GS RichCopy 360

Standard v7.1 and Enterprise v8.1

Administrator's Manual

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Acronyms

The following table lists the different acronyms used in this manual.

ACRONYM	DEFINITION
ACL	Access Control List (NTFS Permissions)
AES	Advanced Encryption Standard
CLI	Command Line Interface
CSV	Comma-Separated Values
FIFO	First in First Out
FQDN	Fully Qualified Domain Name
GS	GuruSquad
GUI	Graphical User Interface
HIPAA	Health Insurance Portability and Accountability Act
IP	Internet Protocol
JPEG	Joint Photographic Expert Group
LAN	Local Area Network
NetBIOS	Network Basic Input/Output System
NTFS	New Technology File System
PIII	Pentium III
RAM	Random Access Memory
RTA	Remote Transfer Agent
SMB	Server Message Block
SMTP	Simple Mail Transfer Protocol
TCP	Transmission Control Protocol
UI	User Interface
VPN	Virtual Private Network
VSS	Volume Shadow Service
SOX	Sarbanes-Oxley Act
WAN	Wide Area Network

Introduction

GS RichCopy 360 is designed to work on Windows servers and workstations and is perceived as the industry leader for file and folder replication and synchronization in WAN and LAN environments. GS RichCopy 360 is offered in two different versions, Standard and Enterprise. The Enterprise version includes all options offered in the Standard version and other advanced options such as Bulk Job Create/Import, Block Level Replication, Real-time Replication, Compression, Encryption, and Replication over a TCP port. The latter option is recommended for replication across the internet, locked down firewall environments and many more options covered later in this manual.

GS RichCopy 360 Enterprise will work over VPN connections and across the internet. This current version has taken over 11 years to develop and is the ideal solution for high-volume server and workstation transactions over networks using LAN, WAN, and VPN connections and across the internet.

Benefits

The following are the benefits of GS RichCopy 360.

Easy to Understand and Use

Our patent-pending design is slick and easy, providing the best administration experience possible while using intelligent and sophisticated logic, and advanced methods under the hood.

GS RichCopy 360 is designed to minimize work by staff. The GS RichCopy 360 interface provides what you need and where you expect to find it. It offers advanced capabilities with minimal overhead configuration.

Robust Performance

GS RichCopy 360 offers advanced multi-threading technology utilizing 100% parallel computing techniques. It also offers a proprietary patent-pending technology that provides the most robust and powerful performance possible.

Affordable Value

GS RichCopy 360 provides functionality that is comparable, if not superior, to most other solutions. What is more, the total cost of ownership of GS RichCopy 360 is less than the initial cost of most other solutions. GS RichCopy 360 comes with free support from our highly trained support staff.

Key Features

GS RichCopy 360 is a job-based software and can be configured for multiple jobs per server or workstation to operate with the following features.

GS RichCopy 360 Enterprise

- Operates real-time.
- Provides byte-level file replication to save on bandwidth and file copy time.
- Uses compressed data during transmission, making transfers much more efficient and robust.
- Provides WebDAV support.
- Provides the option to replicate data across the internet with data being highly encrypted during transmission.

GS RichCopy 360 Enterprise and GS RichCopy 360 Standard

- Provides the capability to schedule jobs (e.g. Friday 11:00 pm) and create repeat intervals (e.g. every 30 Minutes, 1 hour, daily, weekly).
- On demand.
- Provides command line support. Jobs can be created, triggered, or stopped through the command line either locally from the same machine or passed remotely from another machine. This is useful to centrally manage all clients.
- Runs as a windows service or as a currently logged in user.
- Connect as a specific user to source/target machines, which can be useful in workgroup and multi-domain/forest environments.
- Provides long path and file name support.
- Sync Poisoning provides a safety net where data on the Remote Transfer Agent (RTA) server is backed up in the event it is about to get overwritten or deleted by its source job.
- Provides advanced multi-threading technology utilizing 100% parallel computing techniques. It also offers a proprietary patent-pending technology that provides the most robust and powerful performance possible.
- Copies open and locked files due to its full integration with Volume Shadow Service (VSS).
- Provides the option to replicate NTFS ACL security permissions, file and folder attributes, and date time stamps.
- Provides advanced file and folder inclusion and exclusion settings by pattern in name, full name, or explicit.
- Provides the capability for administrative permission override. If GS RichCopy 360 is attempting to copy from or to a folder where it does not have NTFS permissions, it can use the administrative override so it can get the needed access automatically. This is possible for as long as the source or destination is on a Windows operating system and the user account used has administrative privileges.

  Note: There are no settings to turn this feature on. It automatically works as soon as an NTFS permission is preventing reading access. This feature, however, does not work if the destination or source where the NTFS permission is required is a NAS device because override functionality is only supported on Windows systems.
- Sends email notifications upon failure and success using the local SMTP server or any other email provider such as Gmail.
- Environment variable is fully supported throughout most fields in the application.
- Provides the option to have GS RichCopy 360 run as a normal user account where administrative access is not granted. By default, it is required to be an administrator on the machine where GS RichCopy 360 is installed. However, a user can turn off that requirement within the configuration screen so that normal users can operate and manage jobs on GS RichCopy 360.

  Note: Some functionalities may not be available unless the jobs are configured to run as a service. Each job has its own unique configuration (Definition of Source and Target Folder) and its own settings.

Other Features

- Useful in copying, moving, or mirroring directories along with their files and subfolders, ACLs, and attributes from one location to another (same server or different server).

- Provides the option to have the source (folder you are copying from) to be mirrored exactly onto the target or destination (folder you are copying to).
- Provides the option to replicate only the directory tree (structure) without its files. This feature will basically copy only the exact directory structure of the source.

Comparison of Standard and Enterprise Versions

The following table displays the features of the Enterprise and the Standard versions of GS RichCopy 360 for comparison purposes.

FEATURES	GS RICHCOPY 360 ENTERPRISE	GS RICHCOPY 360 STANDARD
GUI or Command Line	√	√
Copy NTFS Security (ACLs)	√	√
Copy Open and Locked Files	√	√
Copy Only Modified Files	√	√
Copy File & Folder Attributes	√	√
Copy File & Folder Timestamp	√	√
Send Emails when Job is complete	√	√
Include Directories (Wildcard supported)	√	√
Exclude Directories (Wildcard supported)	√	√
Exclude Files (Wildcard supported)	√	√
Exclude Directories with Absolute Path	√	√
Copy Data Locally or Across the Network	√	√
Do Not Follow Conjunction Points	√	√
Attempt to Copy Files with CRC Errors	√	√
Copy Files Based on Last Modified Date Filter	√	√
Log Only Errors and Warnings	√	√
Long Path Name Support	√	√
Run as a Service	√	√
100% Multi-Threaded (Robust Performance)	√	√
Wizard Driven	√	√
Powerful Proprietary Scheduler	√	√

FEATURES	GS RICHCOPY 360 ENTERPRISE	GS RICHCOPY 360 STANDARD
Run Simultaneous Jobs at Once	√	√
Run as Normal User	√	√
Permission Override	√	√
Connect As (Impersonation)	√	√
Auto Update Feature	√	√
Bandwidth Throttling	√	√
SOX and HIPAA Compliant	√	√
All Jobs are logged to for tracking	√	√
Optimized for WAN and Internet Replication	√	χ
Copy Files & Folders Across the Internet	√	χ
Byte Level Replication (Delta Change in a File)	√	χ
Compress Data Before Sending	√	χ
WebDAV Support	√	χ
AES 128 and AES 256 Encryption Support	√	χ
Synchronize Data Real-Time	√	χ
Import 1000s of Jobs from CSV	√	χ

Licensing

The GS RichCopy 360 follows a perpetual licensing model. A perpetual licensing model allows the customer to install and use the software indefinitely. GS RichCopy 360 is licensed per machine, requiring that the user purchases a license for each client computer and device on which the software is installed. Other licensing options are available such as volume, site, and enterprise licensing.

If 10 or more licenses are purchased, they can be upgraded to portable licenses. In that case, having 10 installed machine licenses, it is permitted to move one installation from one machine to another, then the administrator can unregister it from the old machine and move it to the new machine.

For this feature, the user must buy 10 Enterprise licenses or 20 Standard licenses.

Note: Licensing models such as volume, site, and enterprise can be discussed and arranged with sales prior to purchasing GS RichCopy 360.

Installation

System Requirements

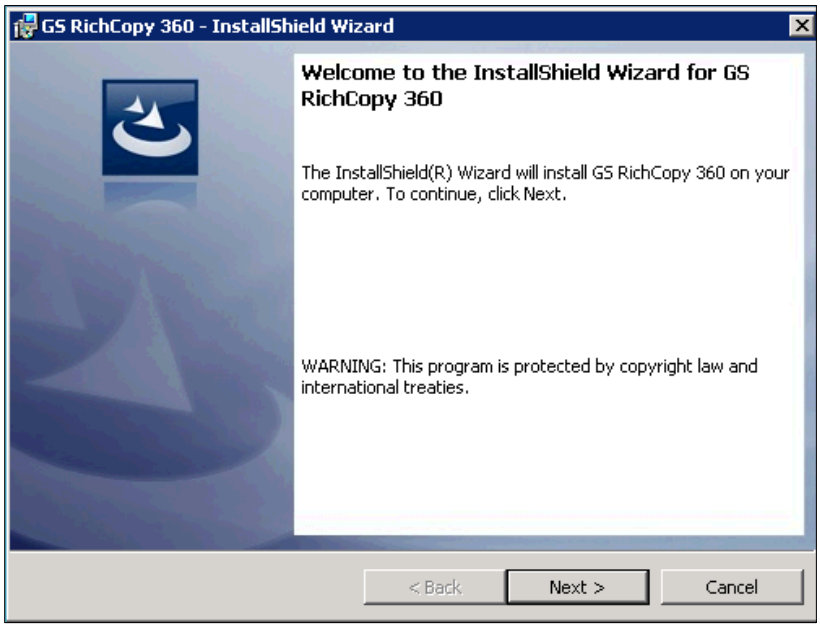
GS RichCopy 360 requires admin privileges when installing and using GS RichCopy 360. It also requires the following:

REQUIREMENT	SPECIFICATION
Operating system	32-bit or 64-bit of any of the following: • Windows Server 2019 • Windows Server 2016 • Windows 10 • Windows Server 2012R2 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 • Windows Server 2003 • Windows 8.1 • Windows 8 • Windows 7 • Windows XP • Windows Vista
Processor	Pentium III (PIII) equivalent or higher
RAM	2GB
Storage	40MB **Note:** It is recommended to have more than 40MB disk space to meet logging requirements in case logs are stored on the same drive partition.
Software	Microsoft .NET Framework 4.5 **Note:** Installing GS RichCopy 360 will not proceed if this framework is not installed.
Installer	GS RichCopy 360 Setup.exe
License	Once installed, GS RichCopy 360 will run in trial mode, copying a maximum of 5 files from every folder. When the trial period expires, it will ask for a valid serial key that you need to enter to automatically switch to a full version. Uninstalling or reinstalling are unnecessary. For more information, refer to *Registering GS RichCopy 360*. For licensing details, refer to *Licensing*.

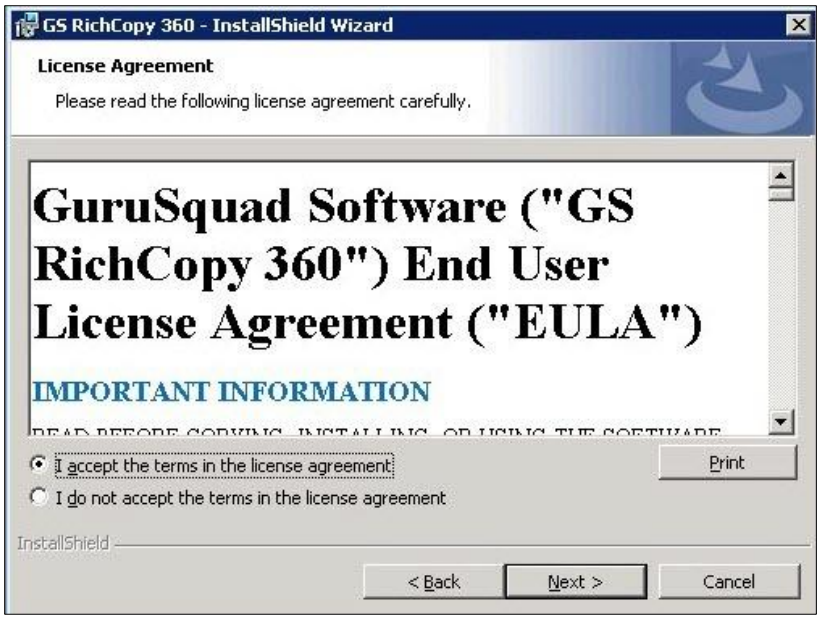
Installing GS RichCopy 360

Before installing GS RichCopy 360, log on to the server or workstation as a user with full admin privileges. To install GS RichCopy 360, follow these steps:

1. Double-click the installer. The following window is displayed.

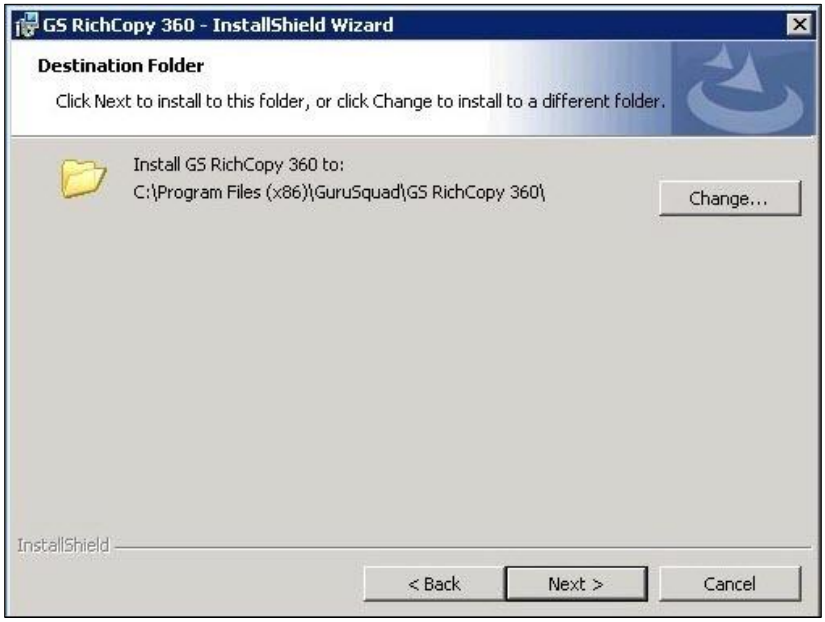


2. Select **Next**. The License Agreement screen is displayed.

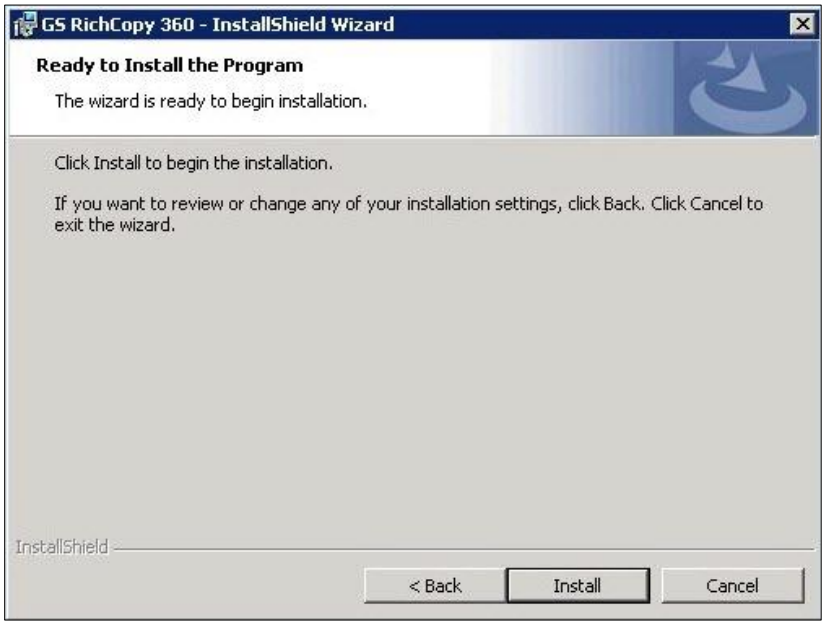


3. Select **I accept the terms in the license agreement**, and then select **Next**.

The Destination Folder screen is displayed.

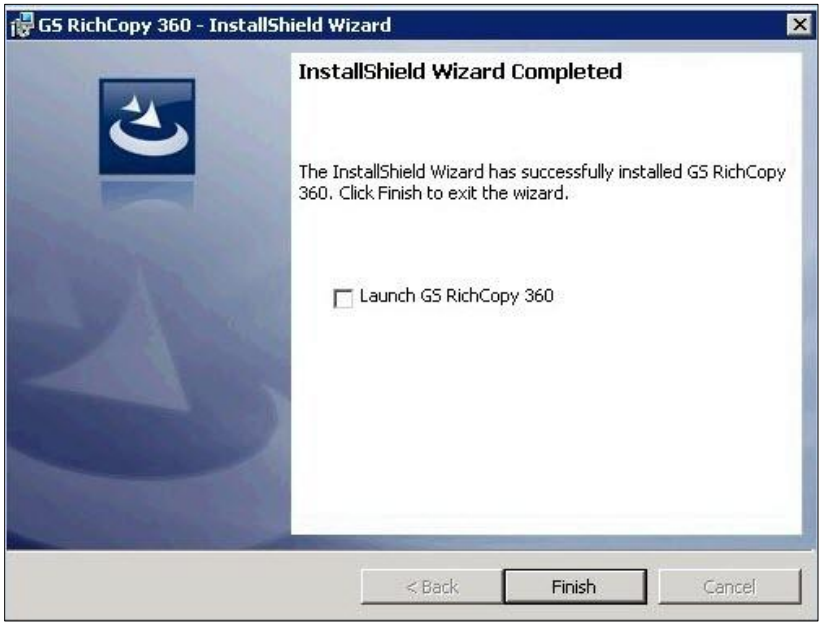


4. Select **Change** if you want to install GS RichCopy 360 in a different folder, or **Next** to continue without changing the destination folder. The Ready to Install the Program screen is displayed.



5. Select **Install** to proceed with the installation.

When the installation is complete, the following screen is displayed.



6. Select **Finish** to close the window.

Registering GS RichCopy 360

To register a newly installed GS RichCopy 360, you need the following:

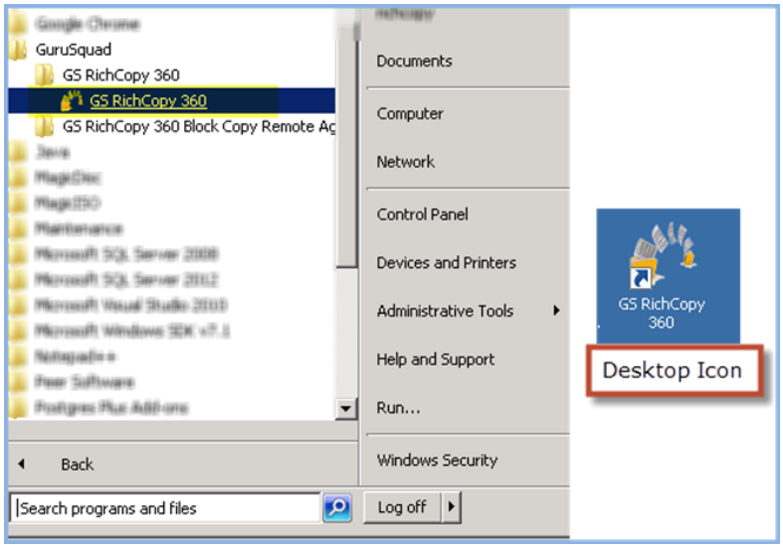
- Product serial key
- Email address

The email address is used for further correspondence and support, and to check for license authenticity.

Note: The serial key will work only for the version issued (i.e. Standard or Enterprise).

To register GS RichCopy 360, follow these steps:

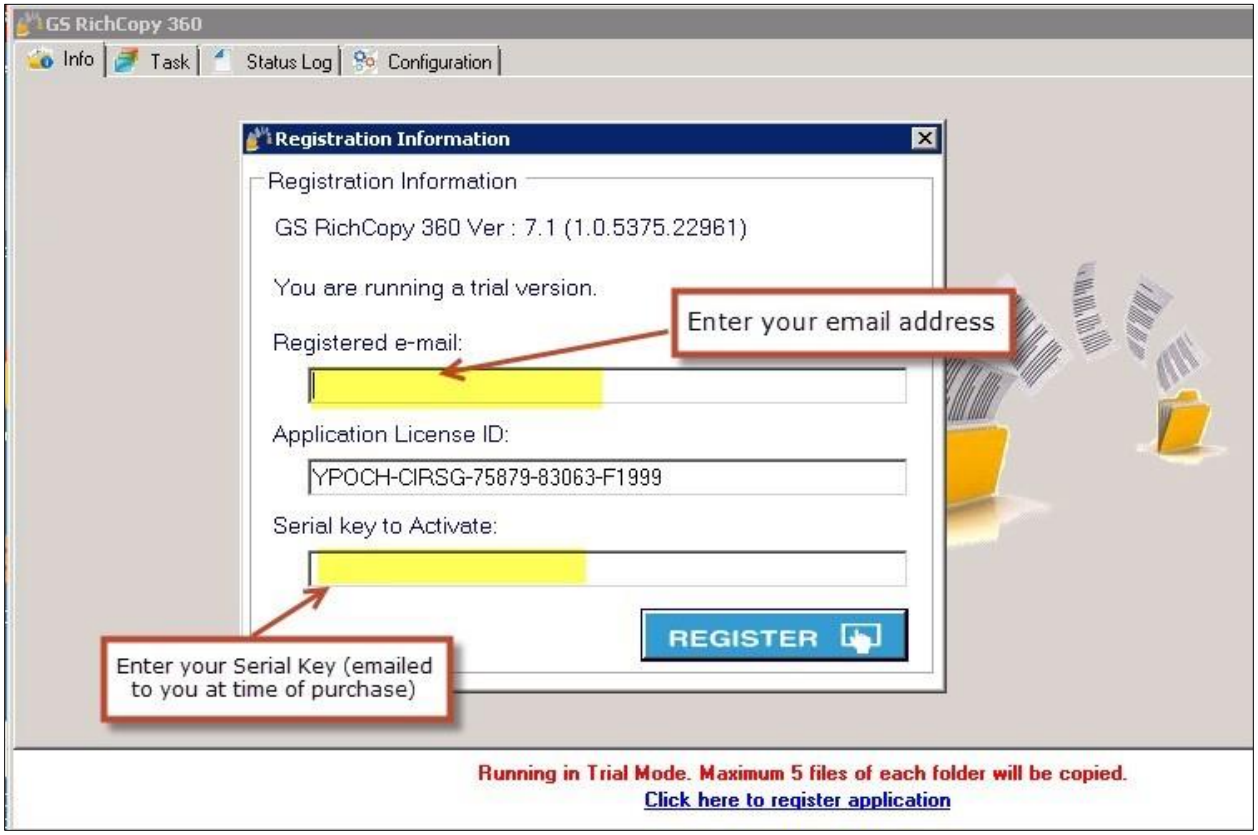
1. Open GS RichCopy 360 by double-clicking the GS RichCopy 360 icon either from the desktop or through the **Start Menu → GuruSquad → GS RichCopy 360**.



2. The GS RichCopy 360 window is displayed. The default screen is the Info tab. At the bottom of the window, select **Click here to register application**.

The Registration Information window is displayed.

3. Enter your **email address** and the **serial key**, and then select **Register**.



GS RichCopy 360 will initiate a connection to the GuruSquad activation servers and instantly activate your copy upon registration.

Note: If your machine does not have internet connectivity, open a support ticket by phone or by email. For the contact details, refer to Frequently Asked Questions (FAQs). An offline activation code can be generated based on the Application License ID.

Upgrading GS RichCopy 360

When upgrading from a previous version of GS RichCopy 360, remove the previous installation and install the new version. The configuration will remain intact as it is stored in the database. To upgrade to the latest build of the current version, click **Check for Update** in the Info tab or download the latest package from GuruSquad.com.

Configuration

GS RichCopy 360 requires minimal configuration and is ready to work straight out of the box. IT administrators have the option to configure certain components such as the following:

- *Running GS RichCopy 360 as a Windows Service*
- *Creating Connect As Accounts*
- *Setting Email Configuration*
- *Setting the Maximum Allowed Concurrent Jobs Execution*
- *Backing up and Restoring the GS RichCopy 360 Database*
- *Allowing non-admin users to use GS RichCopy 360*

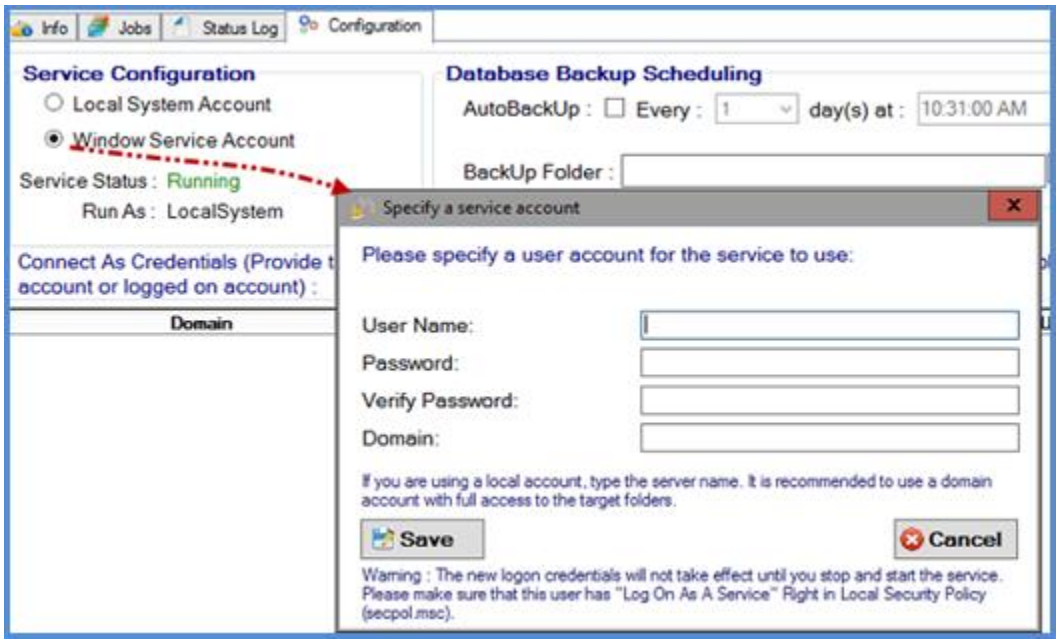
All these settings are configured using the Configuration tab.

Running GS RichCopy 360 as a Windows Service

By default, GS RichCopy 360 will install a service called **GS RichCopy 360 Service**. The service will be in an executable state running under the Local System Account. In the Service Configuration section, you can change it to run under a different user account. This user account can be a local user or a domain user. Preferably, the service account is a domain account that has access to both source and target locations. The account must have admin privileges to be able to copy, open, and lock files. It also must have Log on as a service rights if you are running on a Windows 2008 R2 or a later operating system. For more information, refer to *Assigning Log On as a Service*.

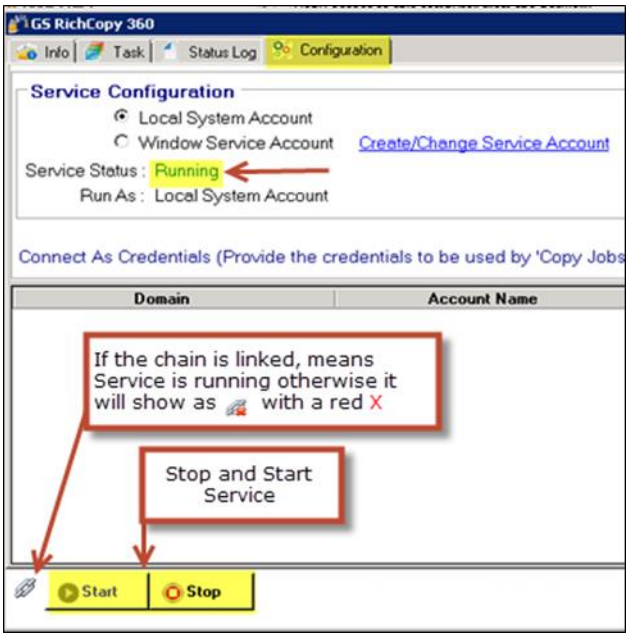
To run GS RichCopy 360 as a Windows service, follow these steps:

1. In the GS RichCopy 360 window, select the **Configuration** tab.
2. In the Service Configuration section, select **Window Service Account**. The Specify a service account window is displayed.



3. Enter the service account details, and then select **Save**.

If you set different credentials or switch back to running under the Local System Account, stop and then start the service for the changes to take effect. You can stop and start the service using the Stop and Start buttons in the bottom part of the window.



Note: If you have any running jobs configured to run under the services account, those jobs will be terminated and they will need to be restarted.

Creating Connect As Accounts

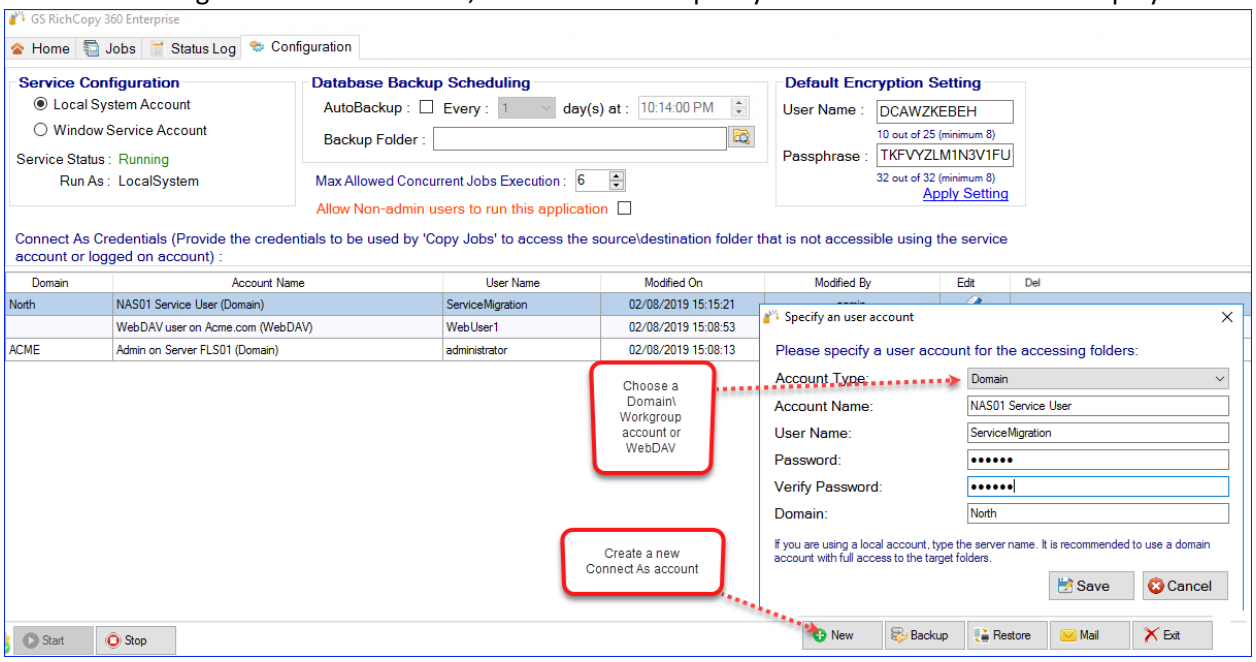
GS RichCopy 360 offers the option to run jobs as the logged in user or as a service account. If the service account and logged in user do not have access rights to connect to the source and destination, GS RichCopy 360 provides another option to specify accounts and save them in the GS RichCopy 360 database. These accounts can then be used to Connect As those users who have the necessary permissions for the source and destination when a job is created. For information on creating a job, refer to *Managing and Creating Jobs*.

Connect As also has the option to configure WebDAV accounts, which can be used to connect to and from WebDAV sites.

Note: Passwords are fully encrypted for the service account and Connect As account, and the credentials are saved in GS RichCopy 360.

To create a Connect As account, follow these steps:

1. In the GS RichCopy 360 window, select the **Configuration** tab.
2. In the bottom-right side of the window, select **New**. The Specify a user account window is displayed.



3. Enter the Connect As account details, and then select **Save**.
   Note: You have the option to configure WebDAV accounts, which can be used to connect to and from WebDAV sites. Passwords are fully encrypted, and the credentials are saved in the GS RichCopy 360 database.

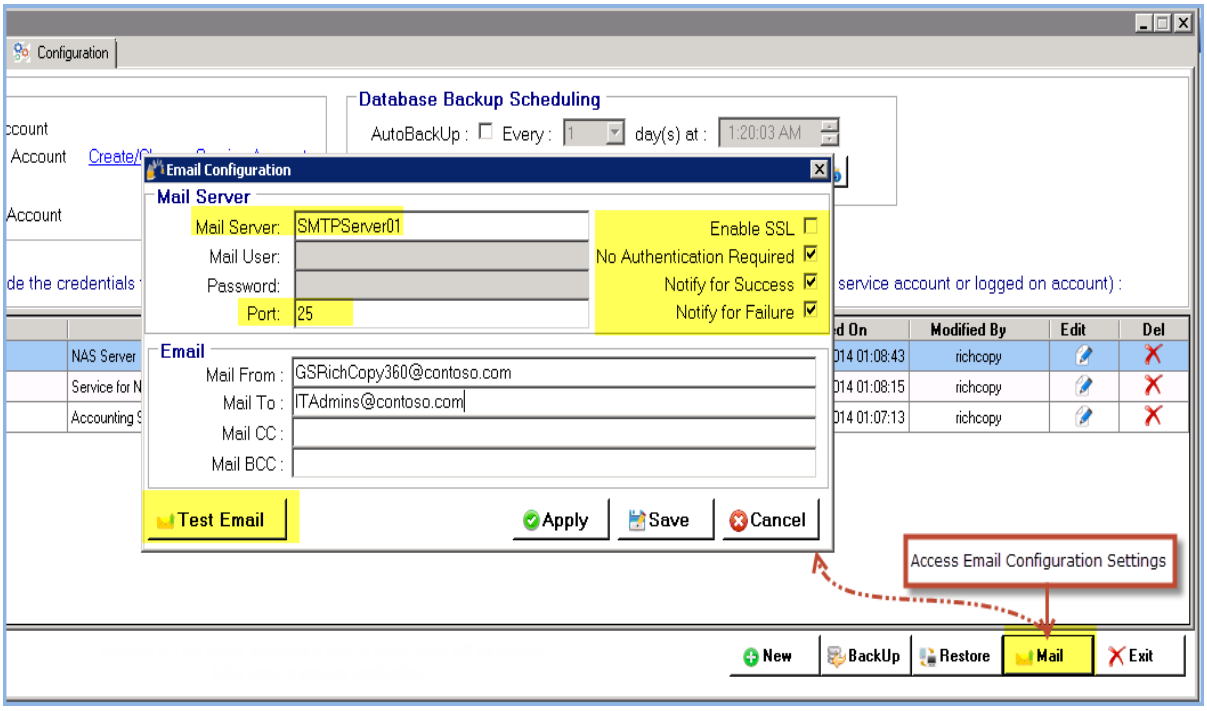
Setting Email Configuration

GS RichCopy 360 offers the option to send email notifications once a job completes to alert the user whether the job succeeded or failed. To access the email configuration settings, select **Mail** at the bottom-right side part of the GS RichCopy 360 window.

GS RichCopy 360 can use any SMTP server, local, or cloud servers, such as Gmail, Hotmail, or Yahoo. Below are two different examples of the configuration.

Note: These settings are inherited on every configured job; the user may also customize recipients for each job.

The following image shows the settings for an open SMTP Server that requires no authentication.



Note: Make sure your non-authenticated SMTP servers can accept relay requests from the machine or machines hosting GS RichCopy 360 if you select this feature.

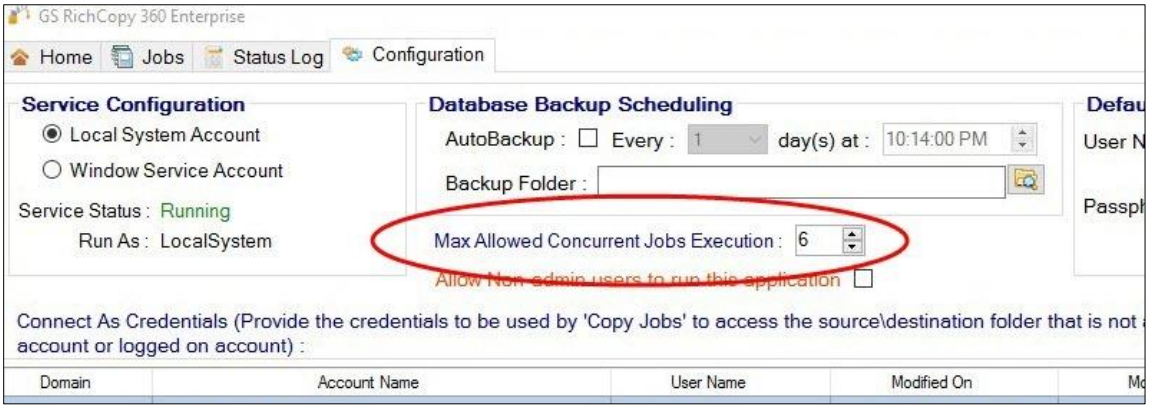
The following image shows the settings for Gmail.

