Datasheet

AhsayCBS v9

New Features Datasheet

Ahsay Systems Corporation Limited
5 September 2023

Table of Contents

Datasheet

Overview (v9.1)

Starting with AhsayCBS v9, the In-File Delta feature (that offers Incremental, Differential, and Full backups) will be replaced with **Deduplication**.

Deduplication is part of the backup process that identifies and eliminates duplicate copies of repeating data, storing it once, in order to save storage space. Deduplication plays a major role in managing storage space, particularly when performed over large volumes of data.

Both the In-File Delta and Deduplication technologies use an *advanced data block matching algorithm* that is capable to verify each block and identify which block is duplicated to compare file contents between two files. Thus, the non-duplicated block will be entirely included in the backup data.

However, with In-File Delta, the MD5 checksum algorithm is used during backups to verify data integrity, but only against unintentional corruption.

On the other hand, Deduplication will use the new speed-optimized XXH3 checksum algorithm. The XXH3 checksum algorithm offers enhanced speed performance in data block matching and is dependable especially when backing up very large files. Thus, saving a lot of time during backups.

Datasheet

Deduplication

Deduplication is an additional Add-on Module that can be enabled per user via the following options. If the Deduplication module is not enabled for the user, the user's backup set with the Deduplication feature enabled will be treated as disabled when a backup job is performed.

Free Trial Options Tab

Backup / Restore > Basic > Free Trial Options

Datasheet

Backup Client Settings Tab

Backup / Restore > Users, Groups & Policies > Backup User > Backup Client Settings

Note: For newly created users, the Deduplication module is **enabled** by default.

Datasheet

AhsayCBS Policy Settings Layout

Another Deduplication-related change with AhsayCBS v9 is the "In-File Delta" tab replaced with the "Deduplication" tab under the Policy settings.

Backup / Restore > Users, Groups & Policies > Policy Group > Default Values
Backup / Restore > Users, Groups & Policies > Policy Group > Preempted Values

AhsayCBS v8 Policy Settings Legacy Layout

AhsayCBS v9 Policy Settings New Layout

Default deduplication settings

Note: Choices for block size has been updated, please refer to [Deduplication v9.5](#) for the details.

Datasheet

For legacy clients (v8 or earlier), the In-File Delta settings can be found here by clicking the link: **Show legacy settings (for version 8 or before only)**.

Enable Deduplication

Name

Default deduplication settings

Applied Modules

- ✔ File Backup
- ✔ MS Exchange Server Backup
- ✔ MS SQL Server Backup
- ✔ MySQL Backup
- ✔ Oracle Database Server Backup
- ✔ IBM Lotus Domino Backup
- ✔ IBM Lotus Notes Backup
- ✔ MS Windows System Backup
- ✔ MS Windows System State Backup
- ✔ VMware Backup
- ✔ MS Hyper-V Backup
- ✔ MS Exchange Mail Level Backup
- ✔ ShadowProtect System Backup
- ✔ Cloud File Backup
- ✔ Office 365 Backup
- ✔ MariaDB Backup

Enable Deduplication

Deduplication scope

- ◯ Same file path within the same backup set
- ⦿ All files within the same backup set

Block size

Auto ⌄ Bytes

- ☐ Migrate existing data to latest version

Show legacy settings (for version 8 or before only)

Datasheet

In-File Delta Legacy settings for version 8 or earlier

Hide legacy settings (for version 8 or before only)

Default Type

Differential ▾

In-File Delta block size

Auto ▾ Bytes

Only apply In-File Delta to files larger than

25 ▾ MB

Upload full file when either of these conditions is met

- ✔ Number of deltas is over | 100 ▾
- ✔ Delta ratio (delta file size / full file size) is over | 50 ▾
- ✔ Failed to generate delta file

Weekly variations for overriding default type

☐ Sunday	Full ▾	☐ Thursday	Full ▾
☐ Monday	Full ▾	☐ Friday	Full ▾
☐ Tuesday	Full ▾	☐ Saturday	Full ▾
☐ Wednesday	Full ▾		

Yearly variations for overriding default type and weekly variations

☐ January	Full ▾	☐ July	Full ▾
☐ February	Full ▾	☐ August	Full ▾
☐ March	Full ▾	☐ September	Full ▾
☐ April	Full ▾	☐ October	Full ▾
☐ May	Full ▾	☐ November	Full ▾
☐ June	Full ▾	☐ December	Full ▾

Day of selected months in yearly variations

◯ Day 1 ▾

◉ First ▾ Friday ▾

Datasheet

Within Policy settings are new GUI policies for the Deduplication feature.

Backup / Restore > Users, Groups & Policies > Policy Group > GUI Settings

Datasheet

AhsayCBS with Meter License

For clients with Meter License applied, they will have an additional **Usage** tab under the License menu.

System Settings > License > Usage

Note: The **Usage** tab is only visible for AhsayCBS with Meter License applied.

Datasheet

Backup Job Scenarios with Deduplication

The following example is when the Deduplication module is disabled for the user, and a backup job is performed with the Deduplication feature **On (enabled)**.

User Deduplication Module = unmarked	Backup Set Deduplication Toggle=On

Backup Report

Datasheet

The following example is when the Deduplication module is enabled for the user, and a backup job is performed with the Deduplication feature **Off (disabled)**.

User Deduplication Module = marked	Backup Set Deduplication Toggle=Off

Backup Report

Datasheet

The following example is when the Deduplication module is enabled for the user, and a backup job is performed with the Deduplication feature **On (enabled)**.

User Deduplication Module = marked	Backup Set Deduplication Toggle=On

Backup Report

Migrate Data

Deduplication has an advanced backup option: **Migrate Data**.

For **newly created v9 backup sets**, the Migrate Data option setting depends on Deduplication Default Values policy assigned to the user. While for **existing backup sets**, this option is **not marked** by default. Both can be managed by policies: **Default Values** and **Preempted Values** on the AhsayCBS Web Console.

The Migrate Data feature is meant for existing pre-AhsayCBS v9 backup data. When a pre-AhsayCBS v9 backup set is run with the Migrate Data option **enabled** and it contains v8 (or earlier) data that are previously backed up, the whole v8 (or earlier) backup data consisting of changed source will be re-uploaded and migrated to the latest version (v9). Therefore, backup jobs with Migrate Data option enabled may take longer to finish especially for large file(s).

> For entirely v9 data and backup set, the Migrate Data will not have any effect when enabled during a backup job.

Example:

- When a 100GB backup data is modified and a backup job is run, only the modified file(s) will be uploaded for the following setting:

  Migrate Data
  ☐ Migrate existing data to latest version

- When a 100GB backup data is modified and a backup job is run, the whole backup data will be re-uploaded and migrated to the latest version (v9) for the following setting:

  Migrate Data
  ☑ Migrate existing data to latest version

  During a backup job, the 100GB backup data will be divided into physical data block size of **32MB** up to **64MB** before it is uploaded to the backup destination(s).

  However, backup data which are smaller than 32MB will NOT affect the backup performance as the physical data block size will not be divided into chunks.

The Migrate Data option will not affect the backup performance if the Deduplication feature is configured **Off (disabled)** for the backup set. The Migrate Data option can be configured in two (2) ways:

Deduplication tab (only for AhsayOBM)

Choose You Backup Options screen

This option can be configured (i.e., enable or disable) before running a backup job. For newly created v9 backup sets, if enabled, it is ignored and serves no function for pure v9 backup sets.

Product	Description
AhsayOBM	▶ For AhsayOBM, the **Migrate Data** option will be shown if the Deduplication feature is **On (enabled)** for the backup set.
AhsayACB	▶ For AhsayACB, the **Migrate Data** option cannot be hidden, and to enable or disable this is the only option available.

The following is an example of backup log in AhsayOBM with both Deduplication and Migrate Data option **enabled**.

The following is an example of backup log in AhsayOBM with Deduplication **On (enabled)** and Migrate Data option **disabled**.

Datasheet

To configure the Deduplication feature in AhsayOBM v9 (or above), click the **Show advanced settings** link under the backup set settings.

Datasheet

Go to the **Deduplication** tab. You will find all the configurable settings for Deduplication in here.

For newly created backup sets in AhsayOBM v9 (or above), the Deduplication feature is **On (enabled)** by default.

Deduplication scope

The Deduplication scope consists of two options:

▶ **Same file path within the same backup set**

▶ **All files within the same backup set** (selected by default)

Same file path within the same backup set

$\Rightarrow$ If this type of Deduplication scope is selected, each backup file will be split into several blocks of varying size, then a checksum verification of each block will be performed to compare the file content throughout the **latest changed data** to identify which block is duplicated.

Any duplicated data under the same file path will be removed during a backup job.
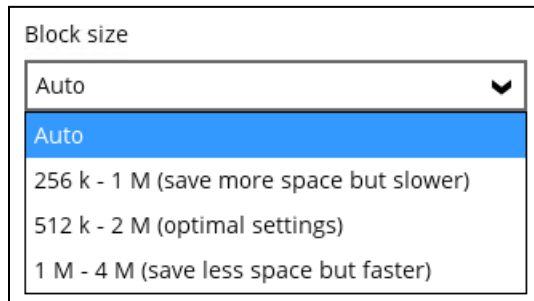
All files within the same backup set

$\Rightarrow$ This is the selected Deduplication scope by default. When selected, each backup file will be split into several blocks of varying size, then a checksum verification of each block will be performed to compare the file content throughout the **whole backup data** to identify which block is duplicated.

