

# Ahsay Cloud Backup Suite v8 Quick Start Guide

Ahsay Systems Corporation Limited

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# **Revision History**

Date Descriptions		Type of modification
25 March 2021	Updated push notification in Ch. 4.6; Updated login instructions for TOTP only setup in Ch. 6.6.5	Modification
25 May 2021	Updated Ch. 4.6.2; Modified pre-requisite requirements for installation on Linux and added support for Debian 10 in Ch. 5.4; Updated Ch. 7.1; Updated Ch. 7.3	New / Modification
18 June 2021	Added note regarding backup and restore reports in Ch. 6.3	New
11 October 2021	Updated system architecture diagram in Ch. 1.1; Removed upgrade instructions for Windows in Ch. 5; Added registration of device in Ch. 7; Moved login instructions to Ch. 8; Added instructions if users unable to login in Ch. 9	New / Modification

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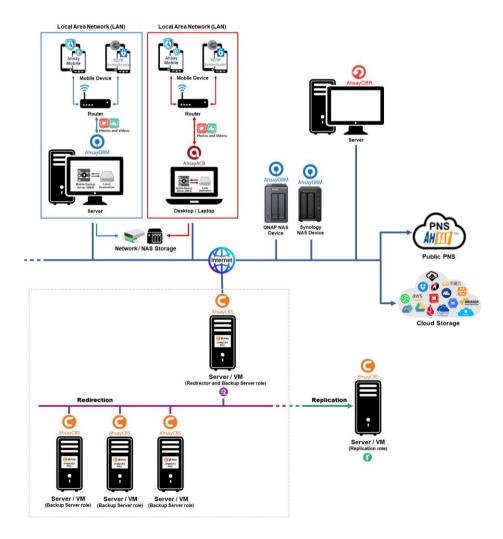
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# 1 Overview

#### 1.1 System Overview

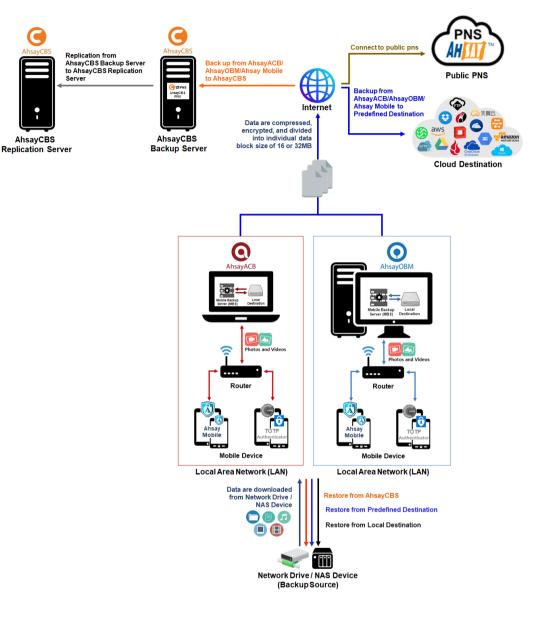
AhsayCBS consists of five core software components.

- AhsayOBM, AhsayACB and Ahsay Mobile are backup clients for installing on servers, desktops, laptop computers, or mobile devices that you need to back up.
- AhsayOBM, AhsayACB, AhsayOBR and Ahsay Mobile are restore clients for installing on servers, desktops, laptop computers, or mobile devices that you need to restore the backup data on.
- AhsayCBS is the server software which bundles a Backup Server, Replication Server and Redirector.
- Backup Server is the module that will host all the AhsayOBM/AhsayACB/Ahsay Mobile backup users and their backup data. It also performs Agentless Office 365 and Cloud File backups.
- Replication Server is the module to provide additional backup of the Backup Server.
- Redirector is the module to provide your backup environment with high scalability solution.

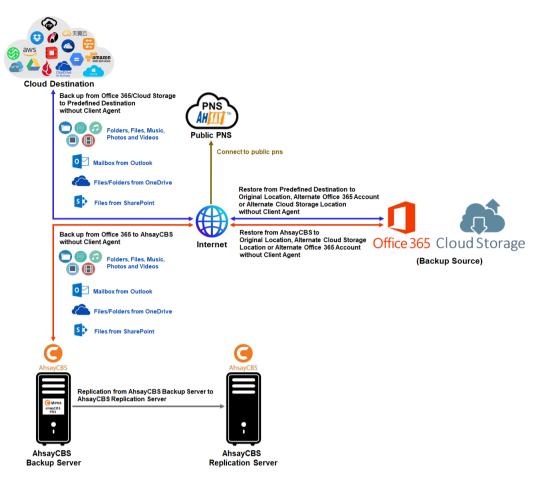


AhsayCBS has two types of setups:

 Agent based setup, wherein you will need AhsayOBM, AhsayACB and Ahsay Mobile to perform backup and restore.



• Agentless setup for Office 365 and Cloud File where the AhsayCBS performs the backup and restore, no need for a backup client to be installed.



## 1.2 Software Component Overview

## 1.2.1 Backup Server

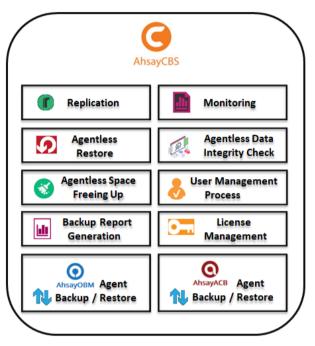
AhsayCBS is a web-based centralized management console for managing client-based backup, Run on Server backup, monitoring restoration, executing Data Integrity Check, performing Space Freeing Up and deleting backup data.

	Key features	<ul> <li>Manage backup of agent-based and Run on Server backup</li> <li>Monitor restoration of agent-based and Run on Server restore</li> <li>Execute Data Integrity Check</li> <li>Perform Space Freeing Up</li> <li>Delete backup data</li> </ul>
<b>AhsayCBS</b>	 Administrator control	<ul> <li>Create backup user accounts</li> <li>Manage group policies</li> <li>Keep track of system performance and health</li> <li>Create sub-admin or resellers account</li> </ul>
	Platform for backup clients to perform backup to various destinations	<ul> <li>Local hard disk</li> <li>Network storage</li> <li>FTP/SFTP</li> <li>Common cloud storages (Google, Amazon, Azure, etc.)</li> </ul>



Starting with AhsayCBS v8.3.4.0, each Run on Server Office 365 and Cloud File backup job has a separate Java process with its own Java memory setting which is independent of the main AhsayCBS Java process.

The new Run on Server process only applies to backup jobs. Other processes like restore, data integrity check and space freeing up are still integrated with the AhsayCBS processes.



#### **Run on Server Backup Process**





backup job

Cloud File Agentless backup job

## 1.2.2 Backup Client

We have three backup clients catering to customers with different needs. Below is a table providing a quick reference of the functionalities of the three backup clients.

	AhsayOBM		🚯 Ahsay Mobile
Backup source	<ul> <li>Back up files, databases and virtual machines such as:</li> <li>VMware</li> <li>Hyper-V</li> <li>Microsoft Exchange Database Availability Group (DAG)</li> <li>Microsoft Exchange Database</li> <li>Microsoft Exchange Mailbox</li> <li>Microsoft SQL Server</li> <li>Oracle Database</li> <li>Lotus Domino/Note</li> <li>MySQL</li> <li>MariaDB</li> <li>Windows System State</li> <li>ShadowProtect</li> <li>Synology NAS Devices</li> <li>Office365</li> <li>Cloud File</li> <li>QNAP NAS Devices</li> </ul>	Back up files, Outlook / Outlook Express / Windows Live mail, Windows System, IBM Lotus Note, Cloud File, Office365 mailbox, OneDrive and Sharepoint files.	Backup up photos, videos and 2FA accounts from an Android or iOS mobile device to AhsayOBM or AhsayACB.
Backup destination	Local and offsite destinations, e.g. local storage, on-premises backup server or backup server located in a datacenter, and common cloud		

	storages (Google, Amazon, Azure, etc.)	AhsayOBM or AhsayACB machine. Also possible for offsite destinations but involves a two-step process. For more
		information please refer to the <u>AhsayOBM</u> <u>Quick Start Guide</u> and <u>AhsayACB Quick Start</u> <u>Guide</u> .
Data encryption	All the backup data are compressed and encrypted before uploading to the Backup Server, while the restoration process requires downloading the compressed and encrypted data onto the client computer for decryption and decompression.	Photos, videos and 2FA accounts are uploaded in its original format; files can be viewed directly in the backup destination.

#### NOTE

Backup Sets with Run Direct restore and Granular restore enabled, both compression and encryption are disabled to optimize restore performance.

## 1.2.3 Restore Client

We have four restore clients (AhsayOBM/ AhsayACB/ Ahsay Mobile/ AhsayOBR) catering to customers with different needs. Below is a table providing a quick reference of the functionalities of AhsayOBR.

	AhsayOBR	
Restore source	<ul> <li>Restore files, databases and virtual machines such as:</li> <li>VMware</li> <li>Hyper-V</li> <li>Microsoft Exchange Database Availability Group (DAG)</li> <li>Microsoft Exchange Database</li> <li>Microsoft Exchange Mailbox</li> <li>Microsoft SQL Server</li> <li>Oracle Database</li> <li>Lotus Domino/Note</li> </ul>	

	Windows System
	Windows System State
	ShadowProtect
	> Office365
	Cloud File
	> MariaDB
Restore destination	The backup data will be restored to the devices running restore
	client

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

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

		quickly, so it saves you time and effort to achieve your restore goal.	selecting this restore option.
Granular Restore	AhsayOBR Client Backup Agent	In some cases, you may only need to restore a few individual file(s) from the guest VM, therefore, granular restore gives you a fast, convenient, and flexible tool to restore selected file(s) from a guest VM quickly.	To ensure optimal restore performance, the backup of the guest VM will <b>NOT</b> be encrypted and compressed, therefore, you may have to take this factor in consideration when using this restore method.
Cross platform usage	AhsayOBR Client Backup Agent	Although both tools are available for use on various platforms, e.g. Windows, Mac, Linux, etc., cross platform restore is <b>NOT</b> recommended. For example, files backed up on Windows are not recommended to restore on a Mac/Linux machine.	
Compatibility	AhsayOBR	Support restore of backup set created on either AhsayACB / AhsayOBM	N/A
	Client Backup Agent	N/A	Support restore of backup set created by the same type of Client Backup Agent only. E.g. backup set created on AhsayOBM can only be restored by AhsayOBM.

## 1.2.4 Replication Server

Replication Server offers close to real time replication of user data hosted on the Backup Server, so that when your live Backup Server is out of service, you can switch the Replication Server into Backup Server so as to keep your backup service uninterrupted. Aside from the Replication Server, you can also use cloud storage for replication. Alternatively, you can also choose to restore the backed up data from the Replication Server or cloud storage when your Backup Server machine is recovered.

## 1.2.5 Redirector

With the use of Redirector in conjunction with multiple Backup Server machines, it forms a cloud backup architecture for servicing as many backup customers as needed with a single public URL. All backup users will use the single URL as the initial contact server, even though they reside on different Backup Servers under different URLs. Thus, an online backup provider can add new Backup Server machines to serve new customers, or relocate existing backup accounts from one Backup Server to another easily without the need for the existing users to reconfigure the backup server address in AhsayOBM or AhsayACB.

#### IMPORTANT

For details regarding setup and configuration of the replication server and redirector, please refer to the **Administrator's Guide** via the URL below. Chapter 7 **Replication** and Chapter 8 **Configuring Redirector** would state the details of replication and redirector respectively.

https://www.ahsay.com/download/download\_document\_v8\_cbs-admin.jsp

## 1.3 Run on Server (Agentless) Backup Process

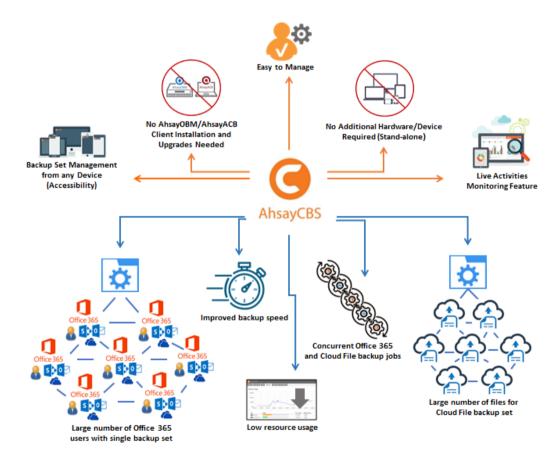
The Run on Server (Agentless) Office 365 and Cloud File backup jobs are now a separate Java process independent from the main AhsayCBS Java process. This means that Office 365 and Cloud File backup jobs will not utilize the Java memory resources of AhsayCBS Java process, as each backup job will run in its own independent Java process with its own dedicated Java memory setting. By default, each Run on Server backup job is assigned 1GB of Java memory. However, the Java memory allocation can be customized by the system administrator.

The previous limitations on maximum number of concurrent Run on Server (Agentless) Office 365 and Cloud File backup job on AhsayCBS has been removed, as more concurrent backups can be supported due to the improvements.

The changes made will improve the overall performance, stability, and scalability of AhsayCBS for Run on Server (Agentless) Office 365 and Cloud File backup jobs.

## 1.3.1 Why deploy agentless Office 365 and Cloud File backup

Run on Server (Agentless) backup process has been improved to make the backup experience better to meet the needs of the customers.



#### No AhsayOBM/AhsayACB client installation and upgrades needed

AhsayOBM and AhsayACB client installation is not required as backup jobs are running on the AhsayCBS server. Also, unlike the client backup agent, upgrading when a newer version becomes available is not necessary, as long as the AhsayCBS server version is upgraded by the backup service provider.

#### No additional hardware/device required

As the Run on Server (Agentless) backup set utilizes the resources of the AhsayCBS backup server, there is no need to provision additional physical or virtual machine to run the backup/restore which means the cost of each backup set is much lower than for an agent based Office 365 and Cloud File backup set.

#### Easy to manage

The AhsayCBS User Web Console offers you an easy-to-manage user interface. This will help you save time and it reduces the overall cost of support.

#### Backup set management from any device (Accessibility)

Backup/restore operation(s), backup set settings configuration, and backup/restore process monitoring can be done from any device as long as a web browser and internet connection are present in the device.

#### Live Activities Monitoring feature

The AhsayCBS User Web Console has a live activity monitoring feature which is used to keep track of the backup and restore job(s). The following operations can be performed using this feature:

- View the status of the backup process that is currently running or finished within 1 hour
- View the status of the restore process that is currently running or finished within 1 hour

#### • Handle backups of large number of Office 365 users with a single backup set

Finish backup of a single Office 365 Run on Server (Agentless) backup set with 2000 users within 24 hours.

#### • Handle backups of large number of files for Cloud File backup sets

Easily backup Cloud File Run on Server (Agentless) backup sets containing large number of files.

#### Improved Office 365 backup speed

The Office 365 backup speed has improved due to Office 365 Change API implementation.

#### Lower resource usage

The new Run on Server (Agentless) backup process has its own independent Java process, set at 1GB by default, which means it does not use the Java memory resources of the AhsayCBS Java process resulting in lower resource usage.

#### Improved capacity for each AhsayCBS server to handle more concurrent Office 365 and Cloud File backup jobs

Since the Run on Server (Agentless) backup process is now separate from the main AhsayCBS process, more concurrent Run on Server (Agentless) Office 365 and Cloud File backup jobs can be supported.

Please refer to the following user guide for the details about how to run agentless backup/ restore jobs using AhsayCBS user web console:

<u>Cloud File Run on Server (Agentless) Backup and Restore Guide</u> Office 365 Run on Server (Agentless) Backup and Restore Guide

# 2 System Requirements

Before you install the AhsayCBS, please pay attention to the following system requirements and make sure that the requirements are met before getting started.

The AhsayCBS should be deployed on a machine supporting 64-bit multiple CPU and multiple cores environment. A 64-bit operating system will allow AhsayCBS to run on a 64-bit Java OpenJDK 1.8 platform, as 64-bit Java is capable of supporting sufficient capacity for future business expansion, to meet the need of existing customers and to support new AhsayCBS server features. It should also have the GNU C Library version 2.14 or higher installed to support the Java OpenJDK 1.8 platform.

When you deploy the AhsayCBS, please consider assigning a dedicated disk for the system home, user home and replication home. It is not suggested to install AhsayCBS on a disk which contains your operating system. Due to backup data growth this can quickly fill up the system drive which makes the operating system unstable and may even crash the AhsayCBS server.

## 2.1 Software Requirements

Refer to the following link for details of the operating systems, applications and databases supported by AhsayCBS.

FAQ: Ahsay Software Compatibility List (SCL) for version 8.1 or above

Refer to the following article for the list of compatible operating system for Granular Restore: FAQ: Ahsay Software Compatibility List (SCL) for Granular and OpenDirect Restore

## 2.2 Hardware Requirements

You can deploy AhsayCBS server on a physical machine, on a virtual machine, or on a cloud environment. The server requirements are outlined in the following sections.

Refer to the following link for details of the hardware requirements needed to run AhsayCBS successfully.

FAQ: Ahsay Hardware Requirement List (HRL) for version 8.1 or above

## 2.2.1 AhsayCBS on Physical Machine

When you deploy a physical machine, please consider to purchase a more powerful machine. This will reduce the need for frequent hardware upgrades when your backup business grows, which will require services down time for hardware upgrades and data migration. If the AhsayCBS server is deployed for Office 365 and/or Cloud File Run on Server (Agentless) backups, the server needs to be of a higher specification; CPU and RAM, as the backup/restore jobs will be processed by the server itself.

It is a good idea to ensure your AhsayCBS server is equipped with some redundancy features, i.e. power supply, and is connected to a UPS (Uninterruptible Power Supply).

## 2.2.2 AhsayCBS on Cloud Environment

To host an AhsayCBS on cloud, the basic requirement would be similar with setting up a physical machine. It is more flexible when you need to increase memory size, process cores, and disk space. In addition, you will need to take the running cost of a server instance and network usage, which are considered as a hidden cost for the setup.

You can consider hosting a cloud server instance such as Amazon or Azure.

#### 2.2.3 Additional Disk Storage

Connect a Direct-Attached Storage (DAS) with e.g. a 12 hard disk bays filled with 4TB hard disks via the SCSI interface, extra SCSI controller card required.

With the above setup, it should be able to handle 100 users with around 30TB of storage and a total of 1000 backup sets. With this server setup, it is not yet reaching the server's physical limitation. There are still other factors that may limit the growth of users, e.g.: network bandwidth. Also, it is easier to manage from administration point of view.

There are 2 assumptions:

- Each user has around 300GB of backup data, with constant 3% of changes daily.
- Each user account has configured 10 backup sets. These backup sets could be run on different machines and backup to the AhsayCBS at the same time.

AhsayOBM/AhsayACB backup clients are enhanced to utilize multiple threads for backup and restore. It is recommended to keep the maximum number of concurrent backup jobs on the AhsayCBS to 1000, to avoid potential performance problems.

#### Additional Storage on Cloud

Besides local storage, you can set up network storage, FTP/SFTP and common cloud storages (Google Drive, Dropbox, OneDrive, Rackspace, Wasabi etc.) for the AhsayCBS.

## 2.2.4 Additional Memory

The amount of RAM needed for the AhsayCBS server to run efficiently depends on:

- The memory required for the operating system to run efficiently.
- The type of backup jobs; agent based backup where the backup is processed on the customer machine or an agentless (Run on Server) backup job such as Office 365 or Cloud file backup where the backup job is processed by the AhsayCBS server itself.
  - Agent based backup

As the agent based backup rely on AhsayOBM/AhsayACB backup client to process the backup, the Java heap size required is relatively small. For most AhsayCBS servers a setting of 4096M or 4GB of Java heap size is sufficient. The default Java heap size is 2048 or 2GB.

For example, the AhsayCBS server will require a minimum of 8GB of RAM, 4GB (for the Operating System) + 4GB (for AhsayCBS service) = 8GM of RAM.

For an AhsayCBS server hosting agent based backups, the Java heap size should not exceed 2/3 of RAM available to allow sufficient resources for the operating system.

For instruction on how to configure the Java heap size, please refer to the <u>AhsayCBS Administrator's Guide</u>.

#### Agentless backup

Although the backup job is processed by the AhsayCBS server itself with each backup job having its own separate Java process and Java heap size, it is still recommended that the AhsayCBS service should have a Java heap size of 4096M or 4GB. As restore, data integrity check and space freeing up feature for agentless Office 365 and Cloud File backup sets will still utilize Java memory from the AhsayCBS service.

For example, if the AhsayCBS server is hosting 20 agentless (Run on Server) Office 365 backup jobs, each backup job has a default Java heap size of 2048M or 2GB of memory. The AhsayCBS server will require 48GB of RAM. That is 40GB (for the 20 Office 365 backup jobs) + 4GB (for the Operating System) + 4GB (for AhsayCBS service) = 48GB of RAM.

Although based on the estimated 48GB RAM usage, a server with 64GB RAM is sufficient. For an on-premises server, it is recommended to provision additional RAM to meet unexpected on-going requirements and future business growth.

Please refer to <u>Chapter 6.9 Setting up memory for Run on Server (Agentless)</u> <u>Backups</u> for more information on how to set up memory of agentless backup job.

#### WARNING

Review usage regularly, if more backup sets are created then more RAM may need to be added.

If there is not enough RAM to accommodate all agentless Office 365 & Cloud File backup jobs running concurrently, then some backup jobs will not run.

## 2.2.5 AhsayCBS on Virtual Environment

It is more flexible when you deploy AhsayCBS on virtual machine environment, as you can increase memory size, process cores according to the actual need.

If VM snapshots are not required, please try to delete or reduce the amount of snapshots stored on your disk. Please also check on the storage requirement on virtual environment.

#### Additional Storage on Cloud

Besides local storage on your virtual machine, you can set up network storage, FTP/SFTP and common cloud storages (Google Drive, Dropbox, OneDrive, Rackspace, Wasabi etc.) for the AhsayCBS.

#### 2.2.6 AhsayCBS on Standby Server

To ensure you have a backup of your Backup Server in the event of any hardware issues. We recommend replicating your data on the Backup Server to the Replication Server.

In case you need to shut down your Backup Server for maintenance, you can simply switch your Replication Server to the Backup Server and change the DNS record from your current Backup Server to the Replication Server.

The hardware requirement of the Replication Server would be similar as your Backup Server and usually configured with more storage than your Backup Server.

Although both Backup Server and Replication Server are bundled in AhsayCBS, both backup and replication services are activated post installation.

It is not recommended to configure and use both services on one machine, as they will compete for system resources, i.e., CPU, memory and storage. This could affect the performance and stability of your backup service. Also, it will completely defeat the purpose of Replication Server as a backup or standby server to your Backup Server.

Please also check the details on the replication setup.

## 2.3 Storage Requirements

When you are setting up storage for your AhsayCBS, please consider the following:

- Type of RAID to fit your requirement (for local physical server or virtual environment)
- If you are deploying the storage locally, you are required to set up storage with redundancy, such as RAID 5 or RAID 6. This is important especially when you are delivering a backup service with good disk performance as well as good fault tolerance.
- Dedicated storage location for the system, user home and replication home
- Physical storage, virtual storage, and cloud storage

## 2.3.1 Redundant Disk Setup for Physical and Virtual Storage

We would recommend setting a rack mount server with several hard disk bays and/or attach a DAS for future expansion.

When you are setting up a rack mount server with 10 4TB hard disks, you may have concerns whether formatting the disk volume with RAID 5 or RAID 6. The following table lists out the differences between the 2 disk array setup.

	RAID 5	RAID 6
Total capacity	Around 36TB	Around 32TB
Fault tolerance	1-drive failure	2-drive failure
Speed gain	9x read speed	8x read speed

As the cost of hard disk has reduced a lot nowadays, it is strongly recommended that you format your disk volume with RAID 6 that maximizes the protection.

#### Dedicated Storage on AhsayCBS

When you partition the disk in your new server, please consider to set up dedicated virtual disk volumes for operating system, application system, user homes and replication home (if Replication Server is enabled), respectively. It is a common practice that application system home, user homes and replication homes are not located in the system volume, which may fill up easily, causing the system to become unstable.

Space required for application system home with replication setup

If you have replication setup on the Backup Server, please consider to dedicate a volume for the application home with sufficient disk space to store the transaction log. As there is no exact formula for estimating the size of the application home, the amount of space used for the transaction log is dependent upon:

- The period of time that the replication reached the replay mode
- The amount of daily backup data uploaded to your backup server

For example, if daily customer backup jobs generate an average of 20GB of data. Your previous replication takes about 5 days to the replay mode, and then your application home partition will require at least 100GB (20GB x 5 days) of free disk space.

This is only a general rule of thumb, this estimation does not take into consideration the growth of daily backup data, or the accumulation of backup data on the backup server which will result in a longer time to reach replay mode.

Setup multiple dedicated disks for each replication receiver.

If your Replication Server has setup several replication by multiple Backup Server, it is recommended that each receiver is located on its own individual disk. The advantage of this type of setup is that it minimizes the I/O on each disk, therefore improving replication performance.

Also, if one of the Backup Servers suffers an outage, there is the option of swapping the disk to the affected Backup Server.

#### 2.3.2 Physical Storage

If you plan to have physical backup server, you are expected to have a fast local backup storage such as local hard disks, DAS or SAN. It is a solution for your business which wants to host the backup data with your physical backup server in your server room or data center.

Please avoid using network storage such as NAS, share drive on another computer as the backup and restore performance is lower.

## 2.3.3 File System Tuning for Virtual Storage Environment

If your backup server and user's data are hosted on a virtual environment, you need to check on the following to make sure the performance has been optimized.

When you set up a disk to attach on a virtual machine, please consider choosing the "thick provisioning" option or the "allocate all disk space" option. This is because choosing "thin provisioning" or "non-allocate all disk space" option may slow down disk performance when the amount of data grows.

Please also consider running the user home on a dedicated virtual disk, which is configured on fast and non-busy physical disks.

#### 2.3.4 Cloud Storage

If you are considering hosting your backup server instance with a commercial cloud services provider such as Google, Amazon, Azure etc., you need to set up cloud storage for your user home, predefined destination or replication home as well.

## 2.4 Requirements for Using AhsayCBS User Web Console

In order to use the AhsayCBS user web console, you need the following:

#### Internet connection

You need to have Internet connection to access the AhsayCBS user web console.

#### Web browsers

The AhsayCBS user web console runs with all major browsers such as Google Chrome, Microsoft Internet Explorer, Mozilla Firefox, and Apple Safari. Please make sure that you are using the latest version of the browser.

#### NOTE

You can also monitor live backup and restore activities on the AhsayCBS user web console of your mobile device.

**OpenDirect restore** of file backup sets or **Granular Restore** for VMware and Hyper-V backup sets performed using Windows File Explorer will not show up on the **Restore Status** tab in **Live Activities**. **Restore Status** tab in **Live Activities** only applies to the restore performed directly through AhsayOBM/ AhsayACB/ AhsayOBR or AhsayCBS user web console.

# 2.5 Temporary folder size for agentless Office 365 and Cloud file backups

All agentless Office 365 and Cloud File backup sets use a temporary directory location on the user home for backup and restore.

Each agentless Cloud File backup job requires at least 100 MB of free space for the temporary files generated during the backup job.

For each agentless Office 365 backup job, the required free space for the temporary files generated during the backup job depends on two factors:

- the number of Office 365 users selected in each backup set, the required free space is calculated as 300 MB per Office 365 user.
- the number of concurrent Office 365 backup jobs running on the AhsayCBS server.

Example:

- If an AhsayCBS server has only one backup set with 500 Office 365 users, it will require 150 GB (500 x 300 MB) disk space on the user home drive for the temporary files generated during the backup job.
- If there are multiple Office 365 backup sets running concurrently on AhsayCBS, then the free space required will be the sum of all the Office 365 users. If they are located on the same user home drive then the temporary folder on that drive will require 540 GB of free space for the temporary files generated during the backup job.

Backup set 1 with 200 Office 365 users (200 x 300 MB) = 60 GB

Backup set 2 with 100 Office 365 users (100 x 300 MB) = 30 GB

Backup set 3 with 500 Office 365 users (500 x 300 MB) = 150 GB

Backup set 4 with 1000 Office 365 users (1000 x 300 MB) = 300 GB

The following are the default temporary directory locations for the different operating systems:

- in Windows C:\\Program Files\AhsayCBS\user\%username%\temp (the default path of the user home)
- in Linux/FreeBSD /usr/local/cbs/user/%username%/temp
- in AhsayUBS /ubs/mnt/eslsfw/obsr/user/%username%/temp

Ensure that the drive where the temporary directory is located has a lot of free space to accommodate all the agentless Office 365 and Cloud File backup jobs, especially if they will be running concurrently.

## 2.6 Permission Requirement for AhsayCBS on Windows with AhsayPRD for agentless backup

To ensure the AhsayCBS Windows service account has permission to access the user home folder of the AhsayCBS instance running with AhsayPRD, make sure the user account for the AhsayCBS service is granted permission to traverse folder / execute file for the Windows user running the AhsayCBS.