Note: Environment variables are supported in the From, To, CC, and BCC fields. For more information, refer to *Environment Variables*.

Setting the Maximum Allowed Concurrent Jobs Execution

GS RichCopy 360 can run multiple jobs at the same time. Running many jobs simultaneously can, however, impact performance and may be difficult to manage. We recommend setting a maximum concurrent job amount.

To set the maximum number of jobs that can run simultaneously, select a number in the **Max Allowed Concurrent Jobs Execution** spinner field. The default value is 6.

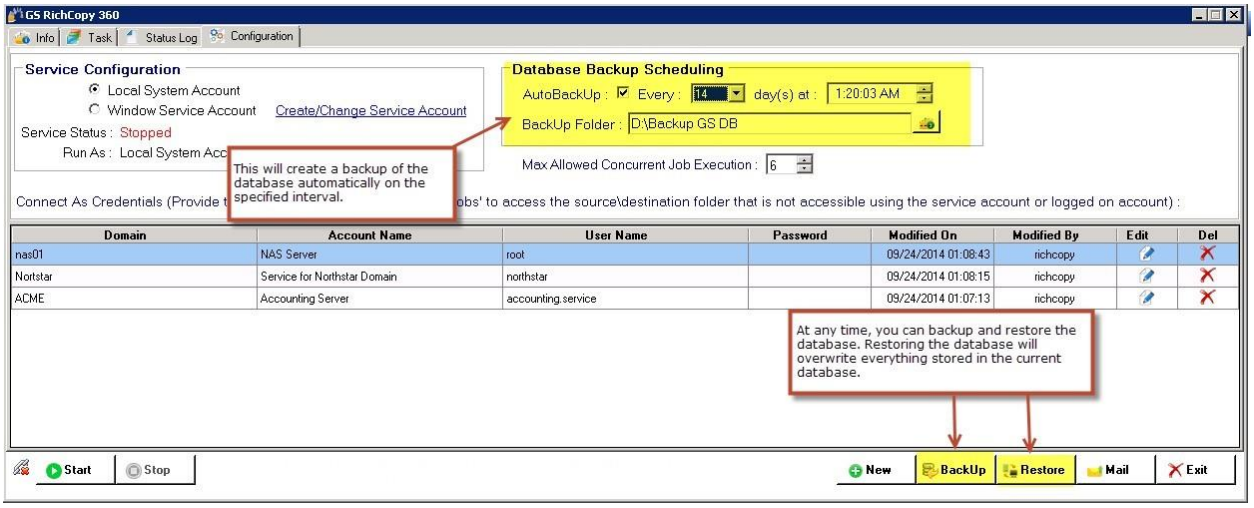


If there are more jobs than the maximum allowed that are trying to run, they will be queued until other jobs are either completed or terminated.

Example: If the maximum allowed concurrent job execution is set to 6 and 8 jobs are trying to run simultaneously, GS RichCopy 360 will allow only 6 jobs to run and the remaining 2 will be queued until 2 of the 6 jobs complete or stop.

Backing up and Restoring the GS RichCopy 360 Database

GS RichCopy 360 saves all entire configuration settings, including job definitions, to a single database stored locally on the machine. The database file is called **GSRichCopy360.sdf** and its default location is at the **C:\GSRICHCOPY360DB** folder.



Creating a backup

To create a backup copy of the database, select the **BackUp** button at the bottom-right side part of the window. GS RichCopy 360 automatically creates the backup copy.

Additionally, GS RichCopy 360 offers the option to have the database backed up regularly at a specific schedule. By default, this option is not turned on. To turn on this option and to set the schedule, follow these steps:

1. At the Database Backup Scheduling section, select the **AutoBackup** check box.
2. Select the number of days and the specific time.
   Note: If you do not often make changes to the database, it is recommended you space out the number of days to minimize the number of backup files.
3. Select the **BackUp Folder**.
   Note: It is highly recommended that the backup location is stored in a different location from where the GS RichCopy 360 currently resides.

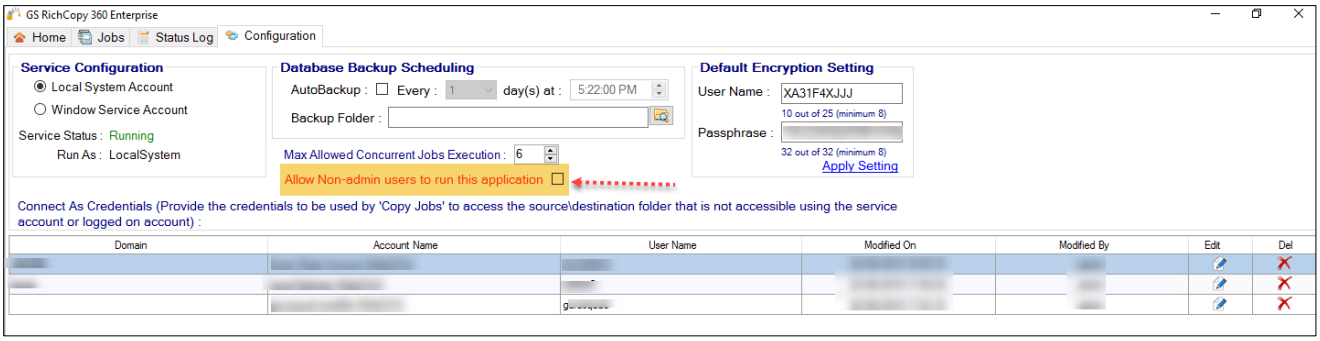
Restoring the database

To restore the database, select the **Restore** button at the bottom-right side part of the window.

Warning: Restoring the database will overwrite everything (e.g. job definitions, configurations) stored in the current database. The GS RichCopy 360 service must be stopped before restoring the database. Once the database is restored, the GS RichCopy 360 user interface and service must be restarted to reload and reflect the new configurations.

Allowing non-admin users to use GS RichCopy 360

By default, only users with local administrator privileges or those who belong to the local administrator group can run GS RichCopy 360. However, GS RichCopy 360 provides the **Allow Non-admin users to run this application** option to allow non-admin users to use the application.



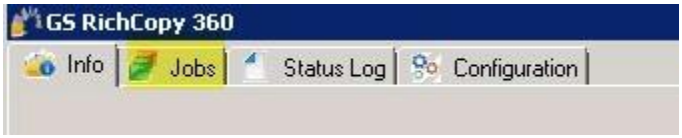
If this option is selected, users who are not part of the administrator group can open the application and create, delete, modify, and run jobs.

Note: Some features, such as copying open and locked files or copying NTFS permissions, require elevated privileges. Non-admin users would not be able to use these features. However, they can still use these features if they run the jobs as a service, which means it is running under an elevated privileged account.

Managing and Creating Jobs

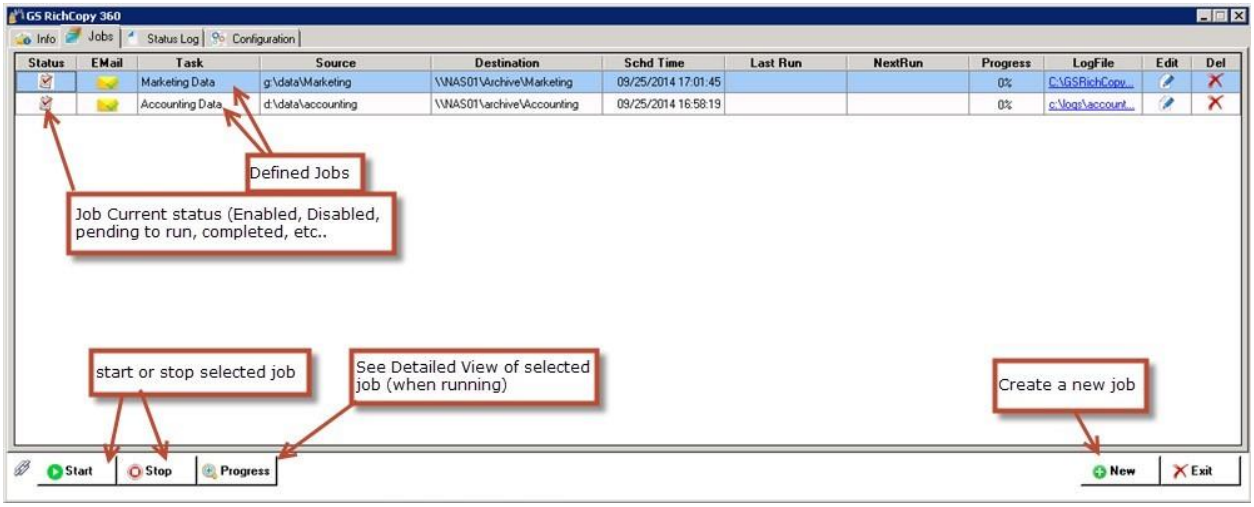
GS RichCopy 360 offers a simple yet intuitive design that makes it easy to manage and create jobs. All the options are available in a single viewer pane so that any options can be easily selected. Moreover, our job setup wizard can walk the user through the most commonly used options.

To manage and create jobs, select the **Jobs** tab in the GS RichCopy 360 window.

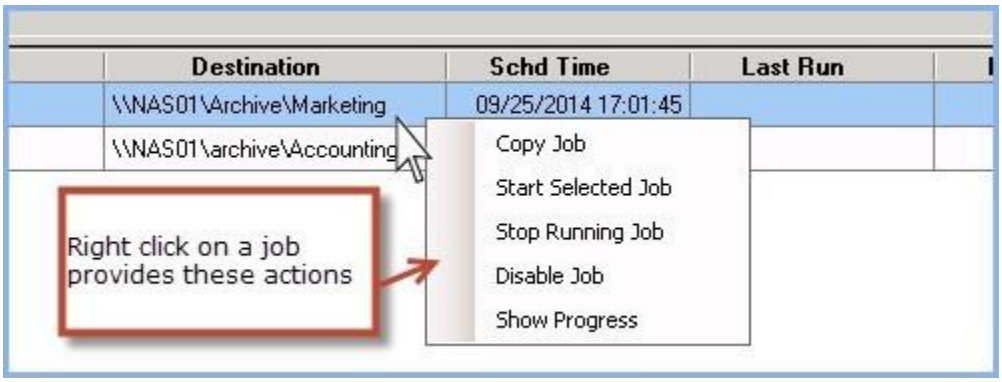


Jobs Tab Overview

After selecting the Jobs tab, the window displays a list of all the defined jobs along with their status (running, completed, queued up) and other configured settings for each job, such as email notification settings.



To highlight a job, click the specific job and then choose an option from the drop-down menu to control the job. You may right-click the job to initiate the same actions in addition to copying an existing job.



Tip: To duplicate an existing job, right-click the job you would like to duplicate and then select **Copy Job**. This will create an exact copy of the job but in a disabled state. The new copy will have the same name as the original job but it is preceded with **Copy of** in the job name.

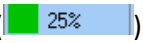
Job Status Legends

The status of the jobs is shown in the first column of the user interface. It shows a different sign for each of the different job statuses. Users can easily identify the status of a job by looking at the presented sign corresponding to a specific job. Below are the different signs and their corresponding descriptions.

Legend	Description
	Job is scheduled to run as a service. Application does not need to be open to run.
	Job is scheduled to run as a user. Application must be open to run
	Job will need to be run manually.
	Job is disabled
	Job was scheduled to run and completed. No future re-runs scheduled.
	The job is running in simulation mode (what if). This legend would show next to any of the other legends when simulation option is selected.

Job Progress Indicators

Because jobs run independently from one another, each job is presented with its own progress bar. The progress bars display the current state of the job or its recent completion result in the event it is no longer running.

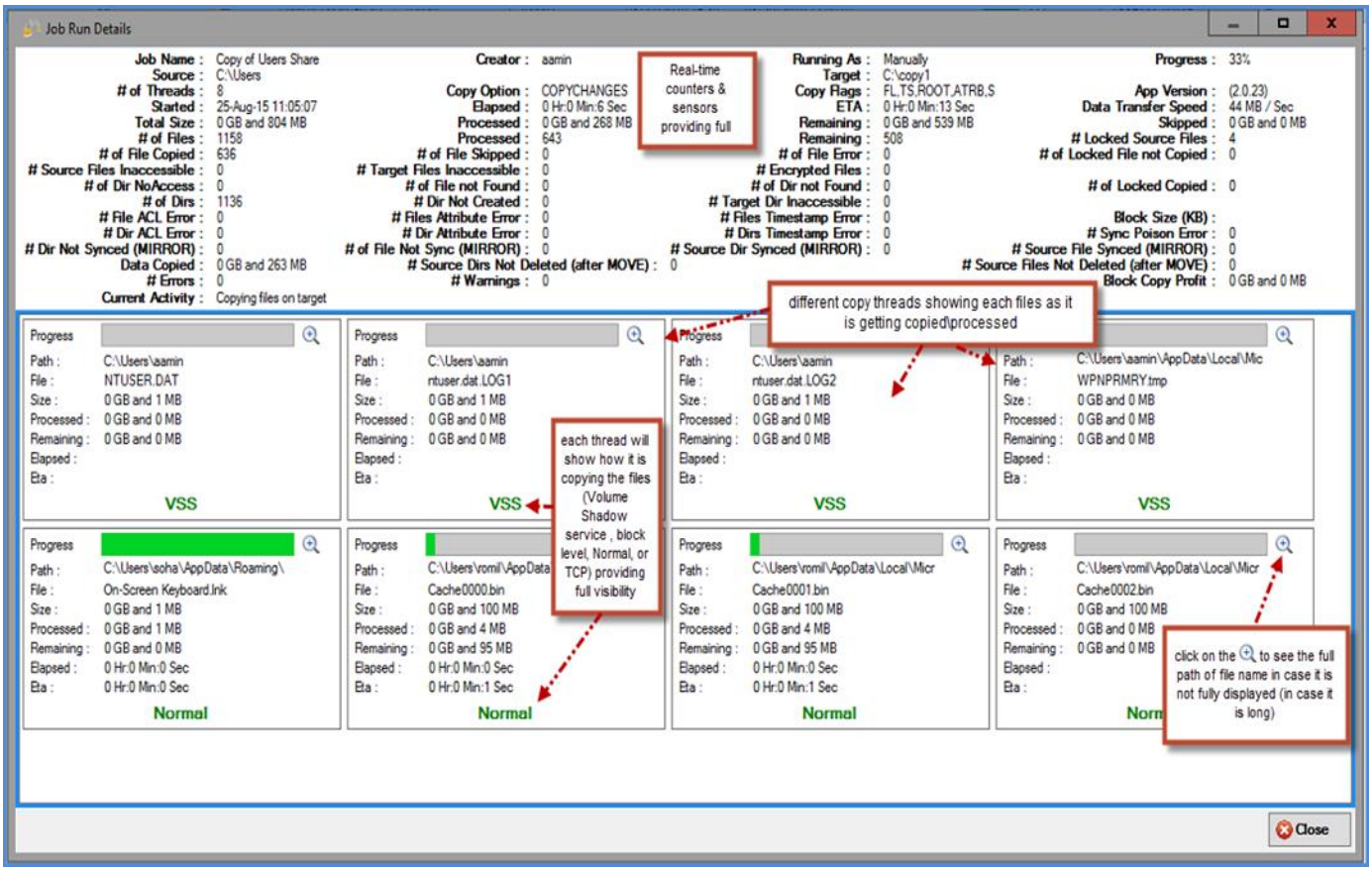
As the progress screen runs, it will show green as long as it does not encounter errors (

). If it encounters a warning, it will change to orange. It then turns red if it encounters any errors. This is useful if there are multiple jobs running and the administrator is performing a quick check on the status of the jobs. If the job indicators all show green, it is an indication that everything is running as desired.

STATE	DESCRIPTION
Running	Job is gathering all the information to start the job operation. The gathering process is fully multi-threaded.
Stopped	The job has been terminated by the user or by some other intervention (Service stopped, etc.).
Error	Job experienced a problem. This could mean it completed with errors or it did not fully complete (i.e. target is full; source or target is down).
Queued	Job is waiting in line for its turn to run. Check Max Allowed Concurrent Job Execution in the event it reached its limit at the current state.
Completed	Job has completed successfully with no errors to report.
Progress %	As the job runs, the percentage of the progress is displayed showing the overall progress of the job. Click it to see the full details regarding its progress. Users can see the detailed progress for individual jobs by clicking the Progress button at bottom part of the window.

Show Progress Screen

When a job is in a running state, users can click the progress bar (25%) next to the running job or click the **Progress** button at the bottom-left side part of the window to see the full details regarding the job's progress. If a job is set to multi-thread (highly recommended), each copy thread and its progress will be shown as well.

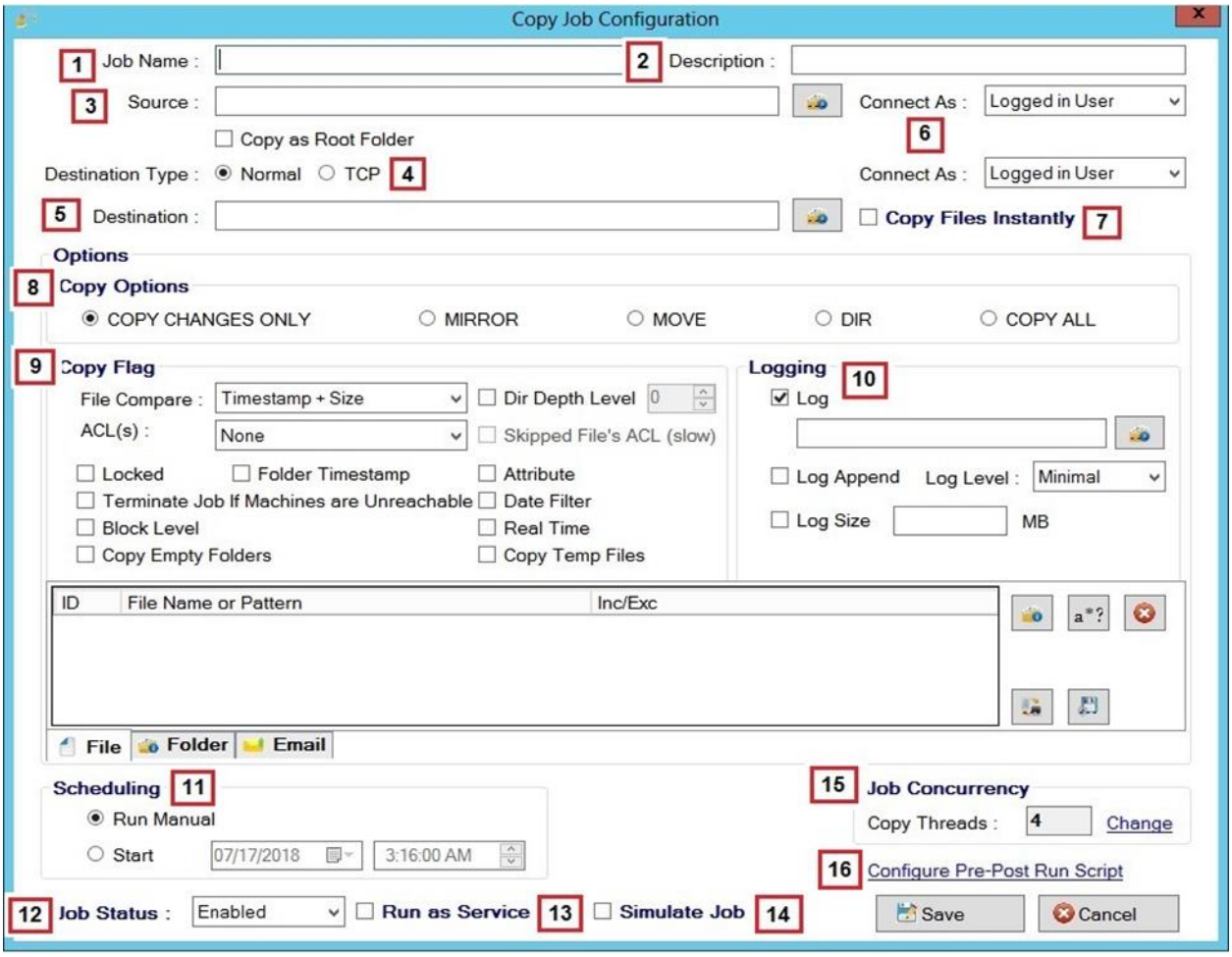


Job Details Window

GS RichCopy 360 offers a single viewer pane, the Job Details window, when viewing or modifying an existing job. The window is very rich in terms of features and options, while being simple and intuitive.

You can access the Job Details window in two different ways:

- Double-clicking on an existing job or selecting the edit button ( ) corresponding to that specific job.
- Creating a job using a blank job's details. This option is selected using the Job Schedule Wizard. For more information, refer to *Creating a Job Using the Job Schedule Wizard*.



The following section describes the items displayed in the Job Details window.

1 - Job Name

The Job Name is used to identify the job. The name has to be unique and descriptive, such as Accounting Data or Copy Email Archive, so that other users or administrators can understand what the job is doing. Job names are referenced in the Job Status section and in email notifications (if turned on).

2- Description

The Description field is available to enter a description for the job.

3 - Source

The source is the path of the folder from where you want to copy. The source will always point to a folder and not to a file.

Note: The Path variable is supported in this field. For more information, refer to *Environment Variables*.

If the Copy as Root Folder option is selected, it will create the source root folder and its contents in the destination folder. If this is not selected, it will copy only the contents of the root folder to the destination.

4 - Destination Type

There are two ways to copy data:

- **Normal**—uses SMB to copy data, such as that on `\\192.168.0.11\share`, or a local drive, such as `D:\target`.
- **TCP**—available only in GS RichCopy 360 Enterprise. The user can specify a specific port (by default it uses TCP 8008) to transmit the data. This option requires a few additional configuration settings and a light RTA must be installed on the recipient machine. For more information, refer to *Creating a TCP Copy Job – Enterprise Only*.

5 – Destination

The destination is the path of the folder where you want to copy to. This folder will be created if it does not already exist. If the user is using the TCP option of copying data, a job serial number is presented instead of a destination path prompt. For more information, refer to *Creating a TCP Copy Job – Enterprise Only*.

Note: The Path variable is supported in this field. For more information, refer to *Environment Variables*.

6 - Connect As for Source and Destination

Users have the option to impersonate a different user to connect to the source and destination. This is practical when the logged in user or the service account used does not have access to the source folder. For more information on the Connect As user accounts, refer to *Creating Connect As Accounts*.

7 - Copy Files Instantly

If you enable this option, GS RichCopy 360 will start the replication or movement before it calculates the total amount of data being replicated or moved. The progress percentage bar will automatically adjust upwards or downwards until the total calculation is complete. We recommend this option if the source has more than 500,000 files and folders or the source has high latency. Disabling this option may slow the start of the replication or movement but will provide a more accurate percentage from the beginning.

8 - Copy Options

The following are the copy options that you can use:

- **Copy Changes Only**—copies only files and folders that are new or modified from the source to destination (Deltas only). This option will not delete files from the destination if they do not match in the source. If the destination has the same files, those files will be skipped.
- **Mirror**—mirrors the destination to the source.
  Note: If a file is deleted from the source, it will be deleted from the target.
- **Move**—moves files and directories (delete from source after copying).
- **DIR**—copies only the directory tree structure.
- **Copy All**—copies all files and folders from source to destination (i.e. overwrite files and folders that match in the destination). This option will overwrite any duplicates of those in the source.

9 - Copy Flag

The following are the options that you can select:

- **File Compare**—sets the file comparison element to compare whether a file in the source and destination match or if it needs to be overwritten in the destination. The following are the options:
    - **File Size Comparison**—the comparison is determined by the file size.
    - **Last-Modified Timestamp**—the comparison is determined by the last-modified time stamp.
    - **Both**—the comparison uses the last-modified time stamp and the file size. If both match, the file will be skipped. If one of the two options returns a mismatch, the source file is copied to the destination.
- **ACLs**—copies all of the NTFS security permissions, including inheritance blocking and advanced ACL settings. If the destination file or folder matches the source except for the NTFS security settings, only the security settings will be replicated over and it will not trigger a retransmission of the entire file or folder.

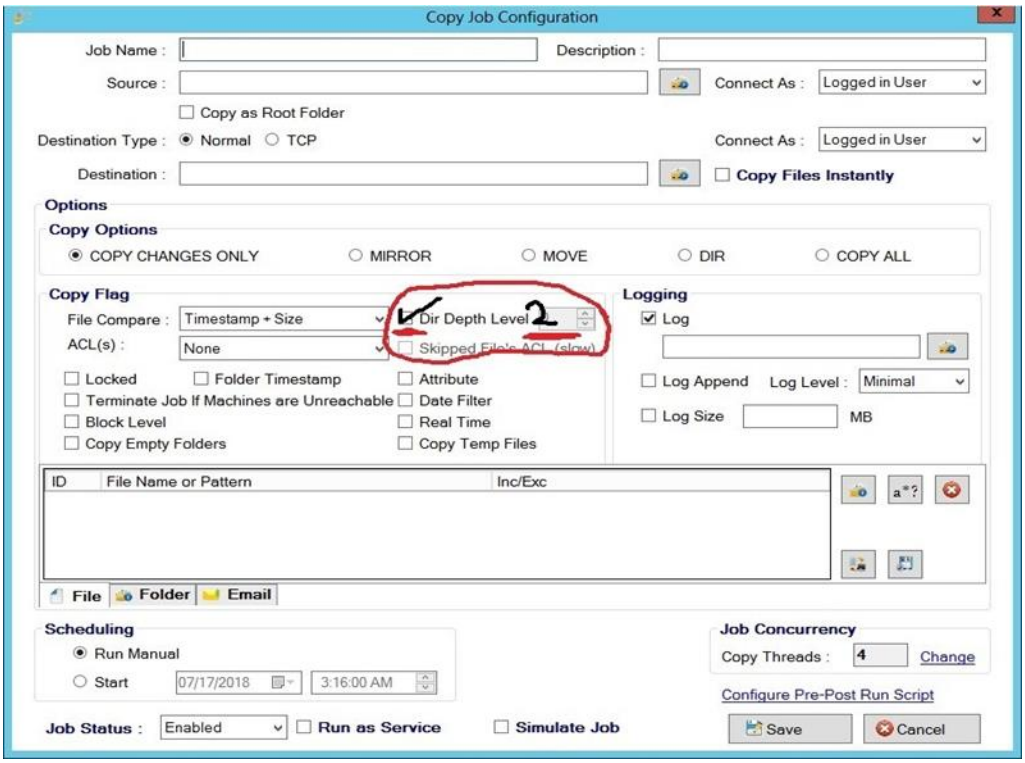
  Example: If a Word document exists in both source and destination but the permissions are different, GS RichCopy 360 would detect that the files are identical and it would just replicate the permissions to the destination so that they are completely the same.
    - **Skipped Files ACLs (slow)**—checks the ACL NTFS permissions even on files that have been skipped to ensure that NTFS permissions set on the files in the destination match permissions set in the source. While setting NTFS permissions on the file is not a recommended practice, this option is available and triggering it may increase the duration of the job while it compares the NTFS permission on every file.
- **Locked**—if checked, this option copies locked and open files through VSS (Volume Shadow Service) integration. For the open file copy to work properly, the source has to be on the local computer since GS RichCopy 360 will work seamlessly with VSS to copy the locked or open files.
- **Terminate Job if Machines are Unreachable**—highly useful in the event the source or destination machines are unreliable. If this option is selected, GS RichCopy 360 will continue to attempt to copy files instead of timing out. This option can be useful when copying across high latency links or over strained or unreliable WAN connections.
- **Block Level Copy**—select this option to enable or disable byte level replication. Byte level replication allows you to just transfer the changed data in a file when synchronizing, instead of the entire file. This is useful in saving bandwidth especially when dealing with large file sizes.

  Note: This option is available only in GS RichCopy 360 Enterprise.
- **Copy Empty Folder**—by default, GS RichCopy 360 does not copy empty folders from the source. Enabling this option instructs GS RichCopy 360 to create empty folders on the destination.
- **Folder Time Stamp**—if this option is selection, the folders in the destination will have their timestamps copied from the source.

- **Dir Depth Level**—by default, GS RichCopy 360 copies all folders from the source to destination. Enabling this option instructs GS RichCopy 360 to copy a certain folder depth to the destination. System administrators may enable this option and choose the level of folder depth.

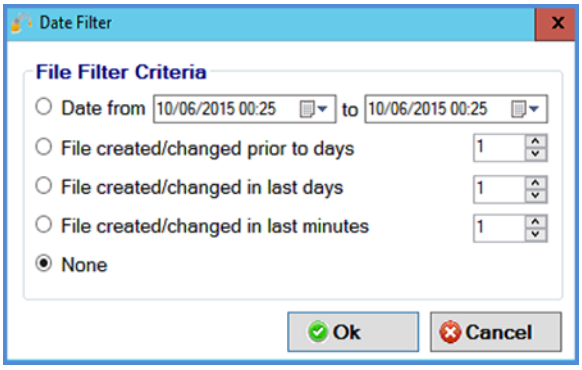
  Example: If the Dir Depth Level option is enabled and set at 2 as shown in the image below, GS RichCopy 360 will just copy a folder depth of 2 to the destination.

SOURCE	DESTINATION
`E:\DOCS\doc01\paper01\`	`.\\DOCS\doc01`
`E:\DOCS\doc02\paper02\`	`.\\DOCS\doc02`



- **Attributes**—if this option is selected, file and folder attributes will be synchronized from source to the destination. If the destination file or folder matches the source except for the attributes, only the attribute settings will be copied over and a retransmission of the entire file will not happen.

- **Date Filter**—provides the option to copy or move files whose last modified date are before or within the specified number of days. A date range can also be set as a date filter. Files not matching the date criteria will be excluded. Date filters will not be applied to folders. Once this feature is selected, the user is presented with different options to set the filter date criteria, as shown in the following image.



- **Real-time**—if this option is selected, the job will monitor changes to files in real-time and use these changes as triggers for file synchronization. If selected, the user will be presented with a configure option to monitor file ACL and attribute changes. Additionally, there is an option to exclude or include specific file extensions to be used in real-time replication.
  Note: This option is available only in GS RichCopy 360 Enterprise.
- **Copy Temp Files**—if this option is selected, GS RichCopy 360 skips temporary files by default. System administrators may enable this option to copy temporary files if they deem it is necessary. The following files are deemed as temporary files by Microsoft. Usually, there is no need to copy them:
  - **desktop.ini**—a hidden file used to store information about the arrangement of a Windows folder. Essentially, if the layout or settings for a folder are changed, a desktop.ini file is automatically generated to save those changes.
  - **thumbs.db files**—the hidden file thumbs.db is a database file containing a small JPEG representing each of the thumbnails in a folder. Thumbs.db files are required by Windows to display a thumbnail for each icon. They are created automatically in the same directory as the thumbnails being viewed.
  - **Temp files**—a number of files may appear on the hard drive in various directories beginning with a tilde character (~) and ending with a (.tmp) extension. These may be temporary files created by Windows that remain on the hard drive due to an irregular exit from a Windows session.

Folder and File Filters (Inclusion and Exclusion)

Depending on the copy job, it is not uncommon to exclude specific subfolders or files from the copy job or the opposite. You only want to copy particular folders or files and exclude everything else. The sections below explain the inclusion and exclusion of folders and files. It is important to note that folders and files have their sections, but they behave similarly.

Note: Filters on files and folders are not available in Mirror jobs going to the cloud.

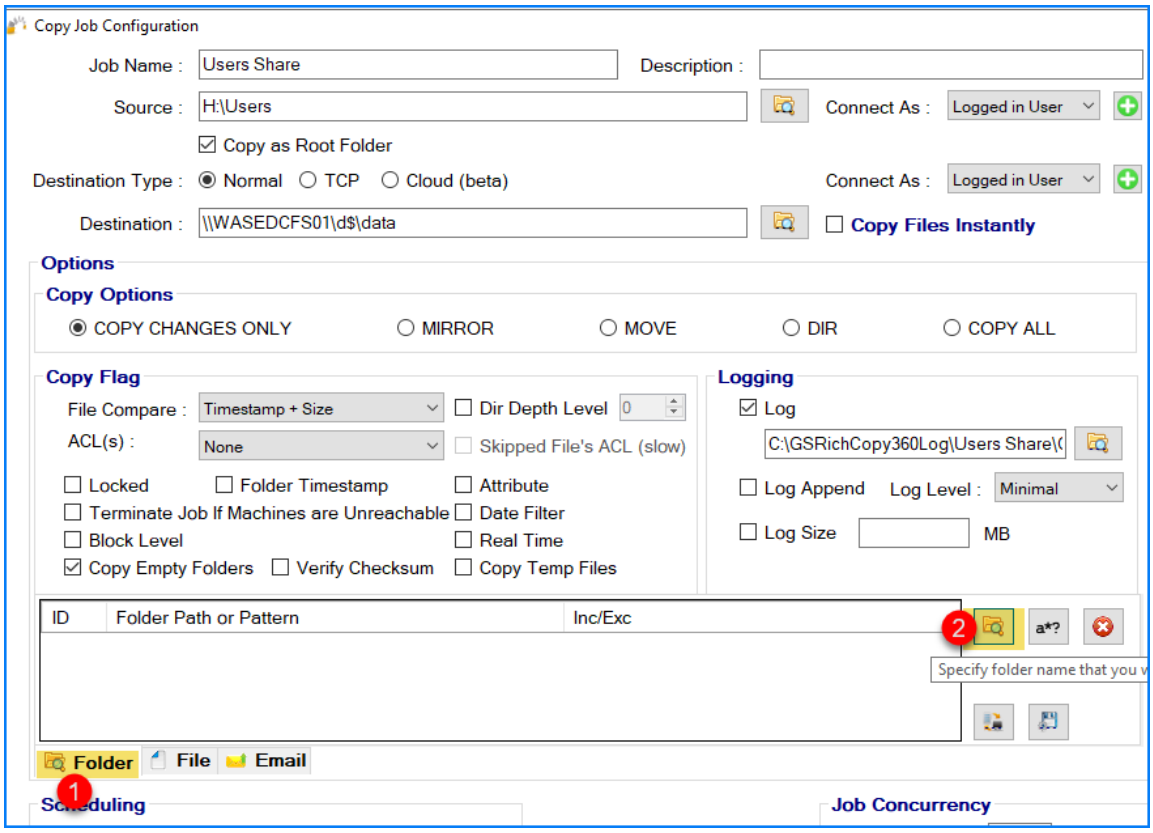
10A - Folder Exclusion and Inclusion:

There are multiple ways to include\exclude folders, and we will discuss them individually.

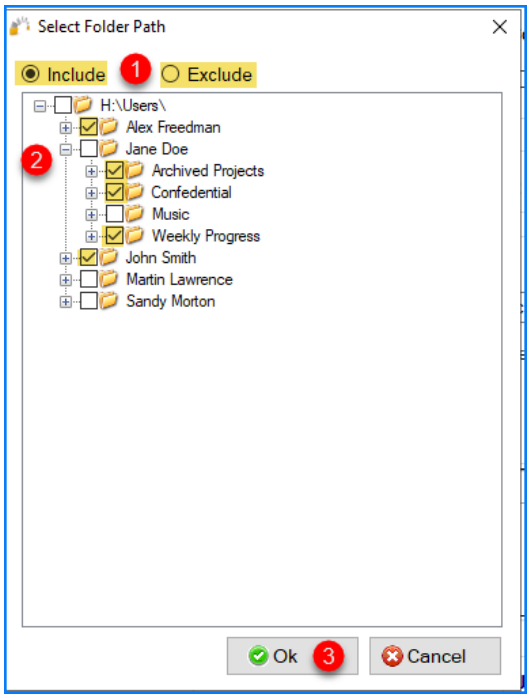
Based on absolute path:

If you have a set folder that you know that you want to be excluded or to be included, then do the following as displayed below

1) Click on the folder tab, then click on the eclipse button highlighted below to select the folder you want to include\exclude

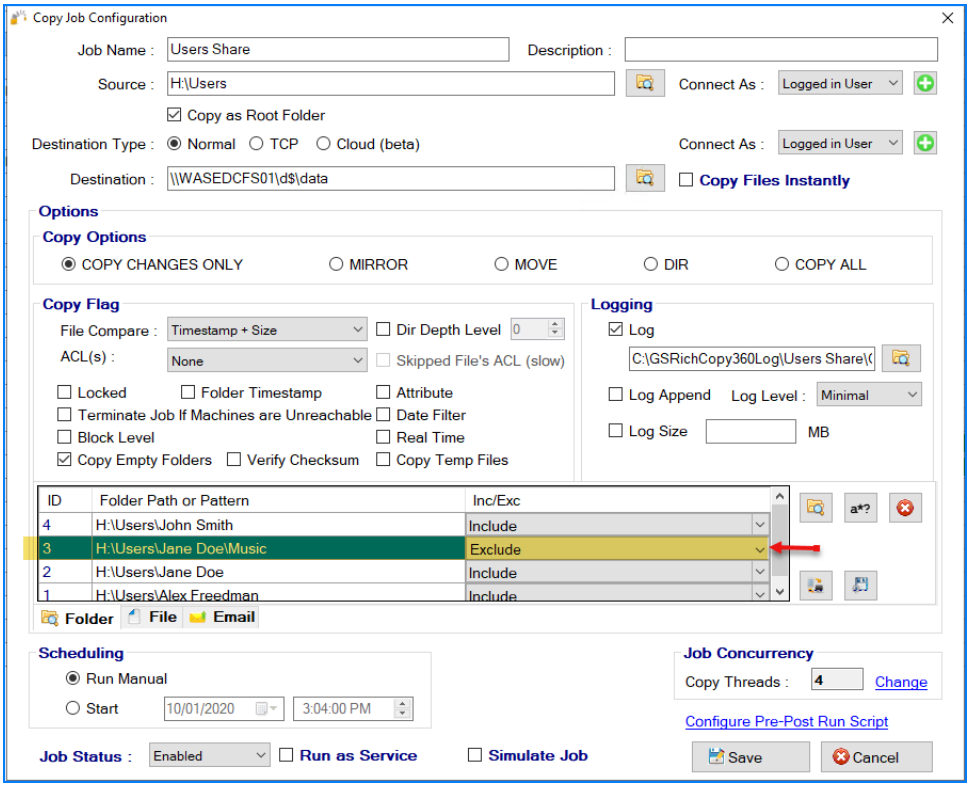


2) Select choose whether you want to include or exclude folders then choose those folders. Your folders do not have to be in the same level. You could include\exclude folders in one level and drill down to other folders and include\exclude them.