Any duplicated data under the same backup set will be removed during a backup job.
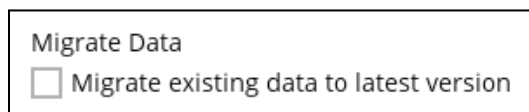
Block size

This option allows you to select the size of block during the checksum verification for each block. This setting is set to **Auto** by default, but you may select from the following Block size range.

Block size
Auto ▼
Auto
256 k - 1 M (save more space but slower)
512 k - 2 M (optimal settings)
1 M - 4 M (save less space but faster)

Migrate Data

Besides the **Migrate Data** option in the Choose Your Backup Options screen before running a backup job, you may also enable or disable this option in the Deduplication tab.

Migrate Data
☐ Migrate existing data to latest version

Note: Make sure to always click the [Save] button when any of the Deduplication settings have been modified to store any changes.

Datasheet

How Deduplication works for each type of Deduplication Scope

> **Same file path within the same backup set (File Path Level)**

Deduplication applies to CURRENT backup JOB and it applies to duplicated contents WITHIN a file.

e.g., 2 files are being backed up

1st backup job:	
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A]
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A]
Deduplicated contents backup	**File 1:** [50MB of content A] + [60MB of content B]
	File 2: [50MB of content A] + [70MB of content C]

2nd backup job:	
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A] + [10MB of new content D]
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A] + [10MB of new content D] + [20MB of new content E]
Deduplicated contents backup	**File 1:** [10MB of new content D]
	File 2: [10MB of new content D] + [20MB of new content E]

Datasheet

> **All files within the same backup set (Backup Set Level)**

Deduplication applies ACROSS different files in the backup SET.

e.g., 2 files are being backed up

1st backup job:	
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A]
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A]
Deduplicated contents backup	[50MB of content A] + [60MB of content B] + [70MB of content C]

2nd backup job:	
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A] + [10MB of new content D]
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A] + [10MB of new content D] + [20MB of new content E]
Deduplicated contents backup	[10MB of new content D]+ [20MB of new content E]

Datasheet

➢ **Deduplication OFF**

No Deduplication of files.

e.g., 2 files are being backed up

1st backup job:		
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A]	
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A]	
Contents backup	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A]	
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A]	

2nd backup job:		
Backup Source	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A] + [10MB of new content D]	
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A] + [10MB of new content D] + [20MB of new content E]	
Contents backup	**File 1:** [50MB of content A] + [60MB of content B] + [50MB of content A] + [10MB of new content D]	
	File 2: [50MB of content A] + [70MB of content C] + [50MB of content A] + [10MB of new content D] + [20MB of new content E]	

Dedupe Saving

The **Deduplication Saving** (or Dedupe Saving) is the amount of storage space that is saved after running a backup job with Deduplication.

The **Dedupe Saving** is automatically calculated by the following formula:

[Dedupe Size] / [Original Size] [Deduplication Ratio in %]

To check the Dedupe Saving of a backup set, go to **Report > Backup**, then select a backup set.

Datasheet

Upon clicking a backup set, the value of **Dedupe Saving** will be displayed on the summary of backup report.

Dedup Saving Formula:

[Dedupe Size] / [Original Size] [Deduplication Ratio in %]
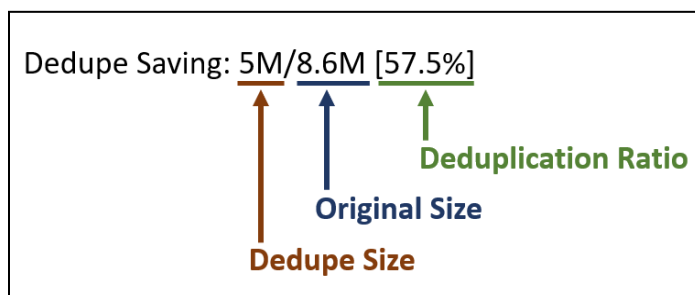
Dedupe Size – the storage size saved by Deduplication

Original Size – the original size of backup data

Deduplication Ratio – the percentage of the amount of storage size saved by Deduplication

Best Practices

	Deduplication	Migrate Data
Pros	When Deduplication is **ON**, it will minimize data upload during backup which means backup performance is boosted. It will also minimize data download during restore which means restore performance is also boosted.	When Migrate Data is **ON**, it will increase the restore performance to utilize new restore logic which minimizes data download.
Cons	Backup time will be longer since additional time is needed to process data to turn it into dedupable form during backup.	A full data backup will be done for first-time backup of a file data in v9 (either file was updated or newly backed up), so backup will take longer time to finish.

Here are some suggested settings for Deduplication and Migrate Data option to optimize backup performance.

Deduplication = ON and Migrate Data = OFF

This is the preferred setting to minimize data upload when data is updated, specially if the source data consists of mostly large files such as virtual disks.

This is also helpful to minimize data updates for frequently updated data.

Migrate Data option does not affect small files (< 32MB) that is either rarely or frequently changed.

Backup source that has data that is 50 to 90% frequently updated with long or archive retention period (i.e. 12 months or more) will benefit from this setting.

Deduplication = ON and Migrate Data = ON

This is the preferred setting for user with data that is rarely updated.

Backup source that has data that is 50 to 90% frequently updated with short retention period (i.e. 30 days or less), will also benefit from this setting. This will ensure space consuming v8 data can be deleted ASAP through space freeing up.

Deduplication = OFF

This is the preferred setting for backup source that has data with low deduplication rate and is rarely updated. This will save time in processing the data to be in dedupable form during backup which increases backup performance.

Physical Data Block Size Enhancement

When running backup jobs starting from v9 client, the data will be compressed, encrypted, and divided for large source files into physical data block size of **32MB** up to **64MB** before it is uploaded to the backup destination(s).

For smaller source files backed up during this job, they may be combined into a single block file, up to **64MB**.

Except for backup jobs with AhsayOBM running on QNAP and Synology NAS, that will use **8MB** up to **16MB** physical data block size.

> **i** A detailed summary of this enhancement can be found in **Chapter 1.8 Data Block Size** of the **AhsayCBS v9 Administrator's Guide**.

Datasheet

Data Migration

AhsayCBS Backup Module Layout

The **Backup Data Migration** page (a legacy feature for v6 data) will no longer exist once upgraded to AhsayCBS v9 or above.

Backup / Restore > Basic > Backup Data Migration

AhsayCBS v8 Basic Module Legacy Layout

AhsayCBS v9 Basic Module New Layout (No Backup Data Migration tab)
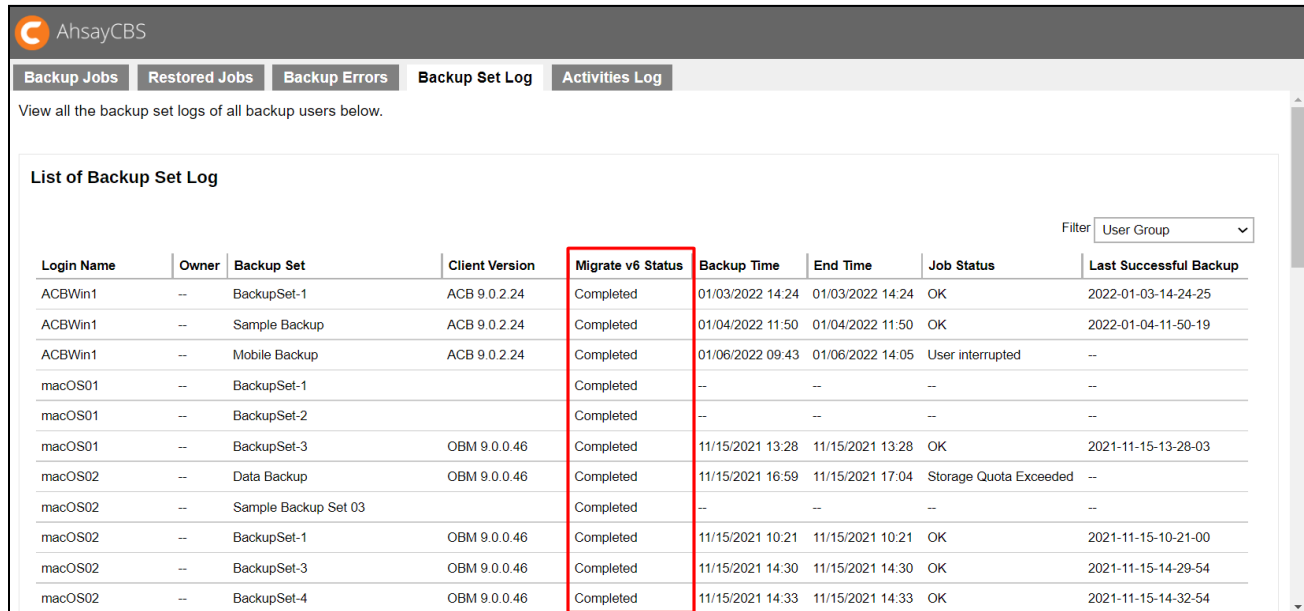
Datasheet

v6 to v9 Conversion

Starting with AhsayCBS v9, any devices with AhsayOBM/AhsayACB v9 installed running v6 backup sets will no longer be excluded from conversion.

To view the status of the v6 backup set data migration, go to **Monitoring** > **Backup / Restore Logs** > **Backup Set Log**.

The **Migrate v6 Status** can show "Pending", "In progress", and "Completed".