Please see below screenshots for reference:

The traverse folder / execute file in the advance security setting for the user home has no permission, it should be the same as the advanced security setting for AhsayCBS which is granted permission to traverse folder / execute file.

	Advanced Security Settings	for Userhome (E:)	<b>N</b>	Advanced Security Se	ettings for AhsayCBS	_ <b>_</b> ×
domain, you can also eval	ting Effective Access	up, or device account. If the account is a member of a nity token for the account. When you evaluate the impact of	domain, you can also evaluate	rs (B\Administrators) Effective Access view the effective permissions for a use	er, group, or device account. If the account is to security token for the account. When you	
View effective access	]		View effective access			
Effective access	Permission	Access limited by	Effective access	Permission	Access limited by	
×	Full control	File Permissions		Full control		
×	Traverse folder / execute file	File Permissions		Traverse folder / execute file		
×	List folder / read data	File Permissions		List folder / read data		
×	Read attributes	File Permissions		Read attributes		
×	Read extended attributes	File Permissions		Read extended attributes		
×	Create files / write data	File Permissions		Create files / write data		
×	Create folders / append data	File Permissions		Create folders / append data		
×	Write attributes	File Permissions		Write attributes		
×	Write extended attributes	File Permissions		Write extended attributes		
×	Delete subfolders and files	File Permissions		Delete subfolders and files		
×	Delete	File Permissions		Delete		
×	Read permissions	File Permissions		Read permissions		
×	Change permissions	File Permissions		Change permissions		
×	Take ownership	File Permissions		Take ownership		
						Activate Go to Syst
		OK Cancel Apply			ОК	Cancel Apply

## Make sure that the Traverse folder / execute file is granted permission.

1	)	Permission Entry	for Userhome (E:)	_ <b>D</b> X
	Principal: Type: Applies to:	cbs ( cbs) Select a principal Deny   This folder only		
	Advanced p			Show basic permissions
		Full control	Vrite attributes	
		Traverse folder / execute file	Write extended attributes	
		✓ List folder / read data ✓ Read attributes	Delete subfolders and files     Delete	
		Read attributes     Read extended attributes	Read permissions	
		Create files / write data	Change permissions	
		Create folders / append data	Take ownership	
	Only apply these permissions to objects and/or containers within this container		Clear all	
_				OK Cancel

# 3 Best Practices for Running Agentless Office 365 Backup

The following are some best practices we strongly recommend you follow before you start any Run on Server (Agentless) Office 365 backup and restore.

## 3.1 Recommended Number of Office 365 users on a Backup Set

To ensure that your Office 365 agentless backup set completes the backup job within 24 hours, it is recommended that a single Office 365 agentless backup set should not contain more than 2000 users. That is assuming that only small incremental daily changes will be made on the agentless backup set.

For a large number of Office 365 users that needs to be backed up, it is recommended that the users be divided into multiple backup sets. However, the actual number of Office 365 users in a single Office 365 agentless backup set may vary depending on the total number of Outlook, OneDrive and SharePoint items, as well as the total size of these items. The actual number of Office 365 users in a single Office 365 agentless backup set could be considerably less or could be more than 2000.

For details on the actual item count and size of the Office 365 user, it is recommended to check in the Microsoft 365 Admin Center. Please refer to Appendix F: Steps on How to view item count and storage used in Microsoft 365 Admin Center in the <u>AhsayCBS Run on Server</u> (Agentless) Office 365 Backup & Restore Guide for more details.

Also, by splitting up the Office 365 users into separate backup sets, the more backup sets, a faster backup process can be achieved.

It is also a requirement that for every split backup set, it should have its own unique user account for authentication to minimize the probability of throttling from Microsoft.

For example, if there are <u>10 split Office 365 agentless backup sets</u>, then there should be <u>10</u> unique user accounts for authentication.

For more detailed example, refer to Appendix B: Example for backup of large number of Office 365 users in the <u>AhsayCBS Run on Server (Agentless) Office 365 Backup & Restore Guide</u>.

## 3.2 Concurrent Backup Thread

The value of 4 concurrent backup threads is found to be the optimal setting for Agentless Office 365 backups to ensure the best backup performance, minimal resource usage, and lowest probability of throttling of AhsayCBS backup requests by Microsoft Office 365.

However, the number of concurrent backup threads can be increased if required. After increasing the number of threads, you should also increase the Java memory of the Agentless backup process as it is expected to consume more memory.

For more details on how to configure the number of threads for the Agentless Office 365 backup job please refer to <u>How to configure backup threads on AhsayCBS</u>.

For details on how to increase the Java memory of the Agentless backup process please refer to <u>Setting</u> up memory for Run on <u>Server (Agentless) Backups</u>

## 3.3 AhsayCBS server dedicated to Agentless Office 365 and Cloud File backup

The AhsayCBS server hosting the Agentless Office 365 and Cloud File backup should not host agent-based backups, so that all available server resources are dedicated to the Agentless Office 365 and Cloud File backups.

## 3.4 Compression Type Usage

It is recommended to use the Fast with optimization for local compression type for AhsayCBS Run on Server (Office 365 and Cloud file) backup jobs since it requires the lowest CPU usage which can reduce the overall server load.

Although the Fast with optimization for local compression consumes the least CPU utilization which increases the backup performance, it has the smallest compression ratio among all compression types thus may increase the overall file storage size and the backup set cost.

# **4** Network and Firewall Settings

#### 4.1 Overview

In this section, we shall discuss the network and firewall settings required for the AhsayCBS. These include the access to the web interface, license activation, backup and restore processes, email port settings and replication port settings.

As a prerequisite, a fixed remote IP and internal IP are required for the AhsayCBS. Also, the firewall should support the TLSv1 cryptographic protocol.

## 4.2 Network Settings

#### 4.2.1 Static IP Address

The use of dynamic IP addresses for AhsayCBS domain names may result in an unstable backup service, or replication process restarting whenever the IP address re-cycles.

A static IP address will ensure the remote IP address sent by AhsayCBS to the Ahsay license server will remain the same during daily routine license checks. This will avoid potential license errors, i.e., 1011 or 1012 license errors which could result in the automatic shutdown of your AhsayCBS service.

It is strongly recommended that you use a static IP address for your AhsayCBS server to ensure a stable and reliable backup service.

#### 4.2.2 Network Load Balancing Configuration

For AhsayCBS servers which are configured with network load balancing, i.e. a dual WAN router or Round Robin routing. A static route should be configured for your AhsayCBS server connection to the Ahsay License Server (**lic.ahsay.com**). This will ensure the remote IP address sent by AhsayCBS to the Ahsay License Server will remain the same during daily routine license checks. This will avoid potential license errors, i.e. 1011 or 1012 license errors which could result to the automatic shutdown of your AhsayCBS service.

In addition, any switching between the two network connections will cause connection problems between Backup Server and Replication Server due to the change in IP address. This will result in the replication process restarting itself.

#### 4.2.3 MAC Address

A valid MAC address is also needed as part of the license activation and validation process, otherwise the evaluation or production license keys will not be applied to AhsayCBS.

In Windows open a command prompt and type <code>ipconfig /all</code>. The MAC address will be displayed as the Physical Address.



```
IP Routing Enabled. . . . . . . . . No
 WINS Proxy Enabled. . . . . . . . . No
Ethernet adapter Private:
 Connection-specific DNS Suffix . :
 Description . . . . . . . . . . . . . . . . Intel(R) 82574L Gigabit Network
Connection #2
 Autoconfiguration Enabled . . . . : Yes
 Link-local IPv6 Address . . . . :
fe80::b8c9:1b18:e502:59e6%15(Preferred)
 Default Gateway . . . . . . . .
 29-E4-A7-EA
 DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                        fec0:0:0:ffff::2%1
                        fec0:0:0:ffff::3%1
 NetBIOS over Tcpip. . . . . . . : Enabled
Ethernet adapter Public:
 Connection-specific DNS Suffix . :
 Description . . . . . . . . . . . . . Intel(R) 82574L Gigabit Network
Connection
 Autoconfiguration Enabled . . . . : Yes
 Link-local IPv6 Address . . . . :
fe80::c920:be27:8595:e668%12(Preferred)
 29-E4-A7-EA
 8.8.4.4
 NetBIOS over Tcpip. . . . . . . : Enabled
Tunnel adapter isatap. {9522CFAB-2A5A-45DB-B5E9-61D594C78BC2}:
 Media State . . . . . . . . . . . . Media disconnected
 Connection-specific DNS Suffix . :
 Description . . . . . . . . . . . . Microsoft ISATAP Adapter
 Autoconfiguration Enabled . . . . : Yes
Tunnel adapter isatap.{324988F8-C083-40FE-A532-9BC6BD88603B}:
 Media State . . . . . . . . . . . . . Media disconnected
 Connection-specific DNS Suffix . :
 Description . . . . . . . . . . . . . . . . . . Microsoft ISATAP Adapter #2
  DHCP Enabled. . . . . . . . . . . . . . . . . No
 Autoconfiguration Enabled . . . . : Yes
```

```
In Linux open a ssh and type if config. The MAC address is the ether.
```

```
ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 10.16.30.2 netmask 255.252.0.0 broadcast 10.19.255.255
        inet6 fe80::49c2:9525:f44c:ff19 prefixlen 64 scopeid
0 \times 20 < 1 \text{ ink} >
        ether 00:0c:29:fb:8d:39 txqueuelen 1000 (Ethernet)
       RX packets 1825484 bytes 1277510886 (1.1 GiB)
       RX errors 0 dropped 255 overruns 0 frame 0
        TX packets 987689 bytes 1043791281 (995.4 MiB)
       TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1 (Local Loopback)
       RX packets 6394 bytes 7067982 (6.7 MiB)
       RX errors 0 dropped 0 overruns 0 frame 0
       TX packets 6394 bytes 7067982 (6.7 MiB)
       TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
virbr0: flags=4099<UP, BROADCAST, MULTICAST> mtu 1500
        inet 192.168.122.1 netmask 255.255.255.0 broadcast
192.168.122.255
       ether 52:54:00:73:02:43 txqueuelen 1000 (Ethernet)
       RX packets 0 bytes 0 (0.0 B)
       RX errors 0 dropped 0 overruns 0 frame 0
       TX packets 0 bytes 0 (0.0 B)
       TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

#### 4.2.4 Test Connectivity

hostname

The AhsayCBS server must be able to ping its hostname and activate license key successfully to ensure that the SMTP server setting will work properly.

In Windows open a command prompt and type hostname. Then type ping "hostname".

```
w2k16R2-std
ping w2k16R2-std
Pinging w2k16R2-std [fe80::b8c9:1b18:e502:59e6%15] with 32 bytes of
data:
Reply from fe80::b8c9:1b18:e502:59e6%15: time<1ms
Reply from fe80::b8c9:1b18:e502:59e6%15: time<1ms
Ping statistics for fe80::b8c9:1b18:e502:59e6%15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms</pre>
```

In Linux/FreeBSD open a ssh and type hostname. Then type ping "hostname".

```
# hostname
freebsd11
# ping freebsd11
PING freebsd11 (10.16.30.21): 56 data bytes
64 bytes from 10.16.30.21: icmp_seq=0 ttl=64 time=0.073 ms
64 bytes from 10.16.30.21: icmp_seq=1 ttl=64 time=0.086 ms
64 bytes from 10.16.30.21: icmp_seq=2 ttl=64 time=0.097 ms
-- freebsd11 ping statistics ---
4 packets transmitted, 4 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 0.073/0.083/0.097/0.009 ms
```

## 4.3 Firewall Settings

## 4.3.1 Ports and Settings

After you have finished setting up your AhsayCBS server, please ensure you have updated your firewall settings to allow network traffic through the following ports:

Port	Description
80	HTTP port for incoming backup and restore traffic, and browsing the AhsayCBS web interface.
443	HTTPS port for incoming backup and restore traffic, and browsing the AhsayCBS web interface.
8081	Default port used by AhsayCBS for Run on Server (Agentless) Office 365 and Cloud File backup on local IP address 127.0.0.1. If the default port is occupied, then AhsayCBS will automatically acquire the next available free port from 8081 to 9080. If all ports in that range are occupied, then AhsayCBS service is stopped.
25	Outgoing SMTP port to the SMTP server.
111	Port Mapper
1058	Mount Port ** Required for Run Direct on AhsayCBS
2049	Port for NFS Service
Any incoming TCP port(s)	Any incoming TCP port(s) used by previous version of replication receiver(s), e.g. 9444, 9445

#### 4.3.2 TCP Ports 80 and 443

It is recommended to expose only TCP ports 80 and 443 to the public on your firewall. Please consult the user's manual of your firewall for more information on how to do so.

#### 4.3.3 SMTP Server

AhsayCBS supports SMTP server which use either TLS v1.0, v1.1 or v1.2.

## 4.3.4 Restricting Access on Administration Panel

If you do not wish to offer your client access to the AhsayCBS console to manage their accounts, it is recommended to implement IP address restrictions to harden the security. You may do this by restricting a range of IP addresses which can access your AhsayCBS console. For more information, please refer to Chapter 5.1.1 on page 64 of the AhsayCBS v8 Administrator's Guide.

## 4.3.5 Replication Using Cross Over Cable

It is not recommended to set up a Backup Server and a Replication Server using a cross over cable for replication, which will result in connection and performance issues.

If the Backup Server and the Replication Server are located on the same site they should be connected via a switch.

\_

## 4.4 Certificate Settings

A Not secure	/cbs/Logo	on.do
Your connection to t	his site is not secu	xure ×
You should not enter any site (for example, passwo it could be stolen by attac	rds or credit cards), be	
You have chosen to disab site. Re-enable warnings	le security warnings fo	for this
Pop-ups and redire	Allow	•
Certificate (Invalid)		
🚯 Cookies (8 in use)		
Site settings		
😽 Certificate	×	< Gertificate ×
General Details Certification Path		General Details Certification Path
Certificate Information		Show: <all></all>
This certificate cannot be verified certification authority.	up to a trusted	Frield     Value       Version     V3       Serial number     1007       Signature algorithm     sha256RSA       Signature hash algorithm     sha256       Issuer     ca@ahsay.com, Ahsay System C       Valid from     Friday, September 27, 2019 3:5       Valid to     Wednesday, January 03, 2024 3
Issued to: Not Secure		Subject ca@absav.com.Not Secure Inf
Issued by: Ahsay System Corpo Valid from 9/27/2019 to 1/3/		E = ca@ahsay.com CN = Ahsay System Corporation Limited OU = Information System Department O = Ahsay System Corporation Limited L = Hong Kong S = Hong Kong C = CN
-	Issuer Statement	Edit Properties Copy to File

As the certificate provided by Ahsay System Corporation Limited is the dummy certificate, which means it can only be used for testing and evaluation but not for production use. So please purchase the offical trusted certificate before using AhsayCBS.

#### NOTE

A valid SSL certificate from a trusted CA is also required if you are going to use Two-Factor Authentication with https protocol. Otherwise, you will have to use http instead which means all AhsayOBM/AhsayACB users with Two-Factor Authentication enabled will need to connect using http as well.

You can refer to the following article for trusted certificate authority (CA) certificates list for AhsayCBS version 8.1.0.24. or above:

https://wiki.ahsay.com/doku.php?id=public:8028 fag:trusted ca list for v8&s

Please refer to AhsayCBS v8 Administrator's Guide for more details about the certification. You can also refer to the folowing link to search about the details about SSL certificate installation:

https://www.ahsay.com/isp/en/home/index.jsp?pageContentKey=ahsay services expressinstallation-services ssl

#### 4.5 Ahsay License Server

The AhsayCBS server is required to access the Internet to connect to our license server lic.ahsay.com using the https protocol in order to activate the trial license key or validate a purchase key.

Please ensure the firewall outbound connection settings are enabled and the TLSv1.2 setting is allowed.

#### Windows

To verify connection to the Ahsay license server, please open a browser on the Windows machine and load https:/lic.ahsay.com in a browser. If the connection is successful, you will see the following screen.

🗲 🔿 🖸 🔒 Ahsay Sys aration Limited [HK] https://lic.ahsay.com/alsIndex.ht Welcome to lic.ahsay.com You have reached the Ahsay Licensing Server successfully. If you are seeing this from a browser running on AhsayOBS, please try the following steps: 1. Logon to AhsayOBS Administration Console

```
    Brows to [Manage System] -> [Software License] page
    Press the [Update] button to obtain new license information from this license server
```

#### Linux

To verify connection to the Ahsay license server, use the telnet command. If the connection is successful, you will see the following message.

```
# telnet lic.ahsay.com 443
Trying 203.186.85.237...
Connected to lic.ahsay.com.
Escape character is `^]'.
```

To verify TLSv1.2 is enabled, use **openssl s\_client** command. If TLSv1.2 is enabled, you will see the following message.

```
# openssl s client -connect lic.ahsay.com:443 -tls1_2
CONNECTED (0000003)
depth=3 C = US, O = "The Go Daddy Group, Inc.", OU = Go Daddy
Class 2 Certification Authority
verify return:1
depth=2 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com,
Inc.", CN = Go Daddy Root Certificate Authority - G2
verify return:1
depth=1 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com,
Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy
Secure Certificate Authority - G2
verify return:1
depth=0 1.3.6.1.4.1.311.60.2.1.3 = HK, businessCategory = Private
Organization, serialNumber = 0498825, C = HK, L = Lai Chi Kok, O
= Ahsay Systems Corporation Limited, CN = ahsay.com
verify return:1
___
Certificate chain
0 s:/1.3.6.1.4.1.311.60.2.1.3=HK/businessCategory=Private
Organization/serialNumber=0498825/C=HK/L=Lai Chi Kok/O=Ahsay
Systems Corporation Limited/CN=ahsay.com
   i:/C=US/ST=Arizona/L=Scottsdale/O=GoDaddy.com,
Inc./OU=http://certs.godaddy.com/repository//CN=Go Daddy Secure
Certificate Authority - G2
1 s:/C=US/ST=Arizona/L=Scottsdale/O=GoDaddy.com,
Inc./OU=http://certs.godaddy.com/repository//CN=Go Daddy Secure
Certificate Authority - G2
   i:/C=US/ST=Arizona/L=Scottsdale/O=GoDaddy.com, Inc./CN=Go
Daddy Root Certificate Authority - G2
2 s:/C=US/ST=Arizona/L=Scottsdale/O=GoDaddy.com, Inc./CN=Go
Daddy Root Certificate Authority - G2
   i:/C=US/O=The Go Daddy Group, Inc./OU=Go Daddy Class 2
Certification Authority
 3 s:/C=US/O=The Go Daddy Group, Inc./OU=Go Daddy Class 2
Certification Authority
   i:/C=US/O=The Go Daddy Group, Inc./OU=Go Daddy Class 2
Certification Authority
_ _ _
Server certificate
----BEGIN CERTIFICATE----
MIIH8DCCBtigAwIBAgIJANK9EdRBepEyMA0GCSqGSIb3DQEBCwUAMIG0MQswCQYD
VQQGEwJVUzEQMA4GA1UECBMHQXJpem9uYTETMBEGA1UEBxMKU2NvdHRzZGFsZTEa
MBgGA1UEChMRR29EYWRkeS5jb20sIEluYy4xLTArBgNVBAsTJGh0dHA6Ly9jZXJ0
cy5nb2RhZGR5LmNvbS9yZXBvc210b3J5LzEzMDEGA1UEAxMqR28gRGFkZHkgU2Vj
dXJlIENlcnRpZmljYXRlIEF1dGhvcml0eSAtIEcyMB4XDTIwMDIyODAxMjI1NFoX
DTIyMDQxNDEzMjQwM1owgakxEzARBgsrBgEEAYI3PAIBAxMCSEsxHTAbBgNVBA8T
FFByaXZhdGUgT3JnYW5pemF0aW9uMRAwDgYDVQQFEwcwNDk4ODI1MQswCQYDVQQG
```

EwJISzEUMBIGA1UEBxMLTGFpIENoaSBLb2sxKjAoBqNVBAoTIUFoc2F5IFN5c3Rl bXMqQ29ycG9yYXRpb24qTGltaXRlZDESMBAGA1UEAxMJYWhzYXkuY29tMIIBIjAN BqkqhkiG9w0BAQEFAAOCAQ8AMIIBCqKCAQEAzVy+OD4alpafXwiOYEKQikNFbMvu 2hysHv6t6g3rX2dBOrtboCWwP9RZOV2g4x5DIRZj7duR2wjhAY0HaE3DN3fr6TnL FJPwq+7IYTt4sd7ovtHJDE1PcEuizjyL2k6XRxcoRajTzAMXDTLZsyJNuRNMSusa TVWpHyhqpXk+D1FqOq2DaPojuYLPW/TkolbFMvj08BBOYqYrcRfV6y+Syz0/PeZ+ Gb9+kkVB+FP4pJMDxv/vlFtbakJDIpbtr01VfgjLHqh0qMMBTnrxsBXrLvhv2GHi 3Lr7TNJb7Hf4JAs9cR3w0kkK1cCK1vvyokQ2QNLEYwexbi+4QMpfpQXd/wIDAQAB o4IEDDCCBAgwDAYDVR0TAQH/BAIwADAdBgNVHSUEFjAUBggrBgEFBQcDAQYIKwYB BQUHAwIwDqYDVR0PAQH/BAQDAqWqMDYGA1UdHwQvMC0wK6ApoCeGJWh0dHA6Ly9j cmwuZ29kYWRkeS5jb20vZ2RpZzJzMv0xNS5jcmwwXAYDVR0gBFUwUzBIBatghkqB hv1tAQcXAzA5MDcGCCsGAQUFBwIBFitodHRwOi8vY2VydGlmaWNhdGVzLmdvZGFk ZHkuY29tL3JlcG9zaXRvcnkvMAcGBWeBDAEBMHYGCCsGAQUFBwEBBGowaDAkBqqr BqEFBQcwAYYYaHR0cDovL29jc3AuZ29kYWRkeS5jb20vMEAGCCsGAQUFBzAChjRo dHRwOi8vY2VydGlmaWNhdGVzLmdvZGFkZHkuY29tL3JlcG9zaXRvcnkvZ2RpZzIu Y3J0MB8GA1UdIwQYMBaAFEDCvSeOzDSDMKIz1/tss/C0LIDOMIH5BqNVHREEqfEw ge6CCWFoc2F5LmNvbYINd3d3LmFoc2F5LmNvbYIPZm9ydW0uYWhzYXkuY29tgq1s aWMuYWhzYXkuY29tqhB3d3cudWsuYWhzYXkuY29tqhVwYXJ0bmVycy11cy5haHNh eS5jb22CDnNob3AuYWhzYXkuY29tqq1pZHAuYWhzYXkuY29tqq1wY3AuYWhzYXku Y29tqhB3d3cuYWhzYXkuY29tLmNuqq1sbXAuYWhzYXkuY29tqhVwYXJ0bmVycy11 av5haHNheS5jb22CFXBhcnRuZXJzLmFoc2F5LmNvbS5jboIMa2IuYWhzYXkuY29t MB0GA1UdDgQWBBQU/GniKbSMjgEmaqndKdtzS0DqlDCCAX0GCisGAQQB1nkCBAIE ggFtBIIBaQFnAHUApLkJkLQYWBSHuxOizGdwCjw1mAT5G9+443fNDsgN3BAAAAFw iWO3kgAABAMARiBEAiA+hEdDmd5DpgSzX43v7ri9BvGIyN3cuzzZG+bUbxMeZOIg PhPHCcuSpHmdZPdiqzd9dkoFfT1a7mBZgA5X/Qn8sXIAdwDuS723dc5guuFCaR+r 4Z5mow9+X7By2IMAxHuJeqj9ywAAAXCJY7tKAAAEAwBIMEYCIQDyF8exjOGxWWqn WjJsCIMdmhNa5TQP4P7S0eILTZxTQQIhAIsb+1B1r2xKnxyf0/5Gjzozgf71RNd2 y5j52nS3fjQ5AHUAVhQGmi/XwuzT9eG9RLI+x0Z2ubyZEVzA75SYVdaJ0N0AAAFw iWO9ogAABAMARjBEAiBoPXKsSdkni3BlFRpz01zcyW6o+GOGbNKM+3JAFBoFrwIg TNKIG8+hkzknLcbhJIJRj8ivOSZxYhYt0wtnfSxKXsIwDQYJKoZIhvcNAQELBQAD ggEBAHtl3dePp2Plp8VLRr8xhpHM76K8u1HBBxF/Joucv68vmelCN+1mY7Z7sloI 01z4tGBh51DK8gerVKUrSgxFk4W/E5PVc0QMpoK6rr8DpwOGbShjSyfGvkAOOwem tv8L7rEtVIldWS1n+oeDPlLOB92RBxWUhiXt8QE9GpV4pPcKrMqNACkoWQZxDKYW JNNhwsTomktzu0sL00yJFhGGmq1htV/RCx7LJ6qZ17/fLcFtzVrd27elaA+iQhEb oCmwZgnijIT49EE6pY0octFYRtEm2GCcq79rAqzVPJnWWaOdbzSwJaurtliCyyZ+ /7/2hEy9EtpStmAf9KVeUglC76c= ----END CERTIFICATE----

subject=/1.3.6.1.4.1.311.60.2.1.3=HK/businessCategory=Private
Organization/serialNumber=0498825/C=HK/L=Lai Chi Kok/O=Ahsay
Systems Corporation Limited/CN=ahsay.com

issuer=/C=US/ST=Arizona/L=Scottsdale/O=GoDaddy.com, Inc./OU=http://certs.godaddy.com/repository//CN=Go Daddy Secure Certificate Authority - G2

--

```
No client certificate CA names sent
Server Temp Key: ECDH, prime256v1, 256 bits
_ _ _
SSL handshake has read 6137 bytes and written 373 bytes
____
New, TLSv1/SSLv3, Cipher is ECDHE-RSA-AES256-GCM-SHA384
Server public key is 2048 bit
Secure Renegotiation IS supported
Compression: NONE
Expansion: NONE
SSL-Session:
    Protocol : TLSv1.2
   Cipher
             : ECDHE-RSA-AES256-GCM-SHA384
    Session-TD:
6C1B0AEEE18BC2A83599A8058564E766063AA3AC87CBA6797EDED5BC77F900F5
    Session-ID-ctx:
    Master-Key:
3F2E8F3E9F0F5AA3719F07B91B91D0685878D1C9E7A4D2B79F53ED640350C3624
D4ED338A6A2397C095E2F1186BF6C5C
    Key-Arg : None
   Krb5 Principal: None
   PSK identity: None
    PSK identity hint: None
   TLS session ticket lifetime hint: 300 (seconds)
    TLS session ticket:
    0000 - 1b ed e6 48 ab 80 f9 a7-f8 0b f1 1d bc 93 70
ab
    ...н.....р.
    0010 - 94 8b dc ab da 60 57 90-5d ea 10 14 66 c5 80
   .....`W.]...f..b
62
   0020 - b2 f1 ba e0 49 fc 48 b6-4b 11 46 bb b9 e7 dd
d8
     ....I.H.K.F....
    0030 - 12 28 36 85 3d 2c bf 1a-61 e9 76 1a 10 d1 d2
f1
    .(6.=,..a.v....
    0040 - e1 28 74 5e 1a 1a 0b 73-d2 c8 4f de 6e e1 d2
6f
   .(t^...s..0.n..o
   0050 - ee 6b 63 e7 ad dd d4 9c-b7 c4 08 19 9e 2c fd
d7
     .kc....,..
    0060 - c1 7e 65 dc 29 f1 26 d7-48 7b 29 d1 88 17 f5
    .~e.).&.H{)....
e 6
    0070 - 49 2c 50 bf 4c 90 25 ac-34 c1 be 40 00 33 0c 65
I,P.L.%.4..@.3.e
    0080 - cf f9 13 a8 c2 d7 82 cf-b2 bc d6 ff 7b 15 9b
6e
     .....{....
    0090 - d9 ce 58 77 a2 c2 e2 c9-e4 2d a5 a0 e4 29 fd
a6
    ....Xw.....-...)...
   00a0 - 2c 21 af bf da 3e 75 38-71 45 e4 0f 4f 36 6a
58
    ,!...>u8qE..06jX
```

```
Start Time: 1612168629
Timeout : 7200 (sec)
Verify return code: 0 (ok)
----
```

#### FreeBSD

To verify connection to the Ahsay license server, use the **fetch** command. If the connection is successful, you will see the following message.

```
# fetch https://lic.ahsay.com/alsIndex.htm
alsIndex.htm 100% of 782 B
3336 kBps 00m00s
```

You also need to open the alsIndex.htm to verify the contents. You can open it by using a text editor like vi.

```
# vi alsIndex.htm
<html>^M
<head>^M
<meta http-equiv="Content-Type" content="text/html;
charset=windows-1252">^M
<meta http-equiv="Content-Language" content="en-us">^M
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">^M
<meta name="ProgId" content="FrontPage.Editor.Document">^M
<title>Welcome to lic.ahsay.com</title>^M
</head>^M
<body>^M
<h1>Welcome to lic.ahsay.com</h1>^M
You have reached the Ahsay Licensing Server successfully. If
you are seeing this from a browser running on AhsayOBS, please
try the following steps: <\!/p\!>^{M}
^M
  Logon to AhsayOBS Administration Console^M
  Browse to [Manage System] -> [Software License]
page^M
  Press the [Update] button to obtain new license information
from this license server^M
^M
^M
</body>^M
</html>^M
```

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#### AhsayUBS

To verify connection to the Ahsay license server, use the **fetch** command. If the connection is successful, you will see the following message.