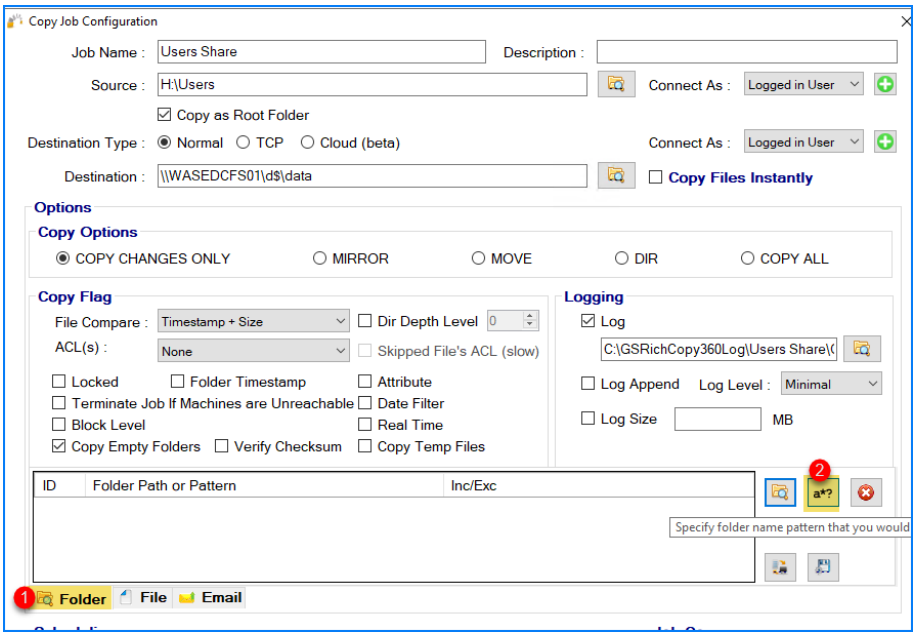
Based on wildcard, name, or pattern:

In most scenarios, you would either want to include or exclude. However, there are times where you may want to include some folder but exclude some subfolders. Don't worry; it's also possible. You can select all the folders you want to include and exclude and click OK. Then set the ones you want to exclude as per the screen below:



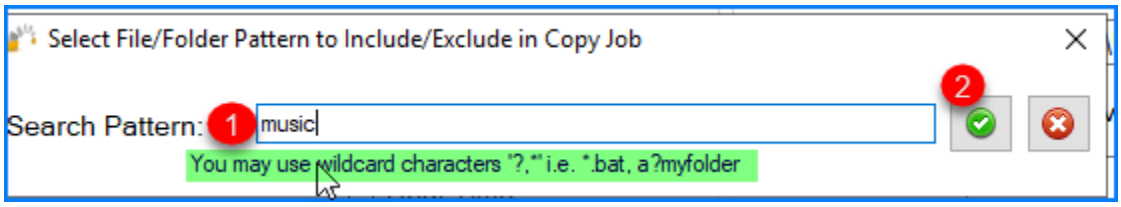
If you wanted to include or exclude folders based on a set criterion such as naming or pattern, you can accomplish so by doing the following:

1) Select the pattern\name\wildcard eclipse button.



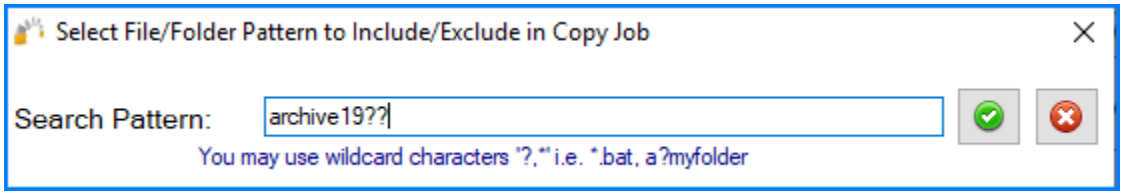
2) Type the name, pattern, or wildcard as per below. There are several scenarios:

a. Specify an Exact match: In the scenario below, we are stating that any folders named "Music" would match.



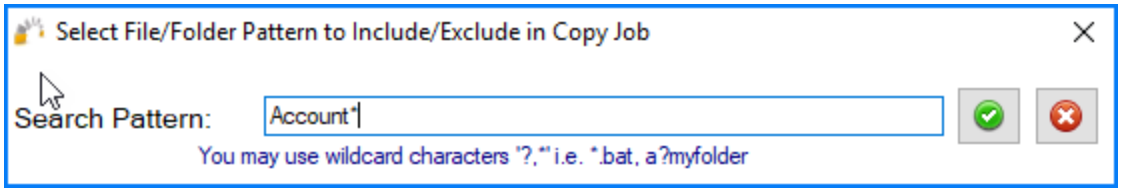
This would copy any folders with the exact name music and not copy the folder named My Music or Music Files.

b. Pattern: In this scenario, we specify the condition to start with "archive19" and end with two characters, such as archive1988 or archive19xx. (Using the ? means any ONE character. Putting ?? means any TWO characters. In the example below, we stated "archive19??"



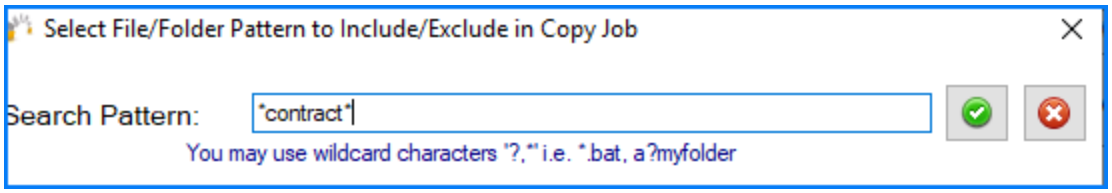
This would copy any folders that begin with archive19 and end with two characters. So it would copy archive1999, archive19AA . It would not copy a folder named Data Archive or Archive Files

c. Wildcard: In this scenario, we are specifying the condition to be any folder that begins with "Account". Putting an asterisk means a wildcard. As long as the folder starts with Account and has something after it, it would be a match.



This scenario would copy folders that begin with Account and has something after it, such as Account Folders, Accounting, and account. It would not copy ABC Account.

d. Wildcard beginning and end: If we wanted anything that contained a word (does not have to be in the beginning, then you could put an asterisk before and after the word such as *contract*

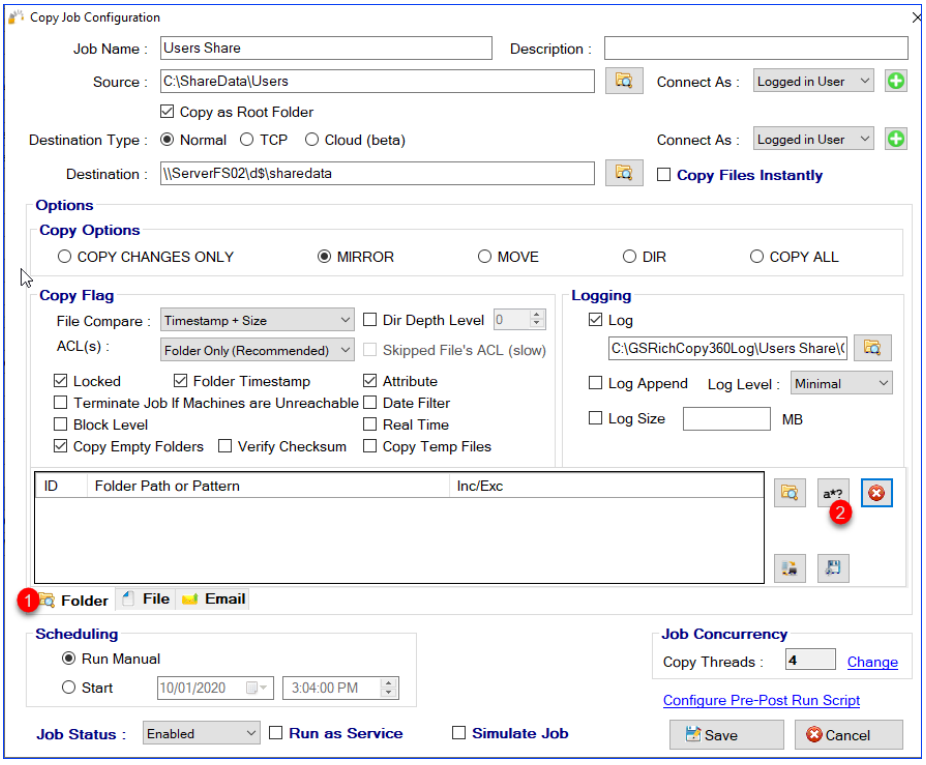


This scenario would copy folders that contain the word Account and has something before it or after it, such as Account Folders, Accounting, Account, and ABC account Files.

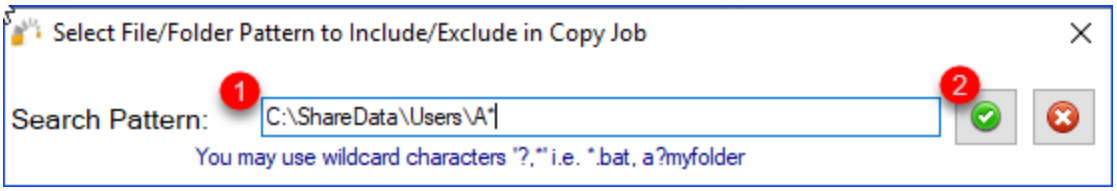
Based on Path and wildcard:

There is a scenario where you want to include only folders from a specific folder starting with a particular letter or string. A typical scenario that we often see is when the administrator wants to copy users home drives but want to do it in batches. For instance, copy only home drives for users that begin with the letter 'A'. Below is an example of this scenario

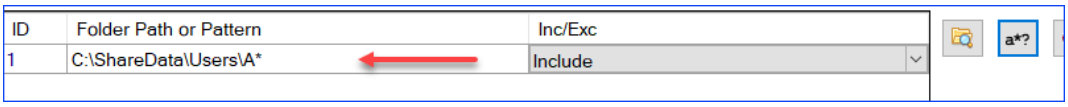
1) Select the pattern\name\wildcard eclipse button.



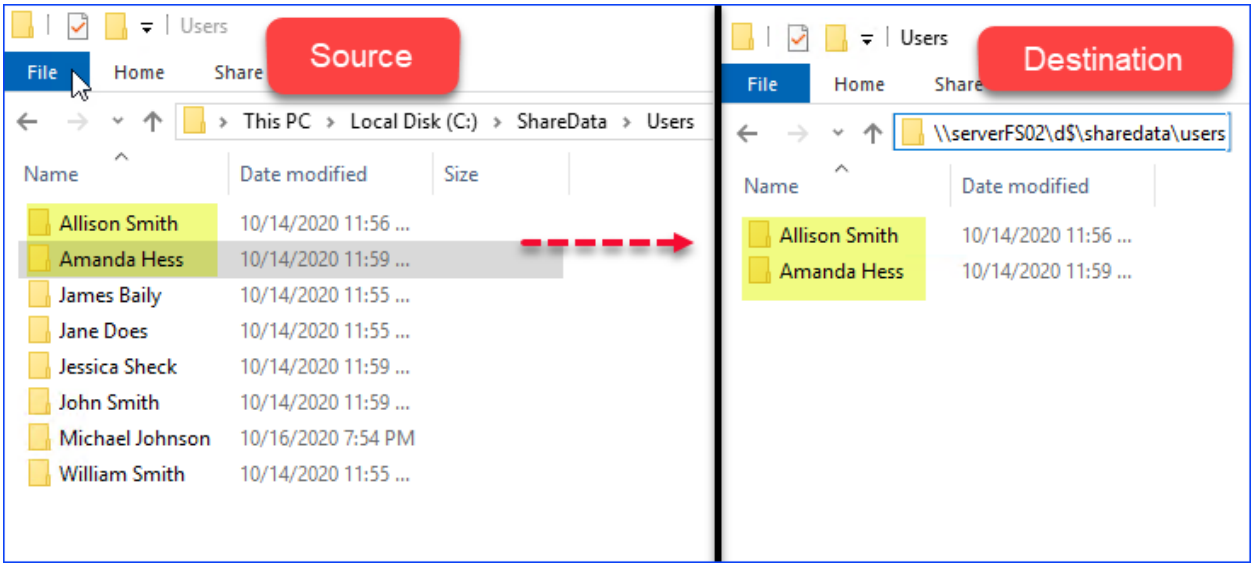
2) Type the path along with to the folder you want to copy from, then append the letter or matching string followed by an asterisk. In our example, it is C:\ShareData\Users\A*



3) The folder filter should look like below once saved



If you save and run this job, the job would only copy folders from the Users folder beginning with the letter 'A' (it is not case sensitive in Windows shares). Below is a good example of the outcome, assuming we have the source with several users starting with different alphabets and what folders would get copied.



In the example above, only two folders got copied (Allison Smith and Amanda Hess) because they matched the criteria of starting with the letter 'A' and are in the same path c:\ShareData\users.

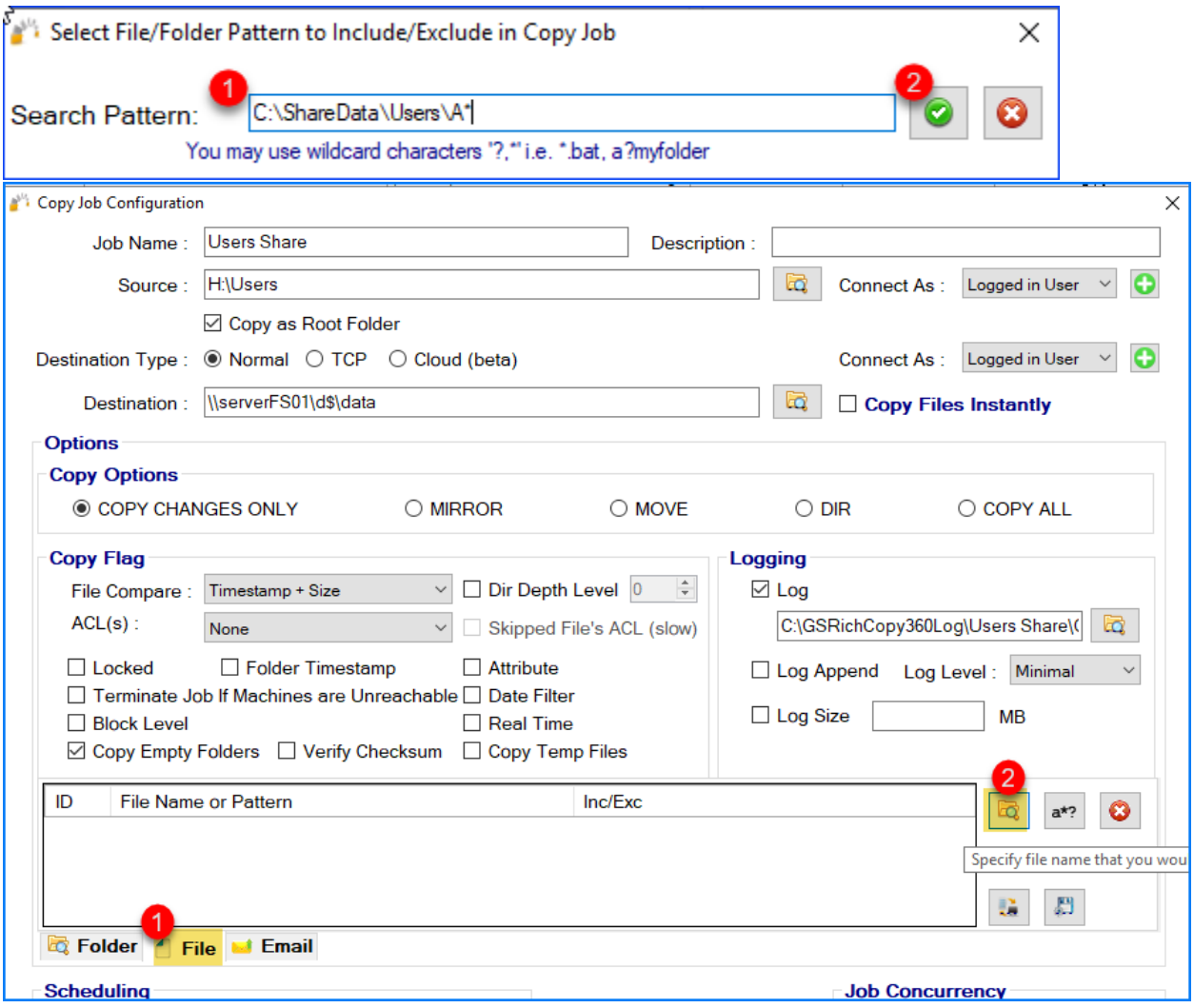
10B - File Exclusion and Inclusion:

There are multiple ways to include\exclude files, and we will discuss them individually.

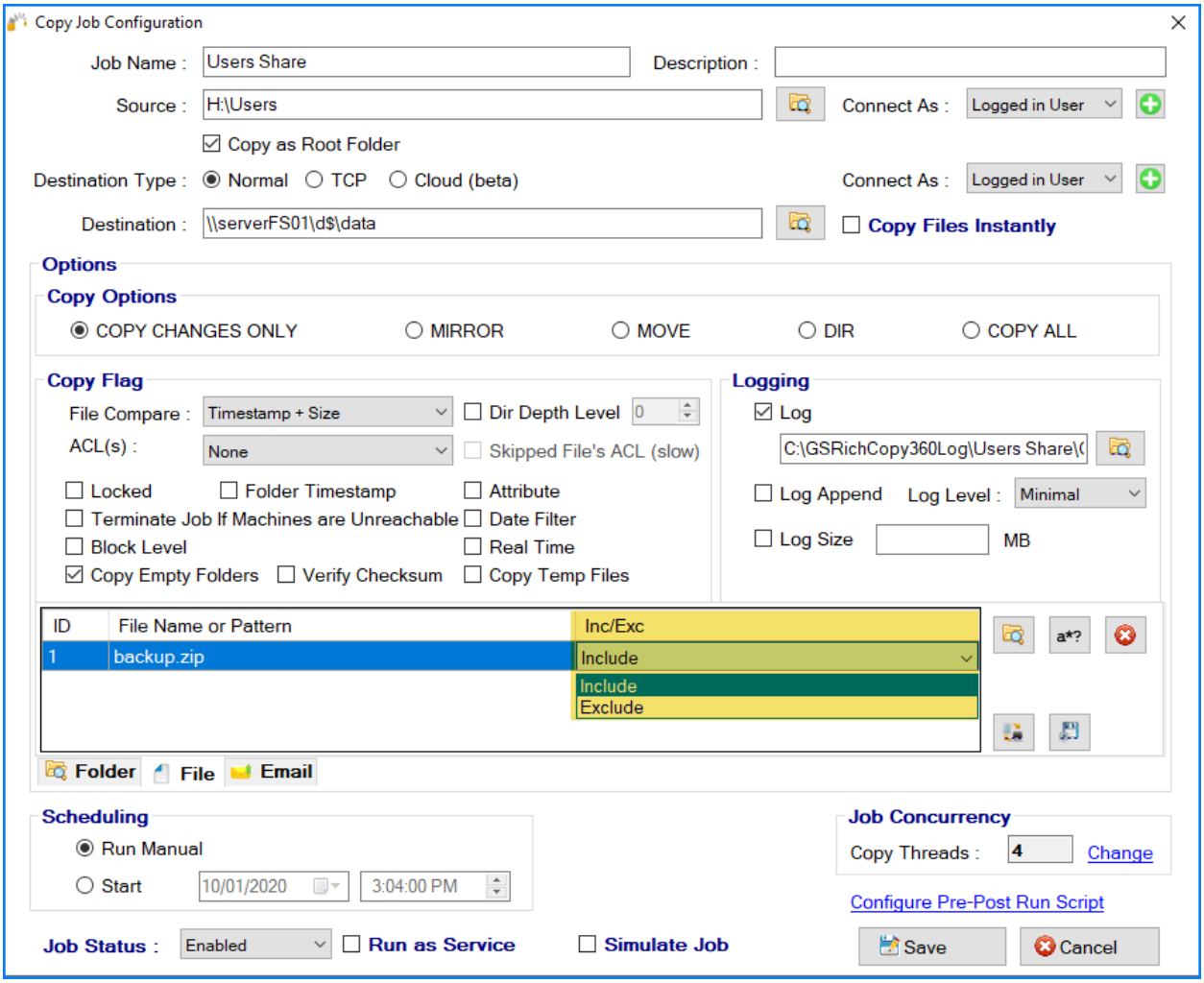
Based on absolute path:

If you have a set file that you know that you want to be excluded or to be included, then do the following as displayed below

1) Click on the File tab, then click on the eclipse button highlighted below to select the file you want to include\exclude



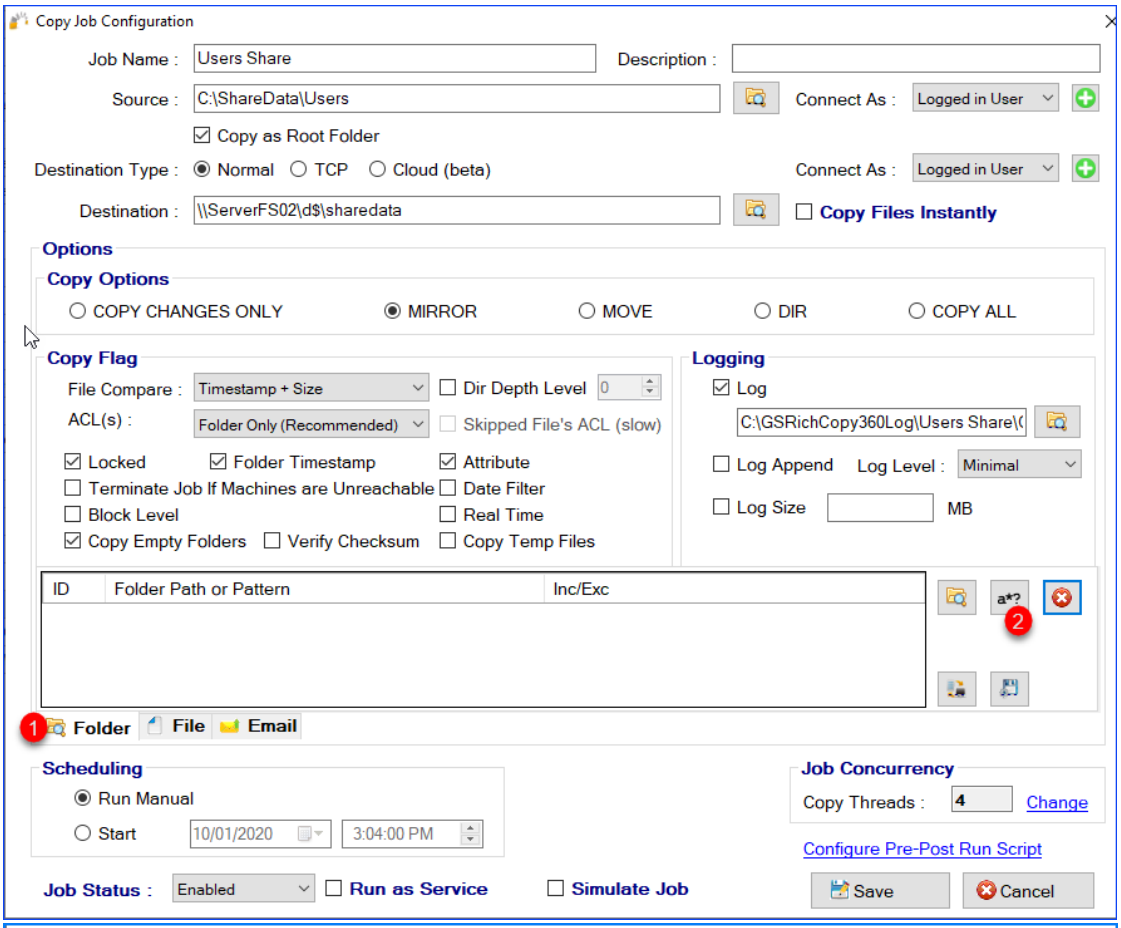
2) Browse and select the file you want to exclude\include. Then set the option of whether or not you want to include it or exclude it.

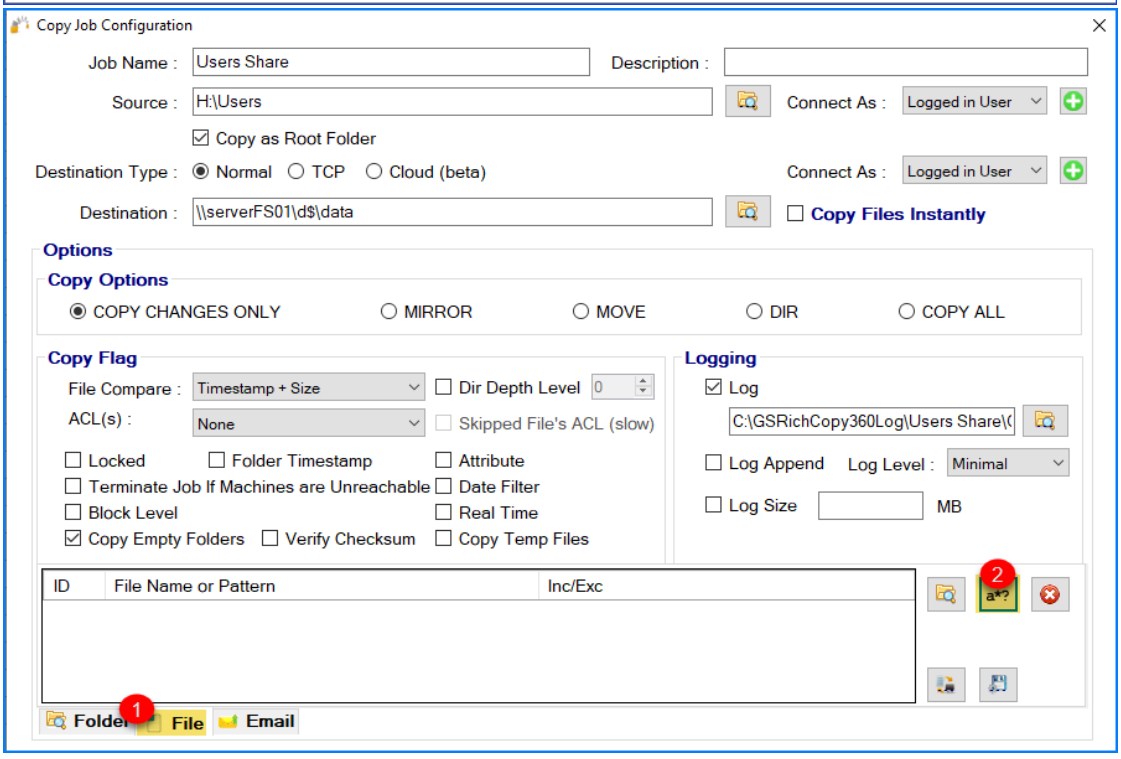


Based on wildcard, name or pattern

If you wanted to include or exclude files based on a set criterion such as naming or pattern, you can accomplish so by doing the following:

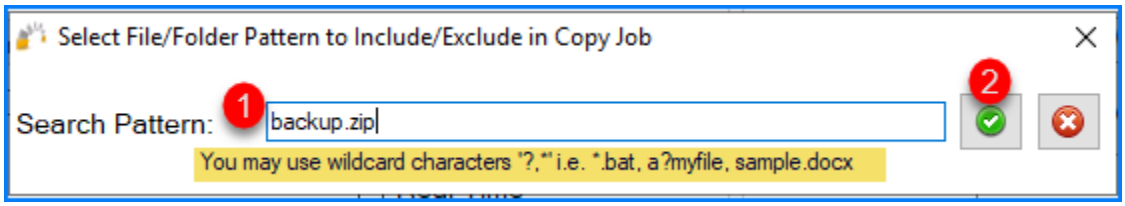
1) Select the pattern\name\wildcard eclipse button.


Copy Job Configuration
Job Name : Users Share
Description :
Source : C:\ShareData\Users
Connect As : Logged in User
Copy as Root Folder
Destination Type : Normal TCP Cloud (beta)
Connect As : Logged in User
Destination : \\ServerFS02\d$\sharedata
Copy Files Instantly
Options
Copy Options
COPY CHANGES ONLY MIRROR MOVE DIR COPY ALL
Copy Flag
File Compare : Timestamp + Size
Dir Depth Level 0
ACL(s) : Folder Only (Recommended)
Skipped File's ACL (slow)
Locked Folder Timestamp Attribute
Terminate Job If Machines are Unreachable Date Filter
Block Level Real Time
Copy Empty Folders Verify Checksum Copy Temp Files
Logging
Log
C:\GSRichCopy360Log\Users Share\(
Log Append Log Level : Minimal
Log Size MB
ID Folder Path or Pattern Inc/Exc
1
Folder File Email
Scheduling
Run Manual
Start 10/01/2020 3:04:00 PM
Job Concurrency
Copy Threads : 4 Change
Configure Pre-Post Run Script
Job Status : Enabled
Run as Service
Simulate Job
Save
Cancel


Copy Job Configuration
Job Name : Users Share
Description :
Source : H:\Users
Connect As : Logged in User
Copy as Root Folder
Destination Type : Normal TCP Cloud (beta)
Connect As : Logged in User
Destination : \\serverFS01\d$\data
Copy Files Instantly
Options
Copy Options
COPY CHANGES ONLY MIRROR MOVE DIR COPY ALL
Copy Flag
File Compare : Timestamp + Size
Dir Depth Level 0
ACL(s) : None
Skipped File's ACL (slow)
Locked Folder Timestamp Attribute
Terminate Job If Machines are Unreachable Date Filter
Block Level Real Time
Copy Empty Folders Verify Checksum Copy Temp Files
Logging
Log
C:\GSRichCopy360Log\Users Share\(
Log Append Log Level : Minimal
Log Size MB
ID File Name or Pattern Inc/Exc
2
1
Folder File Email

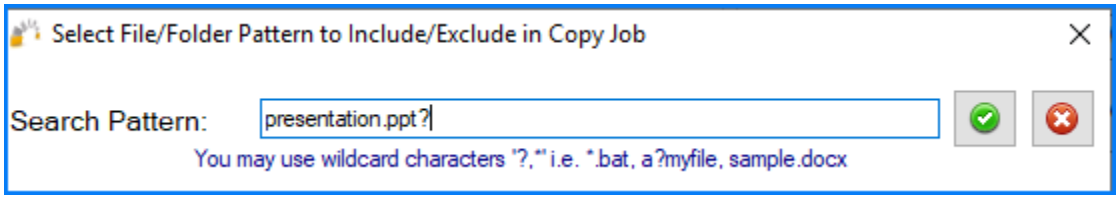
2) Type the name, pattern, or wildcard as per below. There are several scenarios:

a. Specify an Exact match: In the scenario below, we are stating that any files named "backup.zip" would match.



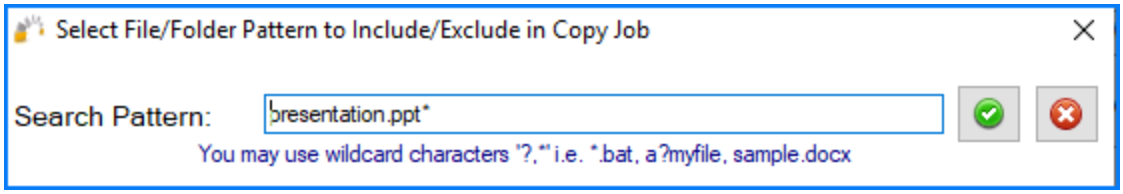
This would copy any files that have the exact name backup.zip. Would not copy the folder named My Backup.zip or Backup.zipx.

b. Pattern: In this scenario, we specify the condition to start with "presentation.ppt" and end with one character such as presentation.pptx or presentation.pptz. (Using the ? means any ONE character. Putting ?? means any TWO characters. In the example below we stated "presentation.ppt?"



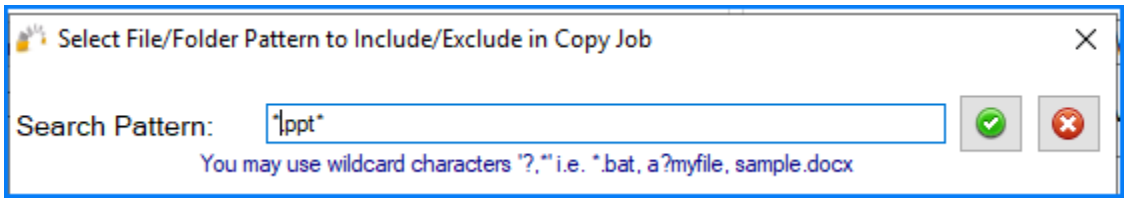
This would copy any files that begin with presentation.ppt and end with an extra character. So it would copy presentation.pptx, presentation.pptz. It would not copy a folder named presentation.ppt or My presentation.pptx

c. Wildcard: In this scenario, we specify the condition to be any files that begin with "presentation.ppt." Putting an asterisk means a wildcard. As long as the files start with presentation.ppt and could have something after it, it would be a match.



This scenario would copy files that begin with presentation.ppt and could have something after it, such as presentation.ppt, presentation.pptx, and presentation.pptx Final version. It would not copy My Presentation.pptx.

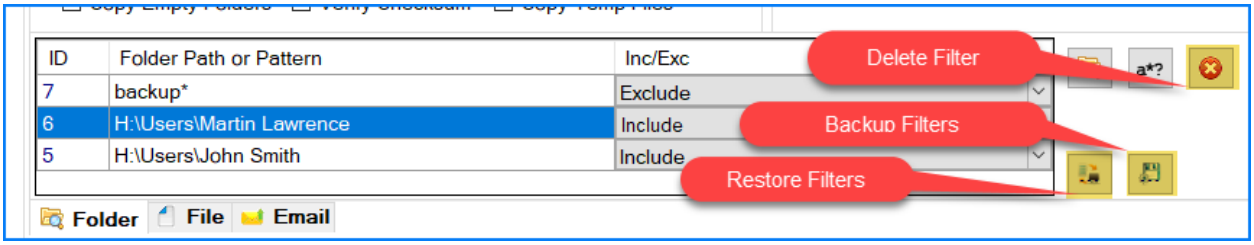
d. Wildcard beginning and end: This is a common example of a requirement to copy all PowerPoint presentations. In this case, we would specify *.ppt*.



This scenario would copy all files that have the externsion ppt and pptx, …etc. This would copy My presentation.ppt, My presentation.pptx, and Final Deck.ppt.

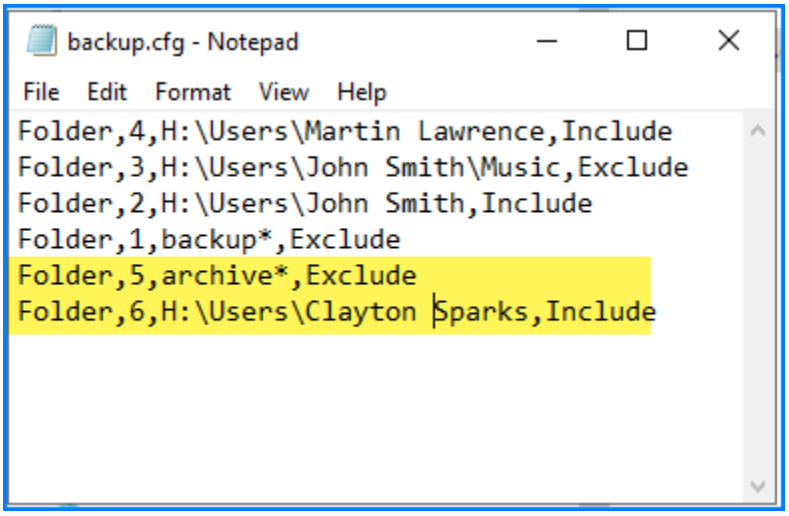
10C - Backup, Restore, Delete Filters:

As you create the include and exclude filters, you may want to back them up to reuse for another job (or you can copy the job for simplicity) or to edit them. You can do so by using the export\import filters button, as displayed on the screen below. You can also delete a filter by selecting the filter you want to delete and click on the button.