The "Completed" status indicates that the backup set is fully converted to blocks format with its v6 data removed.

v6 to v9 Backup Set Data Migration Process

Backup users going from v6 to v9 backup set will undergo a two-stage data migration process:

First Stage:
Using the old "Backup Data Migration" technology from pre-AhsayCBS v9, v6 backup data will be **automatically converted** to AhsayCBS Blocks data format (block size of **32MB** up to **64MB**) for any user's backup sets running on AhsayOBM/AhsayACB v9 client.

AhsayCBS blocks data will require at least 150% of the User Home temporary free disk space.

> ⚠ Consider to closely monitor the User Home disk as there is no option to suspend, pause, or exclude v6 data in the backup set data migration process.

v6 backup set data will be automatically removed on the post backup data migration process. Therefore, storage is reclaimed on the "Backup Data Migration" technology as part of the pre-AhsayCBS v9 behavior.

Second Stage:
AhsayCBS v9 "Migrate Data" technology will be used on AhsayCBS v7/v8 data when the option is **enabled** affecting only the changed Source data (reupload). While unchanged Source data will remain in the First Stage of the data migration process (pre-AhsayCBS v9 blocks data).

Storage is reclaimed on the "Migrate Data" technology through the Retention Policy job and the pre-AhsayCBS v9 blocks data will be removed.

As a result, extra free disk space of the User Home temporary storage is necessary (up to 3x from v6 data); consumed by the first "Backup Data Migration", and later for "Migrate Data" technologies.

Non-VDDK Backup Mode End of Support

Starting with AhsayOBM v9 or above, a non-VDDK backup mode is not supported in VMware vSphere backup, and only VDDK backup mode is supported.

If the VMware backup set is running AhsayOBM v8.5.4.x or v8.7 with AhsayCBS v9, backup jobs in non-VDDK backup mode will still be supported. However, if the AhsayOBM v8.5.4.x or v8.7 is upgraded to AhsayOBM v9 or above with AhsayCBS v9, backup jobs in non-VDDK backup mode will fail to back up.

Therefore, if the VMware backup set will continue to run backup jobs in non-VDDK backup mode, it is recommended to NOT upgrade to AhsayOBM v9 and continue using AhsayOBM v8.5.4.x or v8.7.

Datasheet

Change in statistic calculation for Retention Area

Starting with v9 or above, statistics for the Retention Area will not be counted due to structural changes in the backup data. The backup file itself will be moved to the Retention Area but the data will not follow since it can be referenced from the Data Area.

Example:

Retention Area*		Retention Area*
3.67M / 3.67M [0%] [3]	→	0 / 0 [0%] [3]
12K / 75K [84%] [1]		0 / 0 [0%] [1]
v8		v9

In our example for v8 the compressed size, uncompressed size and compression ratio is still calculated. The data can be interpreted as 12K of compressed size, 75K of uncompressed size. The compression ratio is 84%. And there is 1 file in the Retention Area.

While for v9, the compressed size, uncompressed size and compression ratio are not calculated so the value is now 0. The total number of files is still displayed, because the files are still moved to the Retention Area.

Overview (v9.3)

Starting with v9.3 or above, Office 365 will be changed to Microsoft 365 since the name change has already been implemented by Microsoft. With this the user interface for Microsoft 365 backup sets of AhsayCBS, AhsayOBM and AhsayACB has undergone a major revamp.

Authentication that will be used when creating a Microsoft 365 backup set is Modern Authentication. Basic and Hybrid Authentication have been removed to comply with Microsoft's product roadmap for Microsoft 365. Aside from this, backup and restore of Teams is now supported.

Here are the changes in the new version:

AhsayCBS Backup Client Settings

For AhsayOBM User

Note: The number of Microsoft 365 add-on modules = "5" is an arbitrary example.

Datasheet

For AhsayACB User

Note: Microsoft 365 Backup on AhsayACB limit still remains at maximum: 2.

Datasheet

Microsoft 365 backup set creation

In v9.3, the fields for Microsoft 365 credentials have been removed. This eliminates having to provide the login credentials for Microsoft 365 twice. Unlike in the old version, you have to provide the credentials first before clicking the Test button, afterwards when you login to Microsoft you need to provide your credentials again.

AhsayCBS

Pre-v9.3   v9.3 and above

Datasheet

AhsayOBM

Pre-v9.3

v9.3 and above

AhsayACB

Pre-v9.3

v9.3 and above

Datasheet

Backup Source selection

The user interface for backup source selection for v9.3 has been changed to show all data types that are available for backup. There is an option to select <u>all</u> or <u>specific</u> items for backup in Teams, SharePoint Sites and Public Folders. The list will be loaded per data type selected, unlike in the old version all the data types are loaded in the Advanced Backup Source window.

AhsayCBS
Pre-v9.3

Or when "I would like to choose the items to backup" link is clicked.

AhsayCBS

v9.3 and above

Run on Server AhsayOBM Backup Source selection with "Entire organization" selected as Backup scope

Run on Server AhsayOBM Backup Source selection with "This Microsoft 365 user only" selected as Backup scope or for AhsayACB Backup Source selection

AhsayOBM Backup Source selection

Pre-v9.3

Or when "I would like to choose the items to backup" link is clicked.

AhsayOBM Backup Source selection

v9.3 and above

"Entire organization" selected as Backup scope

"This Microsoft 365 user only" selected as Backup scope

Datasheet

AhsayACB Backup Source selection

Pre-v9.3

v9.3 and above

Datasheet

Restoring M365 Backup Set

In v9.3, a preview and download function have been added where you can check the item first before restoring it.

Preview function
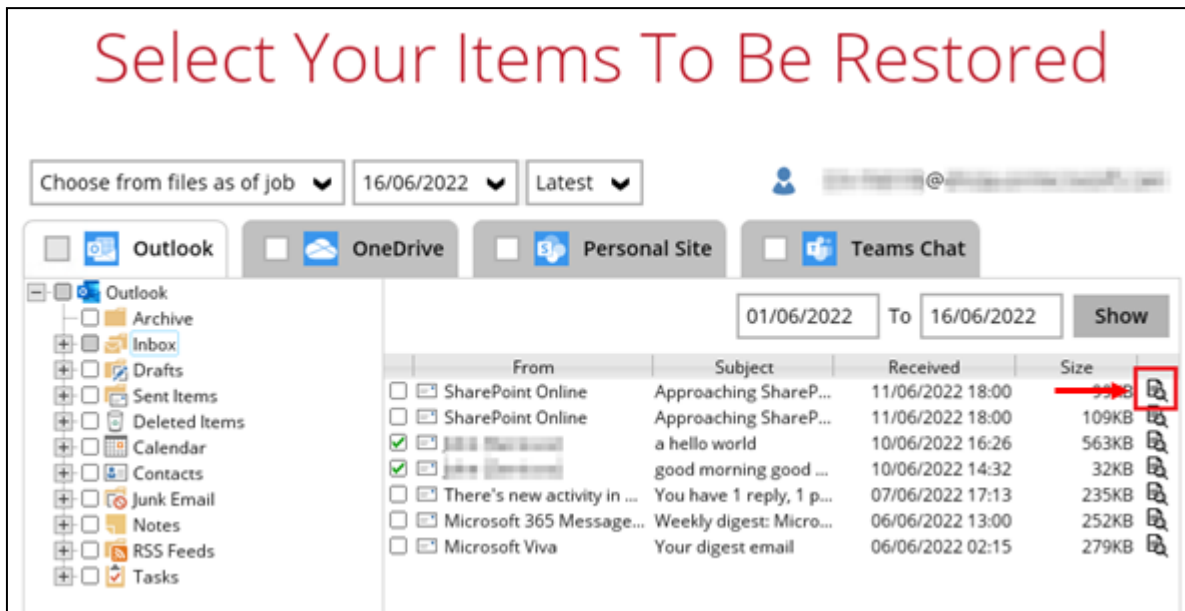
The preview function allows you to view the content of the item. Aside from that you can download and restore it from the Preview Email by clicking the **Quick Download** button.
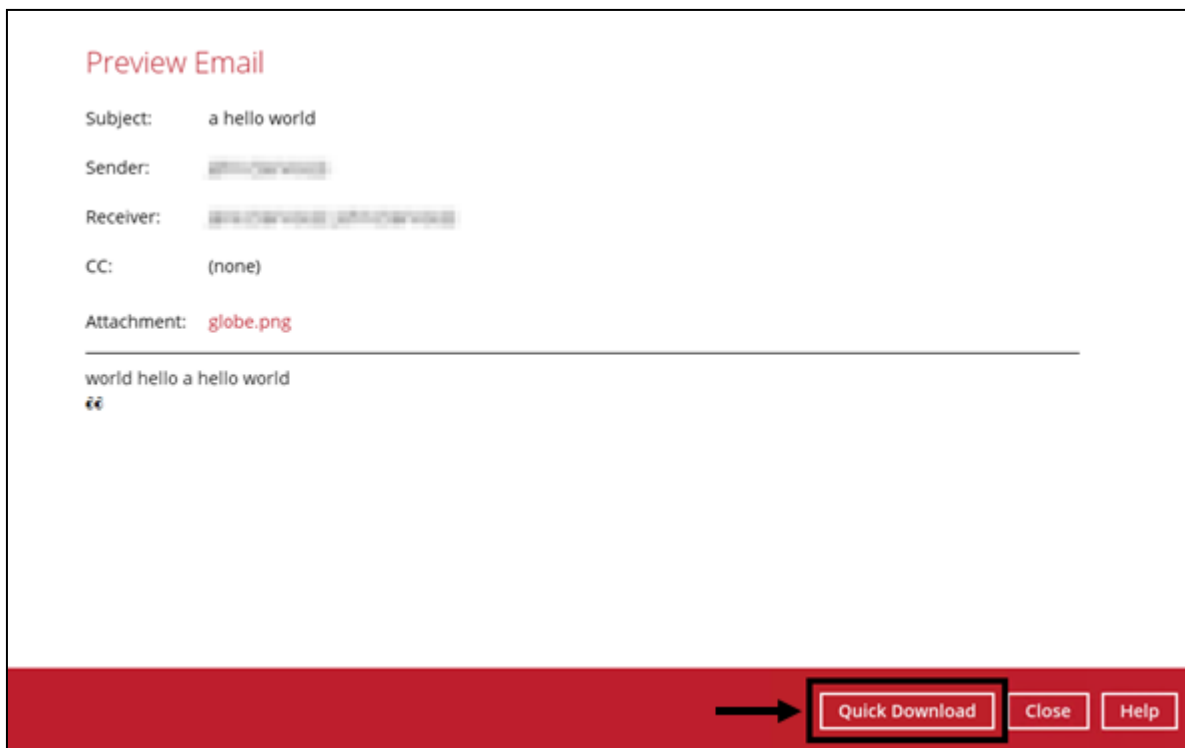
Datasheet

If the email has an attachment, you can download just the attachment by clicking on the attachment itself.