```
# fetch --no-verify-peer https://lic.ahsay.com/alsIndex.htm
alsIndex.htm 100% of 782 B 4989
kBps 00m00s
```

You also need to open the alsIndex.htm to verify the contents. You can open it by using a text editor like vi.

```
# vi alsIndex.htm
<html>^M
<head>^M
             http-equiv="Content-Type"
                                           content="text/html;
 <meta
 charset=windows-1252">^M
<meta http-equiv="Content-Language" content="en-us">^M
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">^M
<meta name="ProgId" content="FrontPage.Editor.Document">^M
<title>Welcome to lic.ahsay.com</title>^M
</head>^M
<body>^M
<h1>Welcome to lic.ahsay.com</h1>^M
 You have reached the Ahsay Licensing Server successfully. If
 you are seeing this from a browser running on AhsayOBS, please
 try the following steps: ^M
^M
 Logon to AhsayOBS Administration Console^M
 Browse to [Manage System] -> [Software License]
    page^M
 Press the [Update] button to obtain new license information
    from this license server^M
^M
^M
</body>^M
</html>^M
```

# 4.6 Ahsay Push Notification Server

The Ahsay push notification server is needed to receive push notifications in your mobile device to log in to AhsayCBS, AhsayOBM and AhsayACB when using Ahsay Mobile for Two-Factor Authentication.

## NOTE

The Ahsay push notification server is only required if Ahsay Mobile is selected as the authenticator app.

# 4.6.1 AhsayCBS public IP address

The AhsayCBS public IP address or domain must be resolvable locally on the AhsayCBS server, i.e. ping your-cbs-server.com on the AhsayCBS server itself must be successful

#### Example:

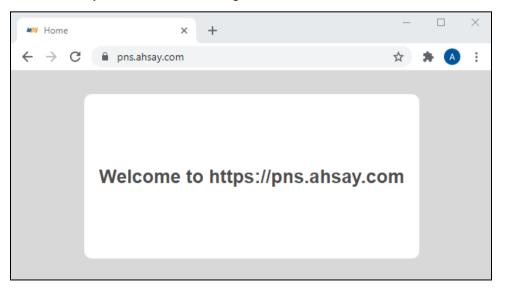
```
C:\ping your-cbs-server.com
Pinging 125.2.17.44 with 32 bytes of data:
Reply from 125.2.17.44: bytes=32 time<1ms TTL=128
Reply from 125.2.17.44: bytes=32 time<1ms TTL=128
Reply from 125.2.17.44: bytes=32 time<1ms TTL=128
Ping statistics for 125.2.17.44:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms</pre>
```

# 4.6.2 Firewall configuration

Please ensure the firewall is configured to allow outbound connections to pns.ahsay.com via port 80 and 443.

## Windows

To verify connection to the Ahsay push notification server, please open a browser on the Windows machine and load <u>https:/pns.ahsay.com</u> in a browser. If the connection is successful, you will see the following screen.



## Linux and FreeBSD

To verify connection to the Ahsay push notification server, use the telnet command. If the connection is successful, you will see the following message.

```
# telnet pns.ahsay.com 443
Trying 52.168.142.119...
Connected to pns.ahsay.com.
Escape character is `^]'.
```

## AhsayUBS

To verify connection to the Ahsay push notification server, use the **nc** command. If the connection is successful, you will see the following message.

```
# nc -zv pns.ahsay.com 443
Connection to pns.ahsay.com 443 port [tcp/https] succeeded!
```

# 5 Download and Install AhsayCBS

# 5.1 Installation on Windows

- 1. Log in as admin on your Windows machine.
- 2. In a browser, download the AhsayCBS installation package **cbs-win.exe** from the <u>Ahsay website</u> by clicking the Download button.

AH <u>sti</u> t	Ahsay Back	up						LOG IN 🚽
Solution	s Products	Destinations	Pricing	Support	Services	Download	Company	
Home /	Download / Dov	vnload AhsayCBS						AhsayCBS v8.5.2.106 Release date: 09-Aug-2021
_	AhsayCBS	AhsayUBS	AhsayPF	RD Ahsa	ay Mobile			
				(	G D	ownloa	ad AhsayCBS	
							8.5.2.106	
						-	Release notes: Click here	
Live Chat	cloud platfor has been bu	m such as Mik noled within. Destro/Lar Local Backup	crosoft Az	Loc	al / Network st	orage	talling on your own backup server hardware, or on a do are installers work for both paid and trial users. A <u>60 day</u> <b>Replication</b> <b>Replication</b> <b>Certain</b> <b>Replication</b> <b>Certain</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b></b>	s free trial key
				[	Downloa	ad and ins	stall AhsayCBS now!	
						lows Version allation / Upgrade)		
						inux Version allation / Upgrade)		
			Q	uick Start O	Guide   Full	Administrato	r's Guide   Upgrade Guide   Datasheets	

3. Enter your email, name and phone then click Download.

AH∭ <sup>™</sup> Ahsay Backup	
Download AhsayCBS for Windows (New Installation / Upgrade)	
Email *	
e.g. example@example.com	
Name	
Phone	
Download	

4. Click on Run to start the download.

∭ <sup>™</sup> Ahsay Backup				
Thanks for downloading	g AhsavCBS	for Wind	dows	
(Click here if download do				
New trial users				
This latest version of AhsayCBS has bundled with a trial key which will b rebranding, all other features have been enabled.	e valid for 60 days sta	rting from the day	of installatio	n. Besides
Download this AhsayCBS quickstart guides for installation, basic confige https://www.ahsay.com/download/download_document_cbs-quick-star		e client side data b	acked up to f	the server:
Detailed AhsayCBS Admin Guide can be found at: https://www.ahsay.com/download/download_document_cbs-admin.jsp	1			
We will follow up with you a few days later to see if you have any proble during your trial, please feel free to contact us.	em on installation and	configuration. If y	ou encounter	any questions
Existing users				
This version also works for partners who are upgrading from previous our Support Team by submitting a new ticket at here.	versions of AhsayCBS.	lf you are not sure	how to upgr	ade, please conta
What do you want to do with cbs-win.exe (751 MB)? From: ahsay-dn.ahsay.com	Run	Save		Cancel

## 5. Run the downloaded installer.

Open File	- Security War	ning	$\times$			
Do you	want to run t	nis file?				
	Name:	ekyb3d8bbwe\TempState\Downloads\cbs-win (1).exe				
-	Publisher:	Ahsay Systems Corporation Limited				
	Туре:	Application				
	From:	C:\Users\\AppData\Local\Packages\Micr				
		Run Cancel				
🗹 Alwa	ys ask before o	pening this file				
۲	While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?					

6. Choose the language, and then click **OK** to continue.

	Select Setup Language
G	Select the language to use during the installation:
	English ¥
	OK Cancel

7. Click **Next** to continue.

0	Setup - AhsayCBS 📃 🗖 🗙					
C AhsayCBS	Welcome to the AhsayCBS Setup Wizard					
	This will install AhsayCBS on your computer.					
	It is recommended that you close all other applications before continuing.					
	Click Next to continue, or Cancel to exit Setup.					
	Next > Cancel					

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8. Select **I accept the agreement** after reading the license agreement. Then, click **Next** to continue.

Setup - AhsayCBS	_		x
License Agreement Please read the following important information before continuing.		(	3
Please read the following License Agreement. You must accept the terms of agreement before continuing with the installation.	of this		
Terms of Use 1. All softwares provided by Ahsay Systems Corporation is on an "as is" with no warranties of any kind and Ahsay Systems Corporation will not b for any damages of any kind arising from the use. Ahsay Systems Corpora further disclaims all warranties, express and implied, including without limit any implied warranties of merchantability or fitness for a particular purpos 2. Ahsay Systems Corporation grants you a non-exclusive, non-transfera royalty-free, limited license to use the binary form of the software provide Ahsay Systems Corporation for personal use only. Redistribution of progr owned by Ahsay Systems Corporation, unless explicitly granted by Ahsay Systems Corporation , is strictly prohibited. I accept the agreement	e liable ation tation, se. ble, d by ams		
O I do not accept the agreement			
< Back Next >		Cano	el

9. Choose the installation directory. Then, click **Next** to continue.

C Setup - AhsayCBS	-		x
Select Destination Location Where should AhsayCBS be installed?		(	3
Setup will install AhsayCBS into the following folder.			
To continue, click Next. If you would like to select a different folder, click	Browse	<b>)</b> .	
C:\Program Files\AhsayCBS	Brows	se	
At least 833.2 MB of free disk space is required.			
< Back Next >		Canc	el

10. Click **Next** to continue.

0	Setup - AhsayCBS
	Select Additional Tasks Which additional tasks should be performed?
	Select the additional tasks you would like Setup to perform while installing AhsayCBS, then click Next.
	Create Additional Icon
	Create Desktop Icon
	✓ Create Administrative Tools Icons
	Server Configuration
	✓ Start AhsayCBS Server
	< Back Next > Cancel

Enter the ports to be used by AhsayCBS. By default, the ports are 80 and 443 (HTTP and HTTPS respectively). If these ports have been used by other applications, e.g. Microsoft IIS, Apache or other applications, please use alternative ports such as 8080 and 8443. Click Next to continue when you are done setting.

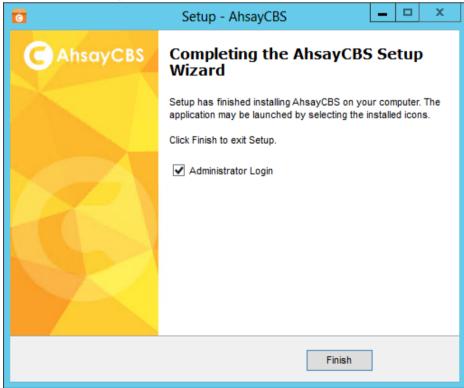
Setup - AhsayCBS		x
Customizing Server Server Port Setting		9
Important Notes The default ports used by AhsayCBS for HTTP and HTTPS communication are 80 and 443 respectively. If you have installed and started an Internet Information Server (IIS) or another http listener (e.g. Apache) on this machine, you are strongly recommended to stop them or change the default ports for AhsayCBS.		
HTTP Port 80 HTTPS Port 443		
< Back Next >	Can	cel

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12. Click **Install** to start the installation.

C Setup - AhsayCBS	_		x
Ready to Install Setup is now ready to begin installing AhsayCBS on your computer.			3
Click Install to continue with the installation, or click Back if you want to re- change any settings.	view o	r	
Destination location:		~	
C:\Program Files\AhsayCBS			
Additional tasks:			
Create Additional Icon			
Create Desktop Icon Create Administrative Tools Icons			
Server Configuration			
Start AhsayCBS Server			
		~	
<		>	
< Back Install		Cano	el

13. Click **Finish** to complete the installation.



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14. Run services.msc to open **Services** from Windows to confirm that the AhsayCBS service has started. In the following screen shot, the status of **Ahsay Cloud Backup Suite** is "**Running**" and the status of the **NFS Service (Ahsay Systems Corporation)** is "**Running**".

9.		Services				>	×
File Action View	Help						
← 🔷 🖬 🖾 🧔	) 🕞 🛛 📷 🕨 🔲 II 🕨						
🤹 Services (Local)	Services (Local)						
	Ahsay Cloud Backup Suite	Name 📩	Description	Status	Startup Type	Log On As	^
		🍓 Ahsay Cloud Backup Suite		Running	Automatic	Local Syste	
	Stop the service	Application Experience	Processes a		Manual (Trig	Local Syste	≡
	Restart the service	Application Identity	Determines		Manual (Trig	Local Service	
		Application Information	Facilitates t	Running	Manual	Local Syste	
		🗟 Application Layer Gateway	Provides su		Manual	Local Service	

Q <sub>0</sub>		Services					x
File Action View	Help						
(= =) 🖬 🖬 🖸	à 🔒 🛿 🖬 🕨 🔳 🕪						
🤹 Services (Local)	Services (Local)	_					
	NFS Service (Ahsay Systems	Name	Description	Status	Startup Type	Log On As	^
	Corporation)	Network Location Awareness	Collects an	Running	Automatic	Network S	
		🎑 Network Store Interface Ser	This service	Running	Automatic	Local Service	
	Stop the service	NFS Service (Ahsay Systems	RunDirect N	Running	Automatic	Local Syste	
	Restart the service	🔍 Optimize drives	Helps the c		Manual	Local Syste	
		鵒 Performance Counter DLL	Enables rem		Manual	Local Service	
	Description:	🌼 Performance Logs & Alerts	Performanc		Manual	Local Service	
	RunDirect Network File System Service of Ahsay Systems Corporation	🎑 Plug and Play	Enables a c	Running	Manual	Local Syste	
	Service of Ansay Systems Corporation	Rortable Device Enumerator	Enforces gr		Manual (Trig	Local Syste	

 When you need to reset the service of an item, select the item (e.g. Ahsay Cloud Backup Suite) and then press Restart in the left pane. Alternatively, after selecting the item, press Stop and then press Start.

Q.	Services 📃 🗖 🗙						x
File Action View Help							
🗢 🄿 📅 🖾 🖾 🖬 🖬							
Services (Local) Servic	es (Local)						
Servi	ce Control	× .	Description	Status	Startup Type	Log On As	Ŀ
Windows is attempting to start the following service on Local Computer		ud Backup Suite		Running	Automatic	Local Syste	
• • • •			Processes a		Manual (Trig	Local Syste	Ξ
Ahsay Cloud Backup Suite		n Identity	Determines		Manual (Trig	Local Service	
		n Information	Facilitates t	Running	Manual	Local Syste	
		h Layer Gateway	Provides su		Manual	Local Service	
		n Management	Processes in		Manual	Local Syste	
	Close	d Intelligent Tran	Transfers fil	Running	Manual	Local Syste	
		d Tasks Infrastru	Windows in	Running	Automatic	Local Syste	
	🔍 Ba	ase Filtering Engine	The Base Fil	Running	Automatic	Local Service	
	🔍 Ce	ertificate Propagation	Copies user	Running	Manual	Local Syste	

15. Open Command Prompt and type the following command to check whether AhsayCBS is listening to pre-defined **http** and **https** ports. The default port values are 80 and 443 respectively.



16. You will get a list of all active connections. You can see clearly that AhsayCBS is listening to both ports 80 and 443.

C:\Users\A Active Cor	Administrator>net: nnections	stat -an more	
Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:80	0.0.0.0	LISTENING
TCP	0.0.0.0:135	0.0.0.0	LISTENING

TCP	0.0.0:443	0.0.0.0.0	LISTENING	
TCP	0.0.0:445	0.0.0.0	LISTENING	
TCP	0.0.0.3389	0.0.0.0.0	LISTENING	

For AhsayCBS servers hosting Run on Server (Agentless) Office 365 and Cloud File backups, ensure that AhsayCBS is listening to port 8081 (default) on local IP address 127.0.0.1.

```
C:\Users\Administrator>netstat -an|more
Active Connections
       Local Address Foreign Address State
Proto
        127.0.0.1:8081 0.0.0.0.0
TCP
                                          LISTENING
         127.0.0.1:49157 127.0.0.1:49158 ESTABLISHED
TCP
         127.0.0.1:49158 127.0.0.1:49157
TCP
                                         ESTABLISHED
TCP
         127.0.0.1:49159 127.0.0.1:49160 ESTABLISHED
TCP
         127.0.0.1:49160 127.0.0.1:49159
                                          ESTABLISHED
```

17. Use the hostname and ping commands to check whether the hostname is resolvable. The following shows that the hostname is resolvable.

```
C:\Program Files\AhsayCBS\nfs\bin>hostname
w7-pro
C:\Program Files\AhsayCBS\nfs\bin>ping w7-pro
Pinging w7-pro [fe80::2ccf:4d81:c65c:805d%14] with 32 bytes of data:
Reply from fe80::2ccf:4d81:c65c:805d%14: time<1ms
Reply from fe80::2ccf:4d81:c65c:805d%14: time<1ms
Reply from fe80::2ccf:4d81:c65c:805d%14: time<1ms
Ping statistics for fe80::2ccf:4d81:c65c:805d%14:
        Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Program Files\AhsayCBS\nfs\bin>
```

If the hostname is not resolvable, add the corresponding hostname information to the "hosts" file found at "C:\Windows\System32\drivers\etc".

Otherwise, the SMTP server setting on the AhsayCBS may not work properly.

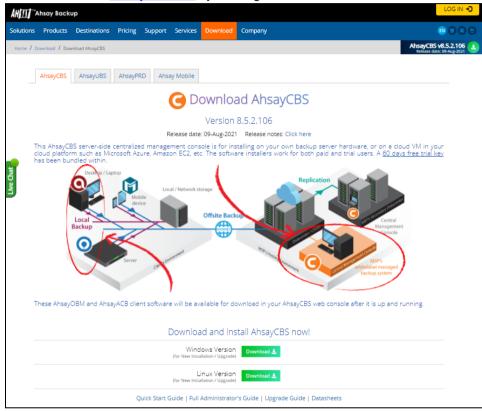
18. After successful installation, you can access the login page by opening **localhost** (<u>https://127.0.0.1/cbs/Logon.do</u>) in a browser.

http://127.0.0.1/	7.0.0.1/cbs/Logon.do × +				
♦ A https://127.0.0.1/cbs/Logon.do		C C Google	٩	☆ 自 ♣	<b>⋒</b> =
C AhsayCBS			English		✓ 🛓
	Login Name system Password Forgot Password Remember my login name				
Y					?

# 5.2 Installation on Windows Server Core

 If the Windows Server Core machine does not have a web browser installed, find the download link of the AhsayCBS installation package **cbs-win.exe** from another machine with a web browser so it can be used in the Windows Server Core machine. Otherwise, use the web browser on the Windows Server Core machine to download the AhsayCBS installation package.

In a web browser, find the download link of the AhsayCBS installation package **cbswin.exe** from the <u>Ahsay website</u> by clicking on the Download button.



2. Enter your email, name and phone then click Download.

<b>ÅH∭</b> ™Ahsay	/ Backup
	Download AhsayCBS for Windows (New Installation / Upgrade)
	Email *
	e.g. example@example.com
	Name
	Phone
	Download

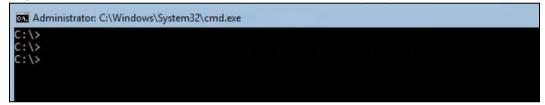


3. Right-click on the Click here link then select Copy link.

∏ <sup>™</sup> Ahsay Backup		
Thanks for down	nloading Ahsay	CBS for Windows
( <u>Click her</u> t	Lif download doornit hannon av	*tomatically.)
	Open in new tab	
New trial users	Open in new window	
This latest version of AhsayCBS has bundled with a trial k all other features have been enabled.	Open in new InPrivate window	starting from the day of installation. Besides rebranding,
Download this AhsayCBS quickstart guides for installation	Save target as	; the client side data backed up to the server:
https://www.ahsay.com/download/download_document_	Copy link	
Detailed AhsayCBS Admin Guide can be found at: https://www.ahsay.com/download/download_document_	Print	
We will follow up with you a few days later to see if you h	Add to reading list	nd configuration. If you encounter any questions during
your trial, please feel free to contact us.	Read aloud	
Existing users		
This version also works for partners who are upgrading fr	om previous versions of Ahsav(	CBS. If you are not sure how to upgrade, please contact ou

Example: http://ahsay-dn.ahsay.com/v8/81150/cbs-win.exe

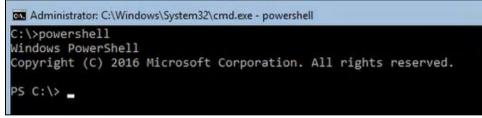
4. Log in to the Windows Server Core and start the command prompt.



5. Type in the following command to enter PowerShell.

C:\> powershell

After successfully entering PowerShell the prompt will change to PowerShell prompt:



6. Use the following command to download the online AhsayCBS installer to Windows Server Core C:\temp folder.

```
PS C:\> Invoke-WebRequest http://ahsay-
dn.ahsay.com/v8/81150/cbs-win.exe -Outfile `c:\temp\cbs-win.exe'
```

**Example:** Invoke-WebRequest http://ahsay-dn.ahsay.com/v8/81150/ cbs-win.exe -Outfile 'c:\temp\cbs-win.exe'



## NOTE

The above command will download the AhsayCBS installer to the path of "C: \temp".

You can change the download path of the file, which is "C:\temp\" to another path, but **DO NOT** change the filename of the AhsayCBS installer downloaded, i.e. "cbs-win.exe".

7. During downloading of AhsayCBS installer the following message will be displayed:

```
Writing request stream... (Number of bytes written: 3223857)
```

After completing the download of the AhsayCBS installer the screen above would disappear. Press **Enter** button to continue.

8. Verify the AhsayCBS installer is downloaded using the following command.

PS C:\temp>	dir				
Machinistrator: C: PS C:\temp> di		em32\cmd.exe - p	oowershell		
Directory: Mode		WriteTime	Length	Name	
 -a	8/6/2020	12:04 PM	898177744	cbs-win.exe	
PS C:\temp≻					

9. Use the following command to execute the installer:

	e	C:\temp\cbs-win.exe	PS C:\>
--	---	---------------------	---------

10. When the Select Setup Language window is shown, select the language then click **OK** to continue.

Select !	Setup Language 🍡 🎽
0	Select the language to use during the installation:
	English v
	OK Cancel

11. In the AhsayCBS Setup Wizard click **Next** to continue.



12. Select "I accept the agreement" after reading the license agreement. Then click Next to continue.

Please read the following important information before continuing.	
Please read the following License Agreement. You must accept the terms agreement before continuing with the installation.	of this
Terms of Use	^
<ol> <li>All softwares provided by Ahsay Systems Corporation is on an "as is" with no warranties of any kind and Ahsay Systems Corporation will not it</li> </ol>	
further disclaims all warranties, express and implied, including without lin any implied warranties of merchantability or fitness for a particular purpo 2. Ahsay Systems Corporation grants you a non-exclusive, non-transfer royalty-free, limited license to use the binary form of the software provid Ahsay Systems Corporation for personal use only. Redistribution of prog	se. able, ed by rams
owned by Ahsay Systems Corporation, unless explicitly granted by Ahsa Systems Corporation , is strictly prohibited.	

13. Choose the installation directory. Then click Next to continue.

Setup - AhsayCBS	
Select Destination Location	G
Where should AhsayCBS be install	ed?
Setup will install AhsayCB	3S into the following folder.
To continue, click Next. If you woul	Id like to select a different folder, click Browse.
C:\Program Files\AhsayCBS	Browse
At least 834.0 MB of free disk spac	ce is required.
	< Back Next > Cancel
	< Back Next > Cancel

14. Select the additional tasks that will be performed. Then click Next to continue.

Select Additional Tasks		
Which additional tasks should be perfor	med?	
Select the additional tasks you would lik then click Next.	e Setup to pe <mark>rform while</mark>	nstalling AhsayCBS,
Create Additional Icon		
Create Desktop Icon		
Create Administrative Tools Icons		
Server Configuration		
Start AhsayCBS Server		

www.ahsay.com

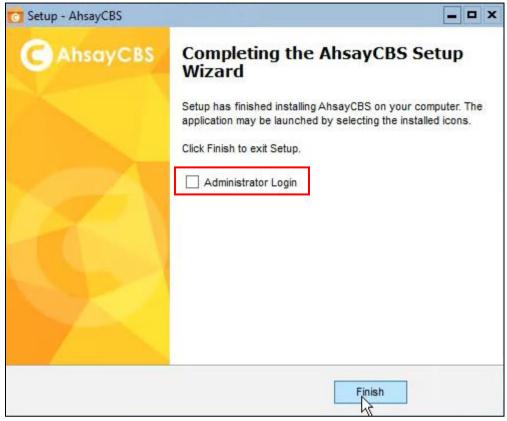
15. Enter the ports to be used. Then click Next to continue.

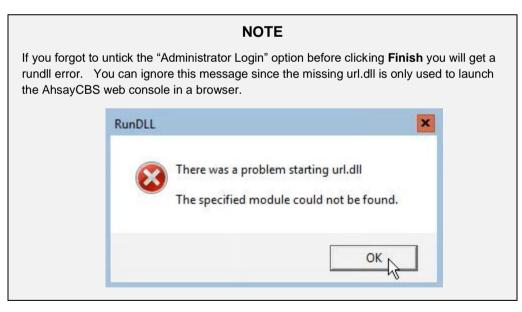
👩 Setu	up - AhsayCBS	-
	stomizing Server Server Port Setting	Θ
	Important Notes The default ports used by AhsayCBS for HTTP and HTTPS communication are 80 and 443 respectively. If you have installed and started an Internet Information Server (IIS) or another http listener (e.g. Apache) on this machine, you are strongly recommended to stop them or change the default ports for AhsayCBS.	
	HTTP Port 80 HTTPS Port 443	
	< Back Next >	Cancel

16. Click Install to start installation.

tall ow ready to begin installing AhsayCBS on your computer.
I to continue with the installation, or click Back if you want to review or y settings.
on location: AbsayCBS
I tasks:
e Additional Icon ate Desktop Icon
ate Administrative Tools Icons er Configuration rt AhsayCBS Server
TAIBBYEDD DUTTE
>
< Back Install C

17. Untick the Administrator Login checkbox. Then click Finish to complete the installation.





 After installation, check whether the AhsayCBS services are running. There are two methods to check the services status. In the following screen shot, the status of Ahsay Cloud Backup Suite is "Running" and the status of the NFS Service (Ahsay Systems Corporation) is "Running".

#### Method 1: Use PowerShell command prompt:

PS C:\> Get-Se	ervice -DisplayName	'Ahsay Cloud Backup Suite'
Status	Name	DisplayName
Running	ahsaycbs	Ahsay Cloud Backup Suite

#### or

PS C:\> Get-Se	ervice -Name 'ahsay	cbs'	
Status	Name	DisplayName	
Running	ahsaycbs	Ahsay Cloud Backup Suite	

#### and

```
PS C:\> Get-Service -DisplayName 'NFS Service (Ahsay Systems
Corporation)'
Status Name DisplayName
------
Running OBNfsServer NFS Service (Ahsay Systems
Corp
```

#### or

If the services are not running, use the command to start the service.

```
PS C:\> Start-Service -DisplayName 'Ahsay Cloud Backup
Suite'
PS C:\> Start-Service -DisplayName 'NFS Service (Ahsay
Systems Corporation)'
```

Method 2: Use GUI:

i. Use the following command to open task manager.

```
PS C:\> taskmgr
```

ii. Task Manager should appear. Navigate to Services.

File Options View					
Processes Performance	Users	Details Services			
Name 🔺	PID	Description	Status	Group	^
ahsaycbs	2760	Ahsay Cloud Backup Suite	Running		
AppIDSvc		Application Identity	Stopped	LocalService	
AppMgmt		Application Management	Stopped	netsvcs	
🔍 AppXSvc		AppX Deployment Service (AppXSVC)	Stopped	wsappx	H
🔍 BFE	1108	Base Filtering Engine	Running	LocalService	-
Ġ BITS		Background Intelligent Transfer Service	Stopped	netsvcs	
Srowser 🗧		Computer Browser	Stopped	smbsvcs	
CertPropSvc	396	Certificate Propagation	Running	netsvcs	
ClipSVC ClipSVC		Client License Service (ClipSVC)	Stopped	wsappx	
COMSysApp	2320	COM+ System Application	Running		
CoreMessagingRegist.	. 1108	CoreMessaging	Running	LocalService	
CryptSvc	1044	Cryptographic Services	Running	NetworkServ	
ComLaunch	756	DCOM Server Process Launcher	Running	DcomLaunch	
defragsvc defragsvc		Optimize drives	Stopped	defragsvc	

### iii. Ensure the following services exist and running.

Name 📩	PID	Description	Status
ahsaycbs	2760	Ahsay Cloud Backup Suite	Running
Name 🔺	PID	Description	Status

If the services are not running, right click to start.

19. Also check if AhsayCBS is listening to the pre-defined http and https ports, which are 80 and 443. The following shows that AhsayCBS is listening to both ports.

PS C:\> netstat -an more					
Active (	Active Connections				
Proto	Local Address	Foreign Address	State		
TCP	0.0.0.80	0.0.0:0	LISTENING		
TCP	0.0.0.0:135	0.0.0:0	LISTENING		
TCP	0.0.0.0:443	0.0.0.0:0	LISTENING		
TCP	0.0.0.0:445	0.0.0:0	LISTENING		
TCP	0.0.0.2179	0.0.0:0	LISTENING		

For AhsayCBS servers hosting Run on Server (Agentless) Office 365 and Cloud File backups, ensure that AhsayCBS is listening to port 8081 (default) on local IP address 127.0.0.1.

PS C:\>	PS C:\> netstat -an more				
Active	Connections				
Proto	Local Address	Foreign Address	State		



TCP	127.0.0.1:8081	0.0.0:0	LISTENING
TCP	127.0.0.1:49157	127.0.0.1:49158	ESTABLISHED
TCP	127.0.0.1:49158	127.0.0.1:49157	ESTABLISHED
TCP	127.0.0.1:49159	127.0.0.1:49160	ESTABLISHED
TCP	127.0.0.1:49160	127.0.0.1:49159	ESTABLISHED

20. Check if the hostname is resolvable. The following shows that the hostname is resolvable.