You can export the backup of filters and modify them in a note pad and restore them.

Note: The restore would overwrite the existing filters. Just follow the same pattern as the job filter and change the index number to a number that is not used. Then restore them using the restore feature. See the example below where we added the filters highlighted in Yellow



11 – Logging

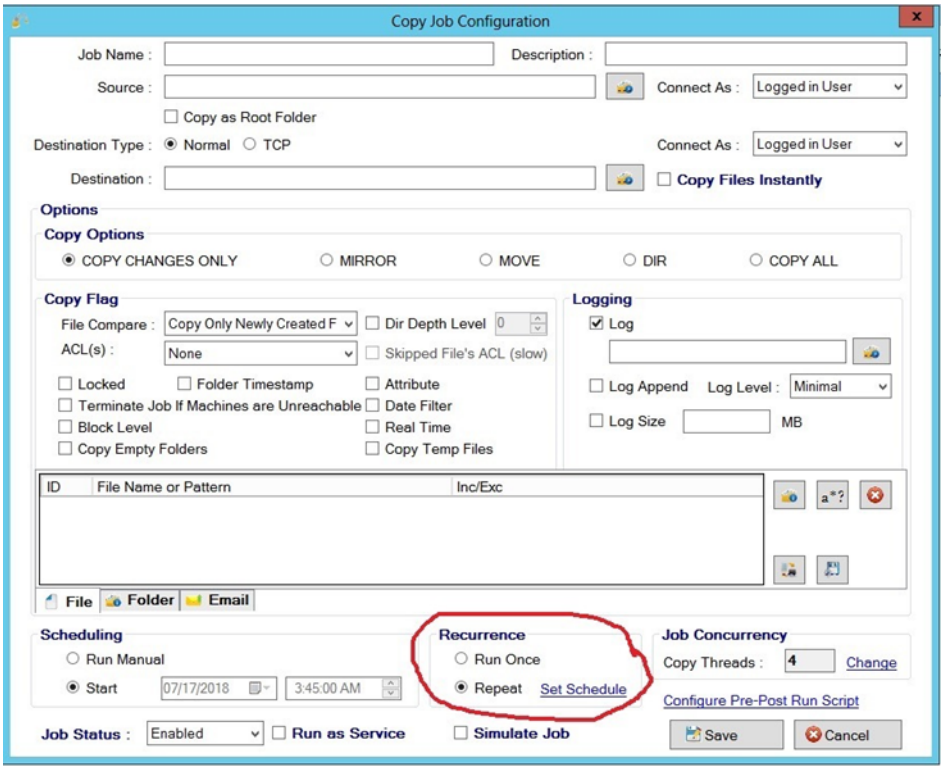
The following options are available under Logging:

- **Logs**—type or browse where you want the log file to be placed.
  Note: The Path variable is supported in this field. For more information, refer to *Environment Variables*.
- **Log Append**—if a log file already exists, logging will just append to the file instead of overwriting it.
- **Log Size**—if a number is specified (in MB), and once the log file size reaches that limit, the job will start logging to a new file. However, the job will continue to run. This option is useful to avoid large log files.
- **Log Level**—there are 3 types of log levels:
  - **Practical**
  - **Minimal**
  - **Verbose**—lists files that were skipped and copied to their own logs in the same folder containing the log.

12 – Scheduling

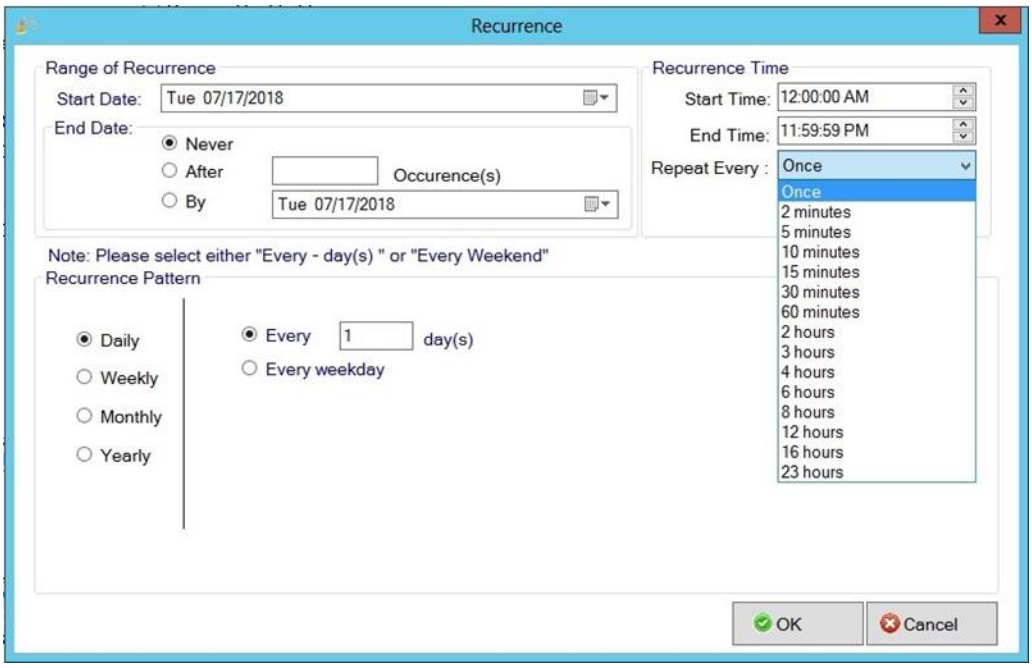
Jobs can be run manually or scheduled in advance to run at a later time. This becomes useful when coupled with the option to run as a service as jobs can then run without any user intervention. It uses the set it and forget it approach. You may select the following options:

- **Run Manual**—indicates that this job can only be started manually by the user.
- **Start** (at a set date and time)—indicates that the job is a one-time event or runs according to a set schedule. The scheduling options vary from daily, day of the week, monthly, yearly, and so forth.



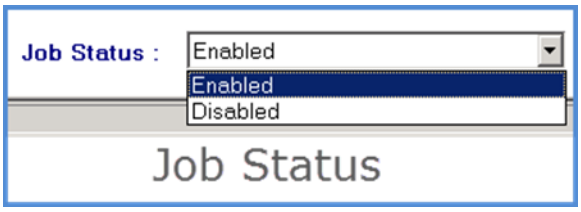
Jobs can be set to run according to the following options:

- **Run Once**—runs the job only once.
- **Repeat**—sets the job to run more than once according to a recurring schedule. Selecting the **Set Schedule** option opens the Recurrence window, where you can set the recurring schedule. In the Recurrence Time section of the window, there are two important things to note about **Start Time** and **End Time**:
    - If a job takes longer to complete and overlaps the next interval, the job will continue to run and the scheduler will schedule the next interval when the job completes given that the job completes before the End Time.
    - End Time means jobs are allowed to start before the End Time is reached. Jobs will not be stopped if they are already running and the End Time is reached.

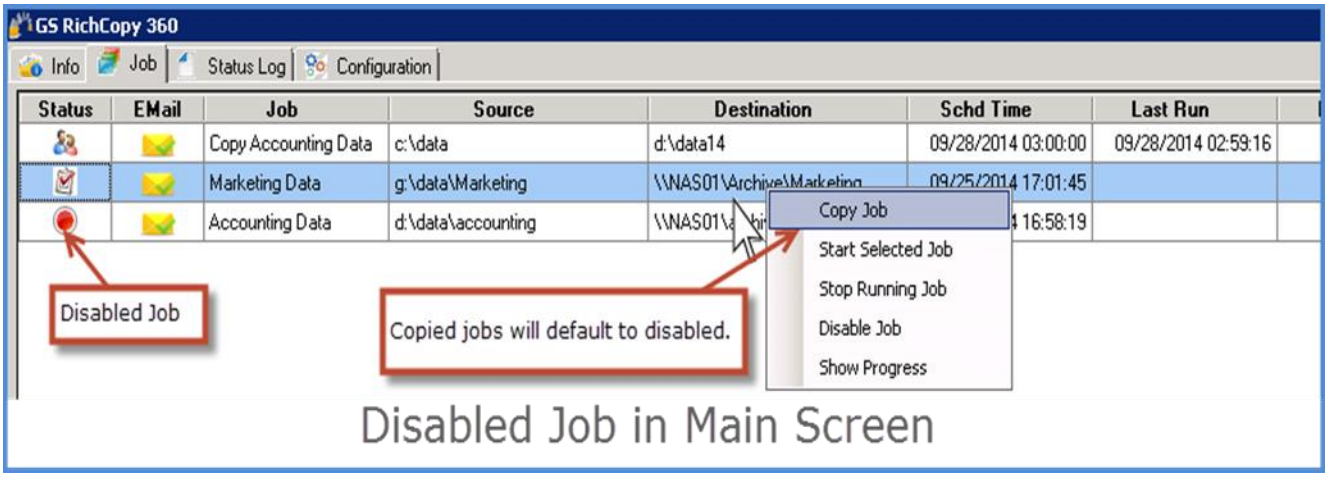


13 - Job Status

Jobs are created as **Enabled** by default. This means they can be run on demand or as scheduled jobs. Jobs that are set to disabled will NOT run on demand or as scheduled.



If a job is duplicated, the duplicated job is set to **Disabled** by default.



14 - Run as Service

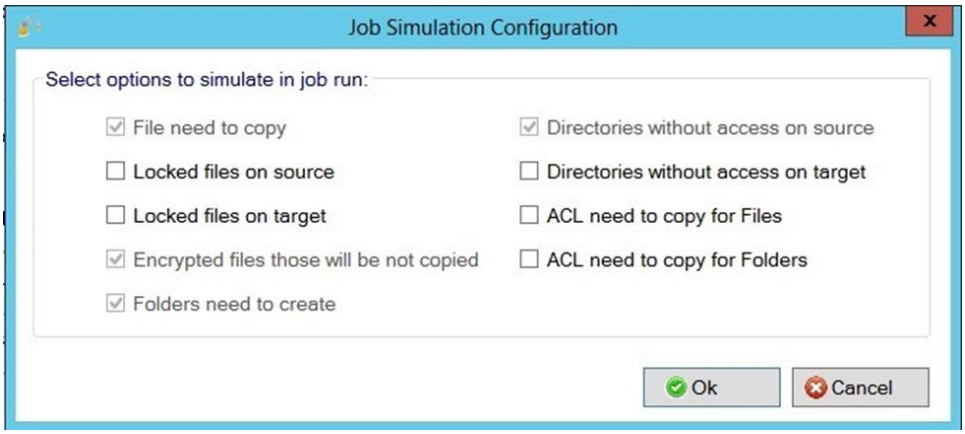
If the Run as Service check box is selected, the job will run as a service using the service credential specified in the Configuration tab (default is Local System Account). If the option is not selected, GS RichCopy 360 will utilize the session of the logged on user running the application.

The following are the advantages to running a job under a service account:

- The jobs will not terminate due to a user logging off or closing the GS RichCopy application.
- A service account can run as the Local System Account, which is an account that has full access to every file and folder on the system (in most scenarios). For example, a machine that has locked down permissions may have issues copying folders and files as the user credentials used may not have sufficient access rights.
- Using a service account running as a Local System Account may provide better results. It is worth noting that jobs have to be set to run at a scheduled time in order to be configured to run using a service account. A scheduled job can always be triggered to start manually which is in fact running the job as a service.

15 - Simulate Job

This option allows administrators to understand what exactly happens when the job starts through detailed logs without a real copy. This option has the configuration showed in the following image. There are four options greyed out and five that can be chosen.



16 - Job concurrency

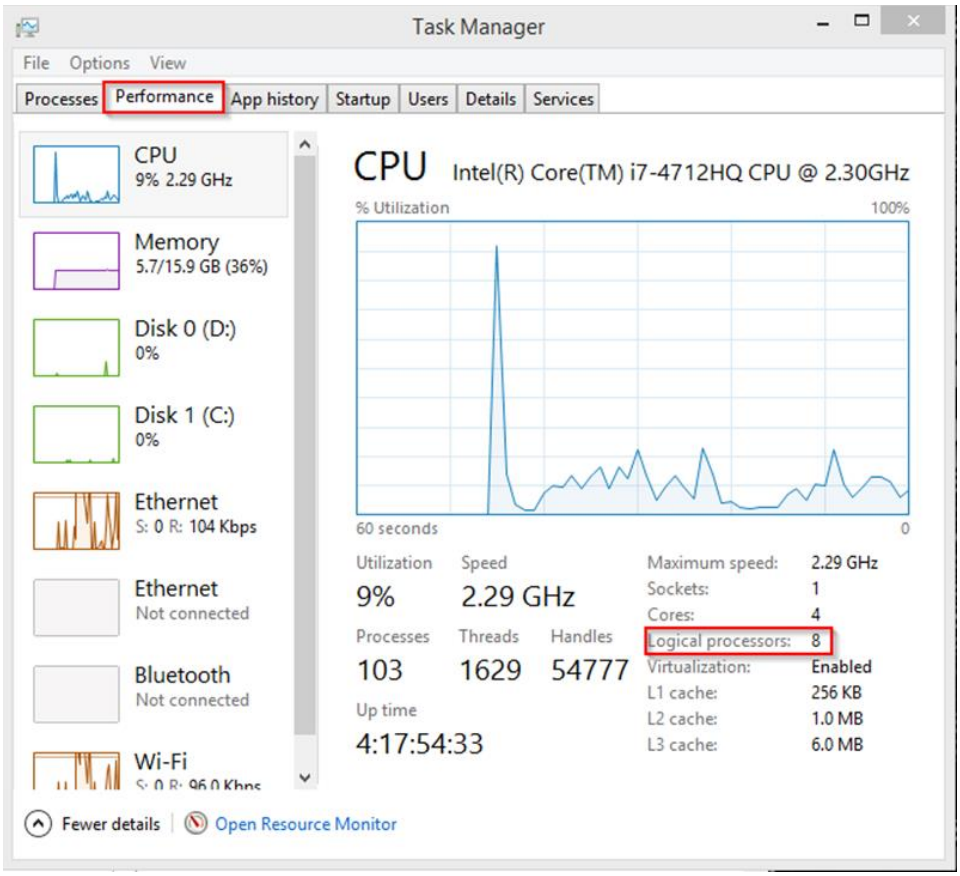
By default, GS RichCopy 360 uses 4 simultaneous copy threads, which means 4 files can be copied at the same time. System administrators can change the number of threads. This should be changed based on the following recommendations:

- The number of threads should be no more than double the available logical cores on the system. (Ideally, the same as the logical cores but up to fewer than double the amount of cores).
- The more threads used, the more resources are consumed on the system. So if this is running on a production machine, reducing the thread count may be best in order to lower resource and memory consumption.
- While a system may have a lot of computing resources (CPU and RAM), storage and network also have to be taken into consideration. In order to avoid OS or network congestion or a bottleneck,

it is wise to have a lower number of threads. This can happen when on a system with a basic storage subsystem or if the destination is across a WAN connection that is highly congested. GS RichCopy 360 is a true multi-threaded system. Each thread runs on a dedicated core for as long as the number of threads equals the number of logical cores.

Note: This option has more important technical details.

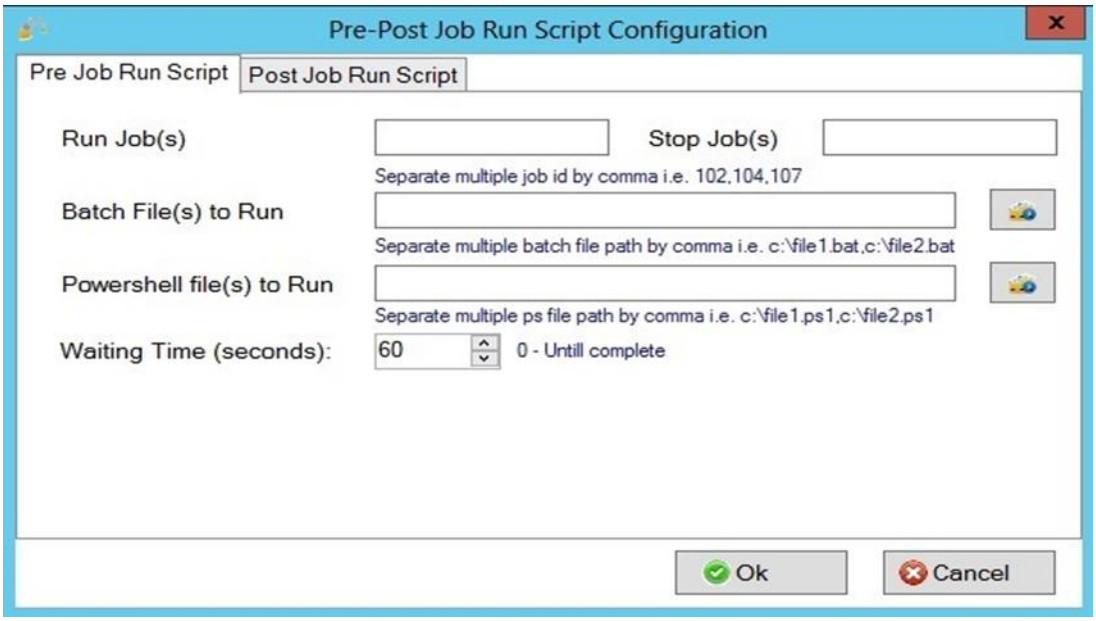
The **Task Manager** is a good way to find out the number of available logical cores.



Note: Increasing the number of logical cores to more than double what the system has available can cause CPU contention and can reduce performance. Furthermore, increasing the number of threads by double does not mean the job time is cut in half.

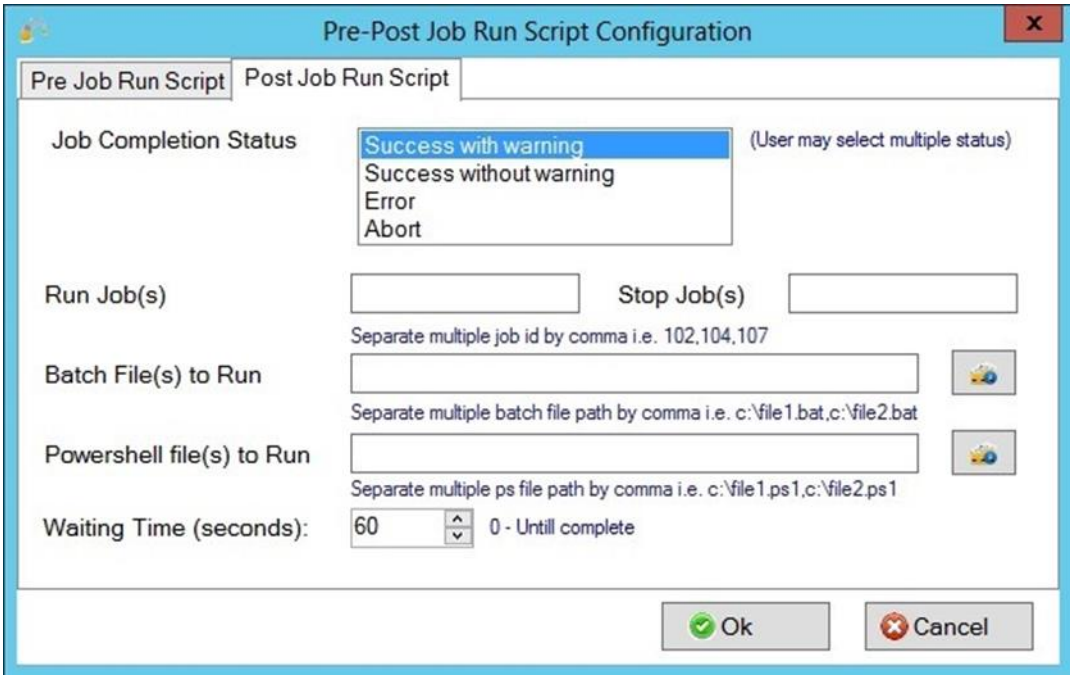
17 - Configure Pre-Post Run Script

Selecting this option in the Job Details window displays the Pre-Post Job Run Script Configuration window. The options displayed in this window run as a service.



Pre-Job Run Scripts

- **Run Job(s)**—option to set up the job(s) ID to run.
- **Stop Job(s)**—option to set up the job(s) ID to stop.
- **Batch File(s) to Run**—option to select one or more batch files needed to run before the selected job(s).
- **PowerShell Files(s) to Run**—option to select one or more PowerShell files needed to run before the selected job(s).
- **Waiting Time (Seconds)**—instructs the job to wait for X seconds before it runs after the pre-tasks are triggered.



Post Job Run Scripts

- **Job Completion Status**—illustrates the job's behavior. The user has the option to set up the conditions under which the post job runs will run. The user can select multiple conditions. If the selected condition matches the job's end result, the post conditions are triggered.
    - **Successful with warning**—shows that the job completed and shows the warning if it exists.
    - **Success without warning**—shows that the job completed and does not show the warning even if it exists.
    - **Error**—shows that there has been an error.
    - **Abort**—shows that the job aborted for some reason.
- **Run Job(s)**—option to set up the job(s) ID to run.
- **Stop Job(s)**—option to set up the job(s) ID to stop.
- **Batch File(s) to Run**— option to select one or more batch files needed to run after the selected job(s).
- **PowerShell Files(s) to Run**—option to select one or more PowerShell files needed to run after the selected job(s).
- **Waiting Time (seconds)**—instructs the job to wait for X seconds after it triggers the pre-tasks.

Creating a Job Using the Job Schedule Wizard

GS RichCopy 360 offers a simple job schedule wizard. The wizard walks administrators through the most commonly used settings and a full summary of the selected options is displayed at the end for confirmation.

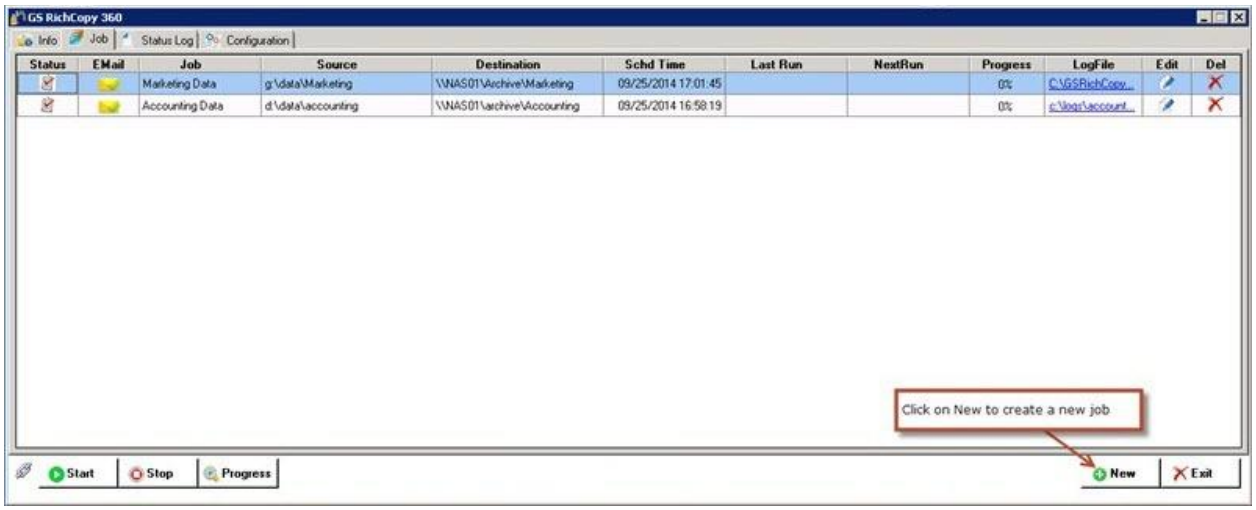
While most of the available options are self-explanatory, help tool tips are displayed next to each setting to further clarify its role, purpose, and how it impacts the job if selected. Tool tips are represented by the question mark icon .

Also, expert users have the option to skip the wizard and jump directly to the detailed job screen and create the job that way.

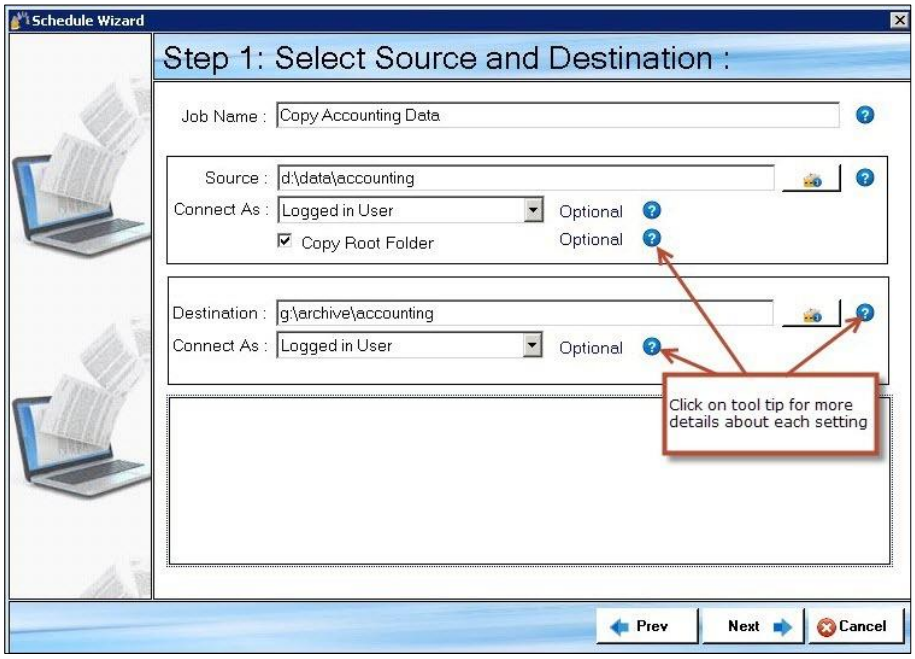
Note: Once a job is created (whether through the wizard or the detailed job's screen), it can always be modified at a later time if the need arises.

To create a job using the Job Schedule Wizard, follow these steps:

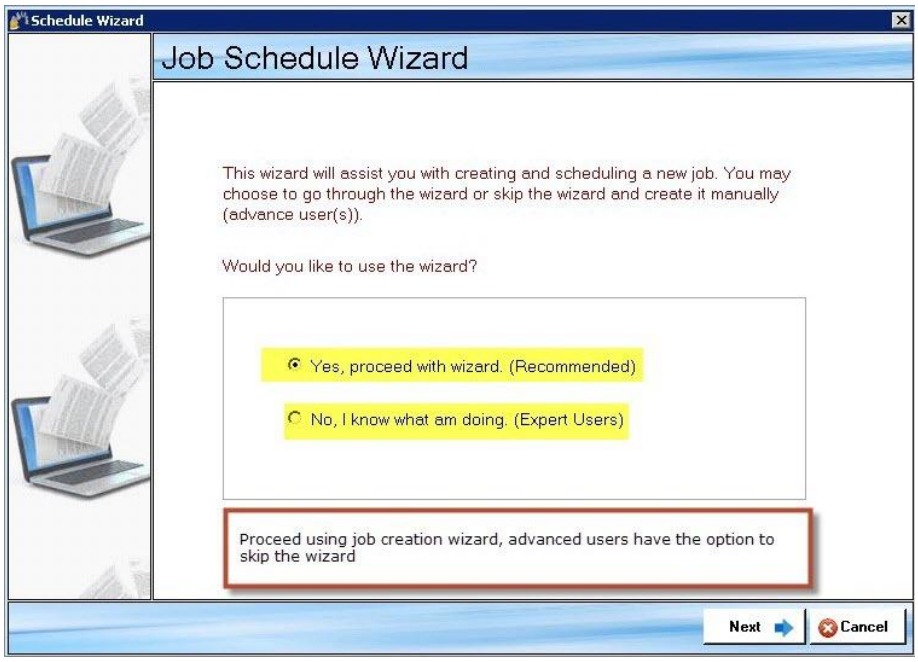
1. In the GS RichCopy 360 window, select the **Jobs** tab, and then select **New**.



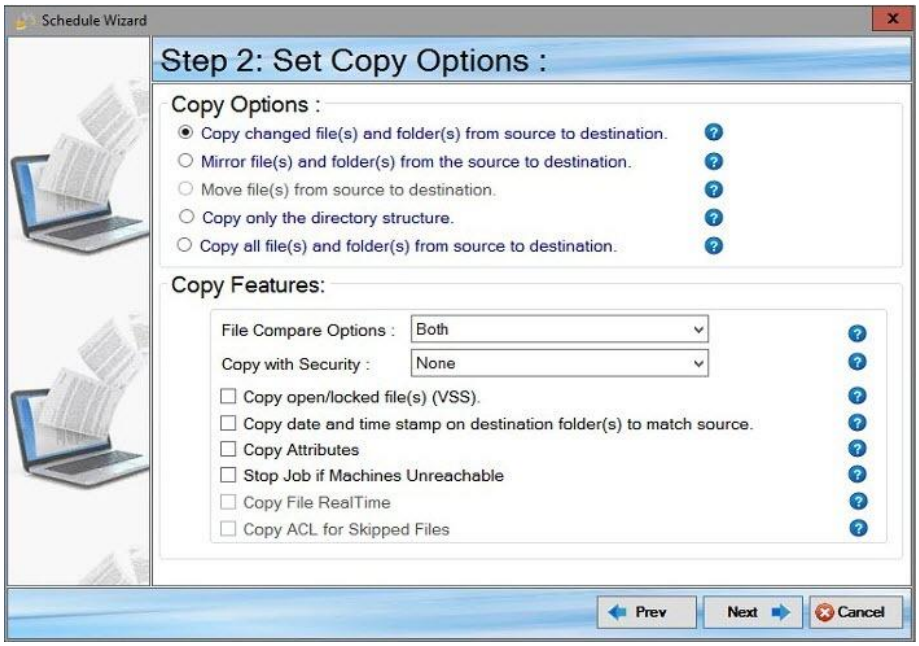
The Schedule Wizard window is displayed.



2. Enter the **Job Name**.
3. Configure the **Source** and **Destination** settings.
4. Select **Next**. The following screen is displayed.

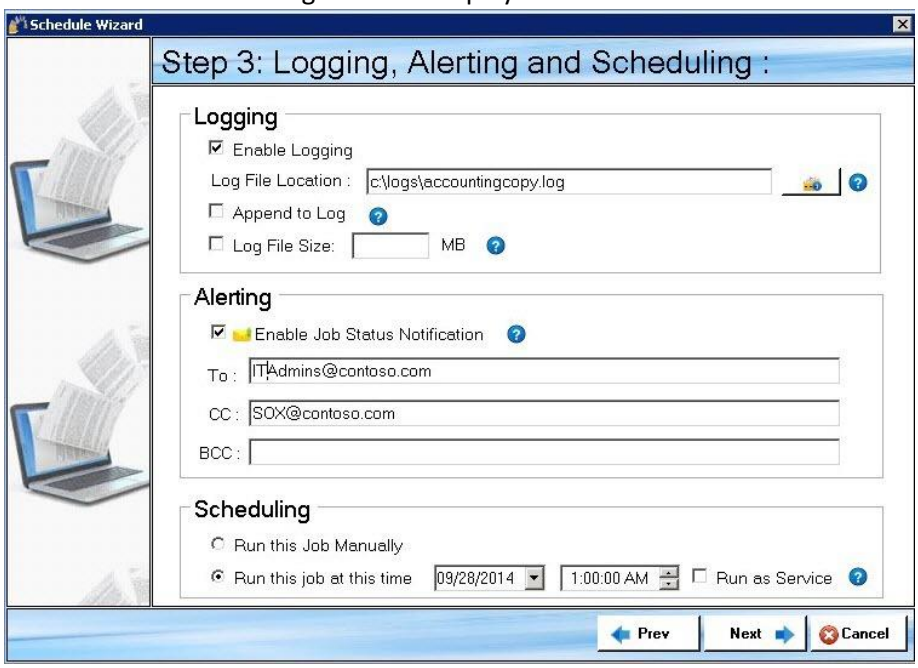


5. Select the **Yes, proceed with Wizard** option.
6. Select **Next**. The following screen is displayed.

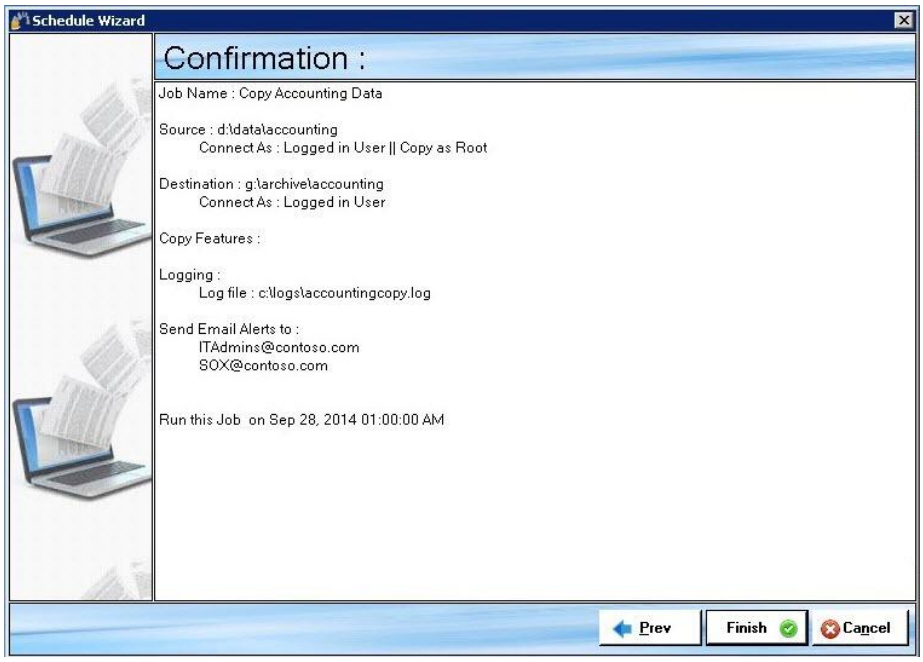


7. Select one from the **Copy Options**.
8. Configure the **Copy Features**.

9. Select **Next**. The following screen is displayed.



10. Configure the **Logging**, **Alerting**, and **Scheduling** settings.
11. Select **Next**. The Confirmation screen is displayed.



12. Review the job details in the Confirmation screen, and then select **Finish**.

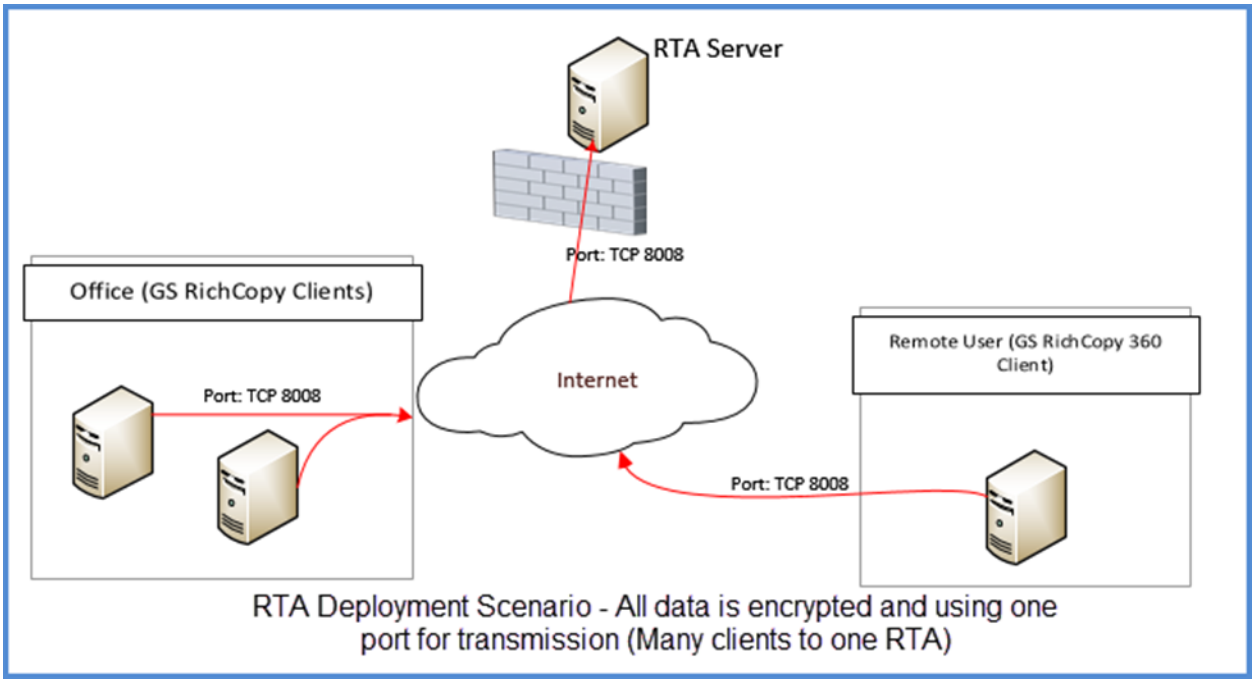
The job is then created and displayed in the Jobs tab. It can then be triggered to run by selecting it or to be modified by double-clicking the job.

Creating a TCP Copy Job – Enterprise Only

The TCP Copy Job offers a lot of advantages. It requires only one single port between source and destination to transmit the data to be copied.

A TCP Copy Job requires minimal configuration on the client side (source machine) and an RTA to be installed on the recipient machine (destination) to receive the data as it gets transmitted.

A TCP Copy Job provides additional features that are not available in the normal copy method. These features are Encryption and File Compression while Data Transfer.

