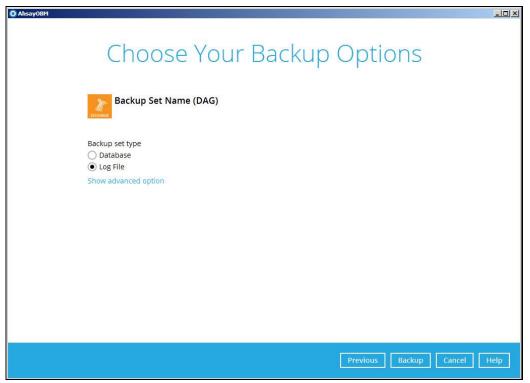
At the completion of Full or Incremental backups, the headers of the active mounted database get updated with the current backup information. A Full backup is required in order to run Incremental or Differential backups. There is no restriction as to which copy the Full backups are taken from as long as it is a backup.

Full backups are used in the following restoration scenarios:

- A database becomes corrupted or is lost, but the transaction log files on disk are intact. In this scenario, the affected database files can be restored from the Full backup, and then recovered by replaying the transaction logs that are still on disk.
- Transaction log files, as well as the database file on disk, are lost. In this scenario, the transaction log files that were backed up at the time of the Full backup are restored together with the database.

Log File backup

Backs up the transaction logs (LOG) to record changes since the last full or incremental backup, and then truncates the transaction logs.



An Incremental backup of Microsoft Exchange Server 2010 database saves changes to the database that have occurred since the last Full or Incremental backup. When all the database files and log files are restored to the system, they can be recovered to the state they were in at the time of the last Incremental backup. The data stored in an Incremental backup includes only the transaction log files up to the current time.

When the backup is completed, the Exchange Server truncates the log files and marks the backup time in the database headers. Using an Incremental backup to recover a database requires the restoration of at least two data sets: the last Full backup, and then every Incremental backup taken after the last Full backup. The benefit of using Incremental backup and an individual Incremental backup is often smaller than an individual Differential backup.

The disadvantage of using Incremental backups is that if there are many Incremental backups made between Full backups, recovering the storage group may involve recovering many Incremental backups. Exchange does not allow an Incremental backup to occur when there has been no previous Full backup to establish the starting point for the incremental changes.

Appendix B Restore Activities Log

The information below demonstrates how you can verify the restoration activities log between the AhsayOBM and the Microsoft Exchange Server.

To verify the restoration activities log, open both the Restore Report in AhsayOBM and the Event Viewer in the Microsoft Exchange Server.

Opening Restore Report in AhsayOBM

- 1. Open AhsayOBM, then click the **Report** icon on the main interface page.
- 2. Click the Restore option on the left, then click the restore report you want to verify on the right. Click the **View Log** button to show all the restoration activities log.

	From To		
Backup	05 🗸 Jun 🖌 2016 🖌 05 🖌 Jul 🖌 2016	Go Go	
Restore	Backup set 🗸 Destination 🗸 Job	Status	~
Usage	Backup set 👔 Exchange 2010 Database		X
03080	Destination G CBS		
	Job 2016-06-27, 19:16:13		
	Time 2016-06-27, 19:16:13 - 19:17:13 (CST))	
	Status Completed successfully		
	Downloaded files* 46 (306.1M)		
	* Unit = No of files (Download size)		
	View log		
	Exchange 2010 Datab G CBS 27/06/2016	19:13 Completed	
	No. of records per page 50 V	Page 1/1	121
	No. of records per page 50 🗢	rage 171	
		Close	Γ.
		Close	
		Close	ļ
юви		Close	ł
юви		Close	ŀ
ювн Renort	Doctoro Doport	Close	
юви Renort	Portaro Poport	Close	ł
Report	Postara Danart	Close	ł
Renort Backup set Exchange 2010 Database	Postora Doport	Close	
Rennrt Backup set Exchange 2010 Database Log 2016-06-27 19:16 ♥ Type	Postora Doport	Show All Time	
Renort Backup set Exchange 2010 Database Log 2016-06-27 19:16 V Type Start [Windows Server 2008 (w08x-1-26), Ahs		Show All Time 2016/06/27 19:16:19	
Backup set Exchange 2010 Database Log 2016-06-27 19:16 Type 5 tart [Windows Server 2008 (w08x-1-26), Ahse b Initializing decrypt action Completed	ayOBM v7.7.0.0]	Show All Time 2016/06/27 19:16:19 2016/06/27 19:16:20 2016/06/27 19:16:20	•
Rennt Backup set Exchange 2010 Database Log 2016-06-27 19:16 ✓ Type Start (Windows Server 2008 (w08x-1-26), Ahsi Initializing decrypt action Initializing decrypt action Completed Greeting new directory Clusters/Administra	syOBM v7.7.0.0] tor/tempiRestoreSet(1467024054408\RestoreDatabase\Microsoft Exchange	Show All Time 2016/06/27 19:16:19 2016/06/27 19:16:19 2016/06/27 19:16:20 2016/06/27 19:16:20	•
Rennt Backup set Exchange 2010 Database Log 2016-06-27 19:16 ✓ 100 Start [Windows Server 2008 (w08x-1-26), Ahst Initializing decrypt action Initializing decrypt action Completed Creating new directory "CiUJsers/Administra Creating new directory "CiUJsers/Administra	syOBM v7.7.0.0] tor/tempiRestoreSet11467024054400iRestoreDatabaselMicrosoft Exchange tor/tempiRestoreSet11467024054408iRestoreDatabaselMicrosoft Exchange	Show All Time 2016/06/27 19:16:19 2016/06/27 19:16:20 2016/06/27 19:16:20	
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Opening Event Viewer in Microsoft Exchange Server