Download function

While the download function allows you to directly download and restore the item.

Datasheet

Restore Method

Another feature that has been added is the Restore Method. Items can be restored in two ways, either **Restore items to Microsoft 365** or **Save archive files to a destination**. The restore location that will be available will depend on the data type and restore method selected.
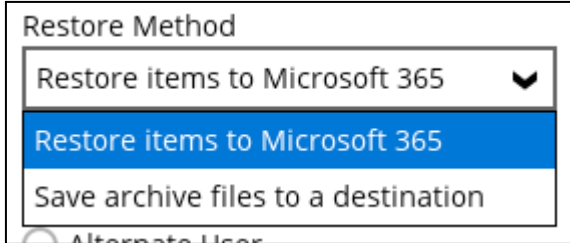
For <u>Restore items to Microsoft 365</u>, there are three restore locations available:

- ▶ Original
- ▶ Alternate
- ▶ Alternate Microsoft 365 organization

Data Type	AhsayACB	AhsayOBM
Users	**Original User** **Alternate Microsoft 365 organization**	**Original User** **Alternate User** **Alternate Microsoft 365 organization**
Teams	n/a	**Original Team** **Alternate Team** **Alternate Microsoft 365 organization**
SharePoint Sites	n/a	**Original Site** **Alternate Site** **Alternate Microsoft 365 organization**
Public Folders	**Original Public Folder** **Alternate Public Folder** **Alternate Microsoft 365 organization**	**Original Public Folder** **Alternate Public Folder** **Alternate Microsoft 365 organization**

Datasheet

While for <u>Save archive files to a destination</u>, restore location available depends on the data type and backup client:

▸ Local

▸ OneDrive of Original Microsoft 365 organization

▸ OneDrive of Alternate Microsoft 365 organization

Data Type	AhsayACB	AhsayOBM
Users	Local	Local OneDrive of Original Microsoft 365 organization OneDrive of Alternate Microsoft 365 organization
Teams	n/a	Local OneDrive of Original Microsoft 365 organization OneDrive of Alternate Microsoft 365 organization
SharePoint Sites	n/a	Local
Public Folders	Local	Local

Here are examples of the restore location for the different data types:

AhsayACB

Data Type	Restore items to Microsoft 365	Save archive files to a destination
Users	Restore Location ◉ Original User ○ Alternate Microsoft 365 organization	Restore Location Local ⌄
Public Folders	Restore Location ◉ Original Public Folder ○ Alternate Public Folder ○ Alternate Microsoft 365 organization	Restore Location Local ⌄

Datasheet

AhsayOBM

Data Type	Restore items to Microsoft 365	Save archive files to a destination
Users	Restore Location ◉ Original User ○ Alternate User ○ Alternate Microsoft 365 organization	Restore Location Local ▾ Local OneDrive of Original Microsoft 365 organization OneDrive of Alternate Microsoft 365 organization
Teams	Restore Location ◉ Original Team ○ Alternate Team ○ Alternate Microsoft 365 organization	Restore Location Local ▾ Local OneDrive of Original Microsoft 365 organization OneDrive of Alternate Microsoft 365 organization
SharePoint Sites	Restore Location ◉ Original Site ○ Alternate Site ○ Alternate Microsoft 365 organization	Restore Location Local ▾
Public Folders	Restore Location ◉ Original Public Folder ○ Alternate Public Folder ○ Alternate Microsoft 365 organization	Restore Location Local ▾

Teams backup and restore

Backup and restore of Teams Group Mail, Group Site, Teams Channel and Teams Chat is now supported in v9.3.

Microsoft 365 Backup Set Source Selection UI on Run on Client vs CBS UI

AhsayOBM Run on Client Microsoft 365 Backup Sets upgraded to v9.3.2.0 or above will first need the Backup Set to be updated from the Client-side in order to migrate pre-existing path list. If this has not been done, the AhsayCBS UI view for the Backup Set will remain in the pre-v9.3 Microsoft 365 Backup Source selection UI. Once the path list has been updated, the new Microsoft 365 Backup Source selection UI will be displayed on the AhsayCBS web console. Refer to "AhsayOBM Backup Source selection" section for example screenshots.

Overview (v9.5)

Starting with v9.5 or above, there will be two types of Quota available in the Quota settings.

▶ **Total Quota** – this is the new setting which is the total storage quota of all the destinations.

▶ **Per Destination Quota** – this is similar to the quota setting in AhsayCBS pre-9.5 version where you can specify the storage quota for specific destinations.

Aside from this, a Recycle Bin has been added for protection of the BAK (block) files stored in the Backup Set's destination. It allows the user to set the number of days BAK files that has been deleted due to Retention Policy or Data Integrity Check will be held under Recycle Bin as added protection. After upgrading to v9.5, this will be automatically enabled by default for existing backup sets. Which in turn may increase the storage space used by the backup set.

Login Web Console is another new feature which determines if a user will be allowed to login to the AhsayCBS user web console.

While for Deduplication, the default "Auto" block size has been removed and replaced with two new block sizes.

A new checkbox has been added in the Restore window which is "Show backup job(s) outside retention". This will allow the user to list all backup jobs even ones that are already beyond the retention period.

An Exclude Filter has been added to Microsoft 365 backup sets to allow users to create filters that will exclude certain folders from the backup.

New in Branding, Certificates for QNAP may be added to personalize your qpkg installer.

For developers, APIs updated to handle Quota types, Deduplication block sizes, enable AUA and user Login Web Console Settings.

Quota

The new quota types can be found in the following sections:

AhsayCBS Backup Client Settings

For AhsayACB User

By default, Per Destination Quota is selected.

Datasheet

For AhsayOBM User

By default, Per Destination Quota is selected.

Policy User Settings

Shared Quota is disabled by default. While Per Destination Quota is selected for the **User Quota**.

Shared Quota

If <u>Total Quota</u> is selected, the total destination storage quota will be shared by all users within the user group with a set maximum percentage for each user.

If <u>Per Destination Quota</u> is selected, the storage quota of each destination storage will be shared by all users within the user group with a set maximum percentage for each user.

User Quota

If <u>Total Quota</u> is selected, the defined total destination storage quota will be the settings applied to newly created backup user.

If <u>Per Destination Quota</u> is selected, the defined storage quota of each destination storage will be the settings applied to the newly created backup user.

Datasheet

Free Trial Options

This setting will be applied to all Trial users. By default, Per Destination Quota is selected with AhsayCBS as the destination storage with 50MB of storage space.

Recycle Bin

The Recycle Bin is another new feature in v9.5. Backup files are deleted based on Retention Policy settings or during Data Integrity Check. Once deleted, there is no way to retrieve the backup files. Recycle Bin ensures that deleted backup files are kept for a specified period. This feature is for protection of the BAK (block) files stored in the Backup Set's destination.

Highlights:

▶ Data in the Recycle Bin will consume Quota.

▶ The Recycle Bin does not move the data in another location within the storage, instead the index tracks the xxxxxx.bak files and the remaining time in the Recycle Bin.

▶ When disabled, if there are already deleted files it will not automatically delete the data inside the Recycle Bin, the data will only be removed if the following operations are run: Backup, Data Integrity Check, Space Freeing Up and Delete Backup Data.

▶ Recycle Bin cleanup is done at the start of the backup job process. You can find action taken by reviewing the report.

▶ Recovering from Recycle Bin requires reverting the index.

▶ Viewing Recycle Bin contents is unavailable.

▶ Recycle Bin size can be found under the user's Statistics Summary view, replacing the Retention Area column.

Datasheet

Here are the sections where the Recycle Bin settings can be configured:

AhsayCBS

Backup Set Settings

Recycle Bin is enabled by default set for 7 days.

Datasheet

Policy Default Values Settings

Recycle Bin is enabled by default.

Datasheet

Policy Preempted Values Settings

Recycle Bin is not enabled by default.

Datasheet

AhsayOBM

Backup Set Settings

Note: After upgrade to v9.5, existing Backup sets will have the feature enabled.

AhsayACB

Backup Set Settings

Note: After upgrade to v9.5, existing Backup Sets will have the feature enabled.