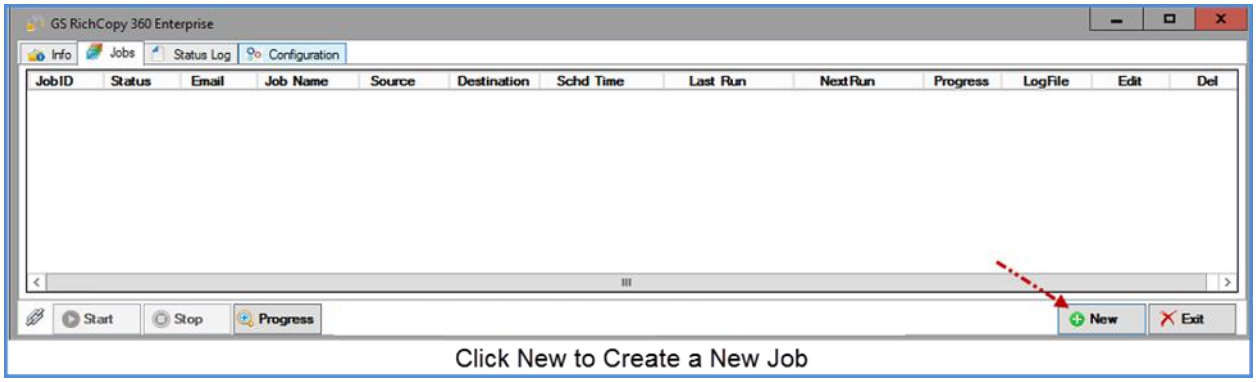


RTA Deployment Scenario - All data is encrypted and using one port for transmission (Many clients to one RTA)

To create a TCP Copy Job, follow these steps:

Client/Source Configuration

1. In the GS RichCopy 360 window, select **New** to create a new job.



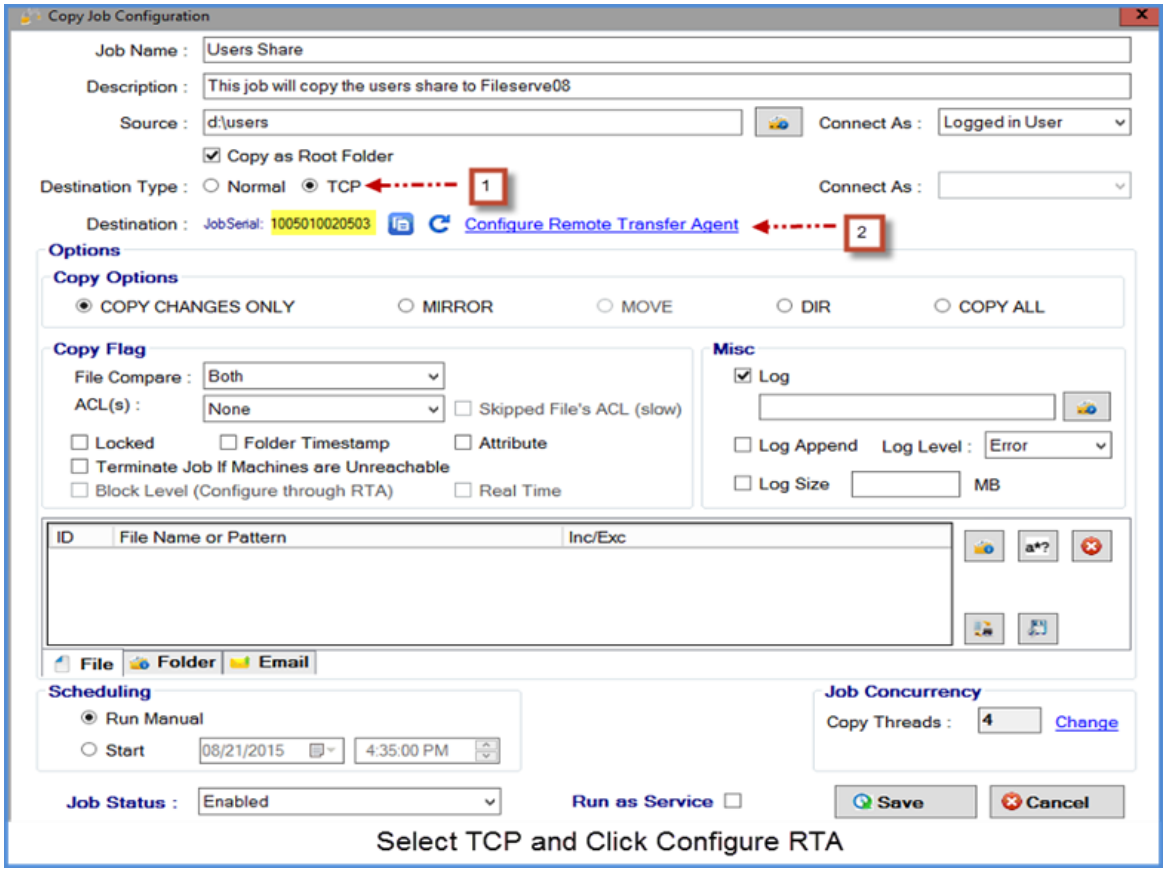
Click New to Create a New Job

The Job Schedule Wizard is displayed.

Select Expert Users

2. Select **No, I know what I am doing (Expert Users)**, and then select **Finish** to bypass the wizard as it currently does not offer the option to create TCP jobs.

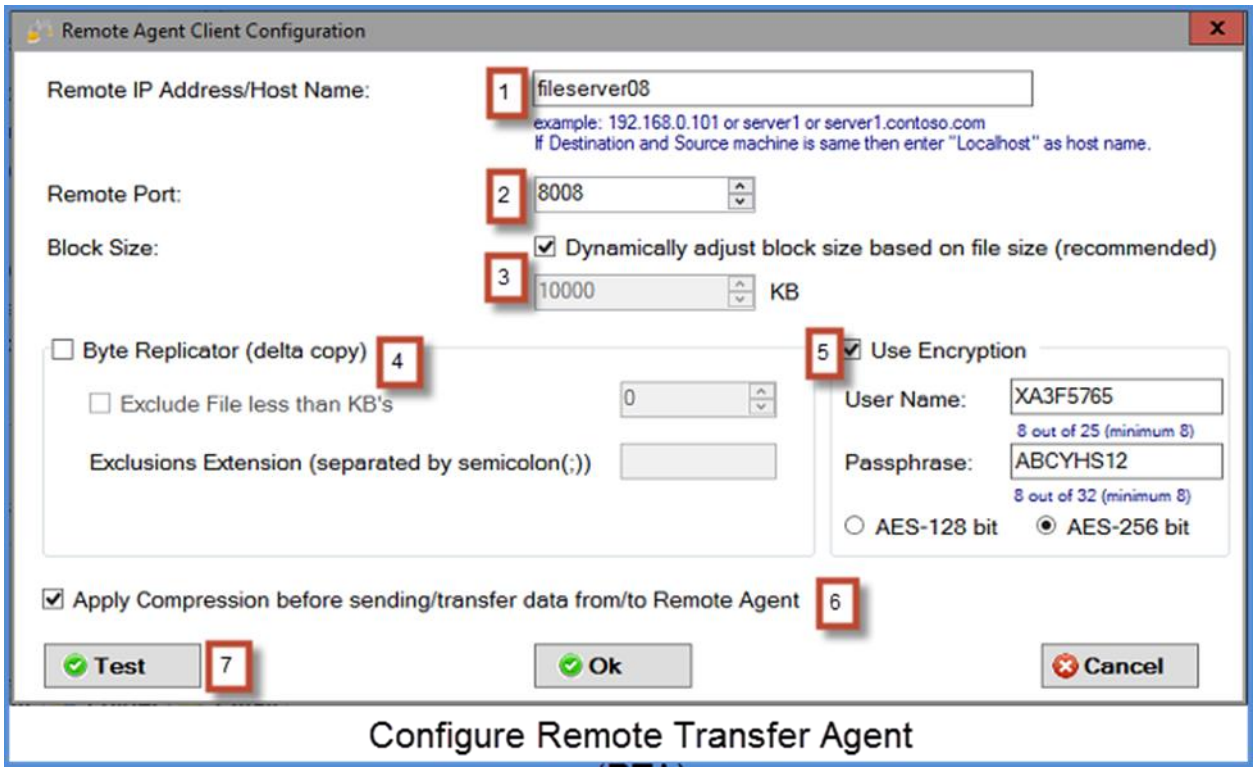
The Copy Job Configuration window is displayed.



Select TCP and Click Configure RTA

3. Enter the details for **Job Name**, **Description**, **Source**, and the rest of the options as desired except for Destination.
4. Select **TCP** for the Destination Type, and then click **Copy Clipboard** to copy the Job Serial.
5. Click **Configure Remote Transfer Agent** to configure the RTA.
   Note: The Job Serial is a unique number that is randomly created on the source per job. The administrator will provide the job serial number on the target machine (RTA) as the administrator creates the destination of the job.
   Note: The Job Serial number can be set by the administrator if required. This can be done from the command line. All manually set Serial Jobs have to be prefixed by 99999 and should be a total 13 numbers. This can be useful in scenarios where the administrator wants to automate job creation on the client and the RTA server. For more information on the command line support, refer to *Command Line (CLI) Support*.

   The Remote Agent Client Configuration window is displayed.



Refer to these items for the fields:

(1) **Remote IP Address/Host Name**—refers to the recipient server (destination server) where data is sent when the RTA agent is installed. This could be the IP address of the destination server, short name (NetBIOS), or FQDN name for as long as the source machine is connected to the RTA machine.

(2) **Remote Port**—by default, GS RichCopy 360 uses TCP 8008 for its communication needs. This port is configurable. If changed, it is important to change it on the RTA agent as well. For information, refer to *Destination Configuration*.

(3) **Block Size**—GS RichCopy 360 transmits the files in chunks when using the TCP method. It is highly recommended to leave it set to the dynamic option ("Dynamically adjust block size…") as this will determine the best chunk size. However, this option can be changed if needed. The default setting is 10MB and the accepted range is between 50KB and 25MB.

(4) **Byte Replicator**—Byte Level allows you to transfer just the changed data in a file when synchronizing, instead of the entire file. This is useful in saving bandwidth especially when dealing with large file sizes. If this option is selected, there are two additional parameters that can be configured:

- **Exclude Files Less than KB's**—files that are smaller than the specified size will not go through byte level comparisons. Instead, they will be copied fully in the event the source and target mismatch. This size should be greater than the Block Size value.
- **Exclusion Extension**—administrators may decide not to have files of certain extensions going through a block level comparison for various reasons. If so, set those extensions and separate them with a semicolon if more than one extension is needed.

(5) **Use Encryption**—encryption in GS RichCopy 360 is very easy to use. A User Name and a Passphrase are required. The combinations will need to be retyped in the RTA agent (destination machine) at a later stage. GS RichCopy 360 supports AES 128 and AES 258. Encryption adds very little to the overhead when using modern CPUs that support the AES instruction set.

(6) **Apply Compression before sending data to RTA agent**—another advantage of using the TCP method is the option to compress data before transmission. GS RichCopy 360 uses high and robust levels of compression, which is one of the most trusted, reliable, and robust compression algorithms defined to date.

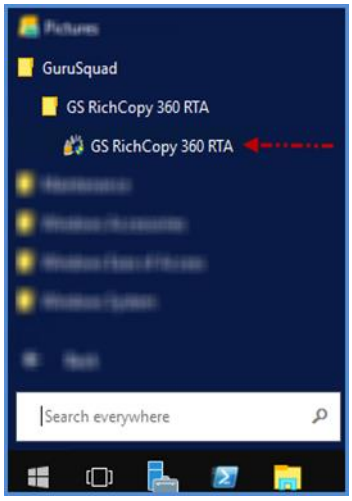
(7) **Test**—if the RTA is installed on the recipient (receiving) machine, the test button can confirm if it can establish a communication. If it reports that it is failing, it is likely to be a firewall port issue or the RTA agent service is not started on the recipient machine.

6. Select **OK** to save the configuration.

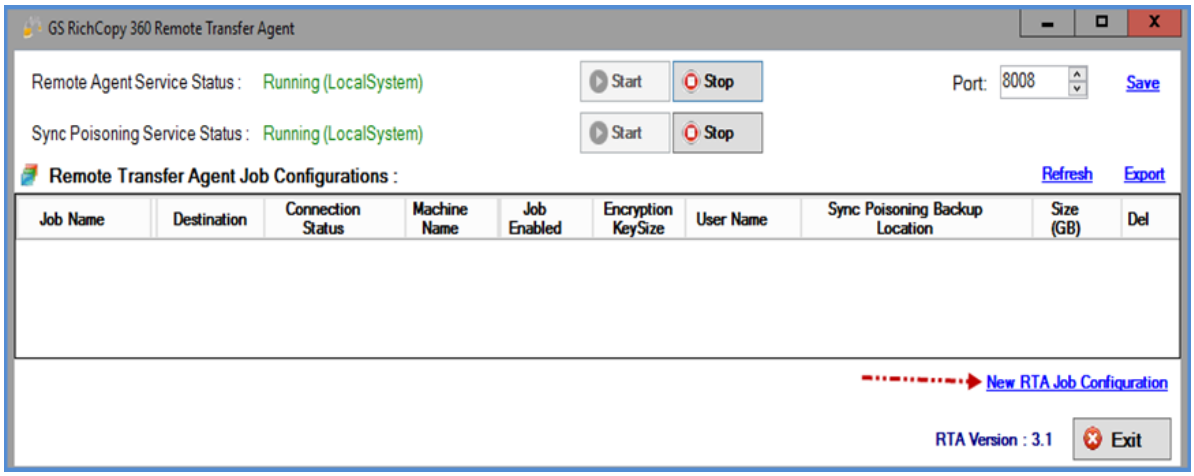
Once a TCP job is configured on the client side (source machine), similar configurations need to take place on the RTA (destination machine). The RTA agent must first be installed on the destination machine before it can be configured. If the RTA is not yet installed, refer to *Installing RTA*. If the RTA is already installed on the destination machine, follow the steps in the next section to complete the TCP job configuration.

Destination Configuration

1. On the destination server, launch the RTA management application.

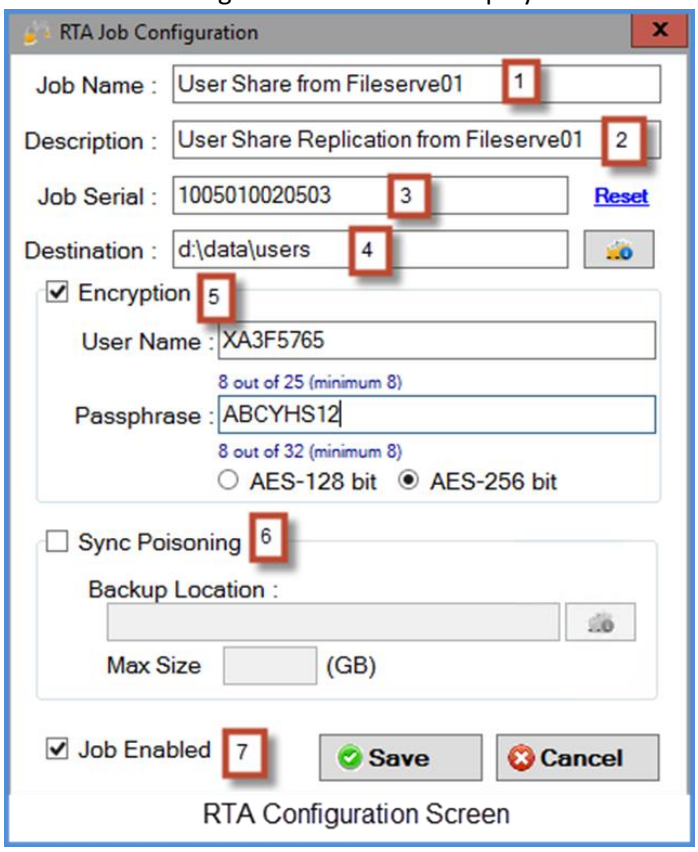


The GS RichCopy 360 Remote Transfer Agent window is displayed. For more information on the sections displayed in this window, refer to *Configuring and Managing the RTA*.



2. Select **New RTA Job Configuration**.

The RTA Job Configuration window is displayed.



3. Enter the necessary information for the following items:
   - **Job Name**—the name of the job that is used to identify it. The name has to be unique. It is highly recommended to use a descriptive name such as Accounting Data or Copy Email Archive so that other users and administrators can understand the purpose of the job.
   - **Description**—describes the job.
   - **Job Serial**—must match the Job Serial number presented on the client side (source machine).
   - **Destination**—the path (folder) where you want to copy to.
     Note: This is relative to the destination machine and not the source machine. Also, the Path variable is supported in this field. For information, refer to *Environment Variables*.
   - **Encryption**—if encryption is set in the source job, the user name and passphrase must be provided to match what is configured in the source job.
   - **Sync Poisoning**—provides a safety net where data on the RTA server is backed up in the event it is about to get overwritten or deleted by its source job. Sync Poisoning works in a very simple way. Should a file get deleted or overwritten by a newer file coming from the source job, this file is moved over to the specified backup folder.
     - **Backup Location**— is where files and folders in the destination location are moved should that version of the file get deleted or overwritten by a newer file coming from the source job. The same directory structure is mirrored in the backup location so that files can quickly be identified.

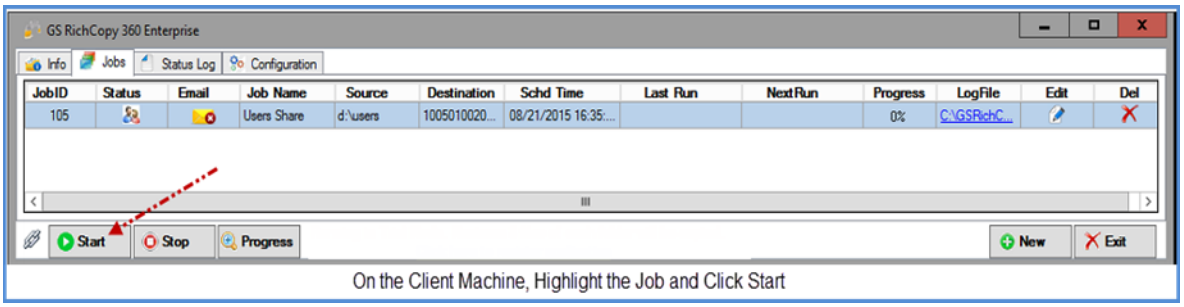
- **Max Size (GB)**—files are purged from the "backup location" when this threshold is reached. The deletion process will use FIFO as its deletion criteria.

Note: The Path variable is supported in this field. For information, refer to *Environment Variables*.

- **Job Enabled**—enables the RTA server to accept incoming connections for this particular job based on its serial number. If the job is not enabled, any connections associated with this job will be rejected.

4. Select **Save** to save the configuration.

The job is now ready to execute from the client screen.

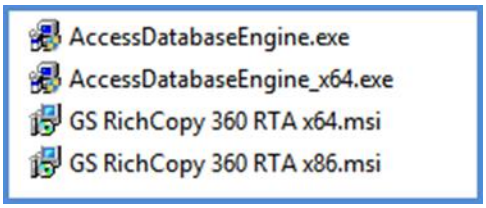


On the Client Machine, Highlight the Job and Click Start

Remote Transfer Agent (RTA) – Enterprise Only

Installing RTA

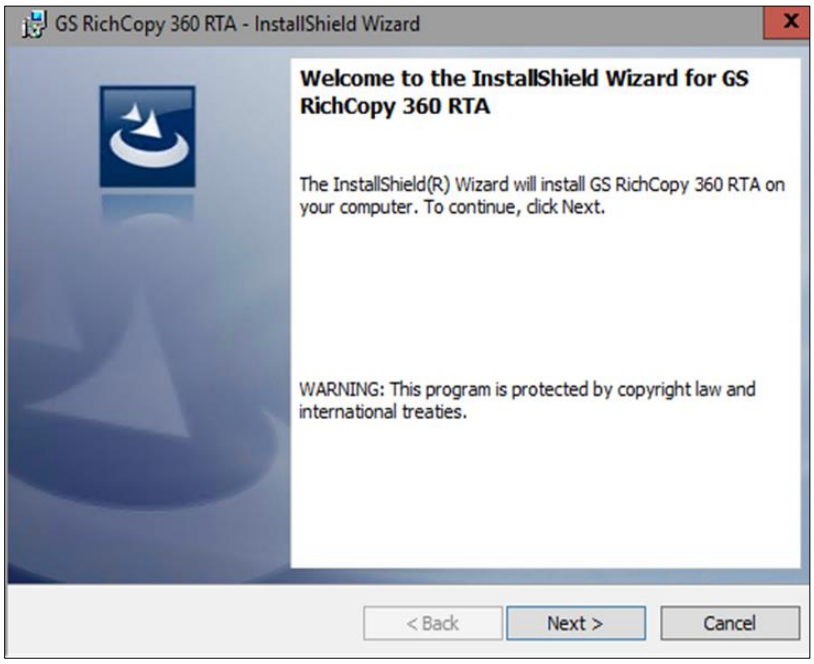
The RTA comes with its own standalone installation package. There are installation packages for 32-bit and 64-bit machines, `GS RichCopy 360 RTA x86.msi` and `GS RichCopy 360 RTA x64.msi` as shown in the following image.



Note: Access Database Engine is a prerequisite for RTA to function properly. It will be installed silently if needed. It needs to be in the same folder as the RTA MSI installation package to get installed.

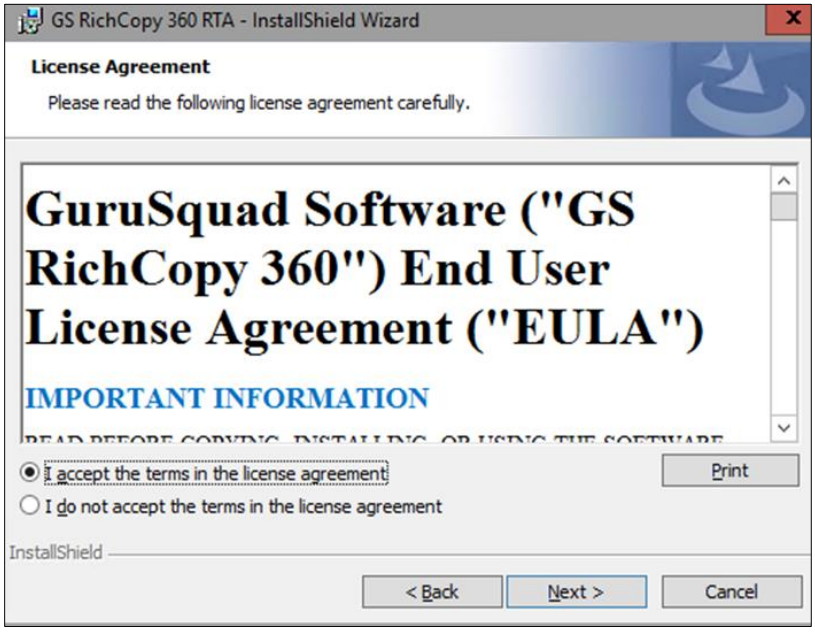
To install RTA, follow these steps:

1. Double-click the MSI installation package for your OS platform (x86 for 32-bit or x64 for 64-bit). The Welcome window is displayed.



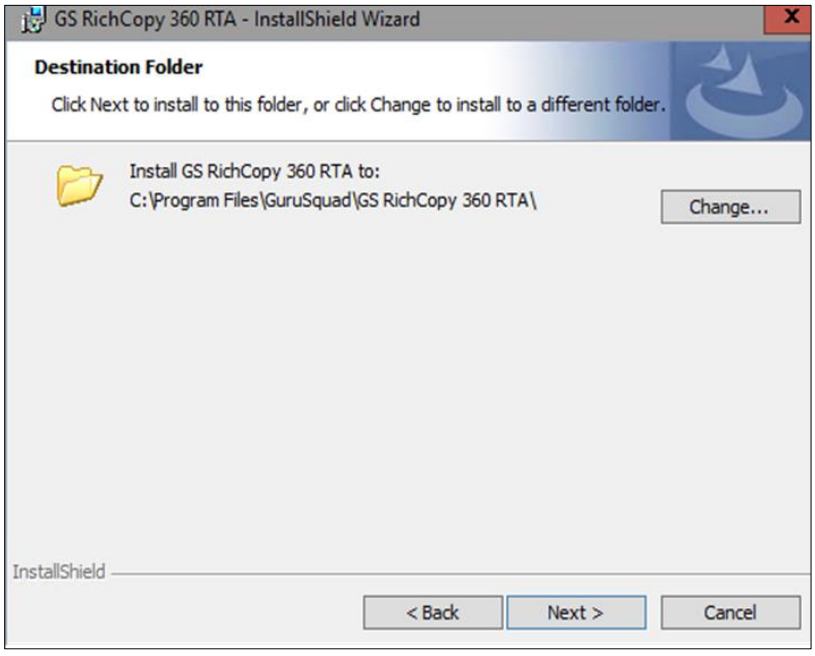
2. Select **Next**.

The License Agreement screen is displayed.



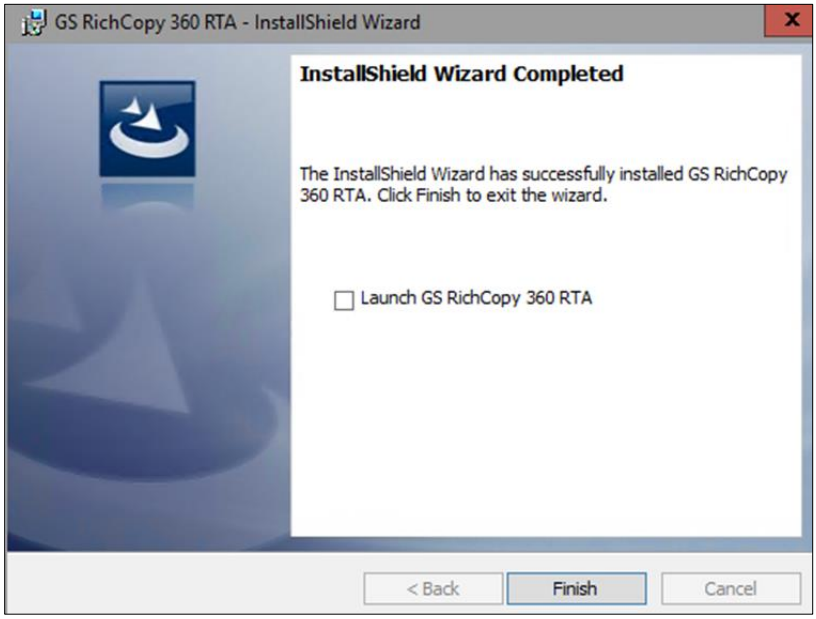
3. Review the **End User License Agreement (EULA)**.
4. Select **I accept the terms in the license agreement**, and then select **Next**.

The Destination Folder screen is displayed.



5. Change the path location if needed, and then select **Next** twice to start the installation.

When the installation is complete, the following screen is displayed.

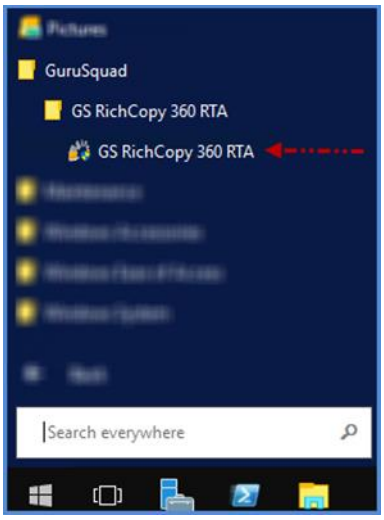


6. Select **Finish** to complete the installation. The GS RichCopy 360 RTA is now installed on your system.

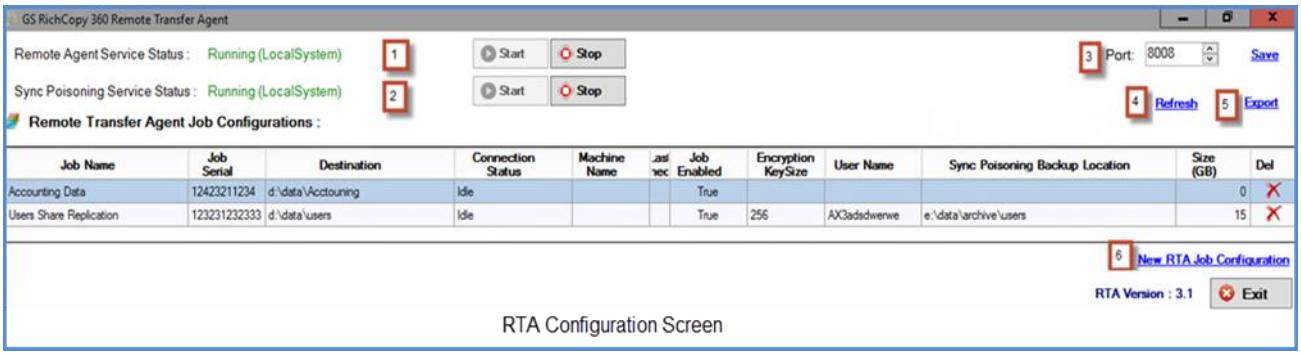
Configuring and Managing the RTA

Once the RTA is installed on the target machine (destination machine), there are some minimal configurations that could be changed. However, upon a successful installation, it should work out of the box. This section provides information on the available options on the RTA screen.

There is a single management interface for RTA, which can be launched from the Start menu.



The RTA management screen provides a single viewer pane showing all current job activities in addition to overall configurations. The user should examine the different settings to get more familiar with it.



RTA Configuration Screen

(1) **Remote Agent Service Status**—RTA runs as a service. The service will either show as running or stopped and will also show the account it is running under. By default, it uses the local system account, which has full access rights to all local drives. The account can be changed through `services.msc`. The service is called **GS RichCopy 360 Enterprise RTA Service**. The Stop and Start buttons change the status of the service. Stopping the service terminates all current jobs and also stops the server from accepting any new connections.

(2) **Sync Poisoning Service Status**—the service is in charge of keeping defined Sync Poisoning locations in various jobs below their assigned threshold. Note that by default, it runs under the context of the local system. Should there be a need to use a different account, the account credentials need to be changed in `services.msc` for the service named **GS RichCopy 360 Enterprise Sync Poisoning Service**. Similar to the RTA service, the Start and Stop buttons change the status of the Sync Poisoning service.

(3) **Port**—the RTA service uses port TCP 8008 by default. If there is a need to use a different port, this number can be changed and applied by clicking the **Save** link. Recycling of the RTA service is going to be required for the newly defined port to be used.

(4) **Refresh**—refreshes the current job activity screen. By default, the job activity screen refreshes every 15 seconds but the administrator has the option to refresh as needed.

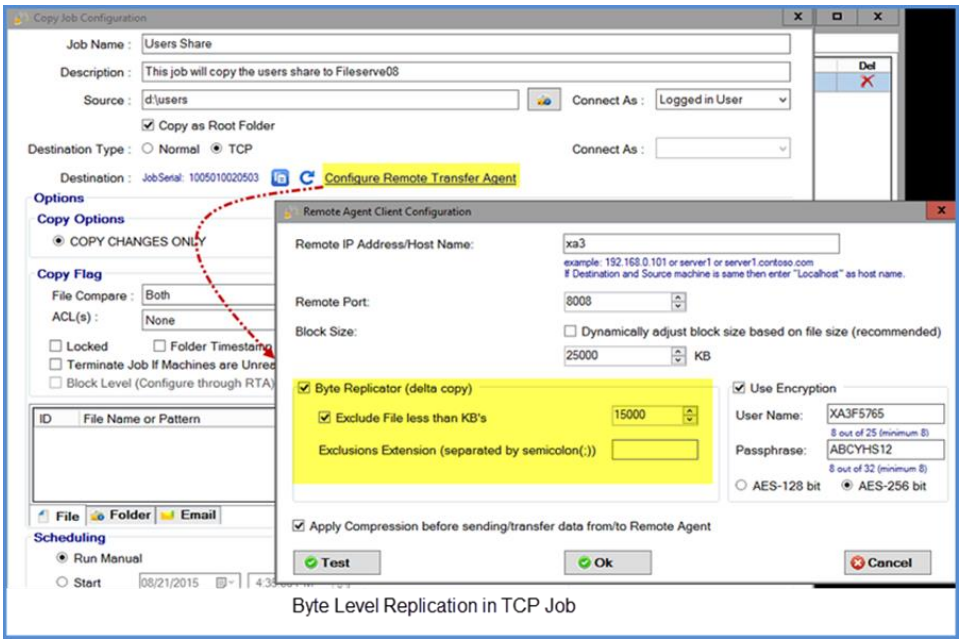
(5) **Export**—provides the option to export currently defined jobs to a CSV file.

(6) **New RTA Job Configuration**—TCP jobs require to be setup on the RTA server (receiving end). Clicking this link displays a new TCP job configuration screen.

Byte Level Replication – Enterprise Only

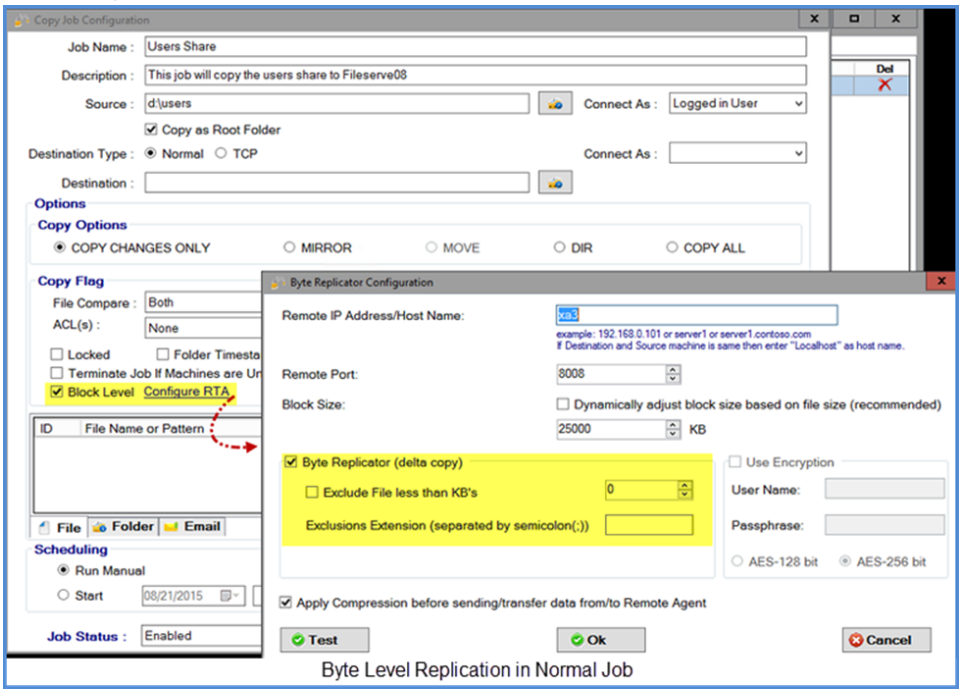
Byte level replication allows you to transfer just the changed data in a file when synchronizing, instead of the entire file. This is useful in saving bandwidth especially when dealing with large files. Byte level replication is available in both TCP copy and normal copy. However, in TCP jobs, it has to be enabled from the RTA configuration screen while in the Normal jobs, it is configured from the main screen.

TCP job



Byte Level Replication in TCP Job

Normal job



Byte Level Replication in Normal Job

Note: Byte Level Replication requires the installation of RTA on the target (destination) machine even if the job is set as a Normal job. There are no configuration settings required on the RTA side once the RTA agent is installed. For more information, refer to *Installing RTA*.

One added feature when using Byte Level Replication is that the application of permissions, date, time stamp, and attributes is offloaded to the RTA agent on the target machine. This could cut down the time taken to apply them by as much as 90%. There are no additional requirements needed to turn this feature on as it automatically works as soon as Byte Level Replication is enabled and configured.

In TCP jobs, the RTA configuration on the client side inherits the settings of the TCP job when it comes to hostname, port, block size, and compression. In Normal jobs, however, Byte Level Replication requires that the settings are set. For more information on these settings, refer to *Client/Source Configuration*.

Note: Encryption is not available in Normal jobs, which is why the encryption option is greyed out in the Byte Replicator Configuration window. Encryption with Byte Level Replication, however, is available when using TCP jobs.

Sync Poisoning Protection – Enterprise Only

Replication is a powerful tool and it is also non-discriminatory. If a series of files becomes corrupt or a user incorrectly alters a file on the source drive, those unwanted changes will be replicated to the copy location as well, unless the replication is handled by GS RichCopy 360 Enterprise. Whenever a file is modified at the source, GS RichCopy 360 Enterprise offers the Sync Poisoning feature to back up the copied original at the destination target drive location to another location before replicating the newly altered file. This ensures that you always have a prior version of every adulterated file that you can go back to. GS RichCopy 360 Enterprise ensures that the availability and integrity of your files is always preserved.

Sync Poisoning is defined and configured on a job-by-job basis. Each job has a configurable threshold where a quota can be set and is monitored real-time, so the backup disk never runs out of space.

Sync Poisoning is available only in TCP Jobs and is configured from the RTA server. For more information, refer to *Destination Configuration*.

Copying to the Cloud

GS RichCopy 360 standard and Enterprise offer the option to copy to several different cloud providers. Please note that we are continuously adding other cloud providers.