1. Click the Start button on the left bottom corner in the Exchange Server, then type Event Viewer in the search bar at the bottom.

Server Manager		Programs		
	1	Event Viewer		6
Command Prompt		Files		
Exchange Management Console	Administrator	Devent Viewer	Admini	strator
Notepad	Documents		Docum	ents
	Computer		Compu	ter
Internet Explorer	Network		Netwo	'k
AhsayOBM	Control Panel		Contro	l Panel
Exchange Management Shell	Administrative Tools		Adminis	strative Tools 🔹 🕨
Ease of Access Center	Help and Support		Help ar	nd Support
🕘 Mozilla Firefox	Run		Run	
Event Viewer				
PUTTY				
Exchange Load Generator 2010				
All Programs		Search Everywhere Search the Internet		
Start Search	○ ● →	Event Viewer	I	• •
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2. When the Event Viewer is opened, click **Windows Log** on the left to expand the menu tree, then select **Application**. All Application activities logs are shown on the right now.

8 Event Viewer (Local)	Application 18,74	2 Events				A	Actions	
E Custom Views	Level	Date and Time	Source	Event ID	Task Category		Application	
Windows Logs Application		7/5/2016 8:53:49 AM	MSExchange ADAccess	2080	Topology	-3	Open Saved Log	
Security	(i) Information	7/5/2016 8:38:49 AM	MSExchange ADAccess	2080				
Setup	(i) Information	7/5/2016 8:29:10 AM	MSExchangeTransport	16022	Configuration		Create Custom View	
System	(i) Information	7/5/2016 8:29:10 AM	MSExchangeTransport	16022	Configuration		Import Custom View	
Forwarded Events	(i) Information	7/5/2016 8:29:10 AM	MSExchangeTransport	16022	Configuration	-	Clear Log	
Applications and Services Logs	(i) Information	7/5/2016 8:29:10 AM	MSExchangeTransport	16022	Configuration		and a second sec	
Saved Logs		7/5/2016 8:29:10 AM	MSExchangeTransport	16022	Configuration		Filter Current Log	
Subscriptions		7/5/2016 8:29:10 AM	MSExchangeTransport		Configuration		Properties	
	Information	7/5/2016 8+20+10 AM	MSEvchanneTransport	16022	Configuration		Find	
		1000 C						
	Event 2080, MSExch	ange ADAccess				×	Save Events As	
	General Details					*	Attach a Task To this Log.	
	General Details							
	Process MSEXC	HANGEADTOPOLOGYSER\	VICE.EXE (PID=1816). Exchar	ge Active Di	rectory Provider has		Attach a Task To this Log. View	
	Process MSEXC discovered the	HANGEADTOPOLOGYSER\ following servers with the f	ollowing characteristics:	-			Attach a Task To this Log. View Refresh	
	Process MSEXC discovered the (Server name	HANGEADTOPOLOGYSER\ ollowing servers with the f Roles Enabled Reachabili		-			Attach a Task To this Log. View Refresh Help	
	Process MSEXC discovered the (Server name Netlogon OS In-site:	HANGEADTOPOLOGYSER\ 'ollowing servers with the f Roles Enabled Reachabili Version)	iollowing characteristics; ity Synchronized GC capa	-			Attach a Task To this Log. View Refresh	
	Process MSEXC discovered the (Server name Netlogon OS In-site: w08x-1-26.qa17	HANGEADTOPOLOGYSER\ ollowing servers with the f Roles Enabled Reachabili	iollowing characteristics; ity Synchronized GC capa	-			Attach a Task To this Log View Refresh Help	
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	Process MSEXC discovered the (Server name Netlogon OS In-site: w08x-1-26.qa17 Out-of-site:	HANGEADTOPOLOGYSER I diowing servers with the f Roles Enabled Reachabili Version) ahsay.com CDG 1 7 7 1 0 1	iollowing characteristics; ity Synchronized GC capa	-			Attach a Task To this Log View Refresh Help Event 2080, MSExchange J Event Properties Attach Task To This Even Copy	A.
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Cross-checking activities log on AhsayOBM Restore Report and Exchange Server Event Viewer