Login Web Console

The Login Web Console is also new in v9.5. This policy setting allows administrators to control who will be allowed to login to the AhsayCBS user web console.
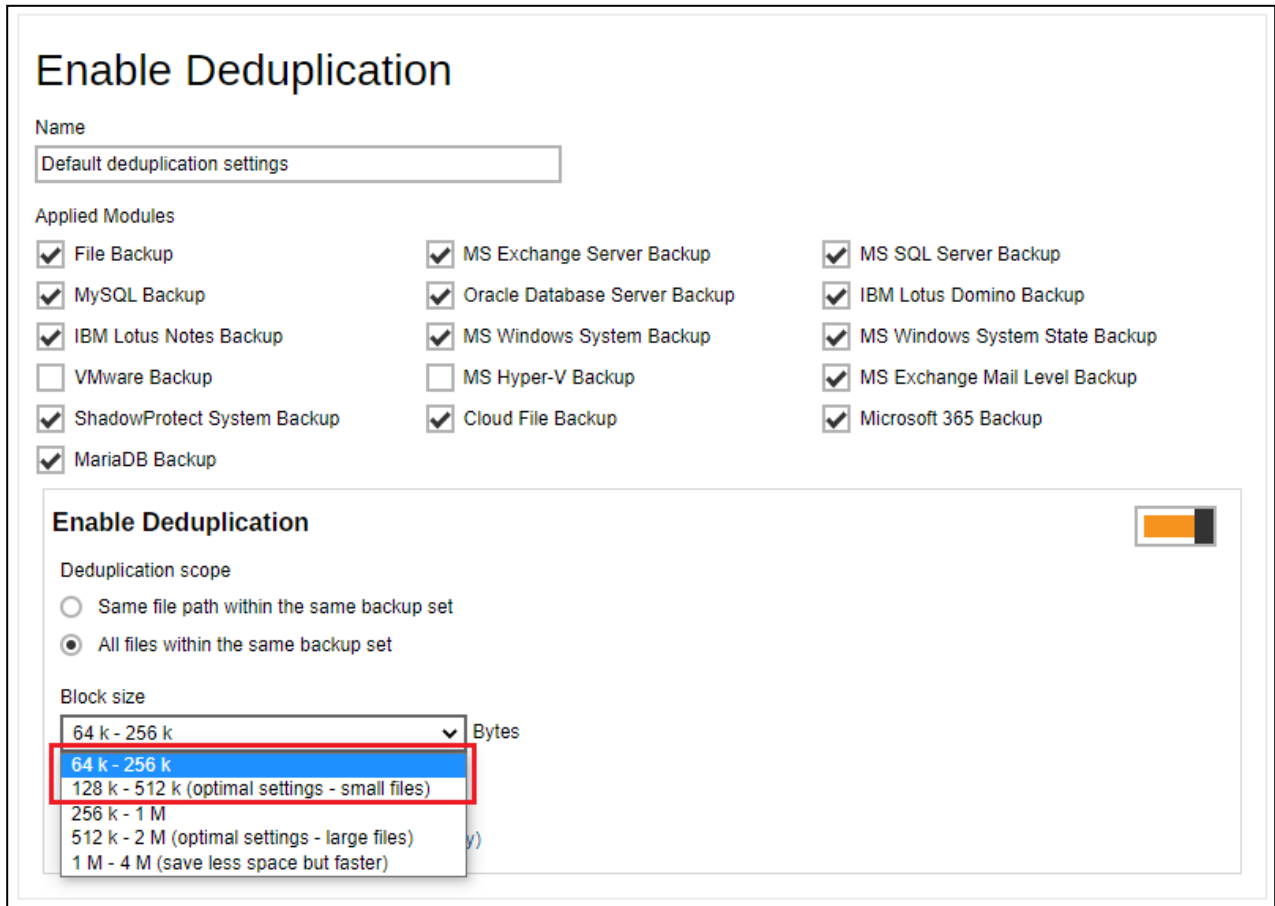
Users will only be allowed to login to the AhsayCBS user web console if **Login Web Console** is <u>enabled</u> and **Allow login web console** checkbox is <u>ticked</u>.

If there are several policies assigned to the user, there are conditions that needs to be considered to determine which policy will take effect. For more information regarding the conditions please refer to the discussion regarding Login Web Console in the <u>AhsayCBS Administrator's Guide</u>.

Datasheet

Deduplication

There are changes in the available block size in v9.5. **Auto** has been removed from the choices and two new block size range has been added which are: **64 k – 256 k** and **128 k – 512 k**.

Here are the default policy settings:

- ▶ For newly installed AhsayCBS, default policy is 64k – 256k (optimal settings).

- ▶ For AhsayCBS v9 upgraded to the latest version with "Auto" selected for the block size, the default block size will be changed to 512k – 2M.

- ▶ For AhsayCBS pre-v9 upgraded to the latest version, no matter what is selected for the In-File Delta block size, it will be changed to 64k – 256k (optimal settings).

> 💡 For AhsayCBS v9.0 – 9.3 upgraded to v9.5, It is suggested to revise the Deduplication default policy to the new optimized setting (64k – 256k).

Restore

For Restore, there is a new check box added which is "Show backup job(s) outside retention". This will display all backup jobs, including deleted ones.

This means that before v9.5, backup job(s) that are already past the retention period are hidden to users, but with this new checkbox all backup jobs will be displayed if the "Show backup job(s) outside retention" is ticked even if the backup job(s) are not available. Be careful in selecting these backup jobs as the files may not be available for restore if they have already been deleted.

v9.5

Backup job(s) that are past the retention period are greyed out.
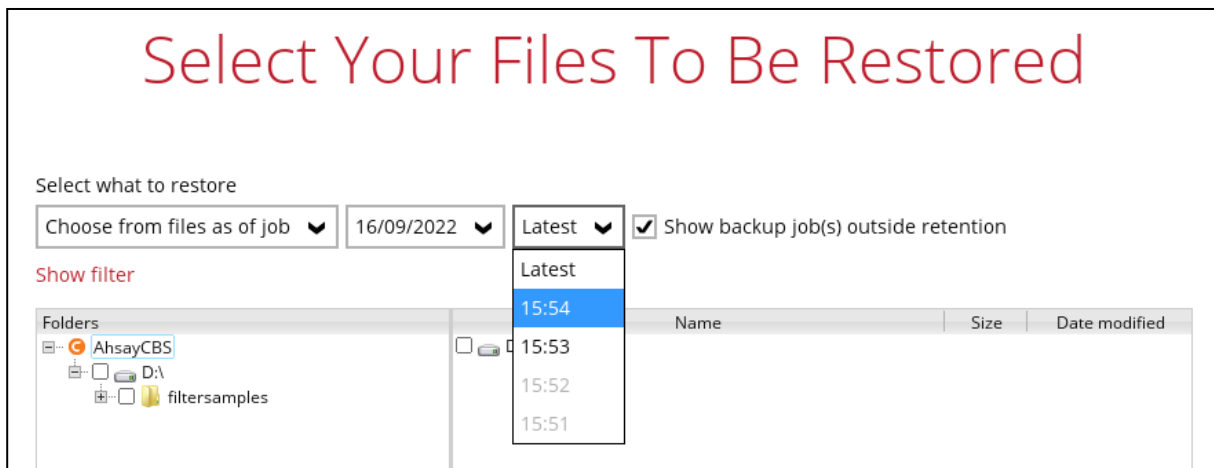
Pre-v9.5
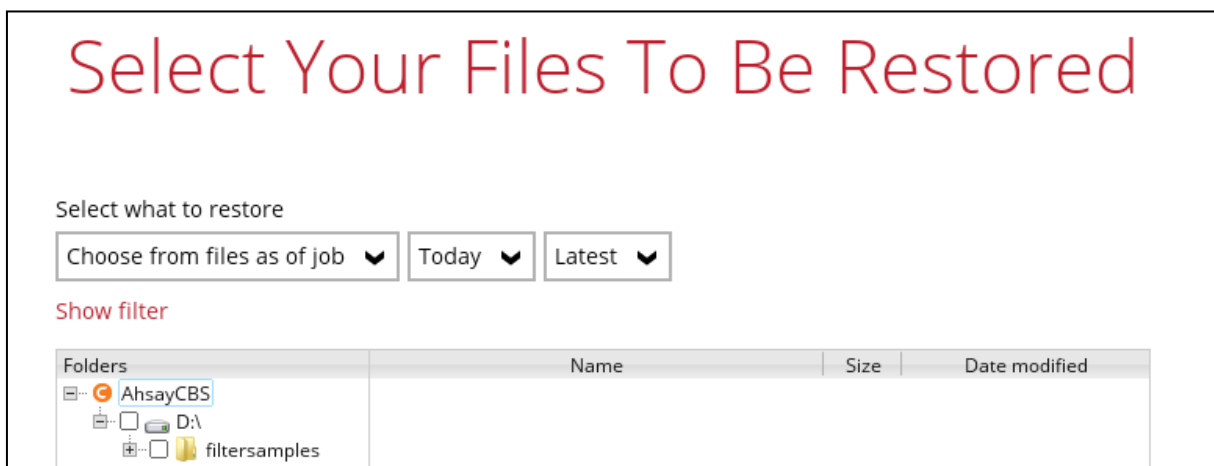
Exclude Filter

The Exclude Filter is new for Microsoft 365 backups in v9.5. This will allow users to create a filter that will exclude certain folders from being included in the backup.

The Exclude Filter will look like this in the following:

AhsayCBS

AhsayOBM

Datasheet

AhsayACB

Once enabled, click to add the filter.