Cloud providers currently supported are:

1) Microsoft:
    a. OneDrive Personal
    b. OneDrive Business
    c. SharePoint Online
    d. Azure Blob Storage

2) Dropbox
    a. Dropbox Personal
    b. Dropbox Business

3) Amazon:
    a. Amazon S3

4) Google
    a. Google Drive Personal
    b. Google Drive Business

Note: It is important to note that some of the cloud providers could use significant bandwidth which could slow down other services and users. GS RichCopy 360 offers a throttling feature to limit the bandwidth consumption when copying to any of the cloud providers. Please refer to Cloud Bandwidth Throttling.

Microsoft Cloud

Whether you are copying to OneDrive Personal, OneDrive Business, or SharePoint Online, they all have the same requirements and follow the same process, so they are covered in one section.

Azure Blob Storage uses a different process, so that we will cover it on its own.

OneDrive / SharePoint Online

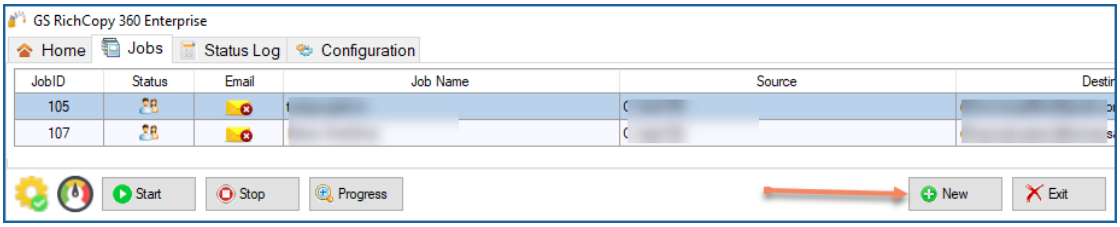
There are two ways to connect to OneDrive and SharePoint Online. You must understand the difference and the impact on throughput for each method we will discuss in further detail.

Microsoft Office 365 made it possible to copy data to its resources (OneDrive Personal, Business, and SharePoint Online) using one of two different methods:

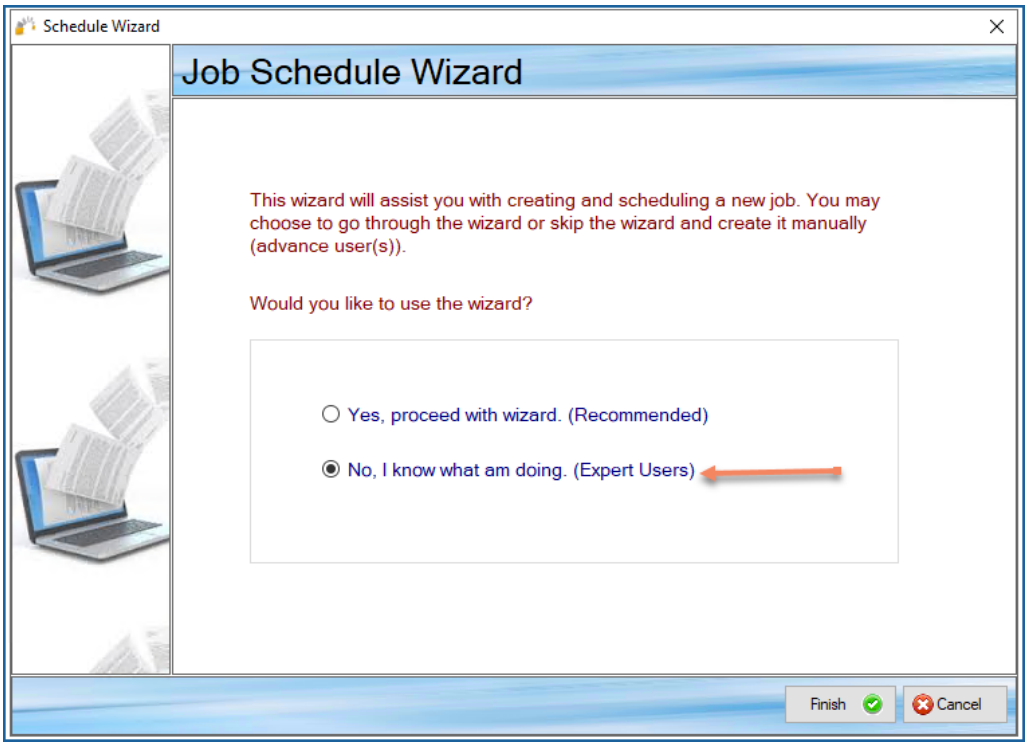
a) User Authentication: User authentication is a step where it requires the user to enter the username and password. This process is straight forward but intended for smaller sized copy jobs as Microsoft Office 365 throttles traffic using user-based authentication, especially if they are experiencing a massive workload at the time of copying. Therefore, it is recommended to copy more extensive data during the weekend and after hours. However, Larger data migration jobs should use App Authentication as Microsoft Office 365 treats jobs using App Authorization as background migration jobs with a much higher threshold in terms of throttling limits. With that said, Microsoft Office 365 still recommends that larger jobs to be processed after business hours and on weekends where possible as the threshold could be lowered at times when Office 365 resources are under workload stress.

To configure a job using User Mode Authentication:

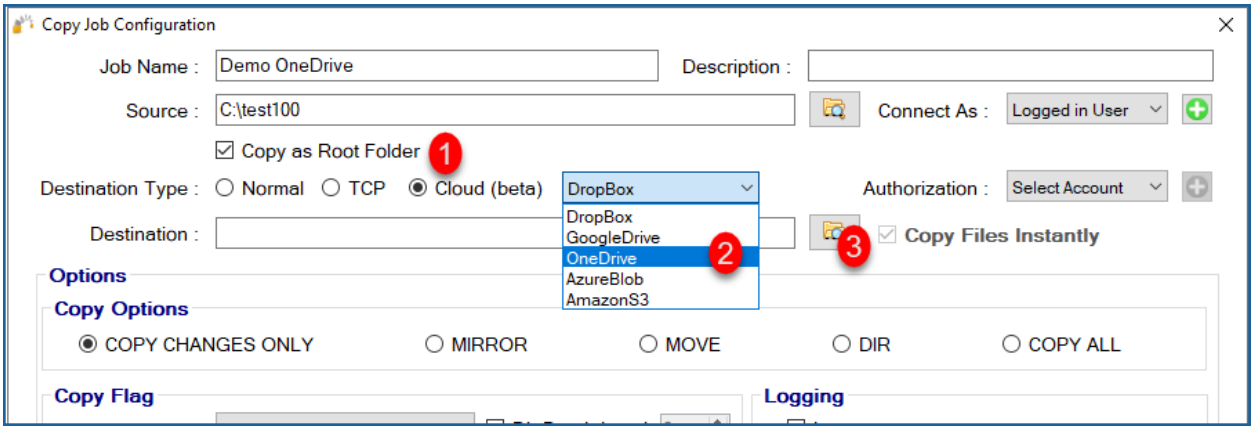
1) Create a new job from the Jobs tab.



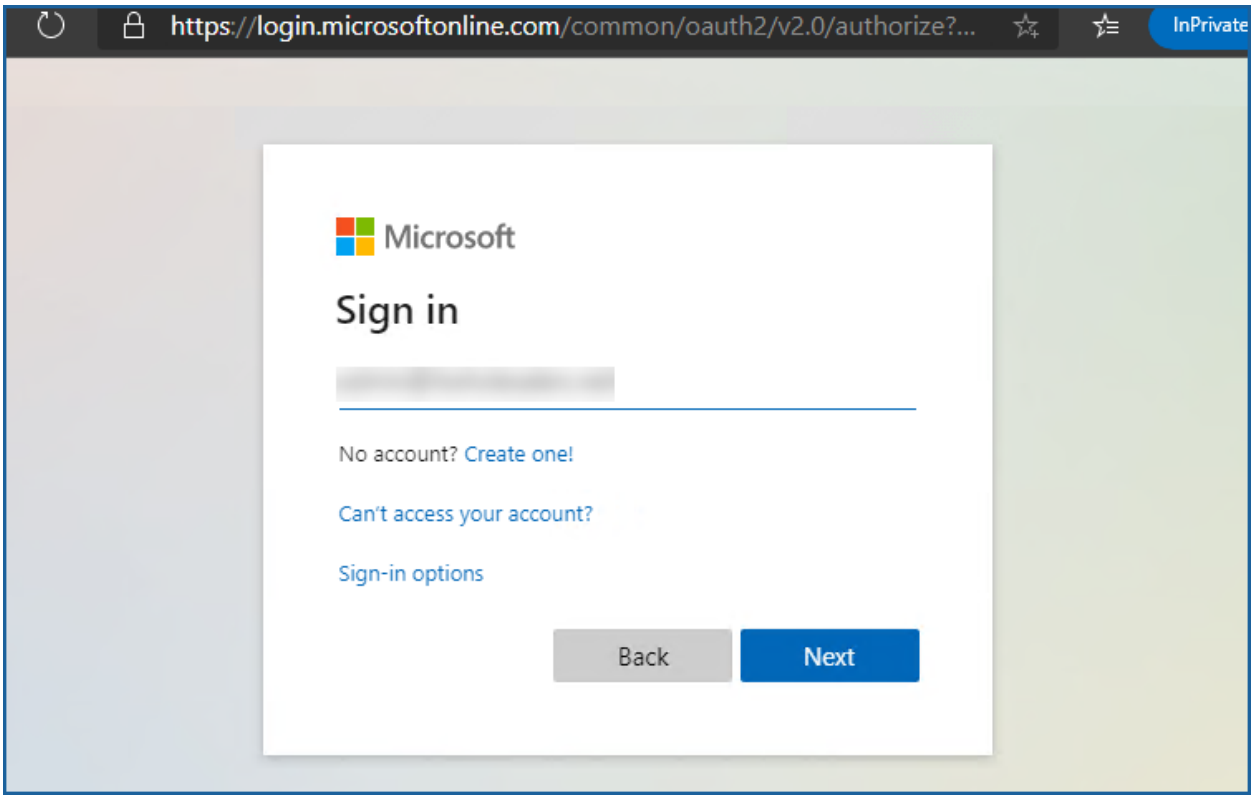
2) Select No, I know what I am doing to skip the wizard.



3) Fill out the required fields (job name, source) and then select Cloud and choose OneDrive (this covers OneDrive Person, OneDrive Business, and SharePoint Online). Then click on the browse button next to the Destination.

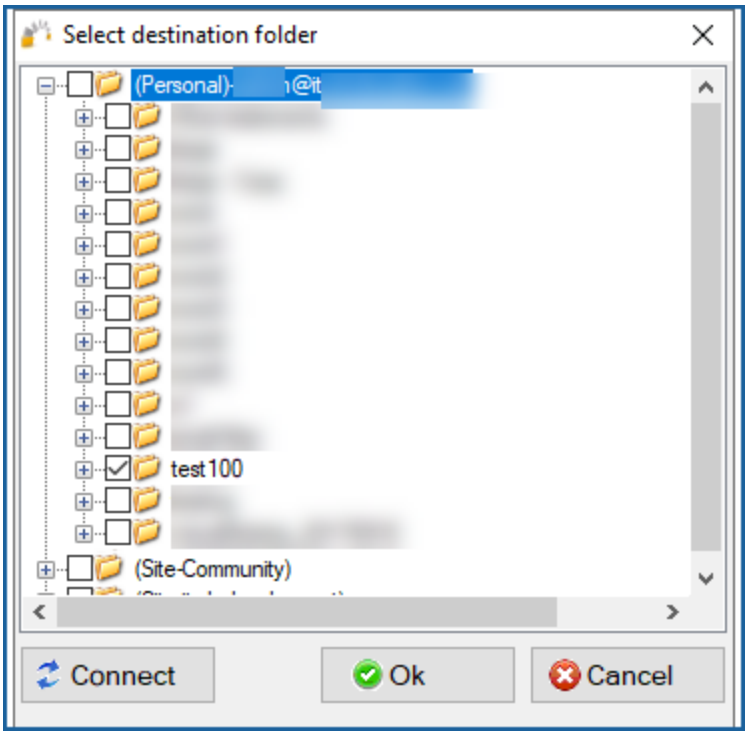


4) The default browser should open up and prompt for username (email format) and password. Provide the credentials and click next (if it prompts you to stay signed in, you can choose yes or no; it does not impact our process).

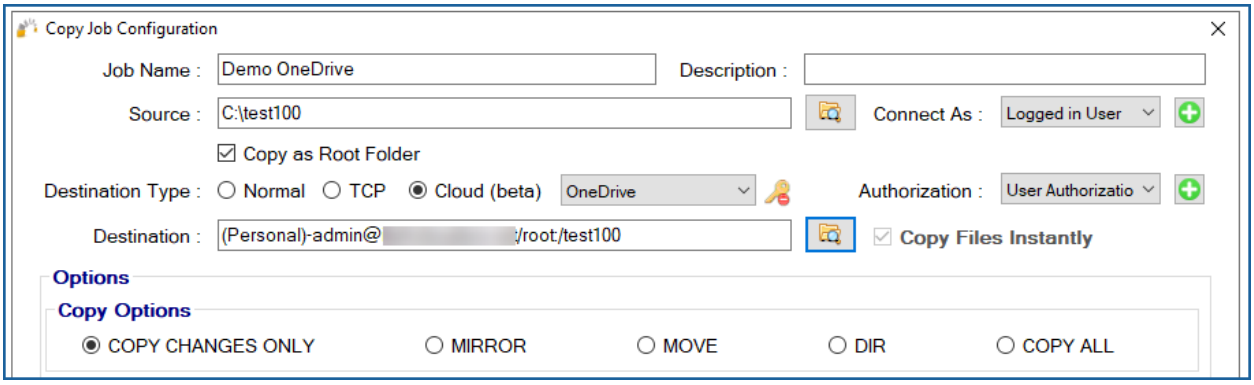


5) After completing the authentication steps, the browser should notify you that GS RichCopy 360 access has been granted and that it is safe to close that window. You can close that window now and go back to the application.

6) You should see a list of the folders; you can expand the folders to drill down. Select the folder where you want to place your data and click OK. Note: Depending on your access, you may see a list of many folders.



7) The destination should then be automatically populated, reflecting the path selected.



8) You can now create the rest of the job by choosing the copy options you want as you would in a normal job.

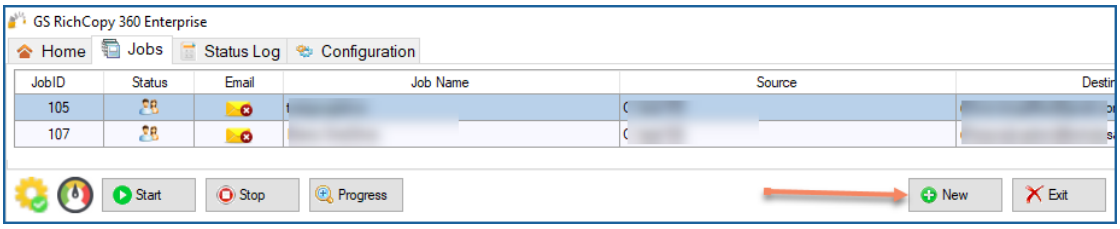
Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless the job is idle for over 8 to 12 months. Should you need to clear credentials for this job, you can click on the key icon.

b) App Authentication: As indicated earlier in the previous section, App Authentication is highly recommended and used in large migrations as Microsoft Office 365 does not throttle it as much as it throttles User Authentication.

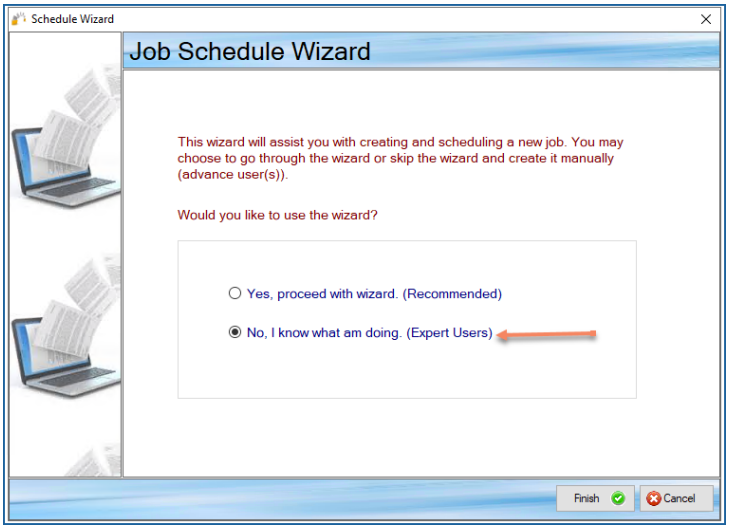
To use App Authorization, the user credentials used must have a Global Admin Role. Follow the steps below to configure a job:

To configure a job using User Mode Authentication:

1) Create a new job from the Jobs tab.

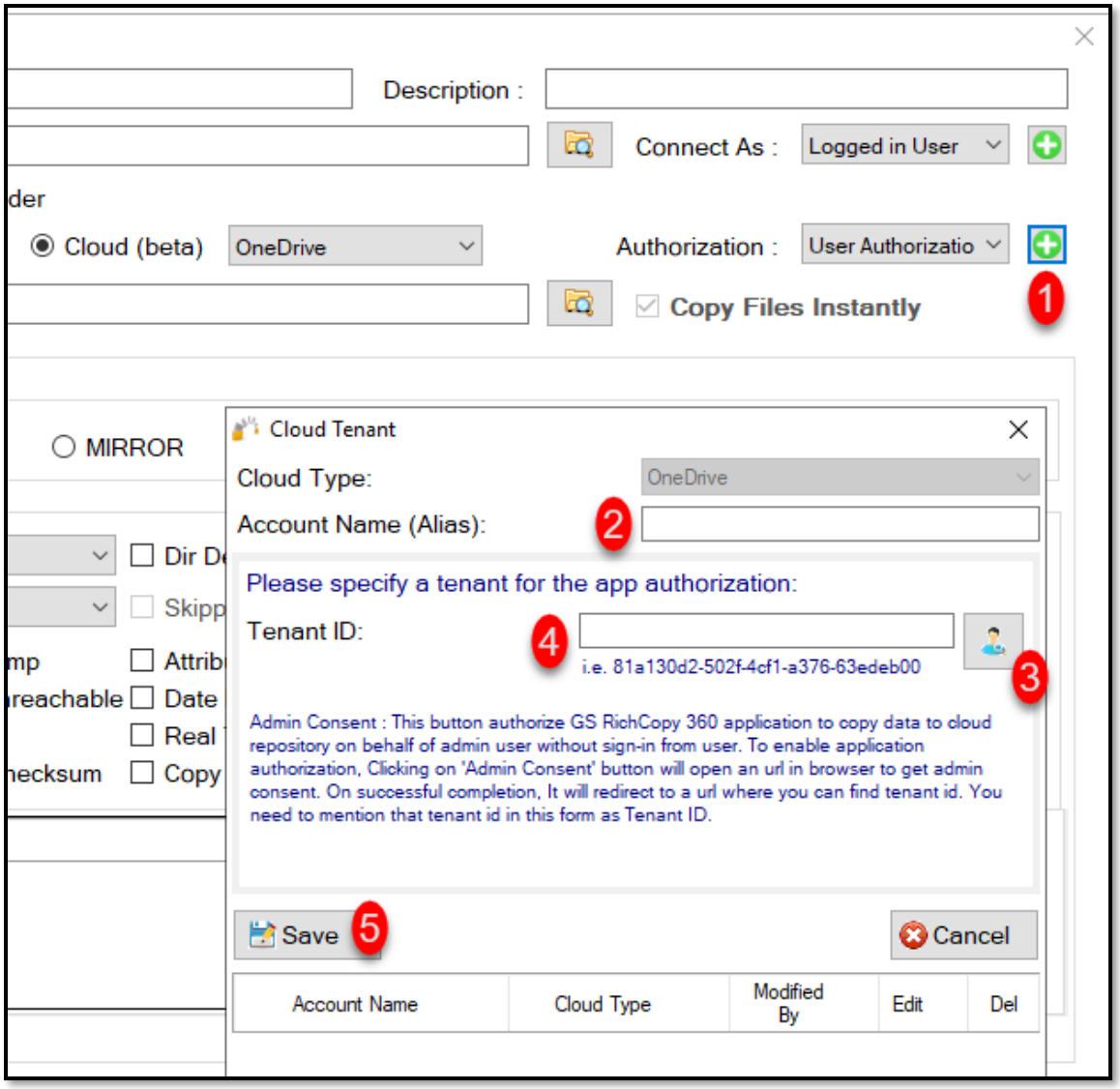


2) Select No, I know what I am doing to skip the wizard.



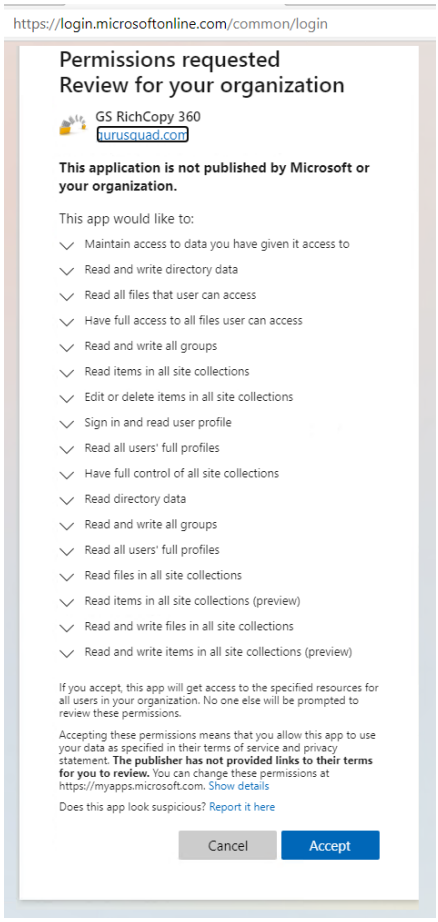
3) Fill out the required fields (job name, source) and then select Cloud and choose OneDrive (this covers OneDrive Person, OneDrive Business, and SharePoint Online).

Then click on the Plus sign button next to Destination  . Once clicked, a new window will pop out prompting for a few fields as per the screen below:



- Account Name: This is just an Alias\ label.

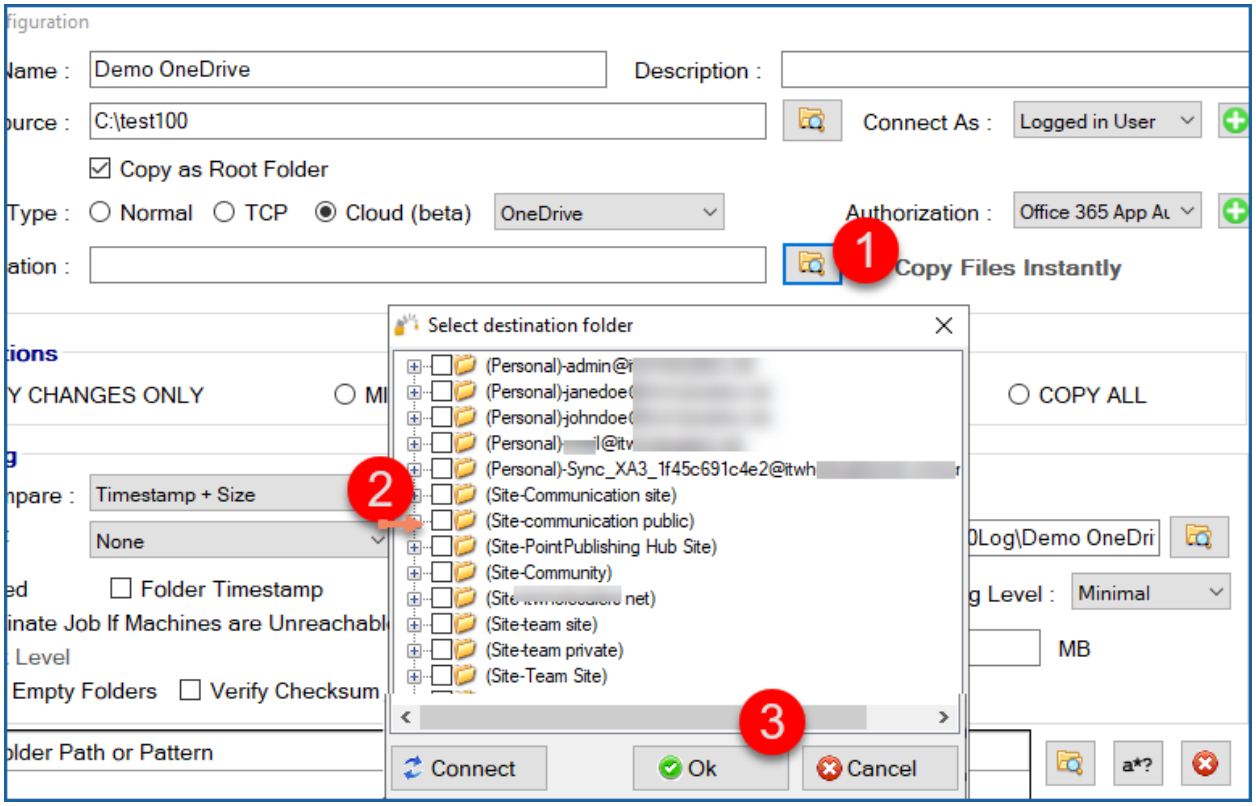
-  Clicking on this button initiates the authorization request to allow the application to access OneDrive\SharePoint resources. A web browser will pop out prompting for username and password (global admin role is required). Once logged in, it will request permission to grant GS RichCopy 360 the access required.



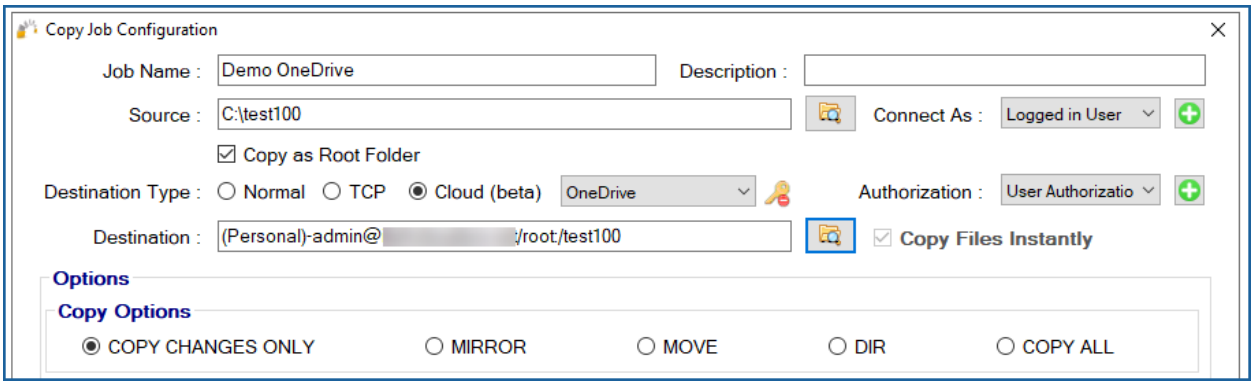
- Once the access has been granted, a confirmation screen will be displayed along with the Tenant ID. **Copy the Tenant ID to your clipboard** as we will need it to fill out the next screen. Not if you do not see the tenant ID displayed in the browser (due to browser compatibility), then you should see it in the URL as it is highlighted in the top bar of the browser. Close the browser and return to the application.
-

- Paste the Tenant ID into the Tenant ID field
- Click on Save

4) Now that the access has been granted, click on the browse button next to the destination, and it should enumerate all the available folders to which you have access. Select the folder you want to copy the data to and click on ok.



5) Once you have selected your destination folder and click on Ok, you should see the path populated in the destination field as below:



6) You can now create the rest of the job by choosing the copy options you want as you would in a normal job.

Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless the job is idle for over 8 to 12 months.

Microsoft Azure Blob Storage:

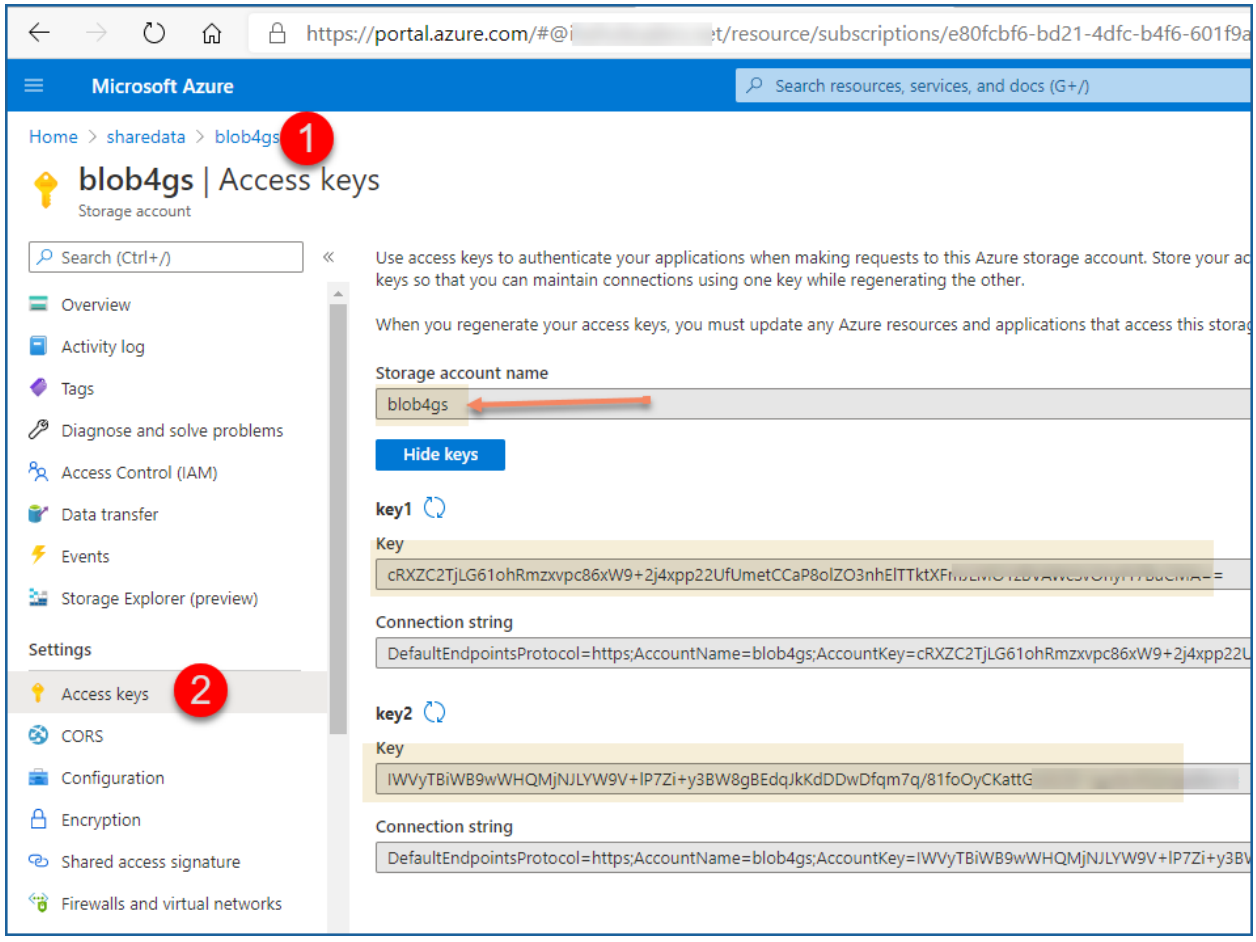
Copying to Azure Blob Storage is straight forward. However, it is essential to note that Azure Blob Storage is known to use network bandwidth excessively. Fortunately, GS RichCopy offers the option the throttle the bandwidth being used to copy to cloud providers. Make sure to visit that section to Cloud Bandwidth Throttling.

To configure a job to copy to Azure Blob Storage, you will need the following from the Access Keys for that storage account:

1) Storage Account Name

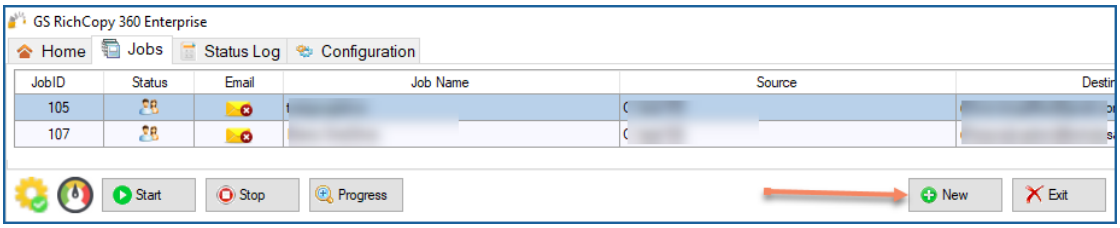
2) One of the two keys.

Here is a screenshot of where you can obtain them from the Azure Portal for reference.

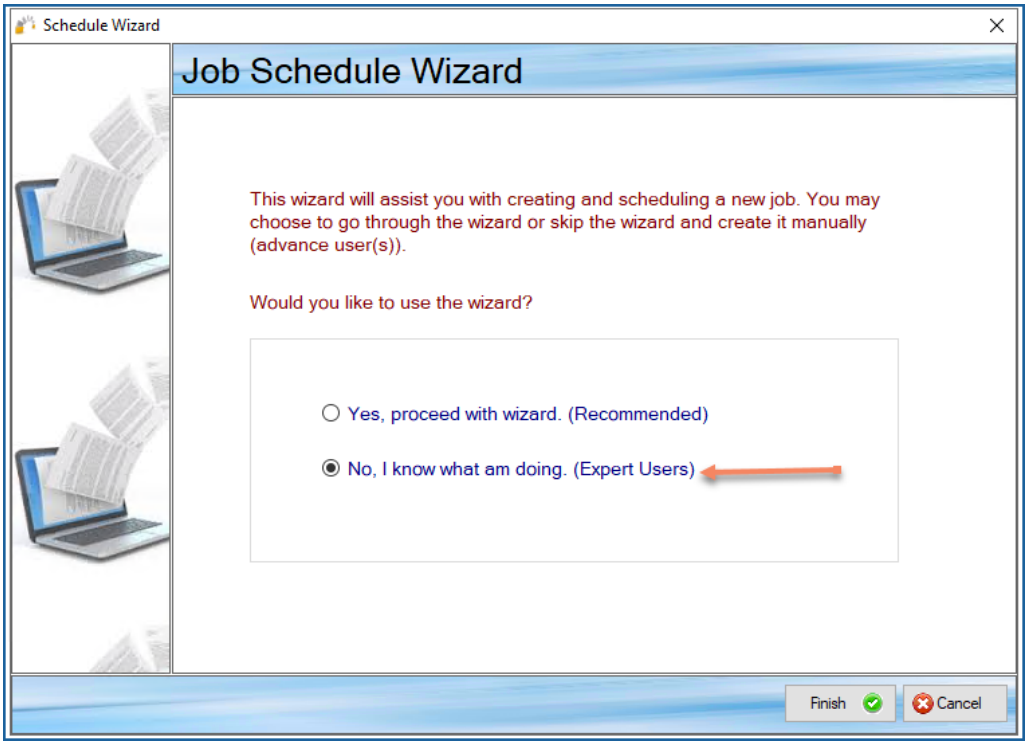


Creating a job to copy to Azure Blob Storage:

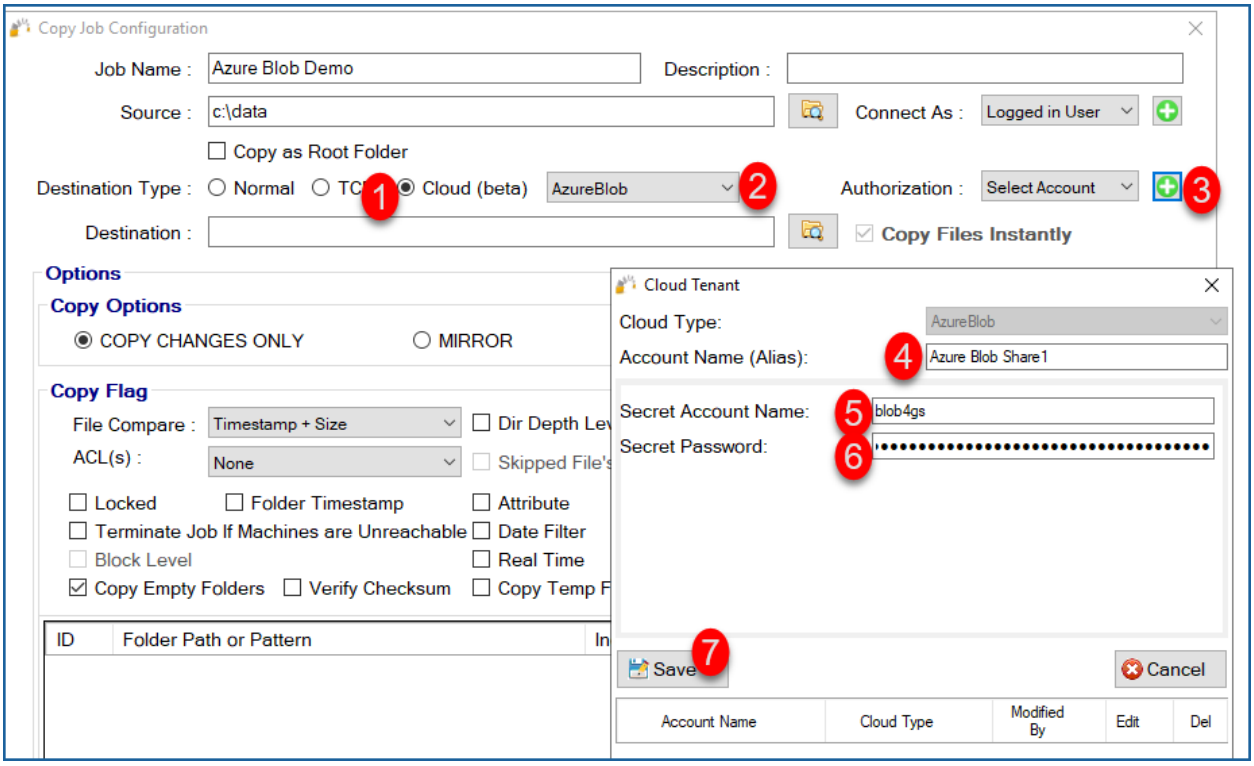
1) Create a new job from the Jobs tab.