```
PS C:\> hostname
w2k16-hyperv
Ps C:\> ping w2k16-hyperv
Pinging w2k16-hyperv [fe80:78f8:2b59:3931:38ce%7] with 32
bytes of data:
Reply from fe80:78f8:2b59:3931:38ce%7: time<1ms
Reply from fe80:78f8:2b59:3931:38ce%7: time<1ms
Reply from fe80:78f8:2b59:3931:38ce%7: time<1ms
Reply from fe80:78f8:2b59:3931:38ce%7: time<1ms
Ping statistics for Reply from fe80:78f8:2b59:3931:38ce%7:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

21. After successful installation you can access the login page by opening https://<yourbackup-server> in a browser.

G AhsayCBS		English	► 👱
	Login Name system		
	Password		
	Forgot Password		
	🗸 Remember my login name		
	LOGIN		
			?

# 5.3 Installation on Linux

### Pre-requisite requirements:

The following packages have to be present on the Linux machine in order for AhsayCBS version 8 to be installed.

GNU LIBC 2.14 <u>https://www.gnu.org/software/libc/</u>

The installed 'GNU LIBC' version must at least be 2.14 to support OpenJDK v8 which is used by AhsayCBS.

To check for the GNU C Library version:

- 1. Log in to the AhsayCBS server as root.
- 2. Check the version by using the Idd --version command.

```
# ldd --version
ldd (GNU libc) 2.17
Copyright (C) 2012 Free Software Foundation, Inc.
This is free software; see the source for copying
conditions. There is NO warranty;
not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE.
Written by Roland McGrath and Ulrich Drepper.
#
```

If the version is lower than 2.14, see instructions below on how to install the GNU C Library.

To install GNU C Library:

- 1. Log in to the AhsayCBS server as root.
- 2. Perform the installation.

Example: on CentOS/Red hat

yum group install 'Development Tools'

Example: on Debian/Ubuntu

apt-get install build-essential

net-tools <u>https://sourceforge.net/projects/net-tools/</u>

The 'net-tools' package contains basic Linux networking tools such as 'ifconfig' which is required by AhsayCBS for system functions such as license key activation.

tar <u>https://www.gnu.org/software/tar</u>

The 'tar' command is used to uncompress and extract installation files from the **cbsnix.tar.gz** file.

You may use one of the following commands:

• wget <a href="https://www.gnu.org/software/wget/">https://www.gnu.org/software/wget/</a>

The 'wget' command is used to download the AhsayCBS **cbs-nix.tar.gz** installation file from the Ahsay website.

• curl <u>https://curl.haxx.se</u>

The 'curl' command is used to download the AhsayCBS **cbs-nix.tar.gz** installation file from the Ahsay website.

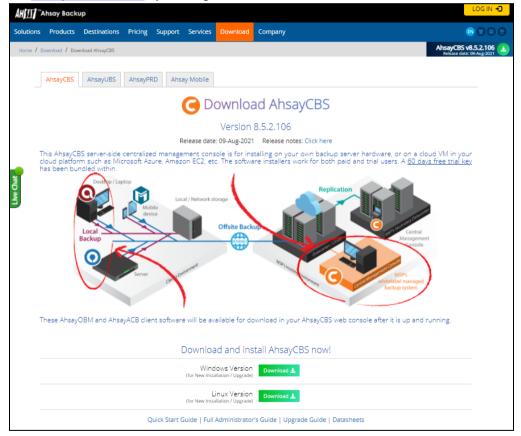
- AhsayCBS installation path: /usr/local/cbs
  - 1. Log in as root on the Linux machine.

```
login as: root
root@10.21.4.28's password:
Last login: Mon May 10 10:46:01 2021 from
192.168.12.1
#
```

2. Create a directory in /usr/local/cbs for the AhsayCBS installation.

# mkdir /usr/local/cbs

3. In a browser, download the AhsayCBS installation package **cbs-nix.tar.gz** from the <u>AhsayCBS website</u> by clicking on the Download button.



4. Enter your email (required), name and phone number, then click **Download**.

H Ahsay Backup			
Download AhsayCBS for Linux (New Installation / Upgrade)			
Email *			
e.g. example@example.com			
Name			
Phone			
Download			

5. Right-click on the **Click here** link, then copy the link address.

How to Get Started (for	Chere if download descrit happen autom Open link in new viab Open link in new vindow Open link in incognito window Save link as Copy link address		ys starting from the day of installation.					
his latest version of AhsayCBS has bundle esides rebranding, all other features have								
Follow these AhsayCBS quickstart guides f Inspect Ctrl+Shift+I and getting AhsayOBM / AhsayACB client backup software data backed up to the server: 1). https://download.ahsay.com/marketing/v8/ahsaycbs-essential-steps.pdf 2). https://www.ahsay.com/download/download_document_cbs-quick-start.jsp Detailed AhsayCBS Admin Guide can be found at: https://www.ahsay.com/download/download_document_cbs-admin.jsp								
If you encounter any questions during your trial, click here to contact our Pre-Sales Team.								
How to Upgrade (for exi:	sting custor	ners)						

6. Go to the created cbs directory, then download the **cbs-nix.tar.gz** installation package file using the wget command. Afterwards, use the tar command to extract the downloaded **cbs-nix.tar.gz** installation package file.

<pre># cd /usr/local/cbs</pre>							
<pre># wget http://ahsay-dn.ahsay.com/v8/83442/cbs-</pre>							
nix.tar.gz							
2020-08-11 15:22:33 http://ahsay-							
dn.ahsay.com/v8/83442/cbs-nix.tar.gz							
Resolving ahsay-dn.ahsay.com (ahsay-							
dn.ahsay.com) 54.192.16.115, 54.192.16.107,							
54.192.16.60,							
Connecting to ahsay-dn.ahsay.com (ahsay-							
dn.ahsay.com) 54.192.16.115 :443 connected.							
HTTP request sent, awaiting response 200 OK							
Length: 1041735214 (886993M) [application/x-gzip]							
Saving to: `cbs-nix.tar.gz'							
100%[======>]							
928,881,759 7.41MB/s in 2m 12s							

```
2020-08-11 15:23:35 (11.9 MB/s) - `cbs-nix.tar.gz'
saved [1041735214/1041735214]
# tar xvfz cbs-nix.tar.gz
```

7. Go to the bin folder then run the install.sh script to start the installation process.

```
# cd bin
# sh install.sh
Log Time: Tue May 11 17:17:01 +08 2021
Verifying current user privilege ...
Current user has enough privilege to "install".
Start configuration on Generic Linux Platform (Linux)
Using CBS HOME /usr/local/cbs
Current Directory: "/usr/local/cbs".
Created symlink "java" to "java-linux-x64".
Minimum supported JVM version: 1.8
Current JVM version is supported for installation.
/usr/local/cbs
Get Startup path for NIX type OS
Installing [ Ahsay Cloud Backup Suite ]
[ Ahsay Cloud Backup Suite ] Service Script created at
  /usr/local/cbs/bin/cbs
Please provide the path to the service script!
Install Service for NIX type OS
Using init script path /etc/init.d
Using run level script path /etc/rc.d
Copying script cbs to /etc/init.d
Copying systemd unit file cbs.service to
  /etc/systemd/system
Creating symbolic link to run levels
You may start this service by:
sh "/etc/init.d/cbs" start &
[ Ahsay Cloud Backup Suite ] setup completed!
Migrate from previous version
/usr/local/cbs
Get Startup path for NIX type OS
RDR HOME
OBS HOME
OBSR HOME
RPS HOME
Run MigrateV6 script
Startup [ Ahsay Cloud Backup Suite ]
/usr/local/cbs
Get Startup path for NIX type OS
RDR HOME
OBS HOME
OBSR HOME
RPS HOME
Run MigrateV6 script
Run MigrateV7 script
_____
                    _____
  _____
You may set SYSTEM DEBUG=0 to disable the debug message
_____
  _____
```

Current User Name : root Using SYSTEM\_TYPE : linux Using SYSTEM\_ARCH : x86\_64 Using PHYSICAL MEM : 3791 (MB) \_\_\_\_\_ \_\_\_\_\_ Using CBS\_HOME : /usr/local/cbs Using JAVA\_HOME : /usr/local/cbs/java Using CATALINA HOME : /usr/local/cbs/tomcat Using JAVA OPTS : -Djava.library.path=/usr/local/cbs/lib/LinX64 -DCATALINA PID=/var/run/obsr.pid -Xrs -Xms512m -Xmx2048m -Xss384k -XX:MetaspaceSize=96m -XX:MaxMetaspaceSize=256m -XX:MaxDirectMemorySize=512m -XX:NewRatio=3 -XX:SurvivorRatio=32 -XX:MinHeapFreeRatio=20 -XX:MaxHeapFreeRatio=80 -XX:+PrintGCDetails -XX:+PrintGCDateStamps -XX:+UseConcMarkSweepGC -XX:+UseCMSInitiatingOccupancyOnly -XX:CMSInitiatingOccupancyFraction=85 -XX:+ScavengeBeforeFullGC XX:+CMSScavengeBeforeRemark -Dsun.net.inetaddr.ttl=3600 -Dnetworkaddress.cache.ttl=3600 -Dsun.net.inetaddr.negative.ttl=300 -Dnetworkaddress.cache.negative.ttl=300 -Dsun.nio.PageAlignDirectMemory=true -Djava.net.preferIPv4Stack=true -Djava.util.logging.manager=org.apache.juli.ClassLoade rLogManager -Djava.util.logging.config.file=conf/logging.propertie s -Dtc.work.path=work -Dtc.log.path=logs -Djavax.servlet.context.tempdir=work -Djdk.nio.maxCachedBufferSize=262144 -Dfile.encoding=UTF-8 -Dsun.jnu.encoding=UTF-8 Using CATALINA OPTS : Using CATALINA\_PID : /var/run/obsr.pid \_\_\_\_\_ ------\_\_\_\_\_ Starting AhsayCBS service Started [ Ahsay Cloud Backup Suite ] Installing [ NFS Service (Ahsay Systems Corporation) ] [ NFS Service (Ahsay Systems Corporation) ] Service Script created at /usr/local/cbs/nfs/bin/cbsnfs Please provide the path to the service script! Install Service for NIX type OS Using init script path /etc/init.d Using run level script path /etc/rc.d Copying script cbsnfs to /etc/init.d Copying systemd unit file cbsnfs.service to /etc/systemd/system Creating symbolic link to run levels You may start this service by: sh "/etc/init.d/cbsnfs" start & [ NFS Service (Ahsay Systems Corporation) ] setup completed! Startup [ NFS Service (Ahsay Systems Corporation) ] Starting NFS Service (Ahsay Systems Corporation) Started [ NFS Service (Ahsay Systems Corporation) ]

NOTE

On some Linux systems, the installation may appear to pause after displaying Starting AhsayCBS service. If this occurs, press the space bar to complete the installation.

8. Check if Java is running on AhsayCBS using ps -ef|grep java command. The following output shows to indicate that Java is running on AhsayCBS.

```
# ps -ef|grep java
                   1 0 12:46 pts/0
root
        17366
                                       00:01:37
/usr/local/obm/jvm/bin/bschJW -Xms128m -Xmx768m -
Dsun.nio.PageAlignDirectMemory=true -
Djava.library.path=.:./LinX64:.../mbs/bin/LinX64 -
cp .:./cbs.jar cbs /usr/local/obm
        18000 17967 0 13:12 pts/1
root
                                       00:01:02
/usr/local/obm/jvm/bin/bJW -Xrs -Xms128m -Xmx768m -
XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true -
Djava.library.path=.:./LinX64 -cp .:./cb.jar Gui
/usr/local/obm
root
        23199
                   1 94 17:17 pts/2
                                       00:05:08
/usr/local/cbs/java/bin/java -
Djava.util.logging.config.file=/usr/local/cbs/conf/logging
.properties -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogM
anager -Djava.library.path=/usr/local/cbs/lib/LinX64 -
DCATALINA PID=/var/run/obsr.pid -Xrs -Xms512m -Xmx2048m -
Xss384k -XX:MetaspaceSize=96m -XX:MaxMetaspaceSize=256m -
XX:MaxDirectMemorySize=512m -XX:NewRatio=3 -
XX:SurvivorRatio=32 -XX:MinHeapFreeRatio=20 -
XX:MaxHeapFreeRatio=80 -XX:+PrintGCDetails -
XX:+PrintGCDateStamps -XX:+UseConcMarkSweepGC -
XX:+UseCMSInitiatingOccupancyOnly -
XX:CMSInitiatingOccupancyFraction=85 -
XX:+ScavengeBeforeFullGC -XX:+CMSScavengeBeforeRemark -
Dsun.net.inetaddr.ttl=3600 -Dnetworkaddress.cache.ttl=3600
-Dsun.net.inetaddr.negative.ttl=300 -
Dnetworkaddress.cache.negative.ttl=300 -
Dsun.nio.PageAlignDirectMemory=true -
Djav .net.preferIPv4Stack=true -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogM
anager -
Djava.util.logging.config.file=conf/logging.properties -
Dtc.work.path=work -Dtc.log.path=logs -
Djavax.servlet.context.tempdir=work -
Djdk.nio.maxCachedBufferSize=262144 -Dfile.encoding=UTF-8
-Dsun.jnu.encoding=UTF-8 -Djdk.tls.ephemeralDHKeySize=2048
Djava.protocol.handler.pkgs=org.apache.catalina.webresourc
es -
Dorg.apache.catalina.security.SecurityListener.UMASK=0027
-Dignore.endorsed.dirs= -classpath
/usr/local/cbs/tomcat/bin/bootstrap.jar:/usr/local/cbs/tom
```

```
cat/bin/tomcat-juli.jar -Dcatalina.base=/usr/local/cbs -
Dcatalina.home=/usr/local/cbs/tomcat -
Djava.io.tmpdir=/usr/local/cbs/temp
org.apache.catalina.startup.Bootstrap start
        23526 21236 0 17:22 pts/2 00:00:00 grep --
root
color=auto java
                  1 0 Apr28 ?
root
        29374
                                      01:05:11
/usr/local/cbp/jvm/bin/bschJW -Xms128m -Xmx768m -
Dsun.nio.PageAlignDirectMemory=true -
Djava.library.path=.:./LinX64:.../mbs/bin/LinX64 -
cp .:./cbs.jar cbs /usr/local/cbp
#
```

9. Check if NFS Service is running on AhsayCBS using ps -eflgrep nfs command. The following output shows to indicate that NFS Service is running on AhsayCBS.

```
# ps -ef|grep nfs
root 23331 1 0 17:17 pts/2 00:00:00
/usr/local/cbs/nfs/bin/NfsLinX64 -logfile
/usr/local/cbs/nfs/log/debug.log -pidfile
/var/run/cbsnfs.pid
root 23576 21236 0 17:26 pts/2 00:00:00 grep --
color=auto nfs
```

10. Check if the process for rotating logs is running on AhsayCBS using ps - eflgrep rotatelogs command. The following output shows that the rotate logs process is running on AhsayCBS.

**NOTE** The rotatelogs process is only applicable to AhsayCBS running on CentOS or Red Hat.

```
# ps -ef|grep rotatelogs
root 72955 1 0 16:40 pts/0 00:00:00
/usr/local/cbs/bin/LinX64/rotatelogs -f
/usr/local/cbs/logs/console_%Y-%m-%d.log 86400
root 73118 72431 0 16:49 pts/0 00:00:00 grep
--color=auto rotatelogs
```

11. Check if AhsayCBS is listening to the pre-defined **http** and **https** ports, i.e., ports **80** and **443** with the netstat -pan|more command. The following output shows that AhsayCBS is listening to both ports.

```
# netstat -pan|more
Active Internet connections (servers and
established)
Proto Recv-Q Send-Q Local Address
Foreign Address
                        State
                                  PID/Program
name
              0 0.0.0.0:111
tcp
         0
0.0.0:*
                                    1478/rpcbind
                         LISTEN
tcp 0
              0 0.0.0.0:80
0.0.0.0:*
                        LISTEN
                                    3736/java
        0
              0 0.0.0.0:22
tcp
```

```
www.ahsay.com
```

0.0.0.0:*				ΤΤΩΠΕΝ	1746/sshd		
	0	0 1		LISTEN	1/46/55110		
-	0	0 1		1:60024			
0.0.0.0:*	<u>,</u>			LISTEN	3736/java		
1 L	0	0 1	L27.0.0.				
0.0.0.0:*				LISTEN	1822/master		
1	0	0 0	0.0.0:				
0.0.0.0:*					3736/java		
tcp	0	0 (	0.0.0:	54178			
0.0.0.0:*				LISTEN			
1569/rpc.st	atd						
tcp 8	6	0 1	LO.16.4.	28:33250			
203.186.85.	237:443			CLOSE WAIT	3736/java		
tcp 8							
				CLOSE WAIT	3736/java		
tcp 5					2		
=				ESTABLISHED	14322/0		
tcp 8							
-				CLOSE_WAIT	3736/iava		
tcp				CTORP MAIL	:::*		
LISTEN					• • •		
		-					
tcp					:::*		
LISTEN	1/46/s	sho	1				
tcp	U	0 :	:::45846		:::*		
LISTEN							
udp	0	0 0	0.0.0.0:	5353			
0.0.0.0:*					1527/avahi-		
daemon:							
udp	0	0 0	0.0.0.0:	111			
0.0.0.0:*					1478/rpcbind		
1	0	0 0	0.0.0:	897			
0.0.0.0:*							
1569/rpc.st	atd						
udp	0	0 0	0.0.0.0:	44431			
0.0.0.0:*					1527/avahi-		
daemon:							
	0	0 0	0.0.0.0:	10000			
0.0.0.0:*					3736/java		
	0	0 (	0.0.0.0:	805	ر . ب		
0.0.0.0:*				-	1478/rpcbind		
	0	0 0	0.0.0.0:	43587	· · , <u></u> · · · · · · · · · · · · · · · · · ·		
0.0.0.0:*	~	5 0		1000/			
1569/rpc.statd							
		0.			•••*		
1		0	:::111		:::*		
1478/rpcbin		0					
<u>1</u>		υ :	:::805		:::*		
1478/rpcbin		~					
<u>T</u>		0 :	:::42700		:::*		
1569/rpc.st	atd						
L							

For AhsayCBS servers hosting Run on Server (Agentless) Office 365 and Cloud File backups, ensure that AhsayCBS is listening to port 8081 (default) on local IP address 127.0.0.1.

<pre># netstat -pan more Active Internet connections (servers and established)</pre>							
Proto Recv-Q Send-Q Local Address Foreign							
Address	State						
PID/Program name							
tcp	0	0	0.0.0:80	0.0.0.0:*			
LISTEN							
6506/java							
tcp	0	0	127.0.0.1:8081	0.0.0.0:*			
LISTEN							
6506/java							
tcp	0	0	0.0.0:22	0.0.0.0:*			
LISTEN							
4341/sshd							
tcp	0	0	127.0.0.1:25	0.0.0:*			
LISTEN							
4571/master							
tcp	0	0	0.0.0:443	0.0.0:*			
LISTEN							
6506/java							

12. Use the hostname and ping commands to check whether the hostname is resolvable. The following shows that the hostname is resolvable.

```
# hostname
centos7
# ping centos7
PING centos7 (10.16.4.28) 56(84) bytes of data.
64 bytes from centos7 (10.16.4.28): icmp_seq=1 ttl=64 time=17.1 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=2 ttl=64 time=0.095 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=3 ttl=64 time=0.098 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=4 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 (10.16.4.28): icmp_seq=6 ttl=64 time=0.081 ms
64 bytes from centos7 ping statistics ----
6 packets transmitted, 6 received, 0% packet loss, time 5001ms
77 min/avg/max/mdev = 0.081/2.936/17.169/6.365 ms
```

If the hostname is not resolvable, add the corresponding hostname information to the "hosts" file found at "/etc".

Otherwise, the SMTP server setting and license key activation on the AhsayCBS may not work properly.

13. Check if both cbs and cbsnfs are present using the ls -la /etc/rc.d/rc[2-5].d/\*cbs\* command. The following output indicates that the cbs and cbsnfs are present on AhsayCBS. These files are needed to enable the cbs and nfs service to automatically start after the machine has been rebooted.

```
# ls -la /etc/rc.d/rc[2-5].d/*cbs*
lrwxrwxrwx. 1 root root 15 Aug 11 16:40 /etc/rc.d/rc2.d/S99cbs ->
/etc/init.d/cbs
```

```
lrwxrwxrwx. 1 root root 18 Aug 11 16:40 /etc/rc.d/rc2.d/S99cbsnfs
-> /etc/init.d/cbsnfs
lrwxrwxrwx. 1 root root 15 Aug 11 16:40 /etc/rc.d/rc3.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx. 1 root root 18 Aug 11 16:40 /etc/rc.d/rc3.d/S99cbsnfs
-> /etc/init.d/cbsnfs
lrwxrwxrwx. 1 root root 15 Aug 11 16:40 /etc/rc.d/rc4.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx. 1 root root 18 Aug 11 16:40 /etc/rc.d/rc4.d/S99cbsnfs
-> /etc/init.d/cbsnfs
lrwxrwxrwx. 1 root root 18 Aug 11 16:40 /etc/rc.d/rc5.d/S99cbsnfs
-> /etc/init.d/cbsnfs
lrwxrwxrwx. 1 root root 15 Aug 11 16:40 /etc/rc.d/rc5.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx. 1 root root 18 Aug 11 16:40 /etc/rc.d/rc5.d/S99cbsnfs
-> /etc/init.d/cbs
```

On Debian or Ubuntu machine, use ls -la /etc/rc[2-5].d/\*cbs\* command.

```
# ls -la /etc/rc[2-5].d/*cbs*
lrwxrwxrwx 1 root root 15 May 12 11:51 /etc/rc2.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx 1 root root 18 May 12 11:51 /etc/rc2.d/S99cbsnfs ->
/etc/init.d/cbsnf
lrwxrwxrwx 1 root root 15 May 12 11:51 /etc/rc3.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx 1 root root 18 May 12 11:51 /etc/rc3.d/S99cbsnfs ->
/etc/init.d/cbsnf
lrwxrwxrwx 1 root root 15 May 12 11:51 /etc/rc4.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx 1 root root 18 May 12 11:51 /etc/rc4.d/S99cbsnfs ->
/etc/init.d/cbsnf
lrwxrwxrwx 1 root root 15 May 12 11:51 /etc/rc5.d/S99cbs ->
/etc/init.d/cbs
lrwxrwxrwx 1 root root 18 May 12 11:51 /etc/rc5.d/S99cbsnfs ->
/etc/init.d/cbsnf
```

For newer Linux versions (e.g., CentOS 8, Red Hat Enterprise 8, Ubuntu 20.04 LTS and Debian 10), service startup after the machine has been rebooted is managed using **systemd**. Check if cbs and cbsnfs services are configured to startup automatically after reboot or power on with the systemctl status cbs and systemctl status cbsnfs commands.

```
# systemctl status cbs
Cbs.service - Service to run CBS
Loaded: loaded (/etc/systemd/system/cbs.service; enabled;
vendor preset: enabled
Active: active (exited) since Fri 2020-08-07 10:25:15 PST;
4 days ago
Main PID: 692 (code=exited, status=0/SUCCESS)
Tasks: 0 (limit: 4657)
Memory: 286.2M
CGroup: /system.slice/cbs.service
Aug 07 10:26:09 ubuntu20 sh[692]: Using PHYSICAL_MEM : 3936 (MB)
Aug 07 10:26:09 ubuntu20 sh[692]: Using CBS_HOME :
```

```
# systemctl status cbsnfs

• cbsnfs.service - Service to run CBSNFS

Loaded: loaded (/etc/systemd/system/cbsnfs.service;
enabled; vendor preset: enabled

Active: active (exited) since Fri 2020-08-07 10:25:15 PST;
4 days ago

Main PID: 693 (code=exited, status=0/SUCCESS)

Tasks: 0 (limit: 4657)

Memory: 1.4M

CGroup: /system.slice/cbsnfs.service

Aug 07 10:25:15 ubuntu20 systemd[1]: Started Service to run

CBSNFS.

Aug 07 10:25:15 ubuntu20 sh[693]: Starting NFS Service (Ahsay

Systems Corporation)
```

If the cbs and cbsnfs services are not starting up automatically after reboot or power on, (for example: when "systemctl status") return the following results:

```
# systemctl status cbs

Cbs.service - Service to run CBS
Loaded: loaded (/etc/systemd/system/cbs.service; disabled;
vendor preset: enabled
```

Active: inactive (dead)

```
# systemctl status cbsnfs

    cbsnfs.service - Service to run CBSNFS
    Loaded: loaded (/etc/systemd/system/cbsnfs.service;
    disabled; vendor preset: enabled
    Active: inactive (dead)
```

It is recommended to enable them using the following commands: systemctl enable cbs and systemctl enable cbsnfs

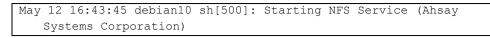
```
# systemctl enable cbs
Synchronizing state of cbs.service with SysV service script with
/lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable cbs
```

```
# systemctl enable cbsnfs
Synchronizing state of cbsnfs.service with SysV service script
with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable cbsnfs
```

#### Example on a Debian machine:

```
# systemctl status cbs
• cbs.service - Service to run CBS
  Loaded: loaded (/etc/systemd/system/cbs.service; enabled;
  vendor preset: enab
  Active: active (exited) since Wed 2021-05-12 16:43:45 HKT;
  18min ago
 Process: 501 ExecStart=/bin/sh /usr/local/cbs/bin/startup.sh
   (code=exited, sta
Main PID: 501 (code=exited, status=0/SUCCESS)
   Tasks: 55 (limit: 2342)
  Memory: 457.9M
  CGroup: /system.slice/cbs.service
          L1129 /usr/local/cbs/java/bin/java -
  Djava.util.logging.config.file=/
May 12 16:44:04 debian10 sh[501]: Using PHYSICAL MEM : 1994 (MB)
May 12 16:44:04 debian10 sh[501]: -----
  _____
May 12 16:44:04 debian10 sh[501]: Using CBS HOME
                                                  :
  /usr/local/cbs
May 12 16:44:04 debian10 sh[501]: Using JAVA HOME
  /usr/local/cbs/java
May 12 16:44:04 debian10 sh[501]: Using CATALINA HOME :
  /usr/local/cbs/tomcat
May 12 16:44:04 debian10 sh[501]: Using JAVA OPTS
                                                 : -
  Djava.library.path=/usr
May 12 16:44:04 debian10 sh[501]: Using CATALINA OPTS :
May 12 16:44:04 debian10 sh[501]: Using CATALINA PID :
 /var/run/obsr.pid
May 12 16:44:04 debian10 sh[501]: -----
  _____
May 12 16:44:04 debian10 sh[501]: Starting AhsayCBS service
```

```
# systemctl status cbsnfs
• cbsnfs.service - Service to run CBSNFS
  Loaded: loaded (/etc/systemd/system/cbsnfs.service; enabled;
   vendor preset: e
  Active: active (exited) since Wed 2021-05-12 16:43:45 HKT;
   26min ago
 Process: 500 ExecStart=/bin/sh
   /usr/local/cbs/nfs/bin/startup.sh (code=exited,
Main PID: 500 (code=exited, status=0/SUCCESS)
   Tasks: 2 (limit: 2342)
  Memory: 628.0K
  CGroup: /system.slice/cbsnfs.service
           L-550 /usr/local/cbs/nfs/bin/NfsLinX64 -logfile
   /usr/local/cbs/nfs/lo
May 12 16:43:45 debian10 systemd[1]: Started Service to run
   CBSNFS.
```



14. After successful installation, you can access the AhsayCBS login page by opening https://<your-backup-server> in a browser.

G AhsayCBS		English	► 👱
	Login Name system Password [ Forgot Password  Remember my login name		
Y			?

# 5.4 Installation on FreeBSD

#### **Pre-requisite requirements:**

Make sure OpenJDK Version 1.8 has been installed beforehand since the user will be asked to enter the location of the java 1.8 home. Also, OpenJDK8 and GNU C Library must be installed on FreeBSD to support AhsayCBS NFS service.

- Install GNU C Library:
  - Login to the AhsayCBS server as root
  - Ochange working directory to /usr/ports/misc/compat9x and add additional ports.

```
cd /usr/ports/misc/compat9x
```

• make installation

make install distclean

- AhsayCBS installation path: /usr/local/cbs
- OpenJDK installation path: /usr/local/openjdk8
- 1. Log in as root on your FreeBSD machine.

```
login as: root
Using keyboard-interactive authentication.
Password for root@fbsd10-4-45:
```

2. Create a directory /usr/local/cbs for the AhsayCBS installation.

```
mkdir -p /usr/local/cbs
```

3. In a browser, download the AhsayCBS installation package **cbs-nix.tar.gz** from the <u>Ahsay website</u> by clicking on the Download button.