Datasheet

This is how the Exclude Filter screen will look like:

AhsayCBS   AhsayOBM/AhsayACB

Datasheet
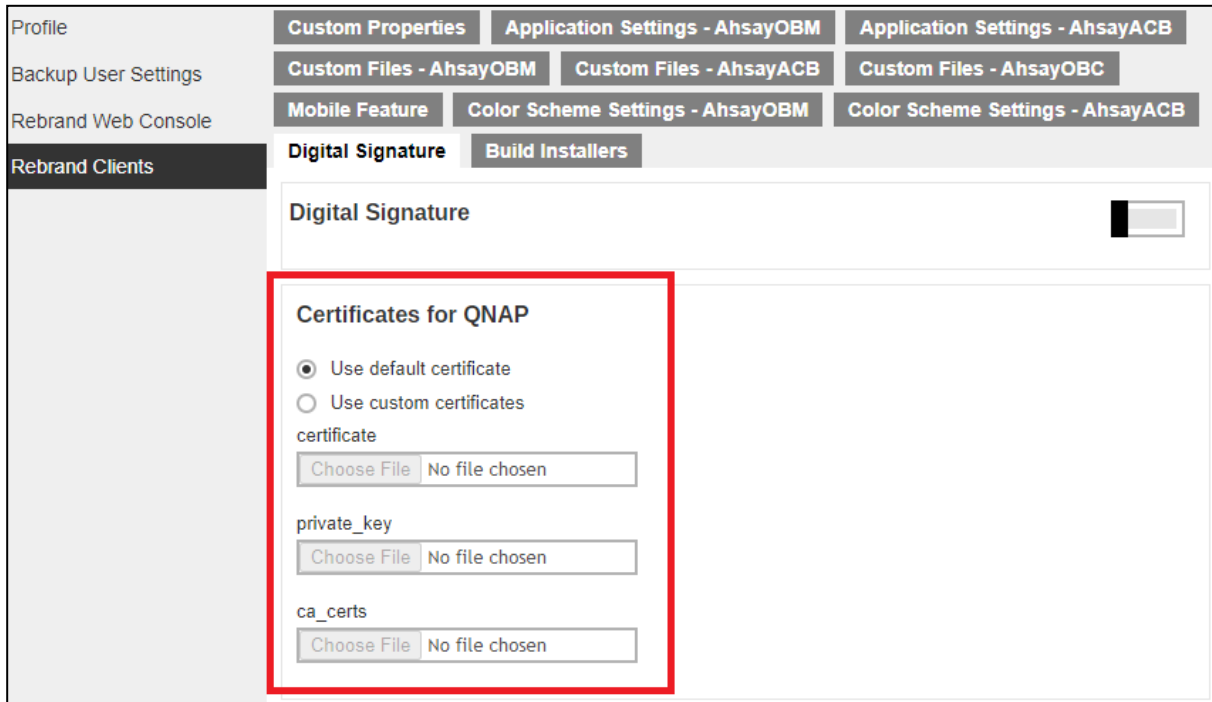
Branding

Added under System Settings > Basic > Administrative Access > %system user% >Rebuild Clients > Digital Signature, is the **Certificates for QNAP**.

In this interface, you have a choice to use the default Ahsay digital QNAP signature or upload your own QNAP signing certificate (in PEM format) for personalized branded experience.

Note: The QNAP certificate is not a SSL Certificate, but a Code Signing certificate signed by a trusted CA.

Behind the scenes AhsayCBS Branding behavior changes:

Upgraded AhsayCBS

Upon upgrade from AhsayCBS pre-v9.5, AhsayCBS v9.5 will:

1. Automatically convert all branding JSON (`$CBSHOME\conf\Branding\*.json`).

2. Import the properties into '`$CBSHOME\conf\cbs.db`'.

3. Export remaining assets into '`$CBSHOME\conf\Branding\{ID}`' structure containing branded graphics, XML, and metadata.

The migration is triggered when the branding settings is loaded for the first time (e.g. access sub admin console, build client installer) or by daily Auto Save routine (06:00), whichever occur first, after handling, the JSON will rename to "`.json.bak`" to signify it was migrated.

Newly installed AhsayCBS

From AhsayCBS v9.5 onwards, Branding will store relevant changes into their new locations:

- ▶ `cbs.db` (temp files `cbs.db-wal` and `cbs.db-shm`)

- ▶ `$CBSHOME\conf\Branding\{ID}`

These are needed if troubleshooting is necessary.

AhsayCBS v9.5 behavior changes within `$CBSHOME\conf\Branding\`:

- ▶ Branding JSON are no longer generated nor existing JSON updated. Any "`*.json.*`" found here (i.e. ROOT.json, ROOT.json.2) are pre-v9.5, and will remain here until future enhancement to remove them.

- ▶ Branding JSON rollback files (the .1, .2) are no longer generated whenever you save Branding changes from the AhsayCBS UI. There no longer exists automatic creation of previous JSON copy.

- ▶ The Export / Import of branding JSON is still available, however, the exported JSON will omit exporting graphics that are unchanged (i.e. no custom graphic uploaded), thus reducing the JSON export file size. Any JSON exported from AhsayCBS v9.5 is not backwards compatible with earlier AhsayCBS version.

- ▶ Routine AhsayCBS conf backup and Auto Save will still bundle exported branding JSON file(s), along with the `cbs.db`; however the `$CBSHOME\conf\Branding\{ID}` directory is not packaged.

AhsayCBS v9.5 behavior change affecting Language and GUI Feature of AhsayOBM/AhsayACB:

The current settings for Language and GUI Feature will re-apply during AUA (i.e. version upgrade and hotfix). If there were changes to either of these, clients will receive the latest values applied after AUA.

Overview (v9.7)

Starting with v9.7 or above, deleting backup sets has become easier. Now a delete button is available in the backup set list.

AhsayCBS will also start supporting saving backups in immutable destinations. Once a destination is set as immutable, users cannot delete or overwrite data saved in that destination. This is an added protection to prevent accidental erasures of important data. Currently only AhsayCBS and three cloud storage destinations supports this feature.

Another new feature for this release is the Restore Drill. This helps to ensure that backup data is restorable by finding out corrupted data at an early phase.

When viewing reports / logs, users can now interact with the displayed Login Name and Backup Set name as presented in each viewable report / log. These Clickable Login Name and Backup Set names allow users to seamlessly transition between the report / log information and the settings for the presented Backup User and Backup Sets.

In addition to these added layer of protection, Two-Factor Authentication (2FA) has been overhauled, now allowing users to choose between allowing logging into the Web Console or making API calls with or without Two-Factor Authentication.

Lastly, an additional feature for Windows machines has been added to Rebranding in the form of Stealth Installation. This feature, when used, allows System Users to build installers that 'hide' AhsayOBM and AhsayACB from easy viewing of users by taking away visible elements of its installation, such as its presence in the System Tray, Start Menu, and Desktop.

Datasheet

Delete Backup Set

Deleting a backup set is now easier, there is one less step to do it.

Just click the 🗑 button and click Yes in the confirmation message and the backup set will be deleted.
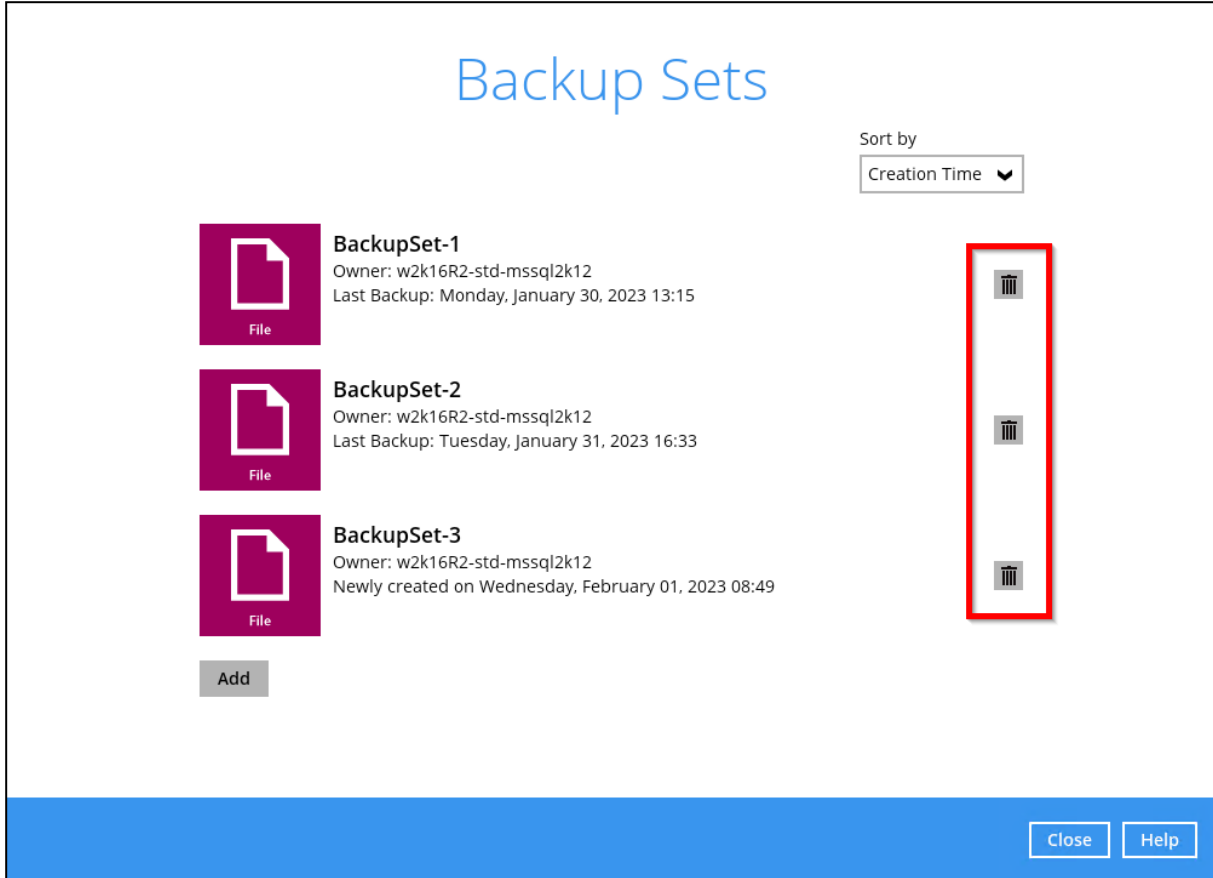
Immutable Destination

To provide added security to backup data, version 9.7 supports select backup destination which is set as immutable backup destination.