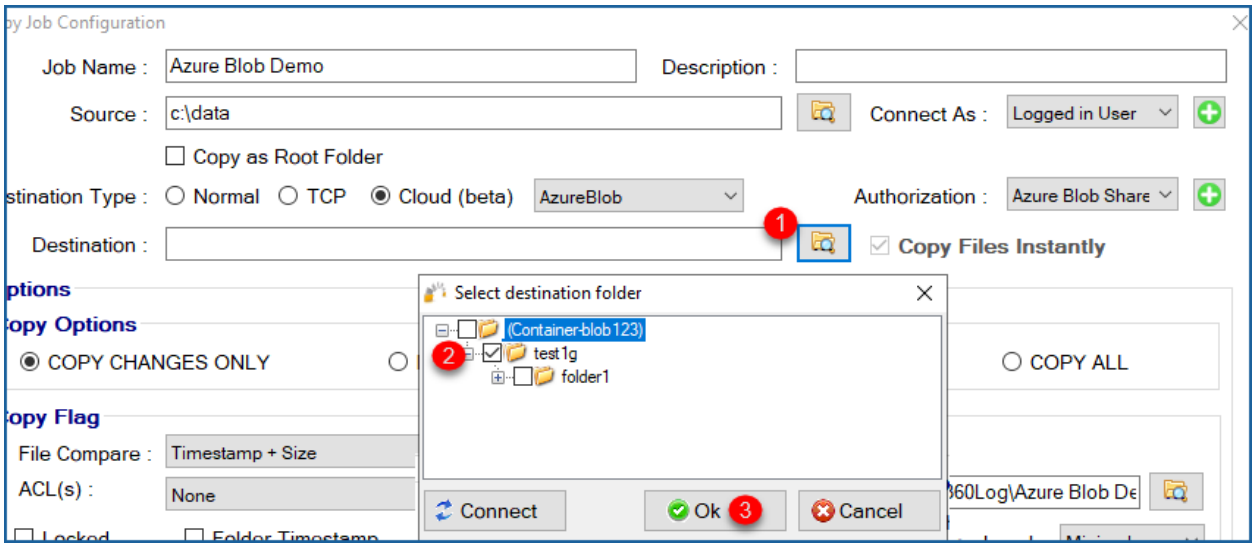
2) Select No, I know what I am doing to skip the wizard.



3) Fill out the required fields (job name, source), select Cloud, choose AzureBlob, click on the Plus Sign next to the destination, and follow the steps below and click Save.



- Then click on the browse button next to the Destination. A list of folders will be displayed. Click on the check box where you want to copy the data to and click ok.



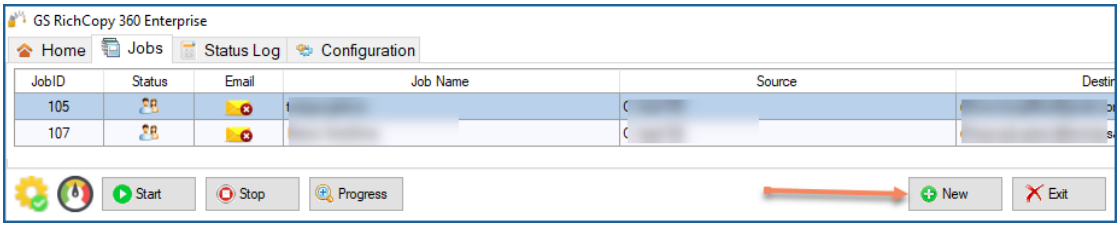
- You can now proceed with creating the rest of the job by choosing the copy options you want as you would in a normal job.

Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless you change the key that is being used.

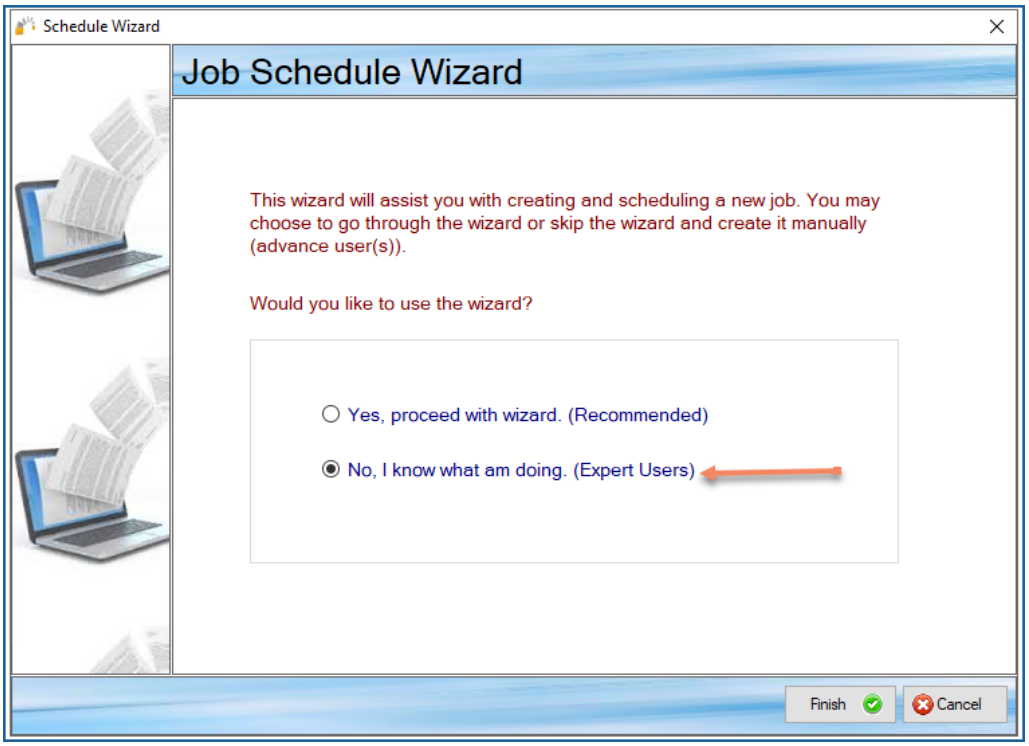
DropBox Cloud

Follow these simple steps to copy to DrobBox Personal/Business Cloud.

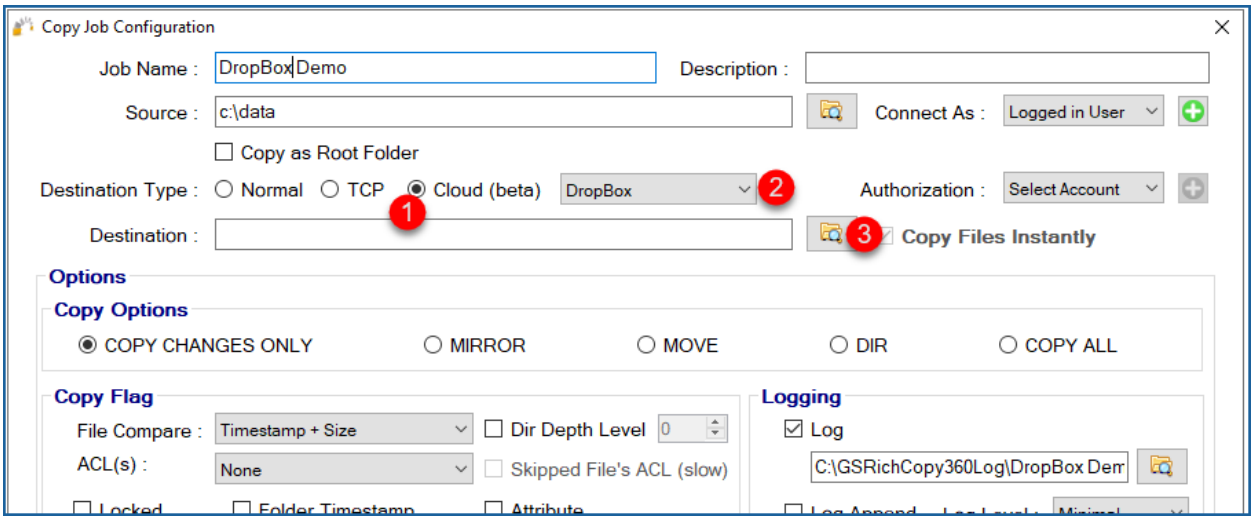
1) Create a new job from the Jobs tab.



2) Select No, I know what I am doing to skip the wizard.

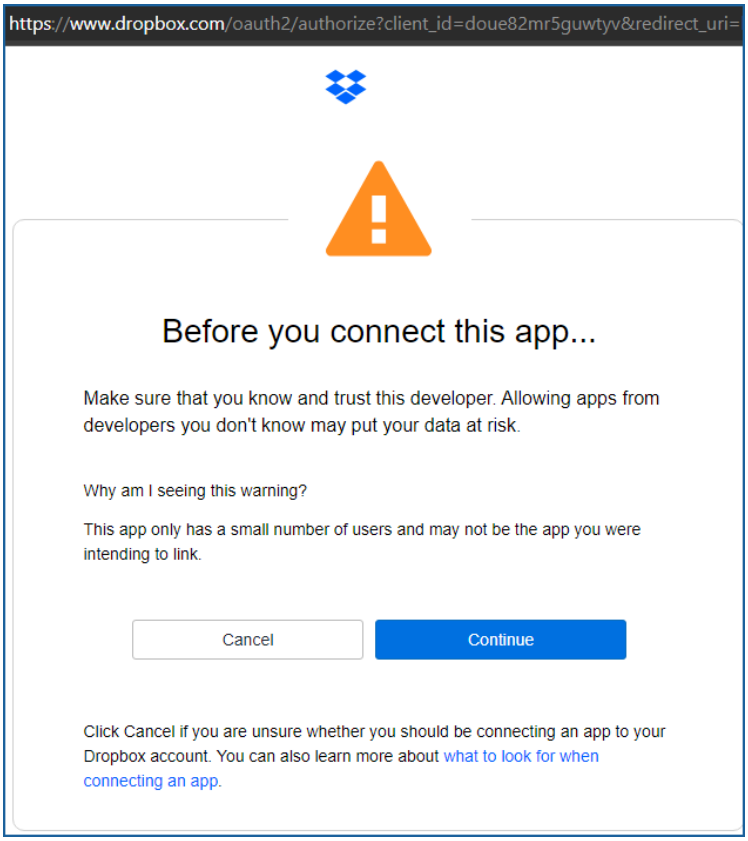


3) Fill out the required fields (job name, source) and then select Cloud and choose DropBox. Then click on the browse button next to the Destination.

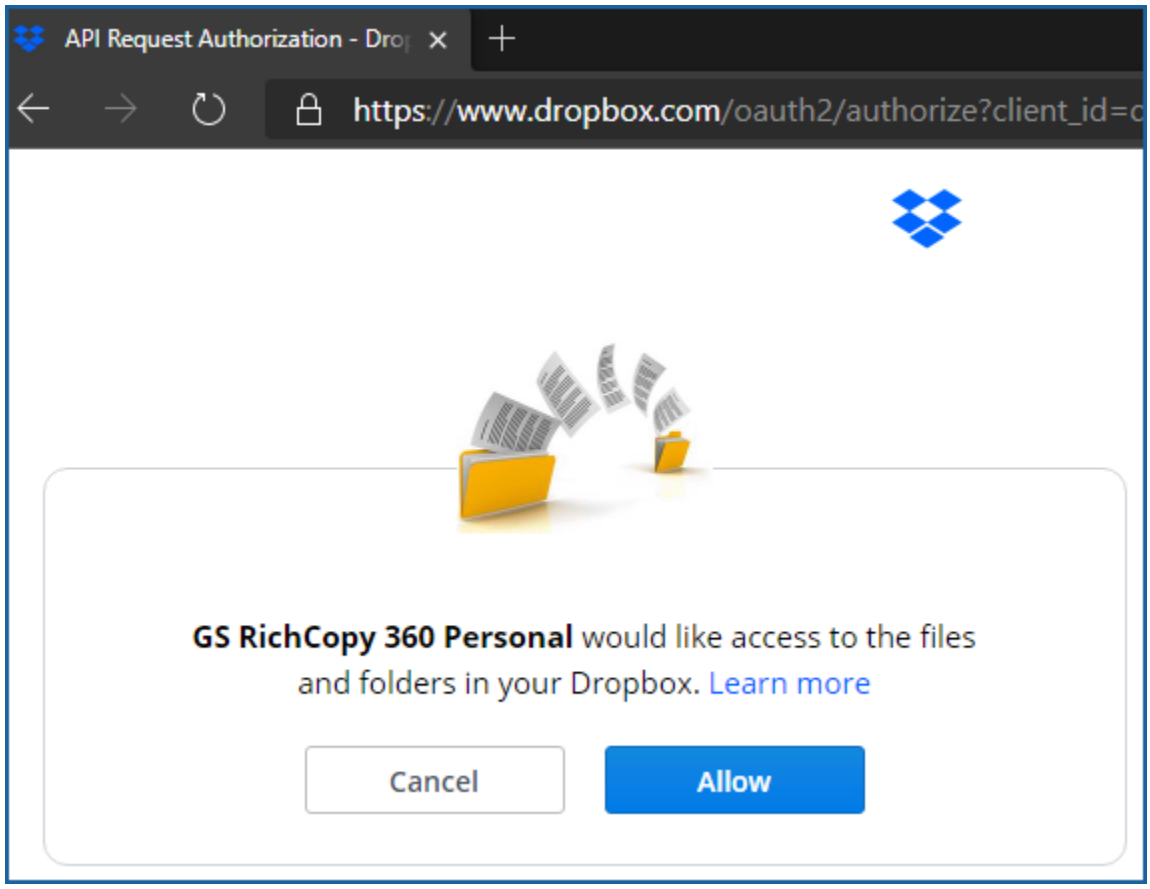


4) A browser window should open up and prompt you for your DropBox credentials. Provide them and logon.

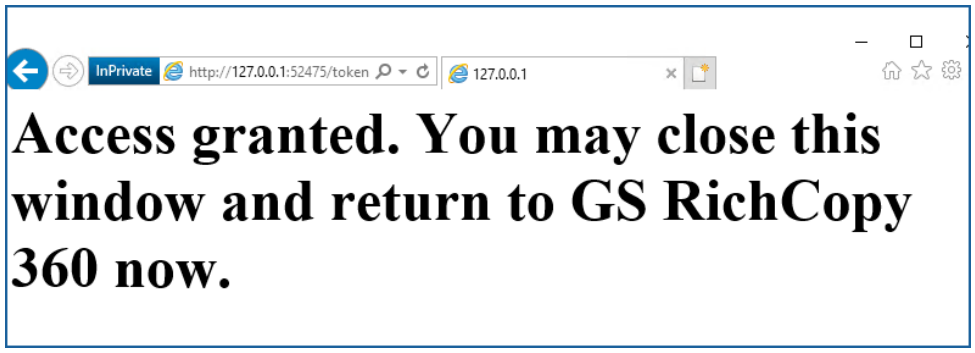
5) A warning prompting for confirmation to allow access to GS RichCopy 360 the DropBox resource. Click Continue.



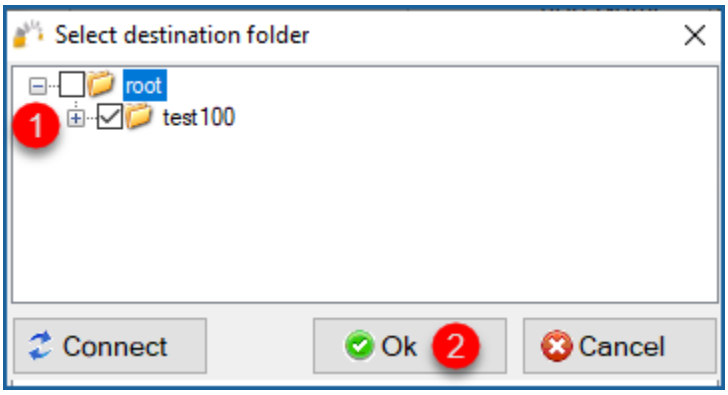
6) Another box may request the GS RichCopy 360 to grant access. Click Allow to continue.



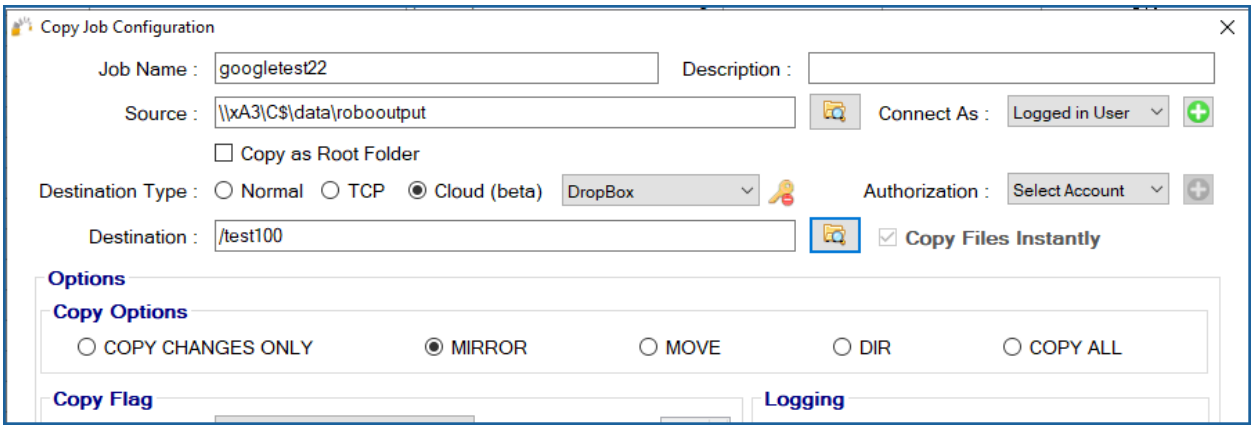
7) A confirmation screen confirming that GS RichCopy 360 has now been granted the access it needs to enumerate and connect to your account. Close that window and go back to the job configuration screen to select a destination folder.



8) Select the destination folder and click Ok.



9) Your destination path now should auto-populate with the folder you selected to copy to.



10) You can now create the rest of the job by choosing the copy options you want as you would in a normal job.

Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless the job is idle for over 8 to 12 months.

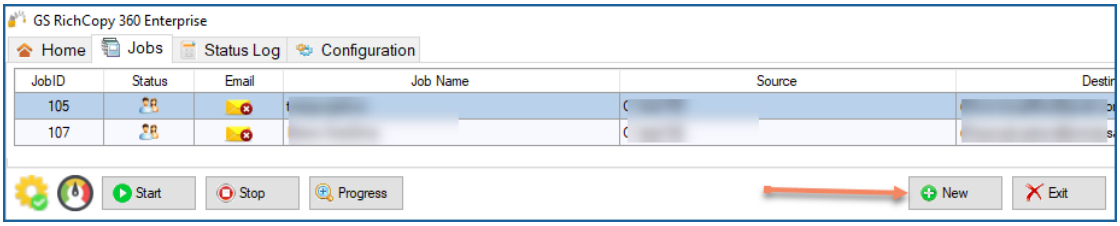
Amazon S3 Cloud

Copying to the Amazon S3 account requires the Access Key and Secret Access Key for either the root account or an IAM user with proper rights and API access to the S3 bucket.

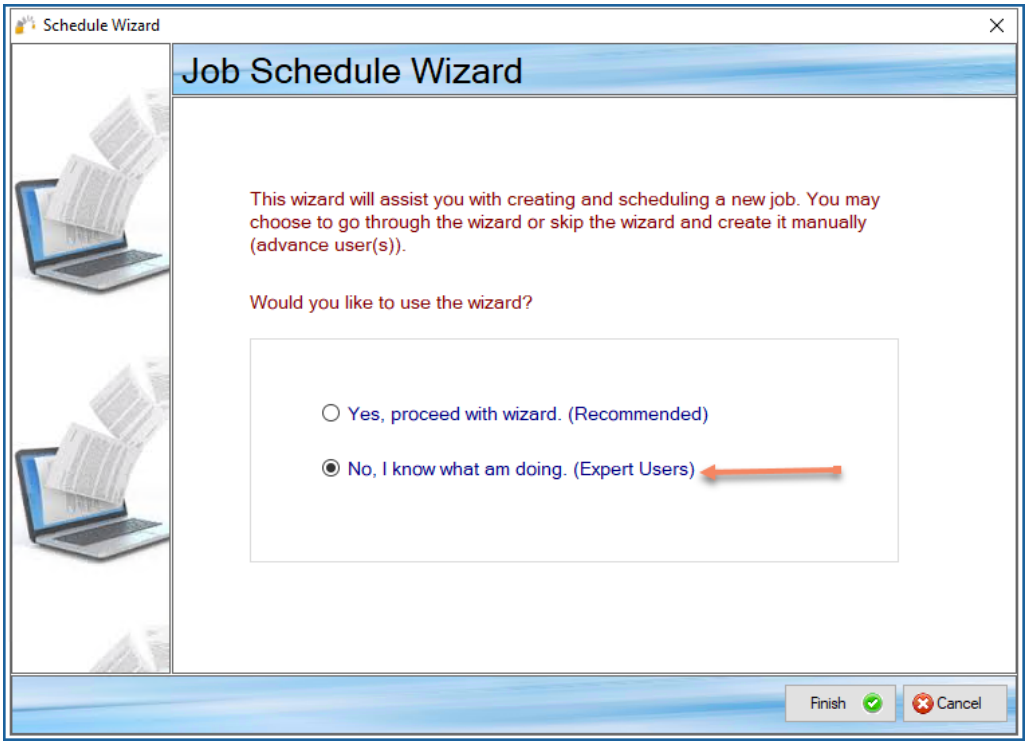
Note: it is very important to note that Amazon S3 is known to use network bandwidth excessively. Fortunately, GS RichCopy offers the option the throttle the bandwidth being use to copy to cloud providers. Make sure to visit that section to Cloud Bandwidth Throttling.

Steps for creating a job to copy to Amazon S3:

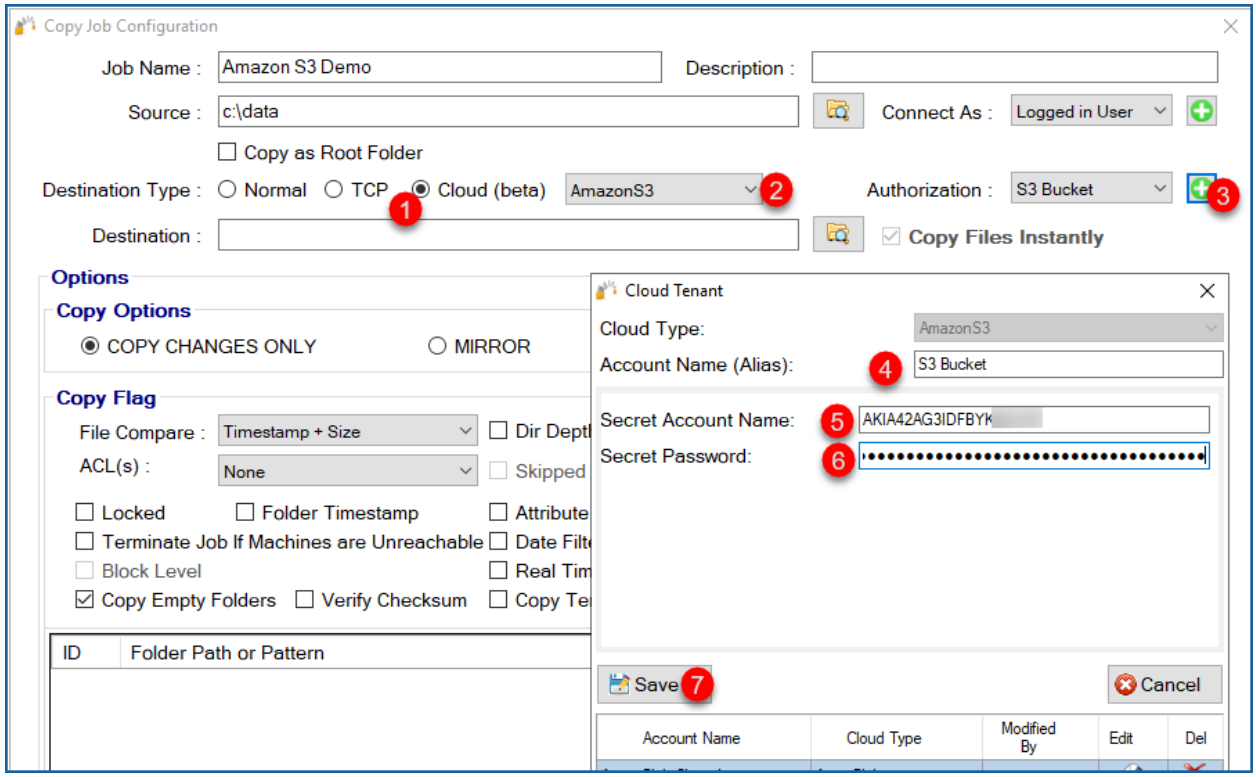
1) Create a new job from the Jobs tab.



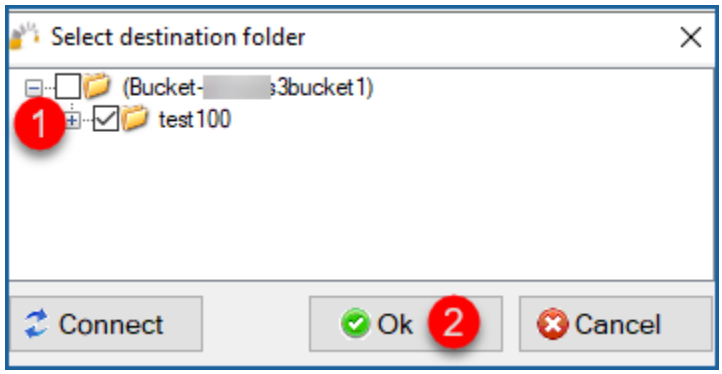
2) Select No, I know what I am doing to skip the wizard.



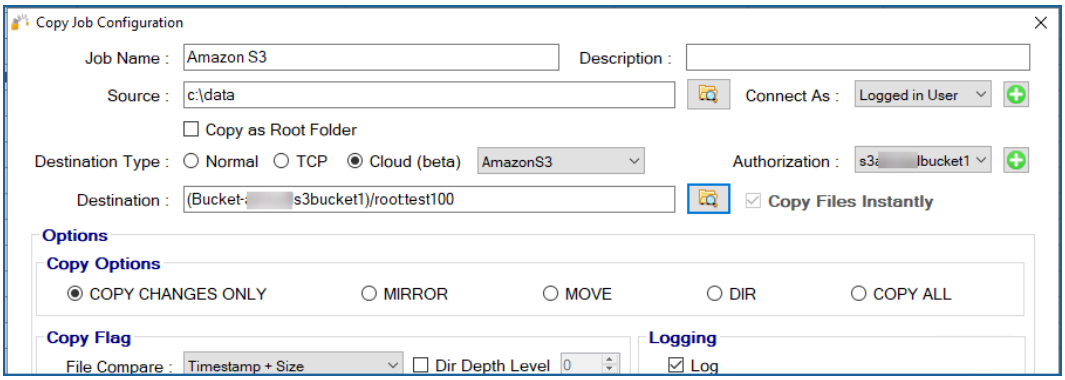
3) Fill out the required fields (job name, source) and then select Cloud and choose Amazon S3. Then click on the Plus sign next to the destination to add the credentials.



4) Click on the browse button next to the destination and select your destination folder and click ok.



5) Your destination path now should auto-populate with the folder you selected to copy to.



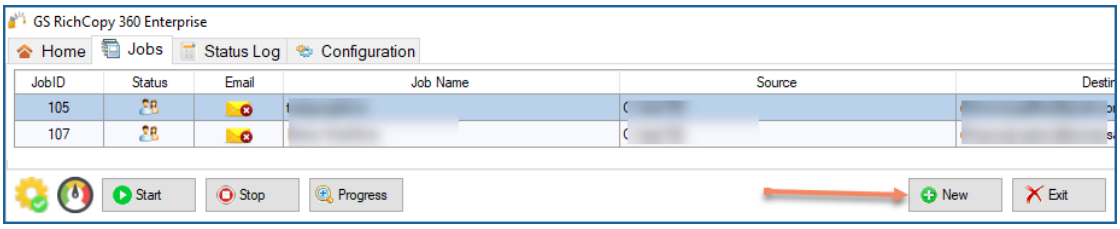
6) You can now create the rest of the job by choosing the copy options you want as you would in a normal job.

Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless you change the key that is being used.

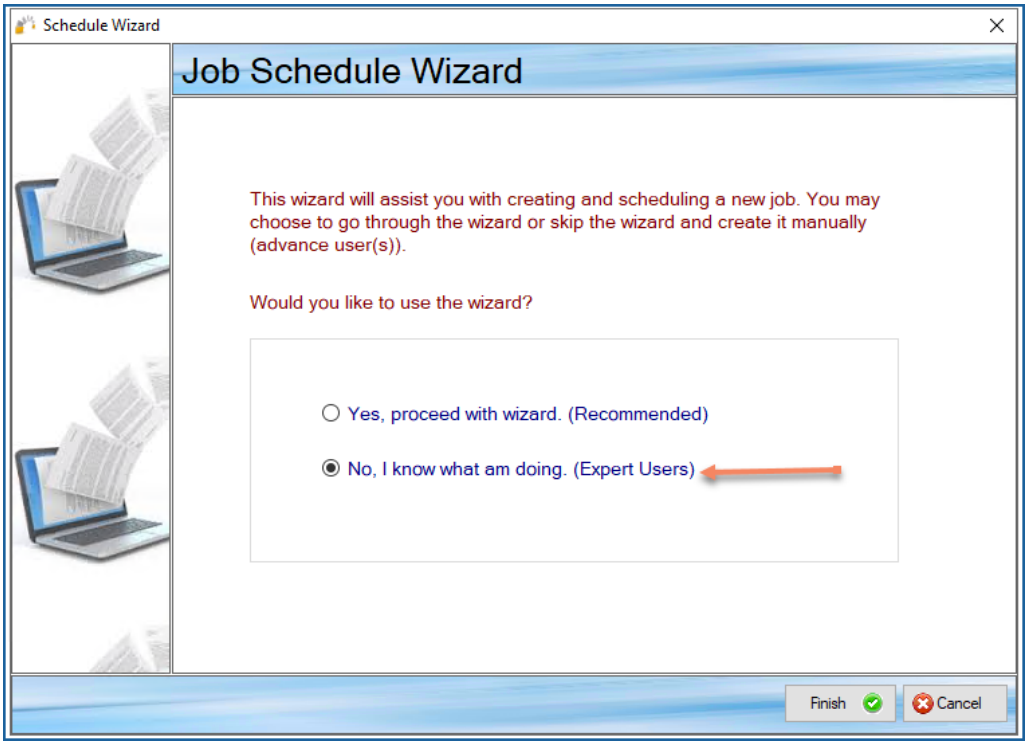
Google Drive Cloud

Follow these simple steps to copy to Google Drive Personal\ Business Cloud.

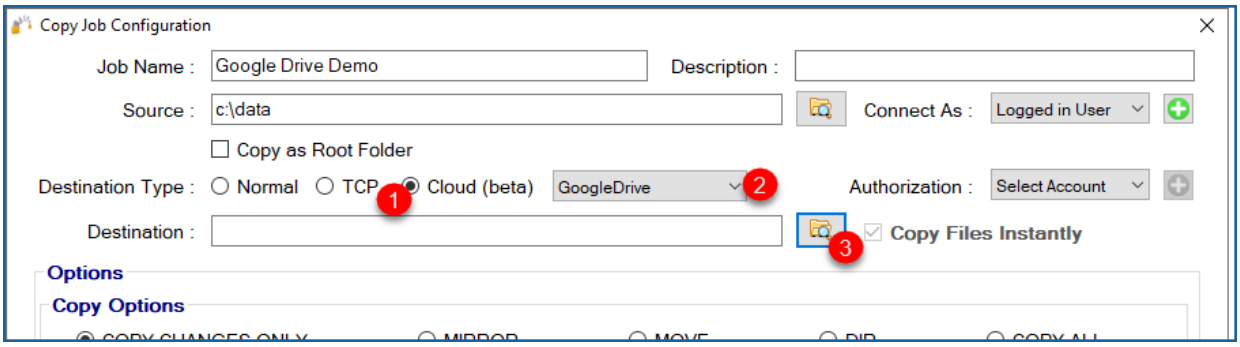
1) Create a new job from the Jobs tab.



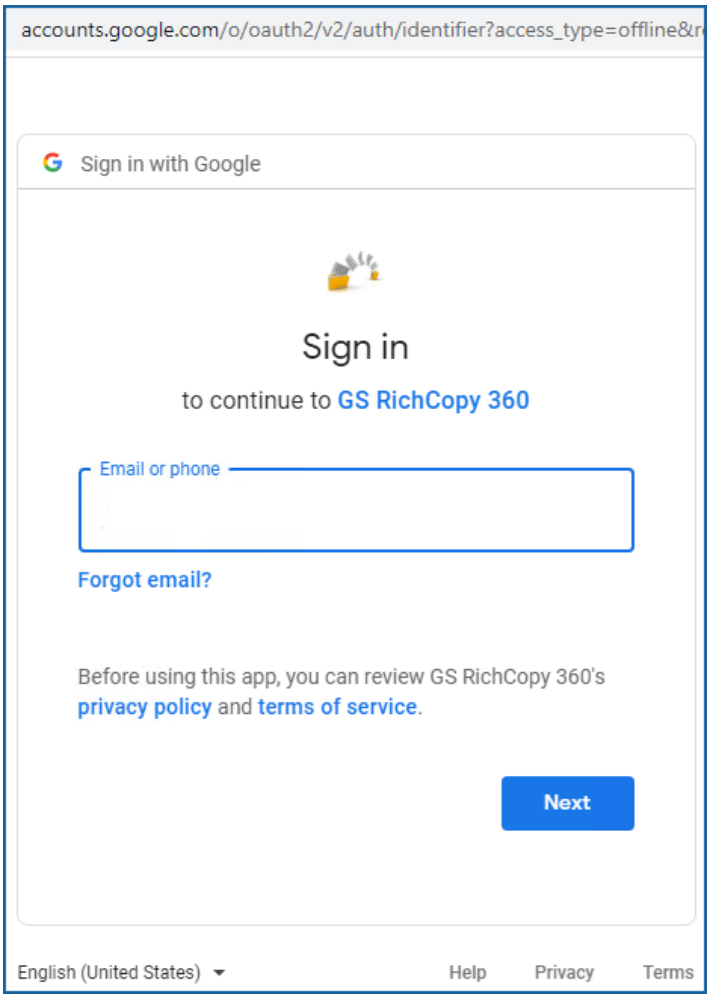
2) Select No, I know what I am doing to skip the wizard.



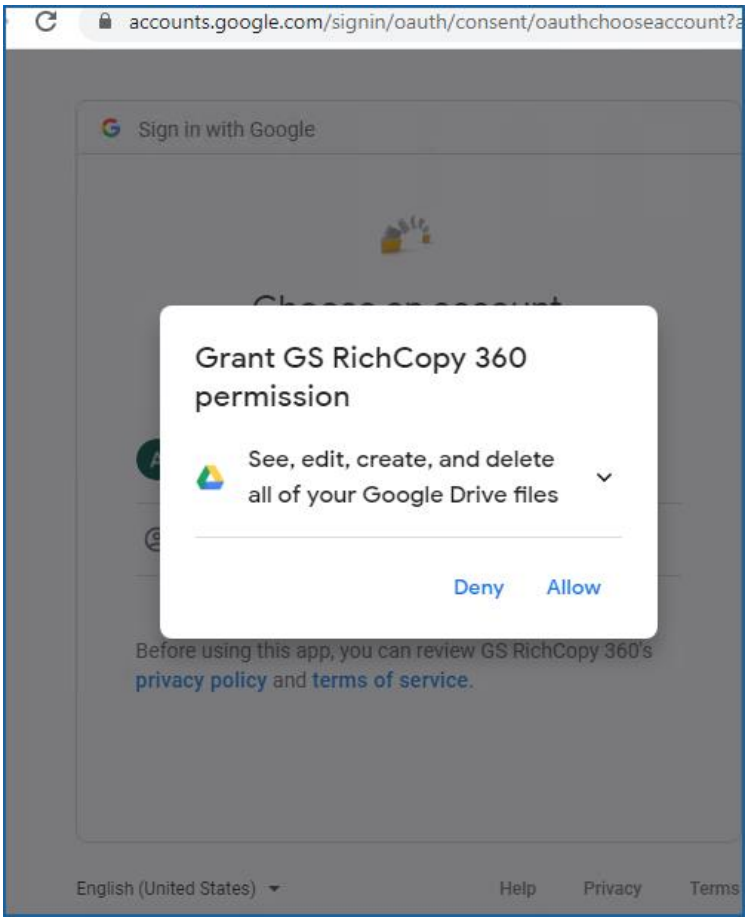
3) Fill out the required fields (job name, source) and then select Cloud and choose GoogleDrive Then click on the browse button next to the Destination.