AH []]]	Ahsay Back	up						
Solutions	Products	Destinations	Pricing	Support	Services	Download	Company	en 93 (3) (2)
Home /	Download / Dow	vnload AhsayCBS						AhsayCBS v8.5.2.106 Release date: 09-Aug-2021
_	AhsayCBS	AhsayUBS	AhsayPR	RD Ahsi	ay Mobile			
					GD	ownloa	ad AhsayCBS	
						Version	8.5.2.106	
						-	Release notes: Click here	
Live Chat	cloud platfor	m such as Mikin noled within. Destroy Lay Local Backup	otop Mob Server	Loc	al / Network st	C. The softweet	talling on your own backup server hardware, or on a do are installers work for both paid and trial users. A <u>60 day</u> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replication</b> <b>Replica</b>	<u>s free trial key</u>
				I	Downloa	ad and ins	tall AhsayCBS now!	
						dows Version allation / Upgrade)	Download 🛓	
						inux Version allation / Upgrade)	Download 🛓	
			Q	uick Start (	Guide   Full	Administrator	's Guide   Upgrade Guide   Datasheets	

4. Enter your email, name and phone then click Download.

<b>AH∭</b> ™AH	nsay Backup
	Download AhsayCBS for Linux (New Installation / Upgrade)
	Email *
	e.g. example@example.com
	Name
	Phone
	Download

5. Right-click on the Click here link then select Copy link.

Thank you for c	lownloading Ahsa	avCBS for Linux
( <u>Click here</u>		patically.)
Newser	Open in new tab	
New trial users	Open in new window	
This latest version of AhsayCBS has bundled with a trial rebranding, all other features have been enabled.	Open in new InPrivate window	tarting from the day of installation. Besides
Download this AhsayCBS quickstart guides for installati	Save target as	the client side data backed up to the server:
https://www.ahsay.com/download/download_documer		the cherk side data backed up to the server.
Detailed AhsayCBS Admin Guide can be found at: https://www.ahsay.com/download/download documer	Add to reading list	
	Search the web for "Click here"	
We will follow up with you a few days later to see if you during your trial, please feel free to contact us.		hd configuration. If you encounter any question
Existing users		
	c : : : : : : : : : : : : : : : : : : :	35. If you are not sure how to upgrade, please o

6. Go to the cbs directory you created then download the installation package cbsnix.tar.gz with the fetch command.

```
# cd /usr/local/cbs
# fetch http://ahsay-dn.ahsay.com/v8/83030/cbs-nix.tar.gz
cbs-nix.tar.gz 100% of 933
MB 383 kBps 41m33s
```

7. Unzip and extract the installation files with the following tar command.

```
# tar xvfz cbs-nix.tar.gz
```

8. Go to the /usr/local/cbs/bin directory.

# cd /usr/local/cbs/bin

9. To execute the installation file, type the following command:

# sh install.sh

10. When asked to enter the java 1.8 home, type the following:

/usr/local/openjdk8 which is the location of your java 1.8 home but the path may be different depending on the installed java.

```
Log Time: Thu Apr 4 10:32:17 HKT 2019
Verifying current user privilege ...
Current user has enough privilege to "install".
Start configuration on BSD distribution Platform
(FreeBSD)
Using CBS_HOME /usr/local/cbs
Please enter your java 1.8 home:
/usr/local/openjdk8
```

11. After successful installation, the screen will look like the following:

```
Copy java 1.8 from /usr/local/openjdk8
Current Directory: "/usr/local/cbs".
Created symlink "java" to "jvm".
Minimum supported JVM version: 1.8
Current JVM version is supported for installation.
Installing [ Ahsay Cloud Backup Suite ]
[ Ahsay Cloud Backup Suite ] Service Script created at
/usr/local/cbs/bin/cbs
Please provide the path to the service script!
Install Service for BSD type OS
Copying script cbs to /usr/local/etc/rc.d
You may start this service by:
sh "/usr/local/etc/rc.d/cbs" start &
[ Ahsay Cloud Backup Suite ] setup completed!
Migrate from previous version
/usr/local/cbs
Get Startup path for BSD type OS
RDR HOME
OBS HOME
OBSR_HOME /usr/local/cbs
RPS HOME
Run MigrateV6 script
Startup [ Ahsay Cloud Backup Suite ]
Run MigrateV7 script
_____
_____
You may set SYSTEM DEBUG=0 to disable the debug message
_____
_____
Current User Name : root
Using SYSTEM_TYPE : bsd
Using SYSTEM ARCH : amd64
Using PHYSICAL MEM : 4063(MB)
_____
_____
Using CBS_HOME : /usr/local/cbs
Using JAVA_HOME : /usr/local/cbs/java
Using CATALINA HOME : /usr/local/cbs/tomcat
Using JAVA OPTS
                : -
Djava.library.path=/usr/local/cbs/lib/FbdX64 -
DCATALINA PID=/var/run/obsr.pid -Xrs -Xms512m -Xmx2048m -
Xss384k -XX:PermSize=96m -XX:MaxPermSize=160m -
XX:MaxDirectMemorySize=512m -XX:NewRatio=3 -
XX:SurvivorRatio=30 -XX:MinHeapFreeRatio=20 -
XX:MaxHeapFreeRatio=80 -XX:+PrintGCDetails -
XX:+PrintGCDateStamps -XX:+UseParNewGC -
XX:+UseConcMarkSweepGC -XX:+CMSParallelRemarkEnabled -
XX:+UseCMSInitiatingOccupancyOnly -
XX:CMSInitiatingOccupancyFraction=85 -
XX:+ScavengeBeforeFullGC -XX:+CMSScavengeBeforeRemark -
XX:PerfDataSamplingInterval=500 -
Dsun.net.inetaddr.ttl=3600 -Dnetworkaddress.cache.ttl=3600
-Dsun.net.inetaddr.negative.ttl=300 -
Dnetworkaddress.cache.negative.ttl=300 -
```

```
Dsun.nio.PageAlignDirectMemory=true -
Djava.net.preferIPv4Stack=true -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogM
anager -
Djava.util.logging.config.file=conf/logging.properties -
Dtc.work.path=work -Dtc.log.path=logs -
Djavax.servlet.context.tempdir=work
Using CATALINA OPTS :
Using CATALINA PID : /var/run/obsr.pid
_____
Starting AhsayCBS service
Started [ Ahsay Cloud Backup Suite ]
Installing [ NFS Service (Ahsay Systems Corporation) ]
[ NFS Service (Ahsay Systems Corporation) ] Service Script
created at /usr/local/cbs/nfs/bin/cbsnfs
Please provide the path to the service script!
Install Service for BSD type OS
Copying script cbsnfs to /usr/local/etc/rc.d
You may start this service by:
sh "/usr/local/etc/rc.d/cbsnfs" start &
[ NFS Service (Ahsay Systems Corporation) ] setup
completed!
Startup [ NFS Service (Ahsay Systems Corporation) ]
Starting NFS Service (Ahsay Systems Corporation)
Started [ NFS Service (Ahsay Systems Corporation) ]
```

12. Check if Java is running on AhsayCBS with the ps -a|grep java command. The following output shows that Java is running on AhsayCBS.

```
# ps -a|grep java
59569 2 I 23:08.38 /usr/local/cbs/java/bin/java -
Djava.util.logging.config.file=/usr/local/cbs/conf/logging
.properties -Djava.util.logging.manager=org.apache.j
65139 2 R+ 0:00.00 grep java
```

13. To check the details of the parameters and values used by the Java process, use the procstat -c {process ID} command. The following output shows the details of the Java process.

```
# procstat -c 59569
                      ARGS
 PID COMM
59569 java
                      /usr/local/cbs/java/bin/java -
Djava.util.logging.config.file=/usr/local/cbs/conf/logging
.properties -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogM
anager -Djava.library.path=/usr/local/cbs/lib/FbdX64 -
DCATALINA PID=/var/run/obsr.pid -Xrs -Xms512m -Xmx2048m -
Xss384k -XX:MetaspaceSize=96m -XX:MaxMetaspaceSize=256m -
XX:MaxDirectMemorySize=512m -XX:NewRatio=3 -
XX:SurvivorRatio=32 -XX:MinHeapFreeRatio=20 -
XX:MaxHeapFreeRatio=80 -XX:+PrintGCDetails -
XX:+PrintGCDateStamps -XX:+UseConcMarkSweepGC -
XX:+UseCMSInitiatingOccupancyOnly -
XX:CMSInitiatingOccupancyFraction=85 -
XX:+ScavengeBeforeFullGC -XX:+CMSScavengeBeforeRemark -
```

```
Dsun.net.inetaddr.ttl=3600 -Dnetworkaddress.cache.ttl=3600
-Dsun.net.inetaddr.negative.ttl=300 -
Dnetworkaddress.cache.negative.ttl=300 -
Dsun.nio.PageAlignDirectMemory=true -
Djava.net.preferIPv4Stack=true -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogM
anager -
Djava.util.logging.config.file=conf/logging.properties -
Dtc.work.path=work -Dtc.log.path=logs -
Diavax.servlet.context.tempdir=work -
Djdk.nio.maxCachedBufferSize=262144 -Dfile.encoding=UTF-8
-Dsun.jnu.encoding=UTF-8 -Djdk.tls.ephemeralDHKeySize=2048
Djava.protocol.handler.pkgs=org.apache.catalina.webresourc
es -
Dorg.apache.catalina.security.SecurityListener.UMASK=0027
-Dignore.endorsed.dirs= -classpath
/usr/local/cbs/tomcat/bin/bootstrap.jar:/usr/local/cbs/tom
cat/bin/tomcat-juli.jar -Dcatalina.base=/usr/local/cbs -
Dcatalina.home=/usr/local/cbs/tomcat -
Djava.io.tmpdir=/usr/local/cbs/temp
org.apache.catalina.startup.Bootstrap start
```

14. Check if NFS Service is running on AhsayCBS with the ps -a|grep nfs command. The following output shows that NFS Service is running on AhsayCBS.

```
# ps -a|grep nfs
40359 0- S 0:40.09 /usr/local/cbs/nfs/bin/NfsFbdX64 -
logfile /usr/local/cbs/nfs/log/debug.log -pidfile
/var/run/cbsnfs.pid
65555 3 R+ 0:00.00 grep nfs
```

15. Check if the process for rotating logs is running on AhsayCBS with the ps -a|grep rotatelogs command. The following output shows that rotate logs process is running on AhsayCBS.

```
# ps -a|grep rotatelogs
59568 2 I 0:00.51
/usr/local/cbs/bin/FbdX64/rotatelogs -f
/usr/local/cbs/logs/console_%Y-%m-%d.log 86400
65656 3 S+ 0:00.00 grep rotatelogs
```

16. Check if AhsayCBS is listening to both pre-defined http and https ports (i.e. Ports 80 and 443) with the netstat -an | more command. In the following screenshot, AhsayCBS is listening to both ports:

```
# netstat -an|more
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address
                                    Foreign Address
(state)
        0
              0 127.0.0.1.60024
                                     *.*
tcp4
LISTEN
t.cp4
       85 0 10.16.4.45.36242
203.186.85.237.443 CLOSE WAIT
tcp4 0 0 10.16.4.45.443
10.20.1.37.51021 ESTABLISHED
tcp4 85 0 10.16.4.45.60497
```

203.186.8	35.237.	443	CLOSE_WAIT	
			*.443	*.*
LISTEN				
tcp4	0	0	*.80	*.*
LISTEN				
tcp4	0	0	10.16.4.45.22	
192.168.7	7.104.3	983	ESTABLISHED	
tcp4	0	0	10.16.4.45.22	
192.168.7	7.104.3	956	ESTABLISHED	
tcp4	0	0	10.16.4.45.22	
192.168.7	7.117.4	617	ESTABLISHED	
tcp4	0	0	10.16.4.45.952	
192.168.2	22.40.2	049	ESTABLISHED	
tcp4	0	0	10.16.4.45.788	
192.168.2	22.40.2	049	ESTABLISHED	
tcp4	0	0	*.44097	*.*
LISTEN				
tcp6	0	0	*.31178	*.*
LISTEN				
tcp4	0	0	127.0.0.1.25	*.*
LISTEN				
tcp4	0	0	*.22	*.*
LISTEN				
tcp6	0	0	*.22	*.*
LISTEN				
udp4	0	0	*.10000	*.*
udp4		0	*.51313	*.*
udp4	0	0	*.5353	*.*
udp4	0	0	*.514	*.*
udp6	0	0	*.514	* • *

For AhsayCBS servers hosting Run on Server (Agentless) Office 365 and Cloud File backups, ensure that AhsayCBS is listening to port 8081 (default) on local IP address 127.0.0.1.

```
# netstat -an|more
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address Foreign Address
(state)
tcp4 0 0 *.443
                                   *.*
LISTEN
tcp4 0 0 *.80
LISTEN
                                   *.*
      0 0 127.0.0.1.8081
                                   * *
tcp4
LISTEN
tcp4 0 0 10.16.30.21.27873
125.5.184.206.80 SYN_SENT
tcp4 0 0 10.16.30.21.22
192.168.12.1.56311 ESTABLISHED
                                   *.*
tcp4 0 0 127.0.0.1.25
LISTEN
       0 0 *.22
tcp4
                                   *.*
LISTEN
tcp6
       0
             0 *.22
                                   *.*
LISTEN
      0
0
              0 *.10000
                                   *.*
udp4
              0 *.514
                                   *.*
udp4
              0 *.514
                                   *.*
udp6
        0
```

17. Use the hostname and ping commands to check whether the hostname is resolvable. The following shows that the hostname is resolvable.

```
root@freebsdl1:~ # hostname
    freebsdl1
    root@freebsdl1:~ # ping freebsdl1
    PING freebsdl1 (10.90.30.21): 56 data bytes
    64 bytes from 10.90.30.21: icmp_seq=0 ttl=64 time=0.267 ms
    64 bytes from 10.90.30.21: icmp_seq=1 ttl=64 time=0.344 ms
    64 bytes from 10.90.30.21: icmp_seq=2 ttl=64 time=0.238 ms
    64 bytes from 10.90.30.21: icmp_seq=3 ttl=64 time=0.226 ms
    64 bytes from 10.90.30.21: icmp_seq=4 ttl=64 time=0.269 ms
    64 bytes from 10.90.30.21: icmp_seq=5 ttl=64 time=0.259 ms
    ^C
    ---- freebsdl1 ping statistics ----
    6 packets transmitted, 6 packets received, 0.0% packet loss
    round-trip min/avg/max/stddev = 0.226/0.267/0.344/0.038 ms
```

If the hostname is not resolvable, add the corresponding hostname information to the "hosts" file found at "/etc".

Otherwise, the SMTP server setting on the AhsayCBS may not work properly. Also, AhsayCBS may not be able to connect to the Ahsay license server.

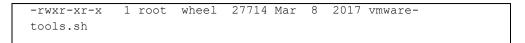
18. Check if cbs and cbsnfs are enabled in the /etc/rc.conf file with the cat

/etc/rc.conf command. The following output shows that cbs and cbsnfs are enabled.

```
# cat /etc/rc.conf
root@freebsdl1:~ # cat /etc/rc.conf
hostname="freebsdl1"
ifconfig_em0="inet 10.16.30.21 netmask 255.252.0.0"
defaultrouter="10.16.0.1"
sshd_enable="YES"
# Set dumpdev to "AUTO" to enable crash dumps, "NO" to
disable
dumpdev="AUTO"
firewall_enable="NO"
cbs_enable="YES"
obmscheduler_enable="YES"
```

19. Check if cbs and cbsnfs are present in /usr/local/etc/rc.d directory with the ls -la /usr/local/etc/rc.d command. The following output shows that cbs and cbsnfs are available. These files will enable the cbs and nfs service to automatically start after the machine has been rebooted.

```
# ls -la /usr/local/etc/rc.d
root@freebsd11:~ # ls -la /usr/local/etc/rc.d
total 56
drwxr-xr-x 2 root wheel 512 Apr 4 10:33 .
drwxr-xr-x 16 root wheel 512 Dec 13 12:41 ..
-rwxr-xr-x 1 root wheel 849 Apr 4 10:33 cbs
-rwxr-xr-x 1 root wheel 983 Apr 4 10:33 cbsnfs
-r-xr-xr-x 1 root wheel 789 Feb 25 2017 dbus
-r-xr-xr-x 1 root wheel 2573 Feb 25 2017 hald
-rwxr-xr-x 1 root wheel 714 Jan 22 11:59
obmscheduler
```



20. After successful installation, you can access the login page by opening https://<your-backup-server> in a browser.

G AhsayCBS		English	~	₹
	Login Name system			
	Password			
	Forgot Password			
	✔ Remember my login name			
Y				?

# 6 Basic Setup and Configuration

# 6.1 Activating License

1. Open AhsayCBS from your browser, e.g. <u>https://<your-backup-server</u>>.

C AhsayCBS	English 🗸	₹
Login Name username		
Password		
Forgot Password		
We use cookies to give you the best experience on our website. By continuing to browse the site, you are agreeing to our	use of cookies. You can change your cooki	e ×
settings at any time but if you do, you may lose some functionality. More information can be found in our Terms and cont		

- 2. Log in to the AhsayCBS with the following default credentials.
  - Login name: system
  - Password: system
- 3. Only for first time login, starting with v8.3.4.0 and onwards, the user will be asked to change the password before they can proceed. Enter the new password and confirm

password. Click 🛄 to save.	
Password	
Password must be changed for default system user for security	
New Password	
Confirm Password	

- 4. To activate the license, click the **License** icon.
  - Ð <u>\*</u> English ¥ Ш **B** R -\/ \/-Redirection Logs Dashboard Live Activities Backup / Restore Logs Replication Logs ſIJ<sub>¢</sub>; ₩ ✵ Accepting Data Û റ്റീ Joining Redirectors Hosting a Redirector **\* Ö** Basic 0-1
- 5. Applying the license key
  - If you are evaluating the AhsayCBS, you can use the evaluation license key provided on the page by default and click the **Update** button.
  - If you have purchased a Backup license, click on the Backup tab then copy and paste the licensee name, license key into the relevant field. Then click the Update button.

G AhsayCBS
Backup Redirector
License information and license related utilities.
Overview
Licensee Name
001-Kay-98235-FRE
License Key
54wF8-sIRE7-LoenS-W4853O-bP
Use Proxy
Connection Test
Test
Update License
Update

www.ahsay.com

If you have purchased a Redirector license, go to the Redirector tab, do the same by copying and pasting the licensee name and license key to the relevant field then click the **Update** button.

Backup Redirector
License information and license related utilities.
Overview
Licensee Name
Mulyair-589VAL-385
License Key
Jiwe4-493Oc-Wsir2P-Adf57-MY
Use Proxy
Connection Test
Test
Update License
Update

 For the Replication Server, an additional AhsayCBS license module is needed. Go to the Backup tab then copy and paste the licensee name, license key into the relevant field. Then click the Update button.

Backup Redirector
License information and license related utilities.
Overview
Licensee Name
ABc-123-Ukowei-Jie94
License Key
Sd489-47Kod-Cskll-888kk-Ph
Use Proxy
Connection Test
Test
Update License
Update

www.ahsay.com

ense Details					
Client Software	Quota	Used		Available	
AhsayOBM	5	1		4	
AhsayACB	5	0		5	
Client Add-on Modules		Quota		Used	Available
Microsoft Exchange Mailbox (Per Mailbox)		5		0	5
Hyper-V / VMware (Per Guest VM)		10		0	10
Hyper-V / VMware (Per Socket)		10		0	10
NAS - Synology / NAS - QNAP		10		0	10
Mobile		Unlimited		0	Unlimited
Office 365		10		0	10
OpenDirect / Granular Restore		5		0	5
Server Add-on Modules		Quota	Used		Available
AhsayOBM Replication Module		5	0		5
AhsayACB Replication Module		5	0		5
High Availability		0	0		0
AhsayUBS		0	0		0
AhsayCBS		1	1		0

Make sure that you have sufficient Replication module license in your backup server. You can check it in the License Details section.

6. Click at the bottom right corner of the page to save the settings.

#### NOTE

The evaluation key can only be applied if it has not been activated before in the machine. If you are using the evaluation license key, you will be able to evaluate the AhsayCBS for 60 days. After which the AhsayCBS service will automatically stop working. Although the service is still active, the AhsayOBM and AhsayACB clients will not be able to connect to perform any backups or restores. If you would like to continue to use AhsayCBS, please contact the Sales team at Ahsay by email at sales-kb@ahsay.com or call our International Sales Hotline +852 3580 8091.

#### Two types of license: OEM and Meter Key

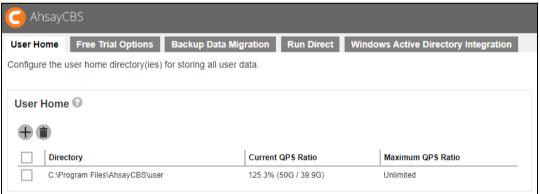
- One type of license is the OEM Key where you purchase the license key and included in the purchase price is the first-year maintenance. This will be enrolled in the Standard Support plan wherein you are entitled to hotfixes and releases. The maintenance will start upon activation of the license key in the AhsayCBS server. For example if you purchased an OEM Key and it was activated on January 1, then you will be entitled to a Standard Support plan for one year from date of activation. So the Standard Support plan will end on December 31. Afterwhich, you need to renew a valid support maintenance if you want to continue getting support. To know more about the different support maintenance please check the page <u>Get Served by Our Support Engineers</u>.
- Another type of license is the Meter Key where you only pay for what you use monthly. With this license you only need to pay an initial meter deposit which is valid for eighteen (18) months. Your monthly usage will be automatically deducted from the initial meter deposit. Once the meter deposit is depleted, you have the option of topping up the meter deposit or pay your invoices on a monthly basis. In this type of license, there is no need to pay for support maintenance since it is already included in the monthly meter rate. Check out the latest price for the Meter Key by checking this page <u>Pricing for Meter License</u>.

# 6.2 Setting up User Home

Set up a user home in your AhsayCBS to store the user's information and back up files in your local or network drive.

- ⊻ Ð English V B B B -^^-Replication N Backup / Restore 1J¢ \* ⋇ **ſ**ĵ ц റ്റീ 🔅 System Settings 0-1 **H**
- 1. Click the blue **Basic** icon on the AhsayCBS main page.

2. In the User Home tab, click +.



3. Enter the directory path in the **Home Directory** field (e.g. **D:\my\_user\_home**) and click

When done.
User Home
Home Directory (Input local / network address)
D:\my_user_home
This share requires access credentials Maximum QPS Ratio Unlimited

It may also be set up in a network drive. Enter the network address in the **Home Directory** field. If access credentials are required to connect to the network drive, check the box beside **This share requires access credentials**. Enter the **User name** 

and **Password**. Click when done.

Iome Direct	ory (Input local / I	network address	)	
\\125.5.184.	23\my_user_hom	1e		
This sha	re requires acce	ss credentials		
Jser name (	e.g. domain\useri	name)		
username				
Password				
•••••				

#### NOTE

It is NOT suggested to store your user home in your system partition, e.g. C:\.

4. Click at the bottom right corner to save the new user home settings.

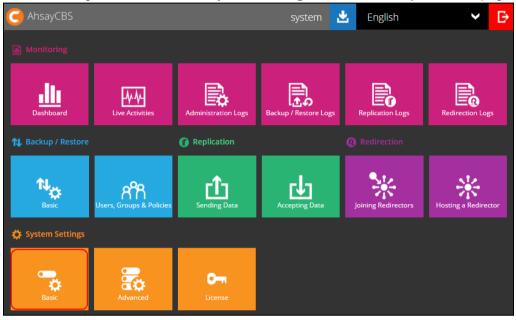
#### NOTE

For cloud setup, please refer to AhsayCBS v8 Administrator's Guide.

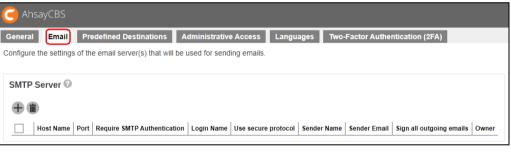
# 6.3 Setting up SMTP

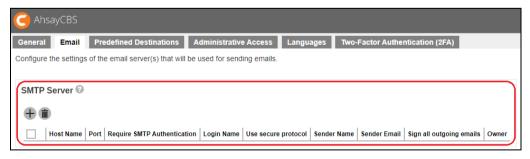
Configure the SMTP so that you can receive reports from the AhsayCBS. For details of the type of reports sent please refer to Chapter 6.2.3 of the <u>AhsayCBS Administrator's Guide</u>.

1. Click the orange **Basic** icon under **System Settings** section on AhsayCBS main page.



2. In the Email tab, locate the SMTP Server section. Then, click







3. Enter the SMTP mail server settings in the Host Name and Port fields.

Add New SMTP Server Add a new SMTP server below for sending emails
SMTP Server Settings
Host Name smtp.mycompany.com
Port 25

4. If authentication is required, click the checkbox next to Require SMTP Authentication and then enter the **Login Name** and **Password**.

Require SMTP Authentication
Login Name
Password

**Optional:** Click the checkbox **Use secure protocol** if required. Select the type of **Protocol** from the drop-down box.

	Use secure protocol	
	Protocol	
	SMTPS (SSL/TLS)	]
	SMTPS (SSL/TLS)	
_	SMTP (STARTTLS)	

5. Enter the report sender's name and email address.

Report Sender 🔞
Name
Administrator
EMail
admin@mycompany.com
Sign all outgoing emails digitally (S/MIME)

- 6. Click at the bottom right corner to save the SMTP settings.
- 7. Click at the bottom right corner to save the settings.

#### NOTE

- > If you don't have a SMTP server, you can consider using a free SMTP such as Gmail.
- AhsayCBS supports SMTP servers which use either TLS v1.0, v1.1 or v1.2.
- Starting with AhsayCBS v8.5.2.42 or above, backup and restore reports that will be sent through email will depend on the size of the PDF report if it will be attached in the email or a download link will be provided. If the PDF report is less than 10MB, it will be attached in the email. However, if the size of the PDF report is greater than 10MB, a download link will be provided instead so the PDF report can be downloaded.

# 6.4 Setting up Hostname & System Home

Configure the AhsayCBS hostname and system home path.

C Ah	sayCB															
General	Em	ail	Predefir	ned Destination	ons Adminis	trative Acc	cess l	anguages	Two-Fa	ctor Auti	hentication (	2FA)				
Configure	the bas	sic set	ttings for t	his server belo	ow.											1
																- 1
Host	,															- 1
Host Na	ne															- 1
																_
Syster	n Hom	e 🕜														- 1
System		_	у													- 1
G:\Ahsa	y\syster	n														- 1
Conne	ctors	0														
<b>+6</b>																- 1
	IP	Port	Protocol	Max Threads	Max Connection	Connectio	n Timeout	Connection	Upload Time	out Max	Keep Alive Re	equest So	ocket R	eceive Buffer Size	Socket Sen	d Buffer S
	0.0.0.0	80	HTTP - NIO	200	10000	30000		900000		9998	9	25	188		43800	
	0.0.0.0	443	HTTPS - NIO	200	10000	30000		900000		9999	9	25	188		43800	
SSL C	rtifica	to 0														
55L U	erunca		,													- 1
<b>+</b>	)															- 17
	Name	C	Common Na	ame	Organization Unit		Organizat	ion Name	Lo	ocation	State	Country		Expiry Date	Status	_
Cookie	Bann	er N	otificatio	on @												
∢ we use	COOKIES	to giv	e you the	best experienc	e in our website.	.										
																x ?