When a storage destination is set as immutable, data stored in that destination are protected from being deleted and overwritten. This is to prevent accidental or intentional deletion/overwriting of the stored data. You cannot change this setting once it is set as immutable. However, another checkbox is provided to temporarily allow the data to be deleted or overwritten within the specified date.

The following destinations supports immutable storage destination:

- AhsayCBS
- Amazon S3
- AWS S3 Compatible Cloud Storage
- Wasabi
- Backblaze
- Google Cloud Storage
- Microsoft Azure

This can be set in System Settings > Basic > Predefined Destination, or through Preempted Values. When setting up Immutable Predefined Destinations, 2FA needs to have been activated for additional security.

Here are the expected behaviors of AhsayCBS and Cloud destinations with different settings in Predefined Destination and Preempted Values:

Destination	Predefined Destination	Preempted Value	Behavior
AhsayCBS	☑ Immutable	☐ Immutable	AhsayCBS will work as immutable.
	☑ Immutable	☑ Immutable	AhsayCBS will work as immutable.
	☐ Immutable	☐ Immutable	AhsayCBS will not work as immutable.
	☑ Enable deletion	☐ Enable deletion	Deletion will be allowed, as long as the date in Predefined is not expired.
	☑ Enable deletion	☑ Enable deletion	Deletion will be allowed as long as the date is not expired. If set dates are different for Predefined and Preempted, the date in Preempted will be followed.
	☐ Enable deletion	☑ Enable deletion	Deletion will be allowed, as long as the date in Preempted is not expired.
	☐ Enable deletion	☐ Enable deletion	Deletion will not be allowed.
Cloud Destination	☑ Immutable	N/A	Predefined cloud destination will work as immutable.
	☐ Immutable	N/A	Predefined cloud destination will not work as immutable.
	N/A	☑ Enable deletion	Deletion will be allowed as long as the date is not expired.
	N/A	☐ Enable deletion	Deletion will not be allowed.

If there is a Backup set created before v9.7, the message "(Supported on or after client version v9.7)" will appear.
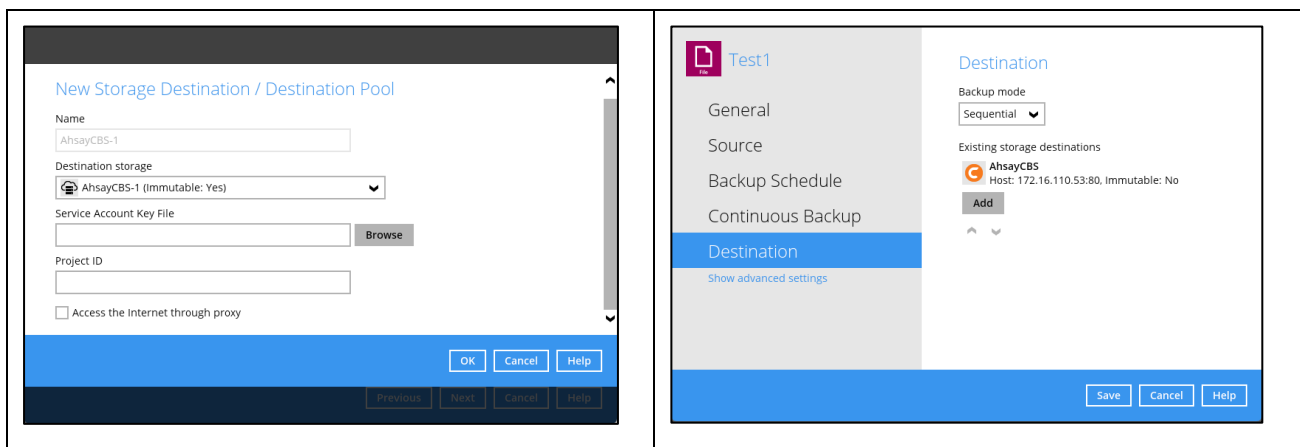
Datasheet

Storage Destination Immutable Status

On the Predefined Destinations page (**System Settings > Basic > Predefined Destinations**), you will be able to see which of the added Predefined Destinations are Immutable by a text marker under the Info tab that reads "Immutable: Yes" or "Immutable: No".

This information can also be viewed in the clients for AhsayOBM or AhsayACB when selecting a Destination during the Backup Set creation process, or when viewing the Destination screen in the Account settings.

Datasheet

Policy Group for Non-Immutable Destination

Non-Immutable Destination Settings is a Policy Group that manages pre-v9.7 created Backup Sets. In the event that a Predefined Destination in use by a pre-v9.7 Backup Set is converted by an Admin into an Immutable destination, Non-Immutable Destination acts as a means to prevent any errors from arising during a Backup Job.

This Policy Group, however, is not automatically applied to Backup Users; Administrators will instead have to manually add the "Non-Immutable Destination Group" or create a new User Group with "Non-Immutable Destination Settings" as a Policy to a Backup User.

User Group for Non-Immutable Destination

With the addition of "Non-Immutable Destination Settings" under Policy Groups, "Non-Immutable Destination Group" has been added to User Groups, which makes use of "Non-Immutable Destination Settings" as its default Assigned Policy.

Functionally, the "Non-Immutable Destination Group" behaves in a similar manner as other User Groups. However, this User Group in particular is dedicated to the facilitation of Users and their relationship with Predefined Destinations. Users assigned to this User Group have their Predefined destinations and their own relative statuses as Immutable Destinations managed by the User Group.

As an example, if Users have "AhsayCBS" as one of their pre-defined destinations, its status as an Immutable destination will be affected by whichever setting is chosen in the "Non-Immutable Destination Settings" Policy Group, regardless if the Immutable function has been activated during the addition of pre-defined destinations. By making use of this new User Group, this would make it easier for Admins to handle multiple Users and their relationship with Immutable destinations easier due to not having to modify destination settings for each User individually.

Preempted Values

Preempted Values is another way of setting up Immutable destinations. This allows the overriding of any Immutable settings applied to an added Predefined Destination by way of a Policy Group.

In the example below, a Predefined Destination called "AhsayCBS Non Immutable" has been added by the System User. Under the Preempted Values setting of a Policy Group, we have overriden the destination's Non-Immutable nature and made it into an Immutable Destination.

> 💡 Only users assigned a User Group containing the specific Policy Group that has the necessary Immutable settings in its Preempted Values can benefit from this feature.
>
> If the Predefined Destination and Policy Group's Immutable settings are contradicting i.e. Immutable is inactive in Predefined Destination settings page and active in Preempted Values, the setting applied to the Policy Group's Preempted Values will apply.

Restore Drill

The Restore Drill feature is used to check for corrupted files in the backup data. Once corrupted files are detected, a report will be generated listing the details of the corruption. Depending on whether Backup User has set up their contact details or the Admin has allowed Restore Drill Reports to be emailed to the Backup User in the Policy Group that governs them, the report will be subsequently emailed to the Backup User.

This Report, emailed or not, serves as a reminder to the Backup User to run the Backup Set again in order to correct the encountered issues uncovered during the Restore Drill.

To activate the function, navigate to:

▶ AhsayCBS Web Console

Users, Groups & Policies > Backup User > %Backup User Name% > Backup Set > %Backup Set Name% > Others > Restore Drill

▶ AhsayOBM / AhsayACB Client

Backup Sets > %Backup Set Name% > Others > Restore Drill

AhsayCBS Web Console	AhsayOBM / AhsayACB Client
Restore Drill Run trial Restore to ensure data healthiness and update corrupted files. Run restore drill every 6 ▾ Months	**Restore Drill** Run trial restore to ensure data healthiness and update corrupted files. On Run restore drill every 6 ▾ Months

⚠ Although Restore Drill settings can also be customized in the Preempted Values section of a Policy Group, these settings will not be able to override the activation of the function as it is set through the AhsayCBS Web Console or AhsayOBM / AhsayACB Client.

Only the schedule for Restore Drill jobs (i.e. the "Run restore drill every" setting) can be overridden by way of Preempted Values.

Manual and Scheduled Restore Drill Jobs

There are two ways in which to run a Restore Drill job:

▶ **Scheduled**

This way of running a Restore Drill job is predicated on the "Run restore drill every" setting, which can be customized once you have activated Restore Drill for a Backup Set or in Preempted Values. The frequency of every Restore Drill job run is measured in Months in increments of 6.