Each restoration action item initiated by AhsayOBM represented by individual activity log in the Restore Report in AhsayOBM, and the corresponding action taken place in the Exchange Server is shown in the Event Viewer as well.

There are 5 major parts to take place during the database restoration progress as shown below.

1. Download files from AhsayCBS to Temp Folder

AhsayOBM Restore Report

Downloading... "C:\Users\Administrator\temp\RestoreSet\1467615269126\RestoreDatabase\Microsoft Exchange S
 Downloading... "C:\Users\Administrator\temp\RestoreSet\1467615269126\RestoreDatabase\Microsoft Exchange S

2. Dismount Exchange Server Database

AhsayOBM Restore Report

Dismount Microsoft Exchange Server Database... "Mailbox Database 1524644718"

Event Viewer in Exchange Server

7/5/2016 12:18:36 PM

Information

MSExchangeRepl

3161 Service

General Details

Active Manager dismounted database Mailbox Database 1524644718 on server w08x-1-26.qa17.ahsay.com.

3. Restore files to Exchange Server Database

AhsayOBM Restore Report

Restoring files to Microsoft Exchange Server Database... "E:\Microsoft Exchange Server\V14\Mailbox\M
 Restoring files to Microsoft Exchange Server Database... "E:\Microsoft Exchange Server\V14\Mailbox\M

Event Viewer in Exchange Server

Information	7/5/2016 12:19:14 PM	ESE	301	Logging/Recover
Consultant				

General Details

Information Store (236) Mailbox Database 1524644718: The database engine has successfully completed recove

For more information, click http://www.microsoft.com/contentredirect.asp.

or more information, click <u>http://www.microsoft.com/contentredirect.asp</u>

4. Remount Exchange Server Database

AhsayOBM Restore Report

Re-mount Microsoft Exchange Server Database... "Mailbox Database 1524644718"

Event Viewer in Exchange Server

Information 7/5/2016 12:19:18 PM

MSExchangeRepl

3156 Service

General Details

Active Manager successfully mounted database Mailbox Database 1524644718 on server w08x-1-26.qa17.ahsay.com.

5. Delete files from Temp Folder

By default, temporary files will be deleted from the temp folder after backup. This feature can be turned on or off by following the steps below.

- 1. Open AhsayOBM, then click the Backup Set icon on the main interface.
- 2. Select the backup set you would like to change this setting.
- 3. Click "Show advanced settings" on the left, then select "Others".
- 4. Use the "Remove temporary files after backup" checkbox to enable or disable this feature.

Backup Set Name (I	2	Temporary Directory	
General	^	Temporary directory for storing backup files C:\Users\Administrator\temp	Change
Source		6.34GB free out of total 30GB space in C: Remove temporary files after backup	change
Backup Schedule		Compressions	
Continuous Backup		Select compression type	
Destination		Fast (Compressed size larger than normal)	
In-File Delta		Encryption	
Retention Policy		Do not use encryption	
Command Line Tool			
Reminder			
Bandwidth Control			
Others			
Hide advanced settings	~		