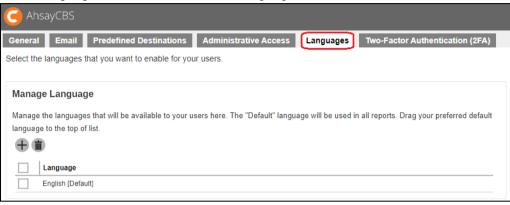
Section	Description
Host	This is the host name of your AhsayCBS. You can enter the domain name of your AhsayCBS in the formats of "IP Address:port_number" or "www.mybackup.com:port_number"
	<b>Note</b> : The <b>Host Name</b> will be the access link for your users to get access to the AhsayCBS. It needs a fully qualified domain name (FQDN) and must be resolvable. Since the host name will be used in various locations, such as inside welcome email as a reference point for the users to access the AhsayCBS, inside email as a reference link for the users to recover the password, users applying Run Direct restore feature, it is important to ensure the host name is accessible by users from external network environment.
System Home	This is the system home location of your AhsayCBS where the system logs and group policy files are located. This path is set to your installation home by default. For production systems the system home should not be setup on the O/S partition, as the logs could fill up the drive and result in system instability.

readily cheo Connectors © ⊕ ■	cked from t	he AhsayCE	pache Tomca S web conso	le.		
0.0.0.0 80 HTTP	- 200 10000	30000 9000		25188	43800	_
0.0.0.0 443 HTTP	S - 200 10000	30000 9000	0 9999	25188	43800	
and Cloud I	ne baenup	e,e .ee		no / mody c		Juisule.
The setting	s can be ch	ecked from	the server.xm	•		
The setting \$Application xml version<br <cerver port<br=""><listener <listener <listener <service< th=""><th>s can be ch n_Home\cc on="1.0" enco t="60024" shu className="o className="o className="o className="o name="Catalin</th><th>hecked from onf folder. ding="ISO-8855 tdown="SHUTDOW rg.apache.cata rg.apache.cata rg.apache.cata rg.apache.cata rg.apache.cata a"&gt;</th><th>-1"?&gt; N"&gt; lina.core.AprLi- lina.core.JreMen lina.mbeans.Glod lina.core.Thread</th><th>nl file which fecycleLister moryLeakPreve balResourcesl iLocalLeakPre</th><th>n is locate</th><th>d in the</th></service<></listener </listener </listener </cerver>	s can be ch n_Home\cc on="1.0" enco t="60024" shu className="o className="o className="o className="o name="Catalin	hecked from onf folder. ding="ISO-8855 tdown="SHUTDOW rg.apache.cata rg.apache.cata rg.apache.cata rg.apache.cata rg.apache.cata a">	-1"?> N"> lina.core.AprLi- lina.core.JreMen lina.mbeans.Glod lina.core.Thread	nl file which fecycleLister moryLeakPreve balResourcesl iLocalLeakPre	n is locate	d in the
The setting \$Application xml version<br <server porton<br=""><listener <listener <listener <listener <service of<br=""><executor name="tomcation"</executor </service></listener </listener </listener </listener </server>	s can be ch n_Home\cc on="1.0" enco t="60024" shu className="o className="o className="o className="c atalin or minSpareTh tThreadPool-h or minSpareTh	hecked from onf folder. ding="ISO-8859 tdown="SHUTDOW rg.apache.cata rg.apache.cata rg.apache.cata a"> reads="1" name ttp-0.0.0.0-86 reads="1" name	-1"?> N"> lina.core.AprLi <sup>-</sup> lina.core.JreMen lina.mbeans.Glob	hl file which fecycleLister moryLeakPreve balResourcesl dLocalLeakPre mreadPool-htt 00" />	n is locate ner" SSLEngi entionLister LifecycleLis eventionList tp-0.0.0.0-8	d in the

# 6.5 Setting up Languages

Upon installation, only English will be available for the languages. You need to set it up so that your preferred language will be included in the choice for languages.

1. In the Languages tab click 🛨 to add a language.



2. Click the checkbox beside your preferred language and click at the bottom right corner to continue.

	age Language nguages from the following list to make them available for users to choose in the client application user interface.	•
Selec	st Language	1
	Language	
	Arabic	18
	Catalan	
✓	Czech	
✓	Danish	
✓	German	
✓	Greek Modern	
✓	Spanish	
	Basque	
	Finnish	
	Franch	-
	✓ X	?

3. Click at the bottom right corner to save the settings.

C Ał	nsayCBS						
Genera	l Email	Predefined Destinations	Administrative Access	Languages	Two-Factor Authentic	ation (2FA)	
Select th	ne languages	that you want to enable for you	r users.				
Mana	ge Langua	ge					
-	e the language ge to the top o	es that will be available to your us f list.	ers here. The "Default" langua	age will be used i	n all reports. Drag your pref	erred default	
	Language						
	English [Defa	ult]					
	Czech						
	Danish						
	German						
	Greek Moder	ı					
	Spanish						
					P	X	?

4. The languages you saved will now be included in the choice for languages.

C AhsayCBS			system	2	English	~	₽
📓 Monitoring		English			Dansk		
		Deutsch			Ελληνική		
<b>1</b> 1.		Español			Suomalainen		
Dashboard	Live Activities		ببرعل ةغللا	ةي -			gs

# 6.6 Setting up Two-Factor Authentication (2FA)

This feature will give additional security to your account. User can only successfully login after entering the password and the passcode or accepting the notification request that will be sent to the Ahsay Mobile app, which needs to be installed on an Android or iOS mobile device.

Mobile Authentication is the new two-factor authentication feature introduced in AhsayCBS v8.5.0.0. Upon login, aside from providing the username and password of the user account, an additional step is needed to complete the login.

One of the two options will be available to users once this feature is enabled to complete the login:

- If using Ahsay Mobile, user must either accept the notification request or enter the timebased one-time password code generated in the app.
- If using a third-party authenticator, user must enter the time-based one-time password code generated in the app. Examples of third-party authenticator apps are Google Authenticator, Microsoft Authenticator, LastPass Authenticator etc.

Starting with AhsayCBS v8.5.4.20 and above, an option to select the authenticator app to be used for 2FA is added. The system administrator can now select which authenticator app the backup users must use to login with 2FA. Here are the differences between Ahsay Mobile and third-party authenticator app:

Ahsay Mobile	Third-party Authenticator app		
Features			
Can be used for 2FA	Can only be used for 2FA		
Can be used for mobile backup			
Requirements			
AhsayCBS v8.5.4.20 or onwards must be insta	alled		
Must be registered with AhsayOBM and Ahsay connected to the internet.	ACB AhsayOBM and AhsayACB must be		
The mobile device must have a functioning camera for scanning of QR code to register 2FA			
A mobile device with the latest version of Ahsay Mobile installed is available for 2FA.	A mobile device with a third-party authenticator app installed is available for 2FA.		
<ul> <li>Ahsay Mobile must be installed on a supported Android or iOS mobile device.</li> <li>For android device, android version must be Android 8 or above.</li> <li>For apple device, iOS version must be 12.0 or above.</li> </ul>	2FA will work with AhsayCBS using SSL with dummy certificate.		
The mobile device must have a valid mobile service and be able to receive SMS notifications.			

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To use 2FA with https protocol, a valid SSL certificate from a trusted CA must be installed on AhsayCBS. Otherwise, you will have to use http instead which means all AhsayOBM/AhsayACB users with 2FA enabled will need to connect using http as well. The firewall on the AhsayCBS machine must be configured to allow outbound connections to pns.ahsay.com via port 80 or 443. Failure to do so will prevent you from logging in to AhsayCBS, AhsayOBM and AhsayACB using Push Notification feature. To use push notification for 2FA, the mobile device must have an internet connection. Ensure that Ahsay Mobile is connected to the same local WIFI network as the AhsayOBM/AhsayACB machine. Failure to do so will prevent Ahsay Mobile from performing backup/restore. Ensure to allow Notification on Ahsay Mobile for your mobile device. Limitations 2FA will not work in AhsayOBM and AhsayACB earlier than v8.5.0.0 Not supported for AhsayCBS API type accounts. For Replication, both sending and receiving are not covered. For Redirector, both hosting and joining are not covered. Not supported in AhsayOBR. Not supported in AhsayOBM running on Synology and QNAP NAS.

Not supported in Linux CLI and FreeBSD CLI.

#### NOTE

Ensure that Ahsay Mobile is setup as the authenticator app if you plan on offering mobile backup for your users. Otherwise, if the third-party authenticator app is selected, your users will not be able to perform mobile backups.

See table below showing supported system users, backup users and operating systems for 2FA:

Supported System Users	
Admin	
Sub-Admin	
Read-only Admin	
ΑΡΙ	×

Supported Backup Users	
AhsayOBM/AhsayACB User (Paid)	
AhsayOBM/AhsayACB User (Trial)	<b>~</b>

Supported Operating System	
Windows	
Мас	
Linux GUI	
Linux CLI	×
FreeBSD CLI	×
Synology DSM	×
QNAP QTS	×

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There are two steps in setting up your 2FA, first you need to set up Mobile Authentication then you need to enable it for the user.

There are two setup options for Mobile Authentication on AhsayCBS v8.5.4.20 or above:

- Setup using Ahsay Mobile as authenticator app
- <u>Setup using Microsoft Authenticator, Google Authenticator or other third-party</u> <u>authenticator app</u>

#### 6.6.1 Set up Mobile Authentication using Ahsay Mobile

Before setting up mobile authentication using Ahsay Mobile as the authenticator app, ensure that you can receive push notification by checking first if you can connect to pns.ahsay.com

In Windows, open a web browser and enter <u>https://pns.ahsay.com</u>. You should get this result.

A	Horr	ie		×	+	_			$\times$
←	$\rightarrow$	G	pns.ahsay.com	ı		☆	*	A	:
			Welcome	to	o https://pns.ahsay.co	m			

In Linux and FreeBSD, use the telnet command to check if you can connect to pns.ahsay.com. You should get this result.

```
# telnet pns.ahsay.com 443
Trying 52.168.142.119...
Connected to pns.ahsay.com.
Escape character is '^]'.
```

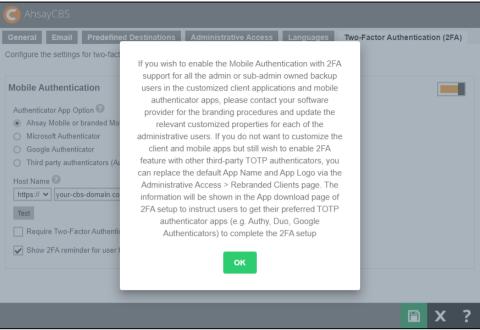
Once done, follow these instructions on how to setup your mobile authentication:

1. In the Two-Factor Authentication (2FA) tab, make sure to switch on **Mobile Authentication**. By default, this is switched off.





2. Once switched on this pop up message will appear. Click



to continue.

**NOTE** This pop up message will only appear if branded settings have been saved before enabling Mobile Authentication.

3. Select the **Authenticator App** to be used for 2FA, in this case select "Ahsay Mobile or branded Mobile app".



- 4. Register AhsayCBS Host Name details for 2FA:
  - i. Select the type of protocol, whether http or https.
  - ii. Enter the Host Name or external IP address of your AhsayCBS server.

#### NOTE

The host name must be a FQDN (Fully Qualified Domain Name) which consists of the host name and domain name or an external IP address.

iii. Select the port used by AhsayCBS, for example 80 for http or 443 for https.

#### Example: https://your-cbs-domain.com

Host Name 😨	]:	443	¥
Test			
Require Two-Factor Authentication for system user logon			
Show 2FA reminder for user first login			

NOTE

No L	
To use Two-Factor Authentication with https protocol, a valid SSL certificate from a	
trusted CA must be installed on AhsayCBS. Otherwise, you will have to use http	
instead which means all AhsayOBM/AhsayACB users with Two-Factor Authentication	
enabled will need to connect using http as well.	

Another option would be to use other Authenticator App Option, i.e. Microsoft Authenticator or Google Authenticator, then there is no need to worry about SSL certificate and you may continue to use SSL with dummy certificate.

5. Click on **Test** to verify. A confirmation message will be displayed once the verification is done.

your-cbs-domain.com says	
ОК	
	ок

6. **Optional**: Check the box if it is mandatory for system users to login using two-factor authentication.

Require Two-Factor Authentication for system user logon

7. **Optional**: Uncheck the box if you do not want to show the 2FA reminder during first login of user. By default this is checked. Click to see <u>example of 2FA</u> reminder.

Show 2FA reminder for user first login

8. Click 🛅 to save.

#### NOTE

Although the 2FA setting has been setup on the AhsayCBS server, you have to enable 2FA for each AhsayCBS/AhsayOBM/AhsayACB user account before they can use it. For more information please refer to <u>Chapter 6.6.3 Enable two-factor authentication of users</u>. For information on how to enable 2FA of AhsayCBS system user account, please refer to Chapter 5.1.4 Enable two-factor authentication of system user topic which can be found in the <u>AhsayCBS v8 Administrator's Guide</u>.

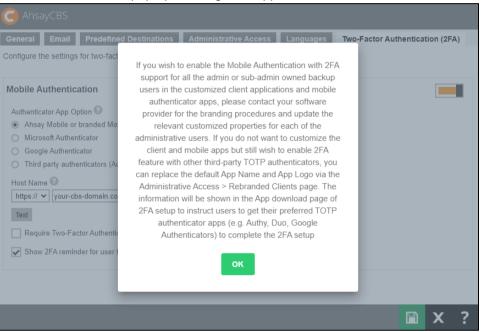
# 6.6.2 Set up Mobile Authentication using third-party authenticator app

1. In the Two-Factor Authentication (2FA) tab, make sure to switch on **Mobile Authentication**. By default, this is switched off.



to continue.

2. Once switched on this pop up message will appear. Click



**NOTE** This pop up message will only appear if branded settings have been saved before enabling Mobile Authentication.

- 3. Select the Authenticator App to be used for 2FA, choices are:
  - Microsoft Authenticator will be used as the authenticator app for 2FA.
  - Google Authenticator will be used as the authenticator app for 2FA.
  - Third party authenticators this option will allow end users to choose their preferred authenticator app for 2FA.

Mobile Authentication	
Authenticator App Option 🕜	
<ul> <li>Ahsay Mobile or branded Mobile App (support Mobile Backup)</li> </ul>	
Microsoft Authenticator	
O Google Authenticator	
O Third party authenticators (Authy, DUO, LastPass etc.) Customize	



If Third party authenticators is selected, click Customize to enter the name that will be displayed for the authenticator app.

#### Example: MyAuthenticator

Authenticator App Option 😨
<ul> <li>Ahsay Mobile or branded Mobile App (support Mobile Backup)</li> </ul>
O Microsoft Authenticator
O Google Authenticator
<ul> <li>MyAuthenticator</li> </ul>

4. **Optional**: Check the box if it is mandatory for system users to login using two-factor authentication.

Require Two-Factor Authentication for system user logon

5. **Optional**: Uncheck the box if you do not want to show the 2FA reminder during first login of user. By default this is checked. Click to see <u>example of 2FA</u> reminder.

Show 2FA reminder for user first login

6. Click 🗎 to save.

#### NOTE

Although the 2FA setting has been setup on the AhsayCBS server, you have to enable 2FA for each AhsayCBS/AhsayOBM/AhsayACB user account before they can use it. For more information please refer to <u>Chapter 6.6.3 Enable two-factor authentication of users</u>. For information on how to enable 2FA of AhsayCBS system user account, please refer to Chapter 5.1.4 Enable two-factor authentication of system user topic which can be found in the <u>AhsayCBS v8 Administrator's Guide</u>.

## 6.6.3 Enable two-factor authentication of users

There are three ways to enable two-factor authentication of AhsayOBM/AhsayACB users:

- The two-factor authentication can be enabled for <u>individual AhsayOBM/AhsayACB</u> <u>user account</u>,
- Be enabled for several AhsayOBM/AhsayACB user accounts at once,

or

• Be enabled for <u>all AhsayOBM/AhsayACB user accounts</u>.

#### For individual AhsayOBM/AhsayACB users:

1. Go to Backup / Restore > Users, Groups & Policies.



2. Select the backup user.

Backup User User Group Policy Group		
Manage your backup users in this section.		
Manage Backup User 🙆		
+ • • • • • • • • • • •	Filter Client Type V User V Registration Date V User Group V Auto Upda	ate 🗸 Owner 🗸 View Default 🗸
Login Name (Alias) Owner Client Version	Add-on Modules	Used / Client Host Limit Status
AhsayOBM ()	者 🔁 🔿 🛝 🛹 latere latere 📐 🔛 🖂 💥 🔛 🕑 🖉 🔿 🔿 🖉 🗊 🗊 🗊	1 / Unlimited Enable
MobileUser ()	2 2 O 🔨 🖉 una una 🔺 🖳 🖂 💥 🖳 🕑 🔻 0 🖉 🖉 🗊 🐨	1 / Unlimited Enable

3. Go to the Authentication tab and switch on Two-Factor Authentication.

User Profile	General Backup Client Settings Contact User Group Authentication Mobile Backup
Backup Set	Password
Settings	
Report	Password ungWv48Bz+pBQUDeXa4ii7ADYaOWF3qctBD/YfIAFa0= Hashed
Statistics	Reset Password
Effective Policy	
	Two-Factor Authentication

4. Click 🛅 to save.

#### For several AhsayOBM/AhsayACB users at once:

1. Go to Backup / Restore > Users, Groups & Policies.



#### 2. Filter the View by selecting **2FA**.

Backup User User Group Policy G	roup						
lanage your backup users in this section.							
Manage Backup User 🖉	Filter Client Ty	vpe 🗸 User 🗸 Re	egistration Date 🗸	User Group 🗸	Owner 🗸	View 2	A ¥
Manage Backup User V	Filter Client Ty	ype ✔ User ✔ Re Legacy Client	<u> </u>	User Group 🗸			Ā ✔
+ • • • • • • • • • • • •	- <u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>			S	

#### 3. Select the backup user that you want to enable/disable the 2FA.

Backup User User Group Policy Gro	up			
Manage your backup users in this section.				
Manage Backup User 🚱				
	<b>5</b> %			
$+$ in $\oplus$ R $\oplus$ P $\boxtimes$ $\boxtimes$ $\bigotimes$	Filter Client Type	Vuser V R	egistration Date 🗸 User Group 🖌 Owner 🗸 Vie	2FA 🗸
Login Name (Alias)	Owner	Legacy Client	Two-Factor Authentication	Status
AhsayOBM ()		×	Disabled	Enable
MobileUser ()		×	Disabled	Enable

#### 4. Click the Enable / Disable Two-Factor Authentication button.

Backup User User Group Policy Gro	up			
Manage your backup users in this section.				
Manage Backup User 🕢				
+ 11 4 7 4 6 8 2 20	Filter Client Type	e 🗸 User 🗸 Reg	gistration Date ✔ User Group ✔ Owner ✔ View	₩ 2FA ¥
Login Name (Alias)	Owner	Legacy Client	Two-Factor Authentication	Status
AhsayOBM ()		Х	Disabled	Enable
MobileUser ()		X	Disabled	Enable

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5. Select if you want to enable or disable the 2FA for the selected account.

		entication optio	in to the
S	elected 2 user	(S)	
Login Name	(Alias)	c	)wner
AhsayOBM ()			

#### For all AhsayOBM/AhsayACB users:

1. Go to Backup / Restore > Users, Groups & Policies.



2. Go to the **Policy Group** tab and select the policy.

Backup User User Group Policy G	roup	
	ration and to reduce the effort required for m ministrator to tailor features and services for	anaging groups of backup users, e.g. security different user groups.
Manage Policy Group 🕜		
+ i d		
Name		Owner
2FA policy		
Default settings		

3. Go to User Settings, switch on Two-Factor Authentication.

General	Two-Factor Authentication	
User Settings		
Backup Set Settings	Password	
GUI Settings	Password Age	
Default Values	O Never expire	
Preempted Values	● 90 ✓ days	
Preempted Backup Sets	Enforce password history (30 passwords remembered)	
	Complexity Requirements	



4. Enable Require Two-Factor Authentication for user logon.



5. Click 🛅 to save.

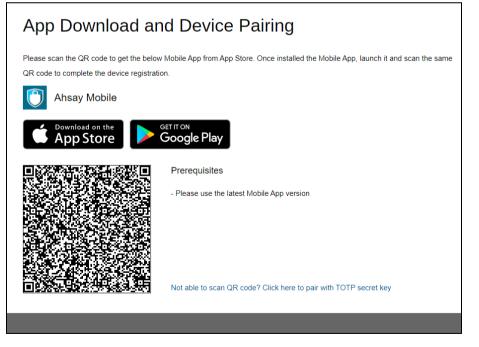
Once enabled, on the next login for all AhsayOBM/AhsayACB v8.5.0.0 or above users which support Mobile Authentication 2FA or AhsayCBS web console user login, users will be required to register a mobile device for the new Mobile Authentication 2FA. Otherwise, they will not be allowed to proceed with the login.

Here are examples of the next login in AhsayCBS web console once "Require Two-Factor Authentication for user logon" has been enabled.

Depending on the Authenticator App selected during setup of Mobile Authentication, the screen that will be displayed may be one of the four:

- Ahsay Mobile
- Microsoft Authenticator
- Google Authenticator
- Third party authenticators

This is the default screen which has instructions to download Ahsay Mobile from the Apple App Store / Google Play Store. Scan the QR code to complete device pairing and finish the login.



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If Microsoft Authenticator is selected, this will be the screen displayed. Scan the QR code using Microsoft Authenticator and enter the one-time passcode generated to finish the device pairing and login.

App Download and Device Pairing
Two-Factor Authentication is enabled for helping safeguard access to your account, please use the below authenticator app to scan the QR code to complete the device registration.
Microsoft Authenticator
Download on the App Store Get IT ON Google Play
Show Secret Key Enter one-time passcode generated from authenticator app  (00:00:06) Display name: Microsoft Authenticator

If Google Authenticator is selected, this will be the screen displayed. Scan the QR code using Google Authenticator and enter the one-time passcode generated to finish the device pairing and login.

App Download and Device Pa	ring
Two-Factor Authentication is enabled for helping safeguard access to you scan the QR code to complete the device registration. Google Authenticator	ir account, please use the below authenticator app to
Coogle Play	
Show Secret Key Enter one-time passcode ge Display name: Google Auth	enerated from authenticator app (00:00:24) enticator

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If Third party authenticators is selected, the name of the third party authenticator that will be displayed will vary. Here is an example using MyAuthenticator as the display name. Scan the QR code using your third party authenticator and enter the one-time passcode generated to finish the device pairing and login.

App Download and Device Pairing					
Two-Factor Authentication is enabled for helping safeguard access to your account, please use the below authenticator app to scan the QR code to complete the device registration.					
MyAuthenticator					
Download on the Cococle Play     Cococle Play     Show Secret Key   Enter one-time passcode generated from authenticator app   Image: Cococle Play     Display name: MyAuthenticator					

While these are the examples for AhsayOBM/AhsayACB:

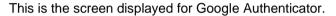
- Ahsay Mobile
- Microsoft Authenticator
- Google Authenticator
- Third party authenticators

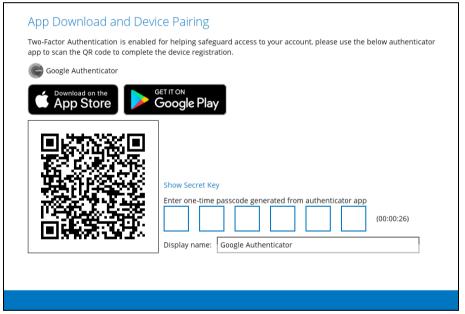
The default screen which has instructions to download Ahsay Mobile from the Apple App Store / Google Play Store.

	below Mobile App from App Store. Once installed the Mobile R code to complete the device registration.
App, launch it and scan the same Q	R code to complete the device registration.
Download on the App Store	Get IT ON Google Play
	Prerequisites
	- Please use the latest Mobile App version

#### This is the screen displayed for Microsoft Authenticator.

Two-Factor Authentication is enablec app to scan the QR code to complete Microsoft Authenticator	d for helping safeguard access to your account, please use the below authenticator the device registration.
Download on the	Get IT ON Google Play
	Show Secret Key         Enter one-time passcode generated from authenticator app         Image: Image





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### This is the screen displayed for Third party authenticators.

App Download and Device Pairing					
Please scan the QR code to get the below Mobile App from App Store. Once installed the Mobile App, launch it and scan the same QR code to complete the device registration.					
MyAuthenticator					
	Google Play				
	- Please make sure below 2 ports are not blocked by any Firewall settings TCP Port: 54000 UDP Port: 54200 Show Secret Key				
	Enter one-time passcode generated from authenticator app (00:00:14) Display name: MyAuthenticator				

## 6.6.4 Migrate Users from Twilio to Mobile Authentication

For users with Twilio Credentials Verification set up prior to upgrading to AhsayCBS v8.5.0.0 or above, since only one two-factor authentication may be used, if you have decided to use Mobile Authentication instead of Twilio please follow the instructions below on how to migrate your users from Twilio to Mobile Authentication.

1. Switch on Mobile Authentication.



2. Click Confirm

<b>Warning</b>					
If Mobile Authentication is enabled, Twilio Authentication will be disabled and removed permanently. Are you sure to enable Mobile Authentication?					
Confirm	Cancel				

3. Twilio Credentials Verification is now deleted. Set up mobile authentication and click to save.

or Authentication (2FA)

4. Enable for your users by enabling the **Require Two-Factor Authentication for user logon** setting.

General User Settings Backup Set Settings	Two-Factor Authentication         Image: Require Two-Factor Authentication for user logon	
GUI Settings Default Values	Password	
Preempted Values	Email Reports	
Preempted Backup Sets	Backup Report	



## 6.6.5 Modify Twilio Credentials Verification

Users on AhsayCBS v8.3.0.30 until v8.3.6.x using Twilio Credentials Verification may continue using it for your two-factor authentication since it will be automatically migrated after upgrading to AhsayCBS v8.5.0.0 or above. However, if it has not been setup in the previous AhsayCBS version, setup of Twilio Credentials Verification is desupported in AhsayCBS v8.5.0.0 or above. Only modification of existing Twilio Credentials Verification setting is allowed.

🥃 AhsayCBS				
General Email	Predefined Destinations	Administrative Access	Languages	Two-Factor Authentication (2FA)
Configure the settings for	or two-factor authentication (2	2FA) below		
Mobile Authenticat	ion			
Twilio Credentials	Verification			
Account SID				
Auth Token				
•••••	••••			
Sender Phone Number	✓ United States, Canada	a (+1)		
Test		a (+1)		
Passcode length				
Resend cooldown time	·			

- 1. Update the Account SID, Auth Token and Sender details, if needed.
- 2. Click on Test to verify.
- 3. Update the following: Passcode length, Resend cooldown time, Expiry time, Consecutive invalid passcode attempts allowed and Consecutive resend allowed, if needed.

Passcode length 6 ▼
Resend cooldown time
1 • Minutes
Expiry time
5 V Minutes
Consecutive invalid passcode attempts allowed
5 Times
Consecutive resend allowed
5 Times

4. Check the box if you will allow legacy clients to skip SMS authentication. Legacy clients are AhsayOBM users who has an old version of AhsayOBM installed who upgraded to the latest version but has not run any backup yet. If this box is not checked, the user will be directed to the 2FA page.

Allow legacy client to skip SMS authentication

5. Click 🗎 to save.

#### NOTE

Also do not forget to check the **Allow legacy client to skip SMS authentication** box if you are using an older version of AhsayOBM v8.3.0.30 or else your users will not be able to login and your scheduled and continuous backups will not run. All functions requiring access and authentication to AhsayCBS will not work. Like starting a manual backup from the System Tray in AhsayOBM/AhsayACB in Windows. Running AhsayOBM/AhsayACB batch files in Windows. Running AhsayOBM scripts in Linux/FreeBSD. Running AhsayOBM/AhsayACB scripts in MacOS. AhsayCBS server initiated backups on AhsayOBM/AhsayACB. And Auto Upgrade (AUA) on AhsayOBM/AhsayACB. For more details please refer to the <u>AhsayOBM Quick Start Guide for Windows</u> and <u>AhsayOBM</u> <u>Quick Start Guide for Linux (CLI)</u>.

## 6.7 Setting up Predefined Destination

Setup the predefined destination, which allows your customers backup data to be saved onto centralized cloud storage, i.e. Amazon S3, Microsoft Azure, OneDrive for Business, Dropbox, Google Cloud Storage, Backblaze, Wasabi etc.

1. Click the orange **Basic** icon under **System Settings** section on AhsayCBS main page.



2. In the **Predefined Destinations** tab, click +.

G AhsayCBS					
General Email Predefin	ned Destinations	Administrative Access	Languages	Two-Fac	tor Authentication (2FA)
Configure the predefined destinations that can be used by this server below.					
Predefined Destination @					
Name E	Destination Storage		In	fo	Owner

3. Select the destination storage, in our example we will use 'Wasabi'.

Destination Storage	
Wasabi	~

4. Enter the destination name and select the type which is 'Single storage destination'.

Add New Predefined Destinatio	n
Name	
Wasabi-1 Type	
<ul> <li>Single storage destination</li> </ul>	
O Destination pool	

5. Enter the Access Key ID, Access Key Secret. Select the region and it is optional to enter the bucket name. Check the "Connect with SSL" checkbox if needed. It is also

Access Key ID
EBP7FGGH9790HUFT2YP5
Access Key Secret
Region us-east-1 V
(optional) Bucket Name
Connect with SSL
Test

optional to click the Test button to check the connection.

- 6. Click the bottom right corner to add the predefined destination.
- 7. Click at the bottom right corner to save the settings.
- After saving the predefined destination, you must make it visible for the users. Go to Backup/Restore > Users, Groups & Policies > Policy Group > Manage Policy Group. Click on the 'Default settings'.

G AhsayCBS			
Backup User Group Policy Group			
Group Policy is designed to simplify administration and to reduce the effort required for managing groups of backup users, e.g. security settings and backup set settings. It allows administrator to tailor features and services for different user groups.			
Manage Policy Group 🚱			
+ • •			
Name	Owner		
Default settings			

9. Go to Backup Set Settings > Destinations Visible to Users > Predefined

Destination and click General Exclude Backup File User Settings Backup Set Settings **Destinations Visible to Users** GUI Settings Default Values Predefined Destination Preempted Values **+** Preempted Backup Sets Name Run Direct Mobile Settings

10. Select the predefined destination that you saved.

Ado	d Predefined Destination
	Name
	Wasabi-1

- 11. Click the bottom right corner to add the predefined destination.
- 12. Click at the bottom right corner to save the settings. The predefined destination you created will now be visible to the users.