▶ **Manual**

Alternatively, Restore Drills can also be done through the AhsayCBS Web Console. Navigate to **Users, Groups & Policies**, then mark the tick-box next to the Backup User/s you wish to run a Restore Drill job on. From there, click on the ↻ icon, and choose from the Backup Sets in the following screen to run a Restore Drill.

You may also view any running Restore Drill jobs on this page, and stop them if needed.

To be able to run a Restore Drill, you must have first run a Backup Job using the Backup Set you wish to perform a Restore Drill on.

Additionally, you may only be able to manually start a Restore Drill job for AhsayCBS destinations. Scheduled Restore Drill jobs will perform normally, regardless of the Backup Set's chosen destinations.

The status of a running Restore Drill job can be viewed in **Monitoring > Live Activities > Restore Drill**.

Email Notification

If any file is corrupted, and is detected by the Restore Drill, an e-mail reminding a Backup User to run a Backup Job again due to these corruptions will be generated and sent to the Backup User's listed e-mail address as described in the **Contact** settings of their User Profile.

If the Backup User has not setup an e-mail as their contact, or if Email Reports are turned off in the User Settings of the Policy Group they are assigned to, a report will nonetheless be generated but be left unsent to the backup User.

The Reports for these Restore Drill jobs can be downloaded from either **Backup / Restore > Restore Drill Jobs** or from the **Report** section of the Backup User's setting page on the AhsayCBS Web Console. These reports come in PDF format, and details the Corrupted, Verified, and To be Verified Backup Files and Chunks of the Backup Job.

Datasheet
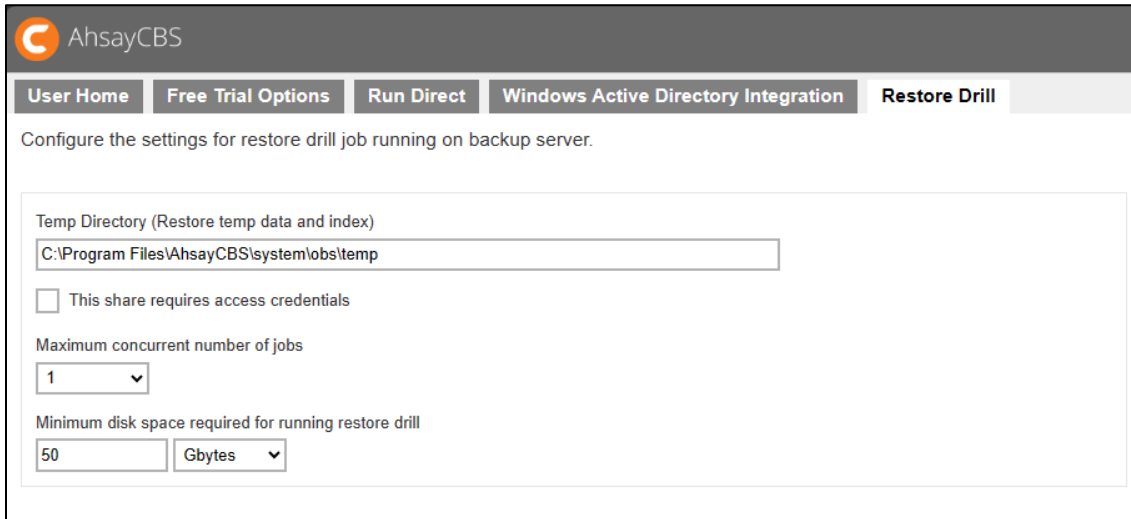
Restore Drill Tab

In addition to the aforementioned features for Restore Drill, a new tab that allows Admins to 'tweak' specific settings for Restore Drill jobs such as Temp Directory, concurrent jobs allowed, and minimum disk space required for Restore Drill jobs has been added to AhsayCBS. This tab can be accessed through **Backup / Restore > Basic > Restore Drill**.

Datasheet

Clickable Login Name and Backup Set name

When viewing Logs as listed in **Monitoring > Backup / Restore Logs**, the listed Login Name and Backup Set of each Log are now clickable menu items that users can use to view the settings for the Backup User and Backup Set respectively.

Datasheet

Customizable 2FA Protection

Two-Factor Authentication (2FA) now has several features that make it more customizable for System Users that enhance 2FA's protection. The first two of these options, presented as markable tick-boxes, are:

- Web Console

- API

Datasheet

Web Console

The Web Console setting, if turned on, will require the user logging into the system that has this feature enabled to submit the Authentication Code as presented in their paired Ahsay Mobile app or Third-Party Authenticator app.

When turned off, this setting simply removes the 2FA page when logging in, giving users immediate access to the Web Console.
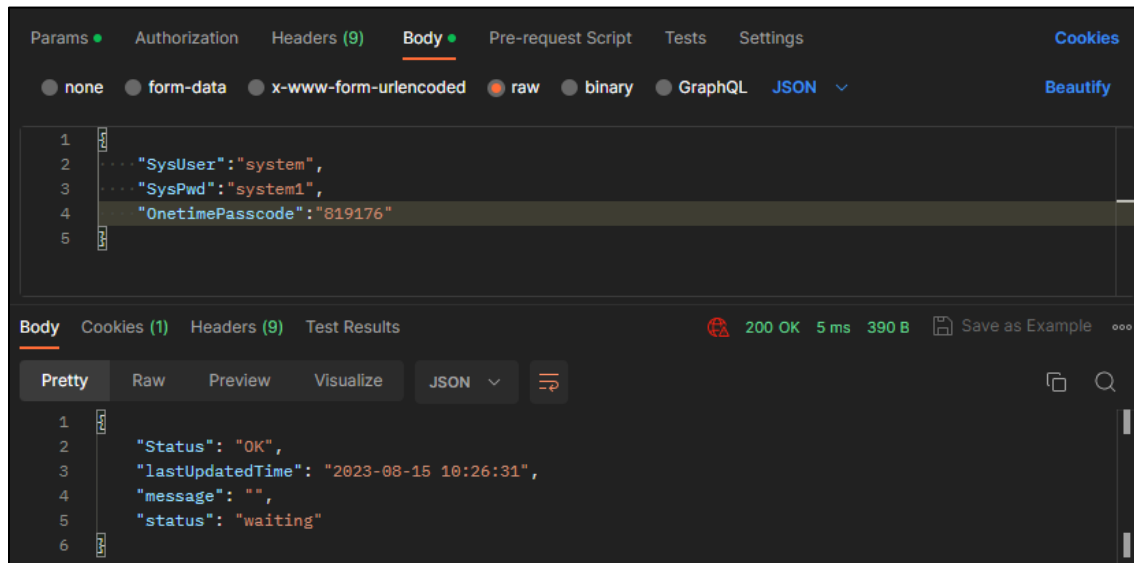
Datasheet

API

The API setting, if turned on, requires the user to input the Authentication Code as presented on their Authenticator Application to authenticate any API calls done. Without the code, all API calls will be returned with Parameter errors due to the missing code – this will prevent any changes done through API from taking effect, and even prevent basic API functions such as getting status reports regarding CBS functions.
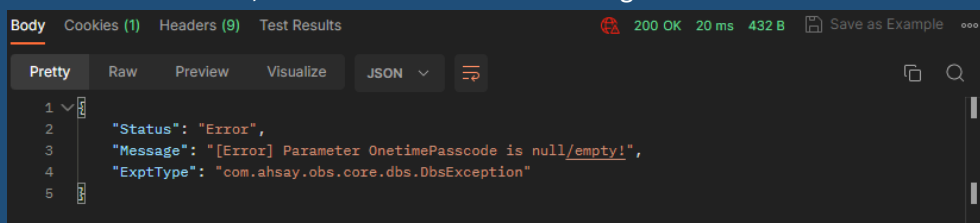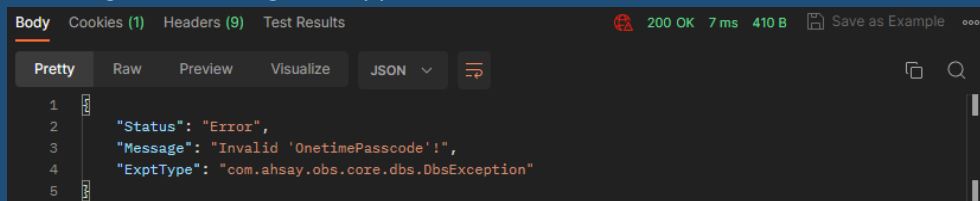

If the "OnetimePasscode" parameter is missing from the API call, along with the correct Authentication Code, users will receive the following return:

If the Authentication Code entered into the "OnetimePasscode" parameter is incorrect, the following error message will appear instead:

Stealth Installation (Windows Only)

A new feature for Branding / Rebranding, Stealth Installation is a "GUI Feature" that now allows for installers to be built that specifically targets the visibility of AhsayOBM and AhsayACB on a user's local machine.

The Stealth Installation setting presents itself as a checkbox that administrators can tick or untick when building installers. This option is found in:

System Settings > Basic > Administrative Access > [Select System User] > Rebrand Clients > Application Settings – AhsayOBM or AhsayACB > GUI Feature.

When the checkbox is ticked and either AhsayOBM or AhsayACB are installed or re-installed if there was a prior installation, the icons for either program that can usually be found in the **System Tray**, **Desktop**, or the **Start Menu** will be hidden from view.

To remove Stealth Installation's effects, AhsayOBM or AhsayACB will have to be uninstalled from the user's machine. Following this, the Stealth Installation's tick-box needs to be unmarked, where afterwards either AhsayOBM or AhsayACB can be re-installed by redownloading their installers and running their executables.