General	Destinations Visible to Users					
User Settings						
Backup Set Settings	Predefined Destination					
GUI Settings						
Default Values	+ ii					
Preempted Values	Name Run Direct					
Preempted Backup Sets	Wasabi-1					
Mobile Settings	Standard Destination					
	Customize application name					
	÷ •					
	Name Name					
	Local / Mapped Drive / Network Drive / Removable Drive					
	AhsayCBS					
	🖹 X ?					

## 6.8 Creating User Account

Create a user account for the backup machine.

1. Click the **Users, Groups & Policies** icon under the **Backup / Restore** section on the AhsayCBS main page.



2. Click to create a new user account.

G AhsayCBS				
Backup User User Group	Policy G	roup		
Manage your backup users in th	his section.			
Manage Backup User         Image Backup User      <				
🗌 🧿 acb ()		-	🏄 🏄 🔿 📉 lotus Latas. 🔺 🛃 📨 NAS 🕐 🐺 🗿 🖉 🕷	Ø 🗊 🕼 🏵
🔲 🧿 api ()	-	7.15.0.20	🔰 者 🖸 🗽 Lotus. Lotus. 🔺 🛃 🖂 NAS 🕑 🐺 🔕 🧔 🖉	🗊 🗊 💷 🖘
🗌 🧿 config ()		7.15.2.2	🔰 者 🔿 🔍 latas. Latas. 🔺 🔛 🖂 NAS 🕑 🐺 🖸 🧔 🌌	🗇 🕼 🕼
O exch ()	-	7.15.0.20	🔰 者 🕞 🔍 later, later, 🔺 🛃 🖂 NAS 🕑 🐺 🖸 📿 🖉	🗐 🕼 🛃 💬
D hyperv ()		-	👔 🔁 🔽 Lotus. Lotus. 🔺 🖳 🖂 NAS 🕑 🐺 🖸 🗶 🖉	😰 🗊 谷

3. Enter the Login Name and Password in the relevant fields. The password should be at least 6 alphanumeric characters.

Add New User	
Enter the login credentials required for acces	ssing Ahsay Cloud Ba
General	
Login Name	
username	Owner:
Password	

**Optional:** Click the check box in front of the user group if you need to assign a user group for this user. The assignment can also be done later.

User Group 🕢	
- •	
Name	Owner
All Users	

- 4. Click at the bottom right corner to continue.
- If you need to assign a dedicated storage location for the backup account, select Manually assigned and choose the storage location under the Home Directory section. If you select Auto assigned, you can skip this step.

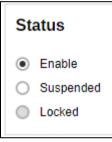
Home Directory			
Auto assigned			
Manually assigned	D:\my_user_home	•	
	D:\my_user_home		

**Optional: Alias** can be left empty if you do not know or do not want to enter the details at this stage.

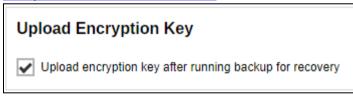
6. Set the desired Subscription Type. Select Paid User if you are creating an account for a user with no expiration period or service will be suspended for this user on the date you specified under the Suspend At drop-down menu. If you select Trial User, service will be suspended after one month.

Subscription Type
<ul> <li>Trial User</li> <li>Paid User</li> </ul>
Suspend At
01-01-2021 (dd-mm-yyyy)

7. Select the status for this user account.



8. By default, the **Upload Encryption Key** option is enabled. This is one of the three settings that requires to be turned on to fulfill the recovery purpose for the encryption key which will be sent to the backup server. This is useful when backup users have lost their key and Ahsay can recover the encryption key for them. For more details, refer to the **Recovering Encryption Key via AhsayCBS Web Console** section in the <u>AhsayCBS v8 Administrator's Guide</u>.



9. Select the language for this user.

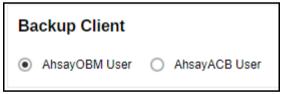
Language	
English	~

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10. Select time zone for this user and then click at the bottom right corner to continue.

Timezone	
GMT+08:00 (CST)	~
GMT+05:00 (PKT)	
GMT+05:00 (TFT)	
GMT+05:00 (TJT)	
GMT+05:00 (TMT)	
GMT+05:00 (UZT)	
GMT+05:30 (IST)	
GMT+05:30 (LKT)	
GMT+06:00 (ALMST)	
GMT+06:00 (BDT)	
GMT+06:00 (BTT)	
GMT+06:00 (IOT)	
GMT+06:00 (KGST)	
GMT+06:00 (YEKST)	
GMT+07:00 (CXT)	
GMT+07:00 (ICT)	
GMT+07:00 (JAVT)	
GMT+07:00 (NOVT)	
GMT+08:00 (BNT)	
GMT+08:00 (BORT)	
GMT+08:00 (CST)	-

11. Select the backup user type under the Backup Client section. If the backup client machine requires to backup files only, such as a desktop computer or a notebook, then you can simply create an AhsayACB backup account. Otherwise, you will need to set up AhsayOBM, because it comes with backup modules to perform Windows system backup, database backup and virtual machine backup.



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12. Click the checkbox(es) to select the Add-on Modules for this backup user.

Add New User Select the backup client software, usable add-on modules and the available quota for this user.				
Backup Client				
AhsayOBM User      AhsayACB User				
Add-on Modules				
Microsoft Exchange Server		🊡 Mic	rosoft SQL Server	
MySQL Database Server		O Ora	cle Database Server	
Lotus. Lotus Domino		Lotus. Lot	us Notes	
Uindows System Backup		O Wir	dows System State Backup	
UMware Guest VM V		🛃 Нур	er-V Guest VM 🗸 0	
Microsoft Exchange Mailbox 0		F Sha	dowProtect System Backup	
🔲 🔜 NAS - QNAP		Syn NAS	S - Synology	
Mobile (max. 10)		Cor	tinuous Data Protection	
Volume Shadow Copy		▲ In-F	ile Delta	
OpenDirect / Granular Restore 0		1 Offi	ce 365 Backup 0	
MariaDB Database Server				
Quota				
Unlimited storage space for the destination not	t shown in the following table			
+ i				
Destination	Quota			
C     AhsayCBS     50.0     Mbytes ~       (If preempted mode is enabled in policy settings, the quota settings are disabled)				
Client host limit	Client host limit			
Maximum number of host 1				

13. You can click to add backup destination for the backup user account. The destination can be both predefined and standard destination and you can assign backup quota for each destination for the user account.

For details about quota management, please refer to <u>AhsayCBS v8 Administrator's</u> <u>Guide</u>.

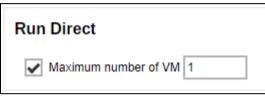


14. By default the Client host limit is non-selected. You can check the checkbox and enter the client host limit value as needed.



15. By default the Run Direct is non-selected. You can check the checkbox and enter the

value of maximum number of VM as needed. Click at the bottom right corner to continue.



16. Click  $\oplus$  to add user's contact information.

Add New User		
Add contact persons information for this user.		
Manage Contact Information 🚱		
<b>+</b>		
Name Email		

17. Fill in the contact details and then click + at the bottom right corner to return to the previous Add New User page.

Contact	
Name	
username	
Email	
username@acompany.com	
Encrypt Email	
Address	
Company	
Website	
Phone 1	
Phone 2	

18. Click at the bottom right corner to save the new user account information.

## 6.9 Setting up memory for Run on Server (Agentless) Backups

By default, the maximum Java heap size of each Run on Server backup process is set to 2GB. While the minimum Java heap size is set to 128MB. This can be modified by appending the options "com.ahsay.obs.core.job.ServerRunBackup.Xmx=%value%" and "com.ahsay.obs.core.job.ServerRunBackup.Xms=%value%" in the cbs.opt file.

To configure follow the steps below:

#### In Windows:

1. Locate the cbs.opt file in the <code>\$APPLICATION\_HOME\conf</code> folder.

	. ~~	A	hsayCBS > conf	ٽ ~
		^	Name	^
255			📄 cbs.opt	
	*		🔬 cbssvc.ini	
ds	*		Context ym	I

2. Open the file, add the options

"com.ahsay.obs.core.job.ServerRunBackup.Xmx=%value%" and

"com.ahsay.obs.core.job.ServerRunBackup.Xms=%value%" then save.

\*cbs.opt - Notepad
File Edit Format View Help
com.ahsay.obs.core.job.ServerRunBackup.Xmx=4096
com.ahsay.obs.core.job.ServerRunBackup.Xms=256

3. Restart the AhsayCBS service.

Services (Local)				
Ahsay Cloud Backup Suite	Name	Description	Status	Startup Type
Stop the service Restart the service	🏟 ActiveX Installer (AxInstSV)	Provides Us		Manual
	🎎 Ahsay Cloud Backup Suite		Running	Automatic
	🍓 Ahsay Online Backup Manager Services	Continuous	Running	Automatic

In Linux/FreeBSD:

1. Locate the cbs.opt file in the /usr/local/cbs/conf folder.

```
# cd /usr/local/cbs/conf
# ls -la
total 896
drwxr-xr-x. 3 root root 4096 Jul 3 17:45 .
drwxr-xr-x. 22 root root 4096 Jul 3 11:59 ..
-rwxr-xr-x. 1 root root 316 Oct 16 2014 acb-config.xml
-rwxr-xr-x. 1 root root 4961 Jun 28 2017 afc.opt
-rwxr-xr-x. 1 root root 70 May 23 2008 autoDiscovery.xml
-rwxr-xr-x. 1 root root 1152 Jul 3 12:46 autoUpdate.bdb
-rwxr-xr-x. 1 root root 1952 Apr 4 2014 ca.crt
-rwxr-xr-x. 1 root root 0 Feb 23 2015 Catalina
-rwxr-xr-x. 1 root root 12505 May 19 2014 catalina.policy
-rwxr-xr-x. 1 root root 12839 Jun 16 16:03 catalina.properties
-rwxr-xr-x. 1 root root 19366 Jul 3 15:15 cbs.json
-rwxr-xr-x. 1 root root 19371 Jul 3 15:15 cbs.json.1
-rwxr-xr-x. 1 root root 19649 Jul 3 12:27 cbs.json.10
-rwxr-xr-x. 1 root root 19649 Jul 3 12:27 cbs.json.11
-rwxr-xr-x. 1 root root 19371 Jul 3 14:25 cbs.json.2
-rwxr-xr-x. 1 root root 19375 Jul 3 14:25 cbs.json.3
-rwxr-xr-x. 1 root root 19375 Jul 3 14:21 cbs.json.4
-rwxr-xr-x. 1 root root 19374 Jul 3 14:21 cbs.json.5
-rwxr-xr-x. 1 root root 19657 Jul 3 13:58 cbs.json.6
-rwxr-xr-x. 1 root root 19653 Jul 3 13:58 cbs.json.7
-rwxr-xr-x. 1 root root 19653 Jul 3 13:50 cbs.json.8
-rwxr-xr-x. 1 root root 19649 Jul 3 13:50 cbs.json.9
-rwxr-xr-x. 1 root root 9667 Jul 3 14:17 cbs.opt
```

2. Open the file, using a text editor add the options

```
"com.ahsay.obs.core.job.ServerRunBackup.Xmx=%value%" and
"com.ahsay.obs.core.job.ServerRunBackup.Xms=%value%" then save.
```

com.ahsay.obs.core.job.ServerRunBackup.Xmx=4096
com.ahsay.obs.core.job.ServerRunBackup.Xms=256

3. Restart the AhsayCBS service

```
# cd /usr/local/cbs/bin
```

```
# sh restart.sh
```

#### In AhsayUBS:

1. Locate the cbs.opt file in the /ubs/mnt/eslsfw/obsr/conf folder.

```
# cd /ubs/mnt/eslsfw/obsr/conf
# ls -la
total 925
drwxr-xr-x
            3 root wheel 142 Jul 9 02:15 .
drwxr-xr-x 13 root wheel 13 Jul 8 08:25 ..
-rwxr-xr-x 1 root wheel 316 Nov 19 2018 acb-config.xml
-rwxr-xr-x 1 root wheel 4966 Jul 8 08:35 afc.opt
-rwxr-xr-x 1 root wheel 70 Nov 19 2018
autoDiscoverv.xml
-rwxr-xr-x 1 root wheel 1152 Jul 8 08:48 autoUpdate.bdb
-rwxr-xr-x 1 root wheel 1952 Nov 19 2018 ca.crt
-rwxr-xr-x 1 root wheel 0 Nov 19 2018 Catalina
            1 root wheel 12505 Nov 19 2018 catalina.policy
-rwxr-xr-x
-rwxr-xr-x 1 root wheel 8008 Nov 19 2018
catalina.properties
-rwxr-xr-x 1 root wheel 19671 Jul 8 10:25 cbs.json
-rwxr-xr-x 1 root wheel 19672 Jul 8 10:25 cbs.json.1
-rwxr-xr-x 1 root wheel 18755 Jul 8 08:43 cbs.json.10
-rwxr-xr-x 1 root wheel 19028 Jul 8 08:28 cbs.json.11
-rwxr-xr-x 1 root wheel 19672 Jul 8 09:09 cbs.json.2
-rwxr-xr-x 1 root wheel 19672 Jul 8 09:09 cbs.json.3
-rwxr-xr-x 1 root wheel 19373 Jul 8 08:46 cbs.json.4
-rwxr-xr-x 1 root wheel 19169 Jul 8 08:46 cbs.json.5
-rwxr-xr-x 1 root wheel 19169 Jul 8 08:44 cbs.json.6
-rwxr-xr-x 1 root wheel 19208 Jul 8 08:44 cbs.json.7
-rwxr-xr-x 1 root wheel 19208 Jul 8 08:43 cbs.json.8
-rwxr-xr-x 1 root wheel 18958 Jul 8 08:43 cbs.json.9
-rwxr-xr-x 1 root wheel 9666 Jul 8 08:54 cbs.opt
```

#### 2. Open the file, using a text editor add the option

"com.ahsay.obs.core.job.ServerRunBackup.Xmx=%value%" and "com.ahsay.obs.core.job.ServerRunBackup.Xms=%value%" then save.

```
com.ahsay.obs.core.job.ServerRunBackup.Xmx=4096
com.ahsay.obs.core.job.ServerRunBackup.Xms=256
```

3. Restart the AhsayCBS service

```
# cd /ubs/mnt/esfmfw/obsr/system/obsr/bin
```

# sh restart.sh

#### NOTE

In the example, 4096 and 256 are the maximum and minimum Java heap size. The size of the Java memory that you will set for each backup job depends on the number of Office 365 user selected in your backup sets and how much RAM your system has.

## 7 Register Device for 2FA

Upon logging in to AhsayCBS for the first time with two-factor authentication (2FA) enabled, you are required to register a device that will be used for 2FA to proceed with the login.

Starting with AhsayCBS v8.5.4.20 and above, there are four types of authenticator apps that can be used for 2FA, which are:

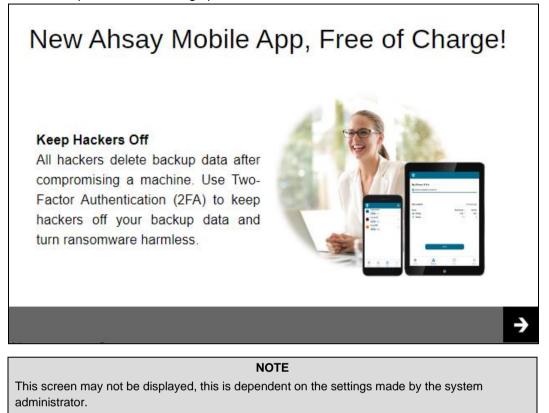
- Ahsay Mobile or branded Mobile app
- Microsoft Authenticator
- Google Authenticator
- Third party authenticators

The authenticator app that will be available depends on the settings made by your backup service provider.

Instructions on how to register your device for 2FA will be discussed in detail for each authenticator app in the succeeding sub-chapters. First follow these login steps to register your device for 2FA then refer to the sub-chapter which cover the details of the registration for the authenticator app that you are using.

#### 1. Enter the Login Name and Password and click LOGIN.

G AhsayCBS		English	~	<b>I</b> €
	Login Name			
	System User 1 Password			
	Forgot Password	l		
	Remember my login name			
	LOGIN			
				?



- 3. Follow the steps in the sub-chapter which covers the authentication app that you are using:
  - Ahsay Mobile or branded Mobile app
  - Microsoft Authenticator
  - Google Authenticator
  - Third party authenticators

NOTE

The actual option available is dependent on the settings made by the system administrator.

# 7.1 Register device for 2FA using Ahsay Mobile or branded Mobile app

1. Download and install Ahsay Mobile or branded Mobile app in your device.

App Download a	and Device Pairing
Please scan the QR code to get the be code to complete the device registratio	low Mobile App from App Store. Once installed the Mobile App, launch it and scan the same QR n.
Ahsay Mobile	
Download on the App Store	Get IT ON Google Play
	Prerequisites
	- Please use the latest Mobile App version
	Not able to scan QR code? Click here to pair with TOTP secret key

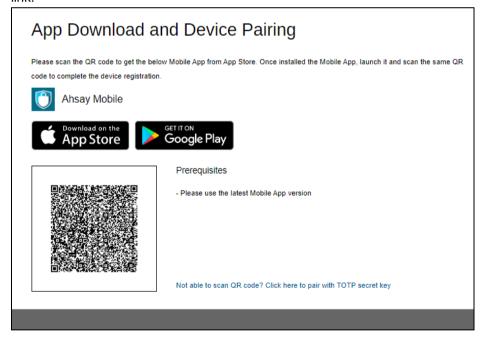
- 2. Pair your mobile device with AhsayCBS. Ahsay Mobile can be configured to support two 2FA modes which are:
  - Push Notification and TOTP (default)
  - TOTP only
  - For Push Notification and TOTP, scan the QR code.

App Download a	nd Device Pairing
Please scan the QR code to get the belo code to complete the device registration	w Mobile App from App Store. Once installed the Mobile App, launch it and scan the same ${\sf QR}$ .
Ahsay Mobile	
Download on the App Store	Google Play
	Prerequisites
	- Please use the latest Mobile App version
	Not able to scan QR code? Click here to pair with TOTP secret key

This is a sample of the Ahsay Mobile app installed on a mobile device named "A32".

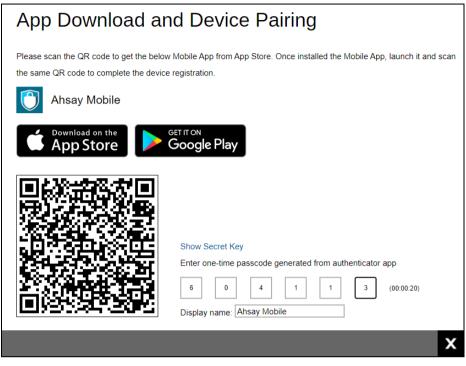


For TOTP only, click the Not able to scan QR code? Click here to pair with TOTP secret key link.



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Scan the QR code. A one-time passcode will be generated in Ahsay Mobile, enter it here.



This is a sample of the one-time passcode generated in Ahsay Mobile.



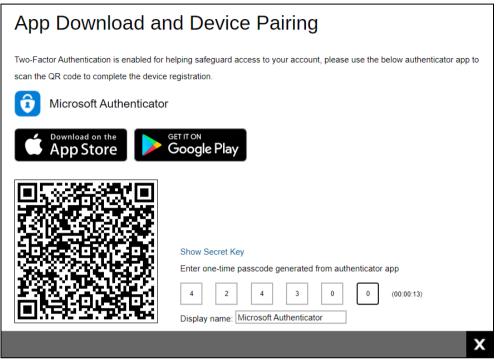
3. When pairing is completed, the screen below will be displayed. Click 🗹 to finish the setup.

Two	-Factor Authentication Setup	
You hav	e registered A32 for the following feature:	
個 少 5 1234 一	Two-Factor Authentication	
		/

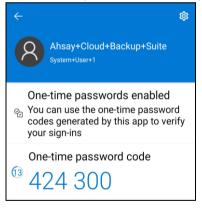
www.ahsay.com

## 7.2 Register device for 2FA using Microsoft Authenticator

- 1. Download and install Microsoft Authenticator app in your device.
- 2. Scan the QR code and enter the one-time passcode generated in Microsoft Authenticator.



This is a sample of the one-time passcode generated in Microsoft Authenticator.



3. When pairing is completed, the screen below will be displayed. Click ✓ to finish the setup.



## 7.3 Register device for 2FA using Google Authenticator

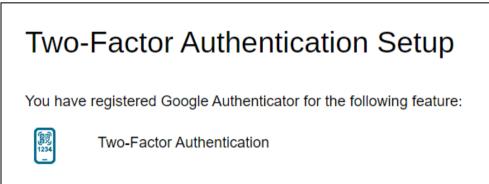
- 1. Download and install Google Authenticator app in your device.
- 2. Scan the QR code and enter the one-time passcode generated in Google Authenticator.

Two-Factor Authentication is enabled for helping safeguard access to your account, please use the below authenticator app to scan the QR code to complete the device registration.         Image: Complex Authenticator         Image: Complex Authenticator
Download on the App Store Google Play
Enter one-time passcode generated from authenticator app 0 3 2 5 1 1 (00:00:29) Display name: Google Authenticator

This is a sample of the one-time passcode generated in Google Authenticator.



3. When pairing is completed, the screen below will be displayed. Click 🗹 to finish the setup.





## 7.4 Register device for 2FA using Third party authenticators

For **Third Party authenticators**, the Display name is dependent on the settings made by your backup service provider. For this type, you can use the authenticator app of your choice. You will know that it is a third parry authenticator if the Display name is not one of these three: Ahsay Mobile, Microsoft Authenticator and Google Authenticator. In our example the Display name is "MyAuthenticator", which means that it is a third party authenticator and you can use any third party TOTP authenticator app that you want, e.g. LastPass, Duo, Authy, Microsoft Authenticator etc.

- 1. Download and install the authenticator app of your choice in your device.
- 2. Scan the QR code and enter the one-time passcode generated in the authenticator app.

App Download an	d Device Pairing
Two-Factor Authentication is enabled for h scan the QR code to complete the device r	elping safeguard access to your account, please use the below authenticator app to registration.
MyAuthenticator	
Download on the App Store	Google Play
	Show Secret Key         Enter one-time passcode generated from authenticator app         1       0       7       0       0       7       (00:00:17)         Display name:       MyAuthenticator
	X

This is a sample of the one-time passcode generated in a third party authenticator app, in this case Duo was used.



3. When pairing is completed, the screen below will be displayed. Click v to finish the setup.





## 7.5 Register additional device/app for 2FA

If you want to register an additional device and/or app for 2FA you may do so by following the instructions below:

1. Go to System Settings > Basic > Administrative Access > Manage System User > %System User Name% > Profile > Authentication > Two-Factor Authentication.

Profile	Profile Authentication			
Backup User Settings	Password			
Rebrand Web Console	Password			
Rebrand Clients	ungWv48Bz+pBQUDeXa4il7ADYaOWF3qc	tBD/YflAFa0=		
	Reset Password			
	Two-Factor Authentication			
	Registered Mobile Device(s)			
	+ ii			
	Device Name	Verified	Last Verified Time	
	A32 Re-pair with authenticator	V	08/27/2021 10:27:22 CST	
	Last Successful Login			
	Time: 08/27/2021 10:27:22 CST			
	IP address: 192.168.12.1			
	Mobile Device: A32			
_		_	_	
			[2 [≝ ✓	X ?
	A32 Re-pair with authenticator		08/27/2021 10:27:22 CST	× 3

- 2. Click  $\oplus$  then follow the instructions discussed in the previous chapters on how to register your device depending on the authenticator app that you will be using:
  - Ahsay Mobile or branded Mobile app
  - Microsoft Authenticator
  - Google Authenticator
  - Third party authenticators

3. After successful registration, the device and/or app will be listed under Registered Mobile Device(s).

Profile	Profile /	Authentication						
Backup User Settings	Password	l						
Rebrand Web Console	Password							
Rebrand Clients		z+pBQUDeXa4il7/	ADYaOWF3qctBD/YfIA	Fa0=				
	Reset Passv	Reset Password						
	Two-Factor Authentication Registered Mobile Device(s)							
	Dev	vice Name		Verified	Last Verified Time			
	A32 Re-	2 -pair with authenticat	or	1	08/27/2021 10:27:22 CST			
	Mic Mic	crosoft Authenticator		√	08/27/2021 11:22:23 CST			
	Goo	ogle Authenticator		$\checkmark$	08/27/2021 11:24:51 CST			
	My/	Authenticator		~	08/27/2021 11:28:49 CST			
		droidv10 -pair with authenticat	or	$\checkmark$	08/27/2021 11:29:49 CST			
	Last Suco	cessful Login						
		/2021 10:27:22 CS	т					
		192.168.12.1						
	Browser / Ap Mobile Devi	pp: Windows / Chro	ome					
	WODIe Devi	UC. AJZ						
	_	_		_	_			
					2 L v	X ?		

#### NOTE

If several authenticator apps are registered for an account and one of those apps is Ahsay Mobile, by default a <u>login request</u> will be sent to login with 2FA. If there are two devices registered using Ahsay Mobile, then both devices will receive the login request.

# 8 Login to AhsayCBS Web Console

Starting with AhsayCBS v8.5.0.0, you will find a new feature introduced with this latest version which is the Two-Factor Authentication. With this new feature, there are several scenarios that will be encountered for login. Login steps for the different scenarios will be discussed in this chapter.

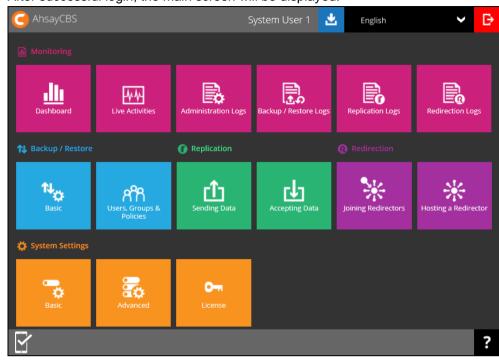
- Login to AhsayCBS without 2FA
- Login to AhsayCBS with 2FA using authenticator app
- Login to AhsayCBS with 2FA using Twilio

## 8.1 Login to AhsayCBS without 2FA

To login to AhsayCBS without two-factor authentication, please follow the steps below:

1. Enter the Login Name and Password and click LOGIN.

G AhsayCBS		English	► 👱
	Login Name		
	System User 1		
	Password		
	Forgot Password		
	Remember my login name		
	LOGIN		
			?

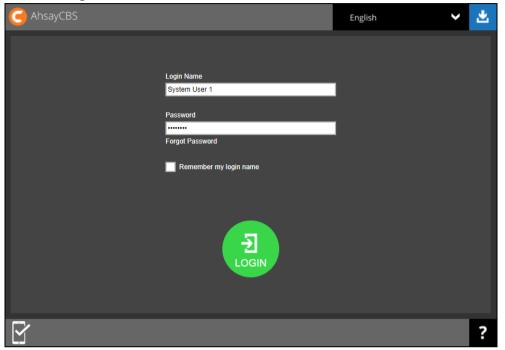


2. After successful login, the main screen will be displayed.

## 8.2 Login to AhsayCBS with 2FA using authenticator app

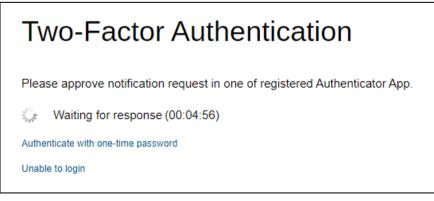
For subsequent logins to AhsayCBS with two-factor authentication, please follow the steps below:

1. Enter the Login Name and Password and click LOGIN.

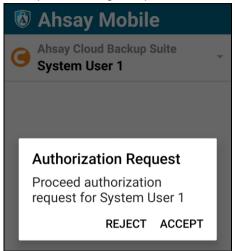


- 2. One of the two authentication methods will be displayed to continue with the login:
  - Push Notification and TOTP when using Ahsay Mobile app
  - TOTP only
  - If Ahsay Mobile app was configured to use Push Notification and TOTP then there are two 2FA modes that can be used:
    - Push Notification (default)

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



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



TOTP

However, if push notification is not working or you prefer to use one-time

passcode, click the Authenticate with one-time password link, then input the one-time passcode generated by Ahsay Mobile to complete the login.

Two-Factor Authentication				
Please approve notification request in one of registered Authenticator App.				
Waiting for response (00:04:49)				
Alternatively, input the one-time passcode generated in your Authenticator App.				
6         0         4         1         1         3         (00:00:18)				
Unable to login				

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



TOTP only

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

<b>Two-Factor Authentication</b>					
Enter one-time passcode generated from authenticator app					
5 1 1 0 3 2 (00:00:27)					
Unable to login					

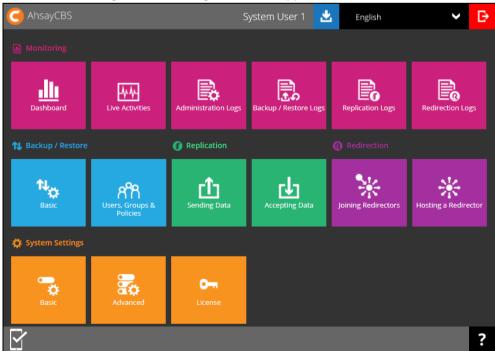
Example of the one-time passcode generated in the third party authenticator app Google Authenticator.

Google Authenticator	•••
Ahsay Cloud Backup Suite (System User 1)	
511 032	U

NOTE

Please refer to <u>Chapter 9</u> or the <u>Ahsay Mobile App User Guide for Android and iOS</u> – <u>Appendix A: Troubleshooting Login</u> if you are experiencing problems logging in to AhsayCBS Web Console with Two-Factor Authentication using Ahsay Mobile app or other third party authenticator app.

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



## 8.3 Login to AhsayCBS with 2FA using Twilio

For AhsayCBS user accounts using Twilio, please follow the steps below:

1. Enter the Login Name and Password and click LOGIN.

G AhsayCBS		English	~	*
	Login Name System User 1			
	Password			
	Forgot Password	l de la companya de l		
	Remember my login name			
	LOGIN			
				?

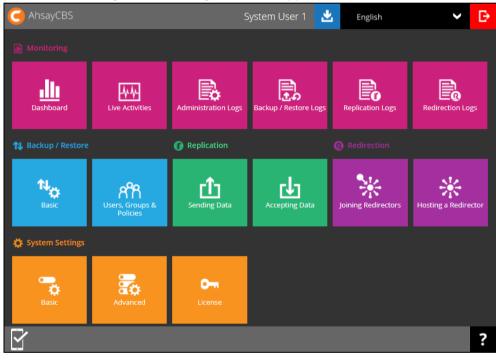
2. Select your phone number.

Two-Factor Authentication					
Please select phone number to receive passcode via SMS message to continue login.  Philippines (+63) - ******8106					
			X	?	

3. Enter the passcode and click **v** to login.



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



# 9 Unable to Login to AhsayCBS Web Console with 2FA

In situations when a user reports they have trouble logging in and they encounter this message:



You need to delete the registered device on the user account so that they can login and register for 2FA again.

Please refer to the following instructions on how to:

- Delete registered device of system user
- Delete registered device of backup user

#### 9.1 Delete registered device of system user

 Go to System Settings > Basic > Administrative Access and click the system user name. In the example, it is "System User 1".

	Email Predefined Destination	Administrative Access	Languages Two-Fact	or Authentication (2FA)
nage	all system user accounts that are able	to access the web console of this se	erver.	
assw	ord			
lana	ge System User			
Ð				View Default ~
	Name	Туре	Owner	Status
	System User 1	Admin		Enable
	sub1	Sub Admin		Enable
				Enable
	sub2	Sub Admin		
	sub2 sub3	Sub Admin Sub Admin		Enable
				Enable Enable
	sub3	Sub Admin		

Profile	Profile Authentication
Backup User Settings Rebrand Web Console Rebrand Clients	Password Password ungWv48Bz+pBQUDeXa4II7ADYaOWF3qctBD/YfIAFa0= Reset Password
	Two-Factor Authentication
	Device Name     Verified     Last Verified Time       Image: Second system     Galaxy A70 Re-pair with authenticator     ✓     08/19/2021 09:33:41 CST
	Last Successful Login Time: 08/19/2021 09:32:36 CST IP address: 172.16.99.1 Browser / App: Windows / Chrome Mobile Device:
_	[ª [≝ ✓ X ?
Click OK	to confirm.
9	says
	ou want to delete the registered mobile device for Two- tication feature?
	OK Cancel

4. Click and to save the settings.

### 9.2 Delete registered device of backup user

1. Go to **Backup/Restore** > **Users, Groups & Policies** > **Backup User** tab and click the backup user login name. In this example, it is "MobileUser1".

C Ar	nsayCBS																				
Backup	User User Gro	oup Po	licy Group																		
Manage	your backup users i	n this sect	ion.																		
Mana	ge Backup User	0																			
<b>+</b> (	i () a C	2	Filter CI	ient Ty	/pe 丶	· U	ser		R	egist	ratio	ו Da	te 🗸	] U:	ser G	Group	• •	Au	to U	odate	~
	8)														0	wner	~	View	De	efault	•
	Login Name (Alias)	Owner C	lient Version								А	dd-o	n Mo	dule	5						
	O MobileUser1 ()			X				Lotus.	Lotus.			$\boxtimes$	Syn		$\bigcirc$	T	0	0	Ry.	Ð	
	() user ()			*	8	0		Lotus.	Lotus.			⊠	Syn		ଡ଼	T	0	Θ	2		1
	() user1 ()			X	1			Lotus.	Lotus.				Syn		ଡ଼	T	0	0	2		
	() user2 ()			X	1	٥İ		Lotus.	Lotus.	Δ		$\boxtimes$	Syn	RAS	ଡ଼	T	0	0	Ry .		
	() user3 ()			X	1			Lotus.	Lotus.			M	Syn		O	T	0	0	Ŋ		
	() user4 ()			X	1			Lotus.	Lotus.			$\boxtimes$	Syn		$\bigcirc$	T	0	0	Ry.	Ð	
	() user5 ()			X	8			Lotus.	Lotus.			$\boxtimes$	Syn		C	F	0	0	2		
	O WindowsTest ()			X	T			Lotus.	Lotus.		Lange Contraction of the second secon	M	Syn NAS	R NAS	C	F	0	0	2		¢
		_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_			
																				Х	?

2. Go to **User Profile > Authentication** tab, tick the box beside the device name and click

-								
User Profile	General	Backup Client Settings	Contact	User Group	Authentication	Mobile Ba	ickup	
Backup Set	Passwo	ord						
Settings								
Report	Password bKE9Usr	wyIPg8LsQHkJaiehiTeUdstI5J2	ZOvaoQRoJA	= Hash	ed			
Statistics	Reset Pas	3 0						
Effective Policy								_
	Two-Fac	tor Authentication						
	Registere	d Mobile Device(s)						
	+ iii							
		Device Name	١	/erified L	ast Verified Time			
		32 Re-pair with authenticator	v	( 0)	8/23/2021 17:03:29 CST	ſ		
	Last Su	ccessful Login						
	Time: 08/	10/2021 14:58:16 CST						
		s: 192.168.12.1						
	Browser / Mobile De	App: AhsayOBM						
	WODIE De	NICE						
							(?	

Click	ОК	to confirm.				
		says				
	•	e you want to de entication featu	-	stered mobile	device	e for Two-
				0	ĸ	Cancel

4. Click to save the settings.

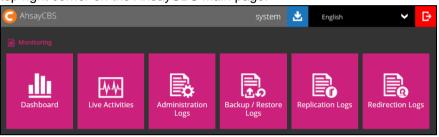
## 10 Download Backup / Restore Client

There are four backup / restore clients for you to choose from:

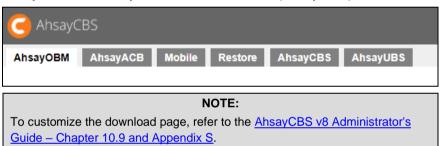
- AhsayOBM and AhsayACB for computer users to backup and restore
- AhsayOBR for computer users to restore only
- Ahsay Mobile for mobile device users to backup and restore

## 10.1 Download AhsayACB / AhsayOBM / AhsayOBR on Computer

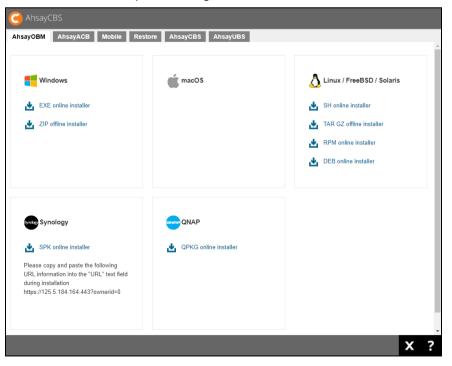
1. In a browser, download the backup clients by clicking the blue **Download** icon at the top right corner on the AhsayCBS main page.



2. Click on the tab with the name of the client backup/ restore agent you wish to download, AhsayOBM tab, AhsayACB tab or Restore tab (AhsayOBR).



3. Click on the "online installer" or "offline installer" of the platform on which you wish to install the client backup/ restore agent.





AhsayCBS support two installation modes, online and offline installation (except for Linux (rpm), Ubuntu (deb), Synology NAS and QNAP which supports online installation only). User can apply either of the installation modes.

	Online Installation	Offline Installation
Internet	<ul> <li>It cannot be started without an internet connection.</li> <li>Clients need to have an internet connection each time an installation is run.</li> <li>If the client internet connection is interrupted or is not stable the installation may be unsuccessful.</li> <li>Online installer size is 6KB to 3.5MB depending on operating system as it contains only the initial installation package files.</li> </ul>	<ul> <li>Once the offline installer is downloaded, the client does not require an internet connection each time an installation is run.</li> <li>The offline installer size is 80MB to 140MB depending on operating system as it contains all the necessary binary and component files.</li> </ul>
Backup Server Availability	The online installer requires the backup server to be online in order to run and complete the installation.	An offline installation can be performed independently of the backup server availability.
Installation Time	<ul> <li>Takes more time as it needs to download the binary and component files (80MB to 140MB depending on operating system) each time the installation is run.</li> <li>A slow internet connection on the client machine will also result in longer installation time.</li> </ul>	Takes less time as all the necessary binary and components files are already available in the offline installer.
Version Control	Ensures the latest version of the product is installed.	May need to update the product version after installation if an older offline installer is used.
Administrative Support	Need more time on the support for the installation as network factor might lead to unsuccessful installation.	Need less time as independent of network factor influence.
Deployments	<ul> <li>Suitable for single or small amount of device installations.</li> <li>Suitable for client sites with fast and stable internet connection.</li> </ul>	<ul> <li>Suitable for multiple or mass device installations.</li> <li>Suitable for client sites with metered internet connections.</li> </ul>

Below is the table of comparison between online installation and offline installation.

#### www.ahsay.com

### 10.2 Download Ahsay Mobile on a Mobile Device

#### 10.2.1 Android Device

The latest version of Ahsay Mobile is available from Google Play.

#### 10.2.2 iOS Device

The latest version of Ahsay Mobile is available from Apple App Store.

#### 10.3 Download Ahsay Mobile using a web browser

Ahsay Mobile can also be downloaded using the following links from the Mobile tab of the AhsayCBS web console. Make sure to use an Android or iOS mobile device when clicking on the respective download links on the AhsayCBS web console, so you are automatically redirected to either Google Play or the App Store.

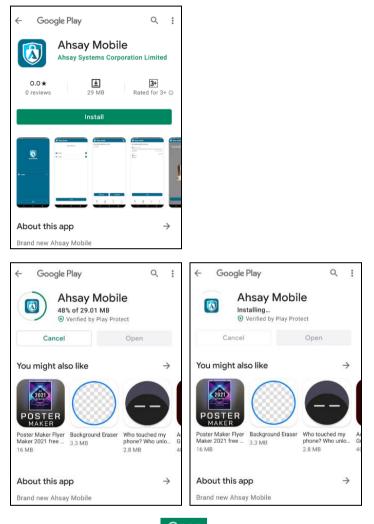
1. Tap the Download button of the platform on which you wish to install the client backup/ restore agent.

G AhsayCBS		
Open Mobile T		
I Android		
Download from Google Play Store		
ios		
Download from App Store		
	X	?

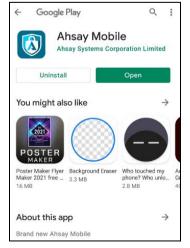
www.ahsay.com

- 2. The following page would be displayed depending on the platform you chose:
  - <u>Android</u>
  - <u>iOS</u>

For Android, user will be redirected to Google Play. Tap **Install** to begin installation of Ahsay Mobile.



Once done installing, tap **Open** to start using Ahsay Mobile.



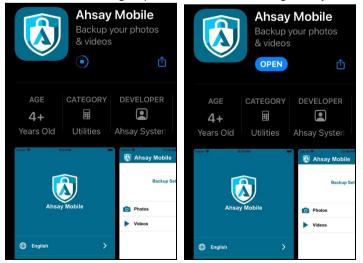
For iOS, user will be redirected to the App Store. Tap **GET** to start the installation of Ahsay Mobile.

		<b>Mobile</b> your photos
	GET	Û
AGE <b>4+</b> Years Old		DEVELOPER
Ţ	y Mobile	Ahsay Mobile     Backup Set
English	>	Videos

Tap Install to continue.

		Mobile your photos
~		Ċ
	CATEGORY	DEVELOPER
4+ App Store		Cancel
	HSAY MOBIL HSAY SYSTE CORPORATION	MS
AC- COUNT		
	Install	

Once done installing, tap **OPEN** to start using Ahsay Mobile.



## **10.4 Instruction Regarding Installation of Client Backup Agent**

For information about the installation of AhsayACB, AhsayOBM, AhsayOBR and Ahsay Mobile, creating backup sets and restoration, please refer to the User Guides/Quick Start Guides via the respective URL below.

# 

Windows	https://www.ahsay.com/download/download_document_v8_acb-quickstart- windows.jsp
Mac OS X	https://www.ahsay.com/download/download_document_v8_acb-quickstart- mac.jsp

# 

Windows	https://www.ahsay.com/download/download_document_v8_obm-quickstart- windows.jsp
Mac OS X	https://www.ahsay.com/download/download_document_v8_obm-quickstart- mac.jsp
Linux (CLI)	https://www.ahsay.com/download/download_document_v8_obm-quickstart- linux.jsp
Linux (GUI)	https://www.ahsay.com/download/download_document_v8_obm-quickstart- linux-gui.jsp
FreeBSD	https://www.ahsay.com/download/download_document_v8_obm-user-guide- freebsd.jsp
Synology NAS	https://www.ahsay.com/download/download_document_v8_obm-quickstart- synology.jsp
QNAP NAS	https://www.ahsay.com/download/download_document_v8_obm-user-guide- gnap-nas.jsp

# AhsayOBR

Windows	https://www.ahsay.com/download/download_document_v8_obr-user-guide- win.jsp
Mac OS X	https://www.ahsay.com/download/download_document_v8_obr-user-guide- mac.jsp

Linux (GUI)	https://www.ahsay.com/download/download_document_v8_obr-user-guide- linux-gui.jsp
🔕 Ahsay	/ Mobile
	https://www.ahsay.com/download/download_document_v8_mobile-getting- start-guide-backup.jsp
Android / iOS	https://www.ahsay.com/download/download_document_v8_mobile-getting- start-guide-2fa.jsp
	https://download.ahsay.com/support/document/v8/guide_ahsay_app_user_v 8.pdf

# **11 Contacting Ahsay**

#### 11.1 Technical Assistance

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

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

#### **11.2 Documentation**

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

You can send us suggestions for improvements or report on issues in the documentation, by contacting us at: <a href="https://www.ahsay.com/partners/">https://www.ahsay.com/partners/</a>

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

# Appendix

### Appendix A Uninstall AhsayCBS on Windows

1. Go to Control Panel > Programs and Features > Uninstall a program, then look for Ahsay Cloud Backup Suite. Then click Uninstall.

Uninstall or change a program							
To uninstall a program, select it from the list and then	click Uninstall, Change, or Repair						
Organize 🔻 Uninstall				H • 🔞			
Name 🔺	Publisher	Installed On	Size	Version			
G Ahsay Cloud Backup Suite	Ahsay Systems Corporation	12/21/2018	745 MB	8.0.4.0			
🔪 Apache HTTP Proxy		9/27/2018					
🞯 ESET Remote Administrator Agent	ESET, spol. s r.o.	9/27/2018		6.5.522.0			
🚣 Java 8 Update 181	Oracle Corporation	9/27/2018	100 MB	8.0.1810.13			
Microsoft ODBC Driver 11 for SQL Server	Microsoft Corporation	9/27/2018	4.61 MB	12.0.2000.8			
Microsoft SQL Server 2008 Setup Support Files	Microsoft Corporation	9/27/2018	38.9 MB	10.3.5500.0			
Microsoft SQL Server 2012 Native Client	Microsoft Corporation	9/27/2018	7.22 MB	11.0.2100.60			
Microsoft SQL Server 2014 (64-bit)	Microsoft Corporation	9/27/2018					
Microsoft SQL Server 2014 Setup (English)	Microsoft Corporation	9/27/2018	50.7 MB	12.0.2000.8			
Microsoft SQL Server 2014 Transact-SQL ScriptDom	Microsoft Corporation	9/27/2018	6.18 MB	12.0.2000.8			
Microsoft Visual C++ 2008 Redistributable - x64 9.0.30	Microsoft Corporation	2/15/2017	13.2 MB	9.0.30729.61			
■ Microsoft Visual C++ 2008 Redistributable - x86 9.0.30	Microsoft Corporation	2/15/2017	10.1 MB	9.0.30729.41			
Microsoft Visual C++ 2010 x64 Redistributable - 10.0	Microsoft Corporation	9/27/2018	13.8 MB	10.0.40219			
Microsoft Visual C++ 2010 x86 Redistributable - 10.0	Microsoft Corporation	9/27/2018	11.1 MB	10.0.40219			

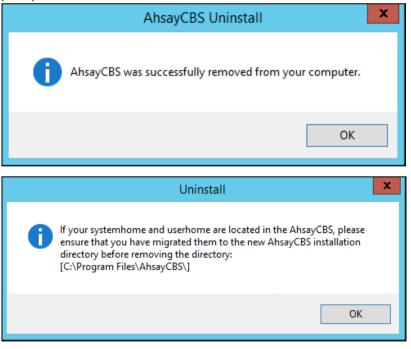
2. The AhsayCBS Uninstall wizard will be shown on the screen, click Yes to proceed.

AhsayCBS Uninstall	x
Are you sure that you want to completely remove AhsayCBS and all of its components?	
Yes No	

- 3. If there is a Run Direct restore running at the time of the AhsayCBS uninstallation, the following screen prompts to alert you the NFS service is in use.
  - Select No if you do not wish to force uninstall the NFS service. AhsayCBS will be uninstalled without affecting the NFS service, where the Run Direct restore will not be interrupted.
  - Select Yes to force uninstall the NFS service. Both AhsayCBS and NFS service will be uninstalled from the machine. The VM running Run Direct restore session and the datastore are both unmounted from the VMware server.

AhsayCBS Uninstall	x
Uninstall Status Please wait while AhsayCBS is removed from your computer.	0
Uninstalling AhsayCBS	
Uninstall	x
Installer has detected that NFS service is in use. Do you want to force uninstall NFS service now?	
Yes No	

4. The following screens prompt when the uninstallation is completed. Click **OK** to exit the prompts.



5. The system will automatically open a file folder directing to the installation path, so that the USER\_HOME, SYSTEM\_HOME and POLICY\_HOME can be copied/backed up easily if required.

### Appendix B Uninstall AhsayCBS on Windows Server Core

1. Change the directory to the installation directory.

> cd `C:\Program Files\AhsayCBS\'

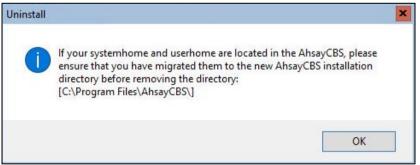
2. Execute unins000.exe and click Yes.

d	7/11/2019	11:06			
d	7/11/2019	11:04	AhsayCBS	Uninstall	×
d	7/11/2019	11:04			
d	7/11/2019	11:07	-	Annual that we want to a second state of the s	
d	7/11/2019	11:04	(?)	Are you sure that you want to completely remove AhsayCBS and all of its components?	
<u> </u>	7/11/2019	11:05		its components:	
d	7/11/2019	11:08			
-a	7/11/2019	11:06			
-a	7/11/2019	11:05		Yes No	
-a	7/11/2019	11:03			-
a	7/11/2019	11:05	API	22905 UNITU2000'W2B	
-a	4/2/2019	9:58	AM	8 version.txt	

3. The following screen prompts when the uninstallation is completed. Click **OK** to continue.

AhsayCBS	Uninstall	×
1	AhsayCBS was successfully removed from your computer.	
	ОК	

4. Click **OK** to continue.



5. Make a backup of your existing SYSTEM\_HOME, USER\_HOME and POLICY\_HOME directory if necessary before removing the AhsayCBS directory.

6. Remove the AhsayCBS directory from the system. Once done, AhsayCBS will now be removed from the system.

```
PS C:\Program Files> rm .\AhsayCBS\

PS C:\Program Files> rm .\AhsayCBS\

Confirm

The item at C:\Program Files\AhsayCBS\ has children and the Recurse parameter was not specified. If

you continue, all children will be removed with the item. Are you sure you want to continue?

[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"):
```

www.ahsay.com

### Appendix C Uninstall AhsayCBS on Linux/FreeBSD

To uninstall AhsayCBS from a Linux or FreeBSD system, please follow the steps below.

- 1. Login as root to the Linux/FreeBSD machine.
- 2. Go to the /usr/local/cbs/bin directory.

# cd /usr/local/cbs/bin

3. Uninstall AhsayCBS using the sh command.

```
# sh uninstall.sh
```

4. After successful uninstallation, AhsayCBS and NFS service will no longer be available because removal of the startup scripts will stop the services from starting at bootup.

For Linux:

```
Log Time: Thu Apr 4 15:29:29 HKT 2019
Verifying current user privilege ...
Current user has enough privilege to "uninstall".
Using CBS HOME: /usr/local/cbs
Using JAVA HOME: /usr/local/cbs/java
Try to shutdown [ Ahsay Cloud Backup Suite ]
_____
You may set SYSTEM DEBUG=0 to disable the debug message
Current User Name : root
Using SYSTEM_TYPE : linux
Using SYSTEM_ARCH : x86_64
_____
                                    _____
Using CBS_HOME : /usr/local/cbs
Using JAVA_HOME : /usr/local/cbs/java
Using CATALINA_HOME : /usr/local/cbs/tomcat
Using JAVA OPTS : -Djava.library.path=/usr/local/cbs/lib/LinX64 -
DCATALINA PID=/var/run/obsr.pid -Dsun.net.inetaddr.ttl=3600 -
Dnetworkaddress.cache.ttl=3600 -Dsun.net.inetaddr.negative.ttl=300 -
Dnetworkaddress.cache.negative.ttl=300 -
Dsun.nio.PageAlignDirectMemory=true -Djava.net.preferIPv4Stack=true -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -
Djava.util.logging.config.file=conf/logging.properties -
Dtc.work.path=work -Dtc.log.path=logs
Djavax.servlet.context.tempdir=work
Using CATALINA OPTS :
Using CATALINA_PID : /var/run/obsr.pid
                                        _____
Stopping AhsayCBS service
Wait 5 seconds before [ Ahsay Cloud Backup Suite ] is down
Remove [ Ahsay Cloud Backup Suite ] (cbs) from service
Uninstall Service for NIX type OS
Using init script path /etc/init.d
Using run level script path /etc
Removing symbolic link from run levels
Removing script file cbs from /etc/init.d
[ Ahsay Cloud Backup Suite ] uninstall service is complete!
Try to shutdown [ NFS Service (Ahsay Systems Corporation) ]
Stopping NFS Service (Ahsay Systems Corporation)
Wait 5 seconds before [ NFS Service (Ahsay Systems Corporation) ] is
down
Remove [ NFS Service (Ahsay Systems Corporation) ] (cbsnfs) from service
```

```
Uninstall Service for NIX type OS
Using init script path /etc/init.d
Using run level script path /etc
Removing symbolic link from run levels
Removing script file cbsnfs from /etc/init.d
[ NFS Service (Ahsay Systems Corporation) ] uninstall service is
complete!
It is now safe to remove files from /usr/local/cbs
```

#### For FreeBSD:

```
Log Time: Thu Apr 4 14:55:31 HKT 2019
Verifying current user privilege ...
Current user has enough privilege to "uninstall".
Using CBS HOME: /usr/local/cbs
Using JAVA HOME: /usr/local/cbs/java
Try to shutdown [ Ahsay Cloud Backup Suite ]
_____
You may set SYSTEM DEBUG=0 to disable the debug message
_____
Current User Name
                  : root
Using SYSTEM_TYPE : bsd
Using SYSTEM_ARCH : amd64
_____
                    _____
                                  _____
Using CBS_HOME : /usr/local/cbs
Using JAVA_HOME : /usr/local/cbs/java
Using CATALINA HOME : /usr/local/cbs/tomcat
Using JAVA OPTS : -Djava.library.path=/usr/local/cbs/lib/LinX64 -
DCATALINA PID=/var/run/obsr.pid -Dsun.net.inetaddr.ttl=3600 -
Dnetworkaddress.cache.ttl=3600 -Dsun.net.inetaddr.negative.ttl=300 -
Dnetworkaddress.cache.negative.ttl=300 -
Dsun.nio.PageAlignDirectMemory=true -Djava.net.preferIPv4Stack=true -
Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -
Djava.util.logging.config.file=conf/logging.properties -
Dtc.work.path=work -Dtc.log.path=logs -
Djavax.servlet.context.tempdir=work
Using CATALINA OPTS :
Using CATALINA PID : /var/run/obsr.pid
_____
Stopping AhsayCBS service
Wait 5 seconds before [ Ahsay Cloud Backup Suite ] is down
Remove [ Ahsay Cloud Backup Suite ] (cbs) from service
Uninstall Service for BSD type OS
Remove script cbs from /usr/local/etc/rc.d
[ Ahsay Cloud Backup Suite ] uninstall service is complete!
Try to shutdown [ NFS Service (Ahsay Systems Corporation) ]
Stopping NFS Service (Ahsay Systems Corporation)
Wait 5 seconds before [ NFS Service (Ahsay Systems Corporation) ] is
down
Remove [ NFS Service (Ahsay Systems Corporation) ] (cbsnfs) from service
Uninstall Service for BSD type OS
Remove script cbsnfs from /usr/local/etc/rc.d
[ NFS Service (Ahsay Systems Corporation) ] uninstall service is
complete!
It is now safe to remove files from /usr/local/cbs
```

5. Make a backup of your existing \$SYSTEM\_HOME, \$USER\_HOME and \$POLICY\_HOME directories to another computer if necessary.

- 6. **For FreeBSD only**, ensure that cbs and nfs service are disabled by removing the cbs\_enable="YES" and cbsnfs\_enable="YES" lines from /etc/rc.conf by using a text editor like vi.
- 7. Remove the \$CBS\_HOME directory from the system. Once done, AhsayCBS will now be removed from your system.

## Appendix D How to configure backup threads on AhsayCBS

To configure the number of backup threads on AhsayCBS, follow the instructions below:

#### In Windows:

1. Locate the afc.opt file in the %APPLICATION\_HOME%\conf folder.

<b>)))</b> ««	AhsayCBS 🕨 conf 🕨	~	Ç
	Name	•	
	🔮 acb-config		
s	afc.opt		
	(a) autoDiscovenc		

#### 2. Open the file, add the parameter

"obx.core.backup.file.BackupResourceManager.maxConcurrentSubCmd" with the preferred number of backup threads and save. In our example, we are using 8 as the preferred number of backup threads.

🥘 a	🧾 afc.opt - Notepad						
File	Edit	Format	View	Help			
obx	.core	e.backu	p.fil	e.BackupResourceManager.maxConcurrentSubCmd=8			

3. Restart the AhsayCBS service.

Services (Local)				
Ahsay Cloud Backup Suite	Name	Description	Status	Startup Type
	🆏 ActiveX Installer (AxInstSV)	Provides Us		Manual
Stop the service Restart the service	🌼 Ahsay Cloud Backup Suite		Running	Automatic
Restart the service	🎑 Ahsay Online Backup Manager Services	Continuous	Running	Automatic

#### In Linux/FreeBSD:

1. Locate the afc.opt file in /usr/local/cbs/conf folder.

2. Open the file, using a text editor add the parameter

"obx.core.backup.file.BackupResourceManager.maxConcurrentSubCmd" with the preferred number of backup threads and save. In our example, we are using 8 as the preferred number of backup threads.

obx.core.backup.file.BackupResourceManager.maxConcurrentSubCmd=8

- 3. Restart the AhsayCBS service
  - # cd /usr/local/cbs/bin
  - # sh restart.sh

#### In AhsayUBS:

1. Locate the afc.opt file in /ubs/mnt/eslsfw/obsr/conf folder.

```
# cd /ubs/mnt/eslsfw/obsr/conf
# ls -la
total 933
drwxr-xr-x 4 root wheel 144 Jul 24 04:30 .
drwxr-xr-x 13 root wheel 13 Jul 8 08:25 ..
-rwxr-xr-x 1 root wheel 316 Nov 19 2018 acb-config.xml
-rwxr-xr-x 1 root wheel 4966 Jul 8 08:35 afc.opt
```

#### 2. Open the file, using a text editor add the parameter

"obx.core.backup.file.BackupResourceManager.maxConcurrentSubCmd" with the preferred number of backup threads and save. In our example, we are using 8 as the preferred number of backup threads.

obx.core.backup.file.BackupResourceManager.maxConcurrentSubCmd=8

3. Restart the AhsayCBS service.

```
# cd /ubs/mnt/esfmfw/obsr/system/obsr/bin
# sh restart.sh
```