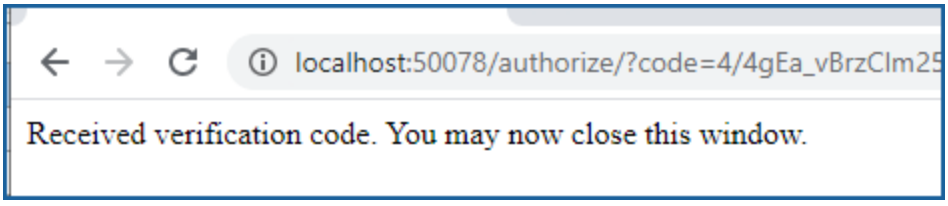
4) A browser window should open up and prompt you for your DropBox credentials. Provide them and logon.



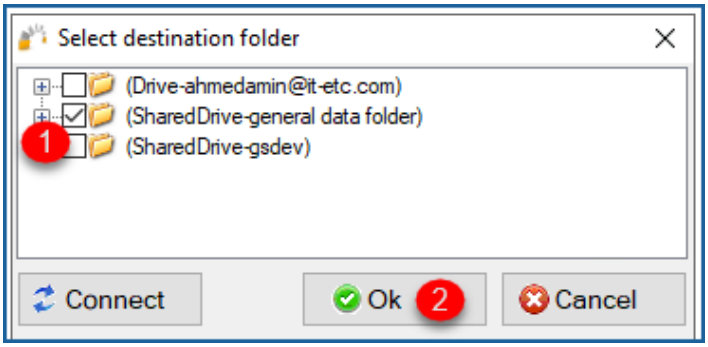
5) Click on Allow access for GS RichCopy 360 to proceed forward



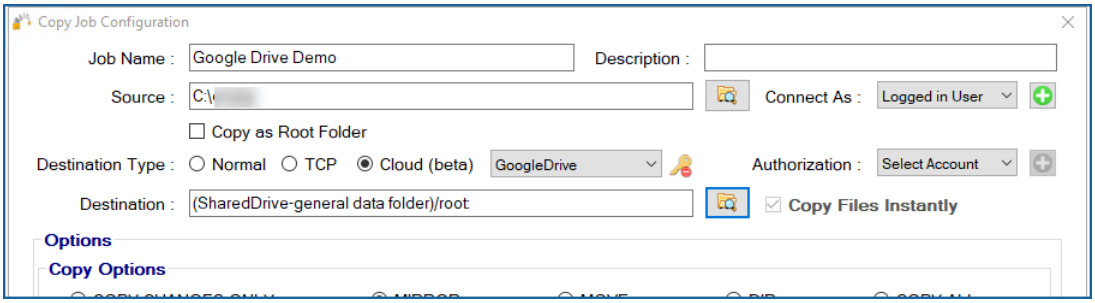
6) You should get confirmation that access to the application has been verified. You can close that window and go back to select the destination folder.



7) Select the folder you want to copy to and click ok.



8) Your destination path now should auto-populate with the folder you selected to copy to.



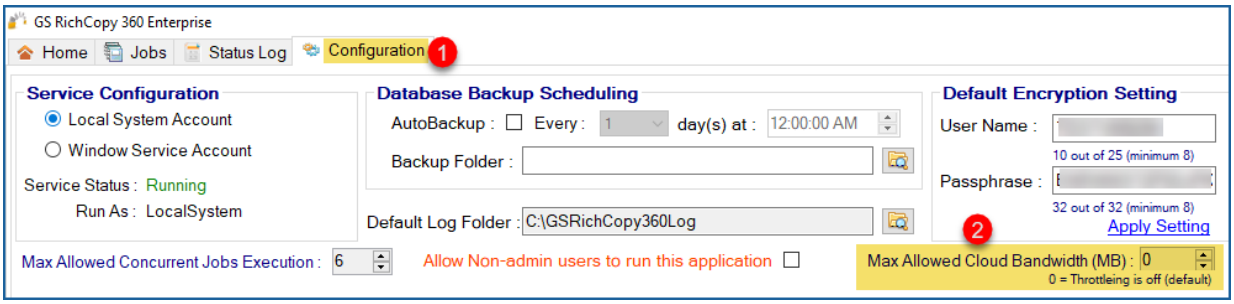
9) You can now create the rest of the job by choosing the copy options you want as you would in a normal job.

Note: The credentials are stored in an encrypted format. So jobs could run uninterrupted as well as run as a service. You do not have to provide credentials for this job again unless you change the key that is being used.

Throttling Cloud Network Bandwidth

Copying data across to different cloud providers can be very taxing on network bandwidth. Fortunately, GS RichCopy 360 made it possible to throttle network bandwidth used for all jobs copying to the cloud.

To throttle bandwidth, click on the configuration tab and set the maximum limit that can be used. Note that cloud jobs running as a service would not adhere to that limit until the GS RichCopy 360 service is restarted. Logged in user jobs take effect immediately. Value of 0 means throttleing is disabled.



With that said, it is important to point out the following best practices when throttling cloud jobs:

1) Throttling cloud jobs apply to all cloud jobs. You cannot throttle one job and un-throttle another.

2) Cloud jobs running as a service and jobs that running under logged in user are calculated separately. So if you set the throttle to 20MBps, then cloud jobs running as a service can only use 20MBps pool and cloud jobs running as logged in user also have a separate 20MBps pool.

3) Normal and TCP copy jobs are not affected by the bandwidth throttling.

4) GS RichCopy 360 sends data in 5MB chucks. So when setting a limit of bandwidth, you should take into account how many threads are used in all the cloud jobs that are running in parallel and account for 5MB for each threads. For instance, if you have a total of 2 cloud jobs and each job is running 3 threads, then you would calculate it as such:

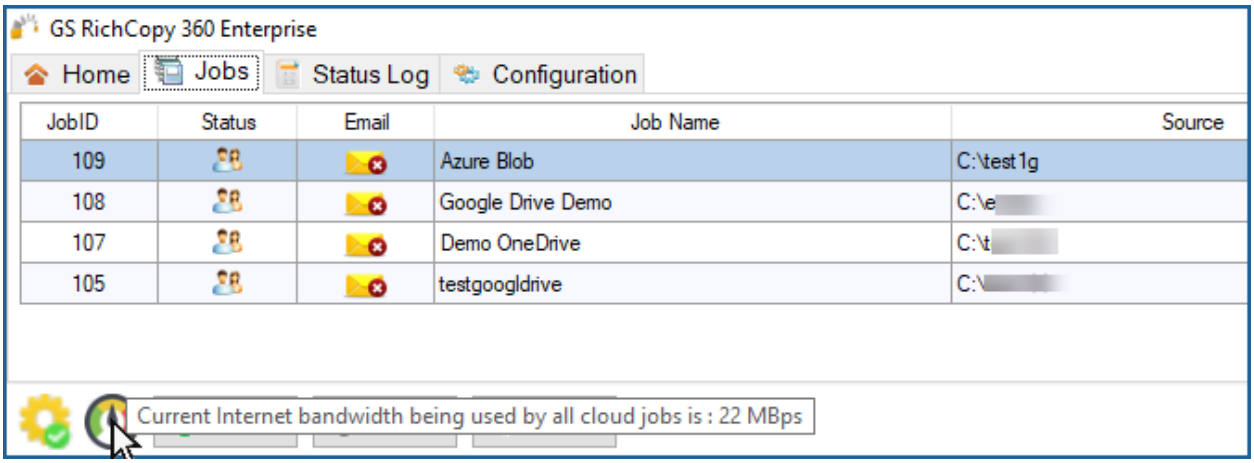
   2 (jobs) × 3 (threads) × 5MB (chunk) = 30MBPS

   Note this is MBPS (Mega Bytes per second). To convert it to mbps (mega bit per second) then you need to multiply it by 8. So 30MBps = 240mbps.

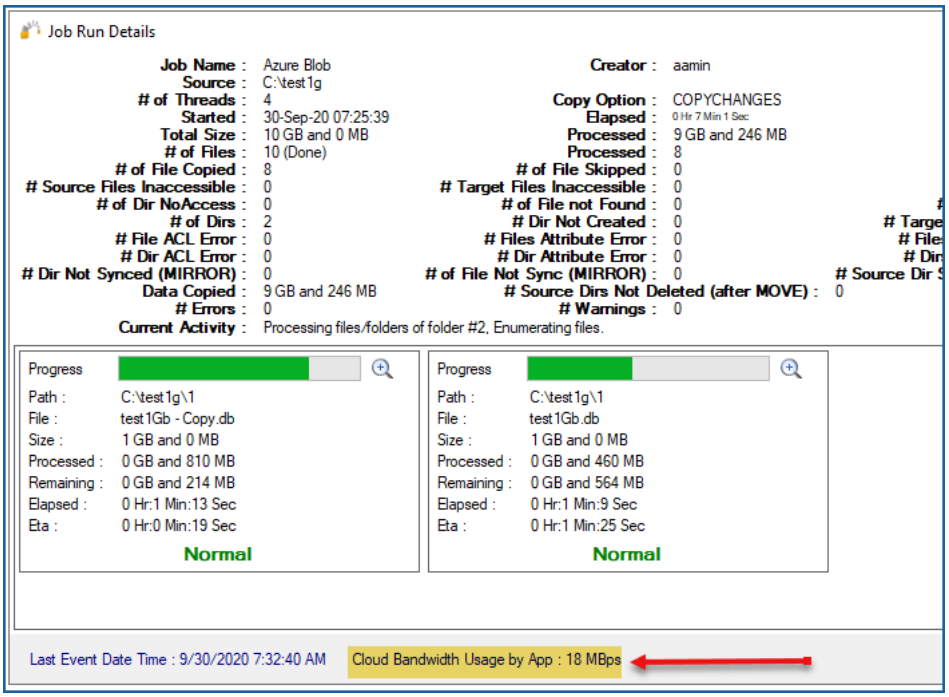
   This is only a recommendation to keep jobs running smoothly. In the event the network speed recommended is higher than the available bandwidth to be allotted, then you can lower the limit and jobs would still operate. GS RichCopy 360 will manage the threads to make the do not use the enter bandwidth. It is crucial to consider throttling cloud jobs in the event the network link is shared with other users or services that rely on that link.

You can monitor the bandwidth used in two different places:

1) The speed gauge in the bottom of the jobs screen. Just hover your mouse on top of it and it will display how much cloud jobs are consuming.



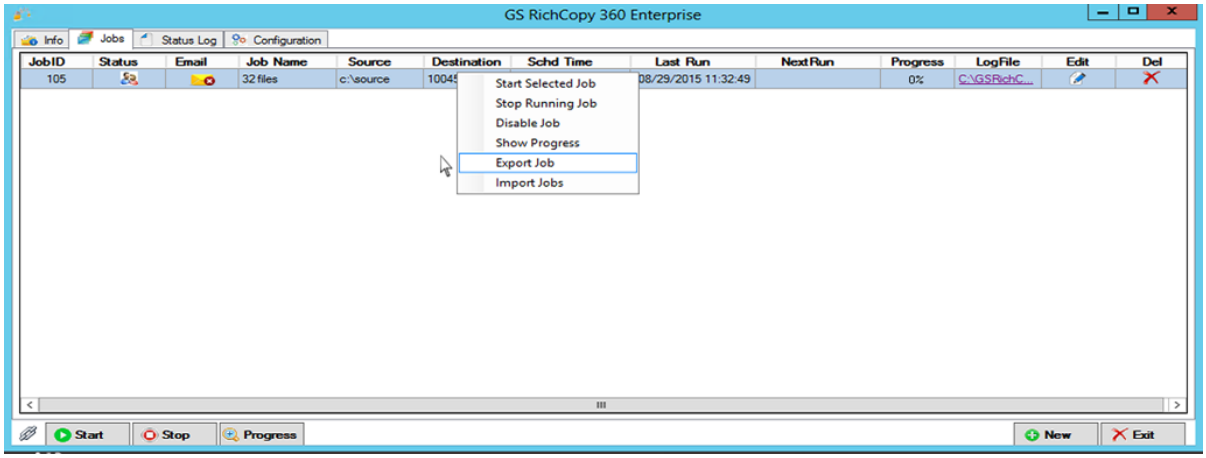
2) The other way to monitor used cloud job bandwidth is via the show progress screen in the bottom.



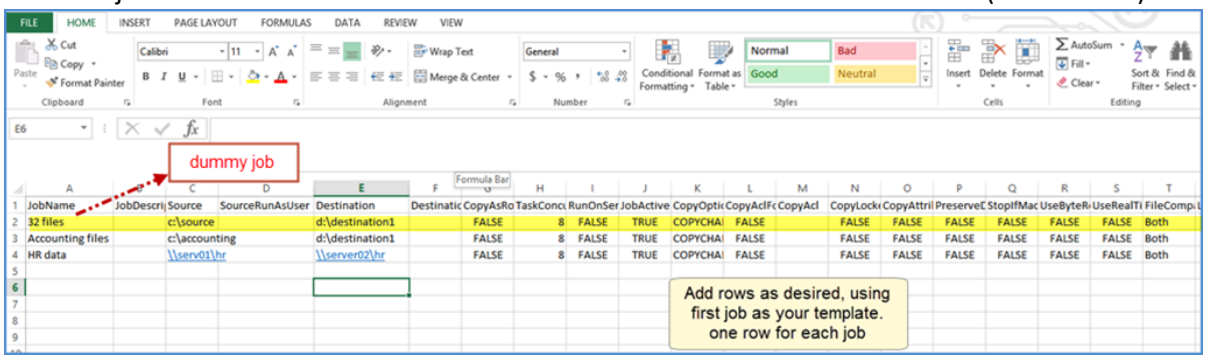
Exporting and Importing batch jobs from CSV – Enterprise Only

Using GS RichCopy 360 Enterprise, system administrators can import thousands of jobs with just a few clicks. To import jobs, follow these steps:

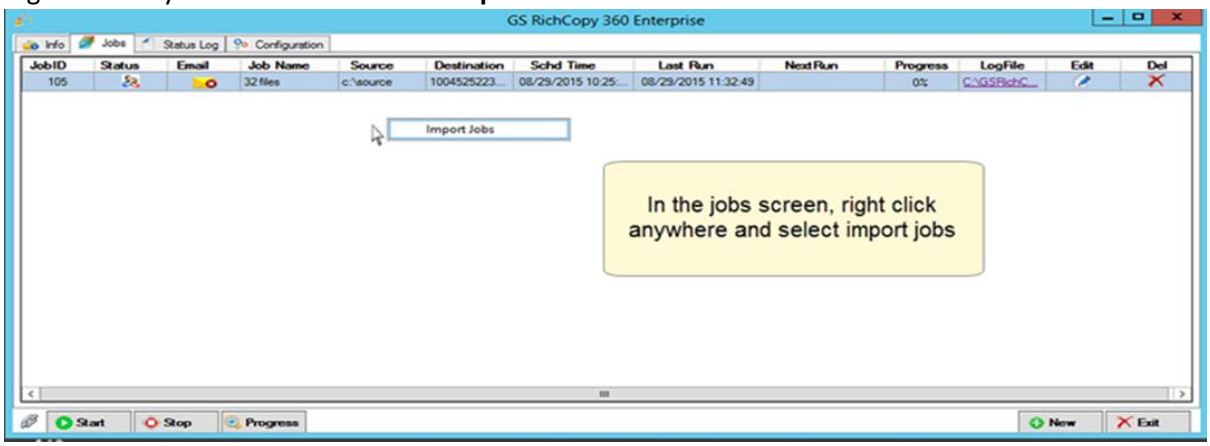
1. Create a dummy job that would act as a template for the jobs you want to import. The main focus is to make all the necessary selections such as type of job (copy changes, mirror, directory structure), inclusion/exclusion filters, whether to run once, run at a specific time, repeat intervals and so forth.
2. Save the job.
3. Right-click the dummy job in the Jobs screen.



4. Select **Export Job**, and then save the exported CSV file.
5. Open the CSV file in a spreadsheet program such as MS Excel.
6. Copy and duplicate the dummy job. Each row will be imported as a job. Each job must contain a different job name. Ensure the source and destination as needed and save the file (as a CSV file).



7. Go back to the Jobs screen of the GS RichCopy 360 Enterprise.
8. Right-click anywhere and then select **Import Jobs**.

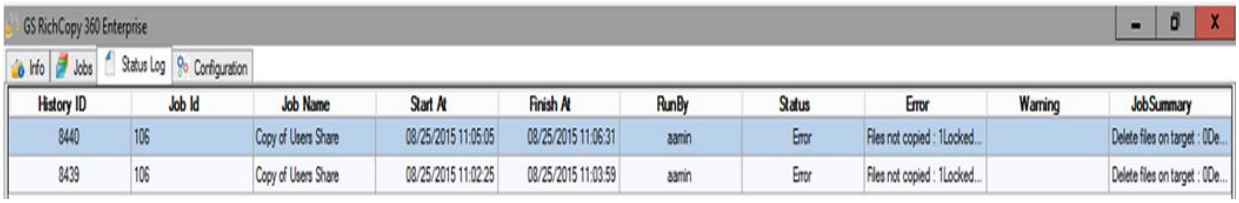


9. The import screen is displayed. Do the following:
    a. Select **Browse** to go to the file.
    b. Select **Validate** to validate that the jobs are not duplicated, and all the set values in the CSV are as expected. Once the validation runs through, any green rows are valid jobs; any red rows are rows with errors. If there are any errors, the errors can be seen scrolling to the right under the error column.
    c. Select **Import** to start importing the jobs. Jobs with errors will be skipped.

When the import is complete, a confirmation screen is displayed. Go to the Jobs screen to view all the imported jobs.

Status Log

The Status Log tab displays a summary of all jobs that are running or have run already.



History ID	Job Id	Job Name	Start At	Finish At	RunBy	Status	Error	Warning	JobSummary
8440	106	Copy of Users Share	08/25/2015 11:05:05	08/25/2015 11:06:31	aamin	Error	Files not copied : 1Locked...		Delete files on target : 0De...
8439	106	Copy of Users Share	08/25/2015 11:02:25	08/25/2015 11:03:59	aamin	Error	Files not copied : 1Locked...		Delete files on target : 0De...

This tab displays the following information:

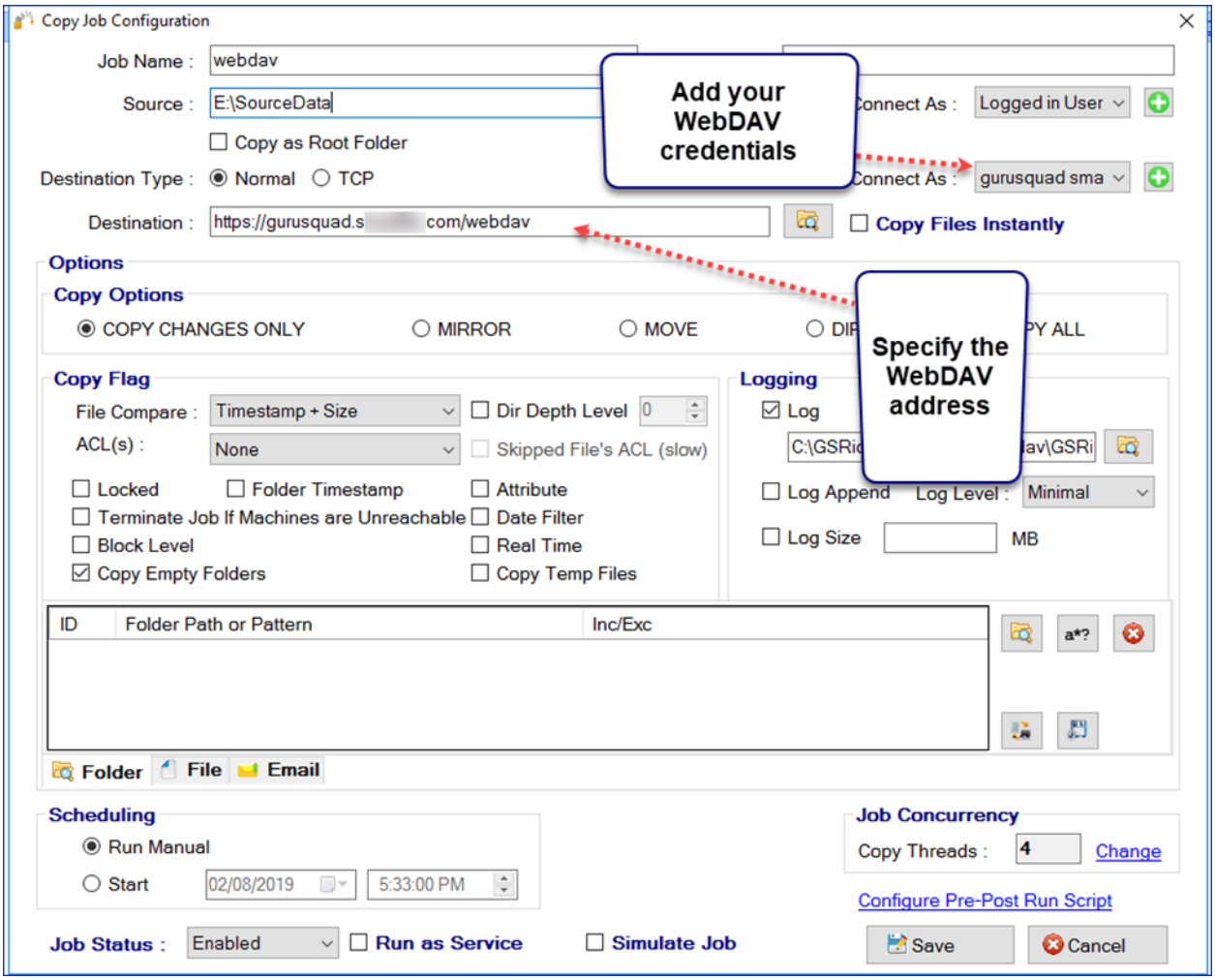
- **Job ID** (in the event of an error, the Job ID can be used when contacting technical support for further assistance)
- **Job Name**
- **Start At** and **Finish At** schedules (if the job is completed)
- **RunBy**, which shows the user name the job ran under
- **Status** (In Progress, Successful, Stopped, or Failed)
- **Error** and **Warning** if the job encountered them
- **Job Summary**

Note: Placing the mouse on a field would display the full text contained in the field.

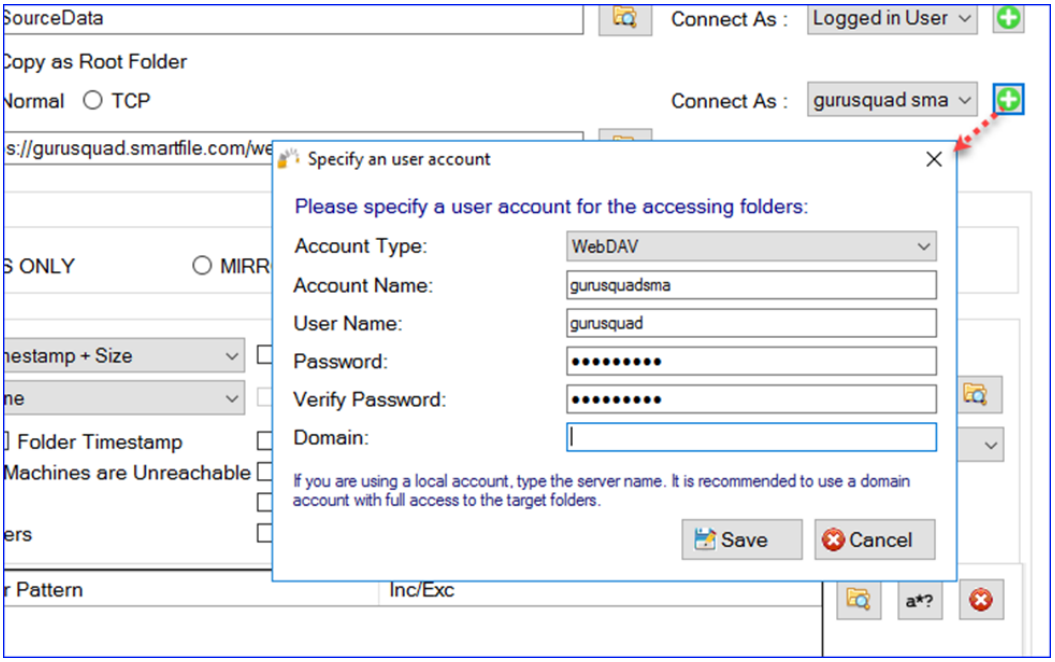
Working with WebDAV – Enterprise Only

Many cloud and organizations use WebDAV access to remote storage due to their higher security level and ease of accessing data. GS RichCopy 360 Enterprise offers the ability to copy data from and to using WebDAV.

Use the **Connect As** feature in the Job Configuration window to specify your WebDAV credentials and select it. Specify the WebDAV URL in the **Destination** field, as shown in the following image.

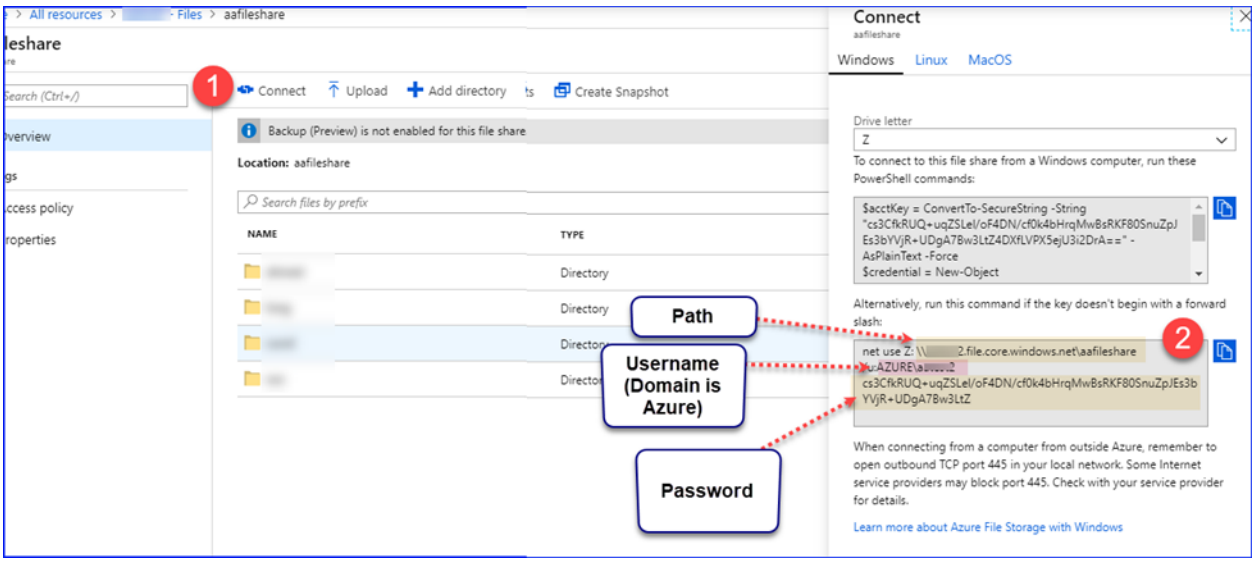


Some WebDAV providers require you to leave the Domain blank. Others may require a domain entry.

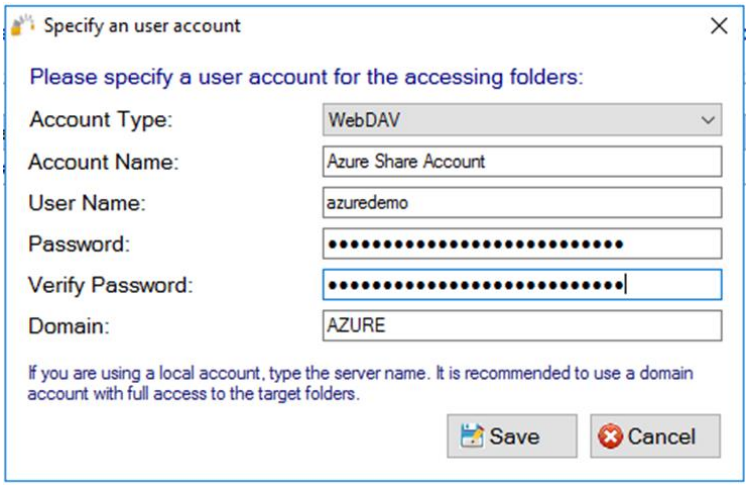


Accessing Azure Files

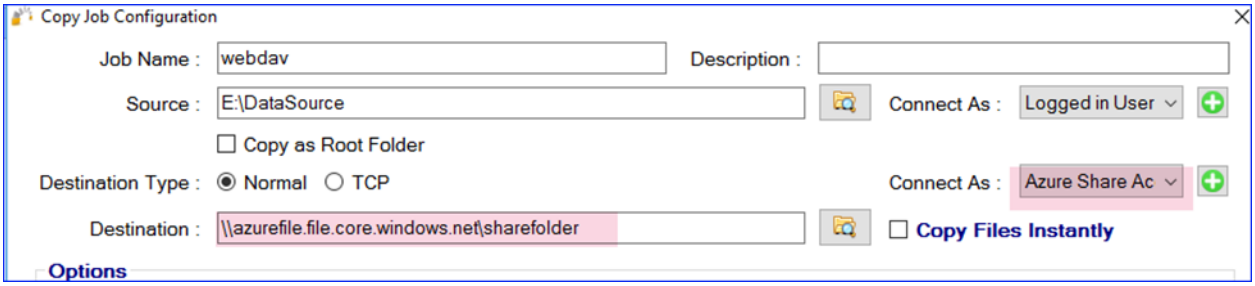
If you are using Azure Files, check the following settings as an example to access Azure Files using WebDAV.



Configure the following settings in the GS RichCopy 360 Client.



Configure the destination or source in the Job Configuration.



Note: WebDAV for Azure uses a UNC path instead of https as Azure supports SMBv3, where a UNC path can and should be used.

Command Line (CLI) Support

Both GS RichCopy 360 Standard and Enterprise offer command line (CLI) support. This is very useful for administrators who are looking to automate job management and creation from the command line.

The command line offers the ability to manage GS RichCopy 360 clients installed locally and ones that are installed on remote machines. This provides administrators the option to mass configure or manage clients from one central machine.

The next sections cover the different command line options and where they are used along with easy to follow examples. A section will discuss the Generate Command Line Script, which provides a full syntax from a pre-defined job so that administrators can save time and effort in terms of figuring out the right syntax to use.

Note: The CLI fully supports environment variables. For information, refer to *Environment Variables*.

Refer to the following sections for more information:

- *GS RichCopy 360 Client*—covers how to manage clients using CLI. There are two CLI commands that can be used:
    - **GSRicCopy360.exe**—used to set actions such as creating, deleting, enabling, and disabling job.
    - **GSAPI.exe**—used to retrieve information about jobs defined in GS RichCopy 360 Client. It can report on the job running status, job history, and list of jobs defined.
      Note: GSAPI is available only in GS RichCopy 360 Enterprise.
- *GS RichCopy 360 RTA – Enterprise Only*—covers how to manage RTA servers using CLI.

GS RichCopy 360 Client

The GS RichCopy 360 client CLI is used to manage installed clients locally and on remote machines.

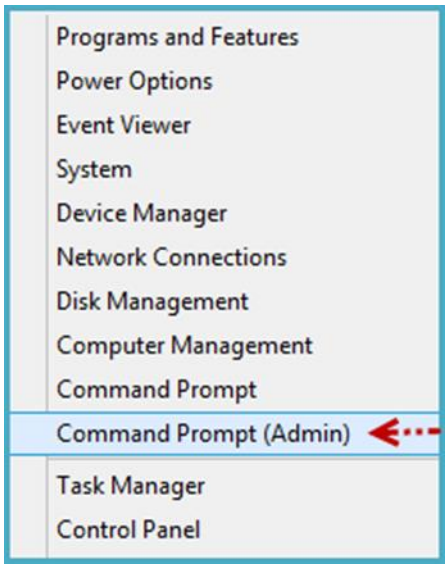
GSRichCopy360.exe

GSRichCopy360.exe is used to set actions such as creating, deleting, enabling, and disabling job.

Access

To access the CLI version of GS RichCopy 360, follow these steps:

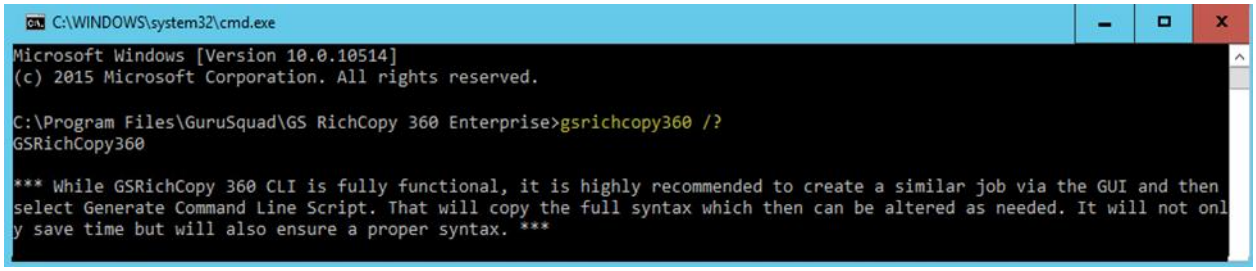
1. Run the command prompt as an administrator by right-clicking the **Start** menu and then selecting **Command Prompt (Admin)**, as shown in the following image.



   Note: If there is a requirement where users without administrative privileges need the ability to run GS RichCopy 360 CLI, refer to *Enable Remote Management and Remove Admin Privileges Restriction* for more information.

2. When the Command Prompt window opens, navigate to the GS RichCopy 360 folder. By default, it is installed in one of the following:
   - Enterprise version—**C:\Program Files\GuruSquad\GS RichCopy 360 Enterprise**
   - Standard version—**C:\Program Files\GuruSquad\GS RichCopy 360**
3. To list all the available parameters in the command line, type the following line:
   `gsrichcopy360 /?`

   All the available commands and optional parameters are displayed on screen as shown in the following image.



An administrator can create a template job in the GS RichCopy 360 GUI and generate a command line script for that job. This would simplify the need of having to find out the right syntax and save on time spent to script the job through the CLI.

This is most useful when the intent is to write a script for job creation. It is extremely easy to generate a command line script from the GUI. All that is required after the "dummy job" is created with all of its options (copy options, scheduling, include/exclude filters, and so forth) is to right-click the job and select **Generate Command Line Script**. This copies the full syntax to the clipboard, which can later be pasted to Notepad, allowing the CLI to be changed or executed.

Syntax

```
GSRichCopy360.exe [Action Command] [Required Parameters] [Options]
```

Action Commands

There are several action commands that can be issued through the CLI.

COMMAND	DESCRIPTION
enablejob	Enables an existing job.
disablejob	Disables an existing job.
runexistingjob	Runs an existing job that has already been created.
deleteexistingjob	Deletes an existing job.
stopexistingjob	Stops an existing job that is currently running.
createjob	Creates a new job.
createandrunjob	Creates a new job and run it.

Note: Different commands will have parameters that are required or are optional. Review the examples provided in this manual to learn when and how to use each command and parameter. Also, jobs must be configured to run as a service in order to be set to run from the CLI.

The commands **EnableJob**, **DisableJob**, **RunExistingJob**, **DeleteExsitingJob**, and **StopExistingJob** all require information about the job. Jobs can be referenced by its Job ID (JobID) or Job Name (JobName). The syntax would look something similar to these examples:

- `Enablejob jobname:"Account Job"`
- `DeleteExistingJob jobid:115`

The commands **CreateJob** and **CreateAndRunJob** require several optional and required parameters. Refer to the next section for information on the available parameters.

Note: Using the **Generate Command Line Script** feature from the GUI would save administrators from having to assemble a job creation command. However, it is strongly advised to get familiar with the different options so that once a job is generated from the GUI, it can be modified as required.

Administrators can set the Job Serial number through the command line. All manually set Job Serial numbers have to be prefixed by 99999 and should be 13 numbers long. This can be useful in scenarios where the administrator wants to automate job creation on the client and the RTA server. For more

information, type **gsrichcopy360 /?** at the command prompt from the GS RichCopy 360 Enterprise folder or review Example 7 in the *Examples* section.

Parameters

PARAMETER	INFORMATION
<deletejobwhencomplete>	Default is false. This is used only with createjob and createandrunjob action commands.
<"jobdescription:<jobdescription>">	
"source:<source folder path>"	
"destination:<destination folder path>"	
<"sourceusername:username<sourcepassword:password>> | <sourcerunasuser:<account name connect as configured in app>">	If sourcepassword is not passed with sourceusername, it will be prompted and will not be stored in the database for future use. **Note:** This option cannot be associated with recurring jobs.
SourceUserName:domain\username or user@domain.com	
<"destinationusername:username<destinationpassword:password>> | <destinationrunasuser:<account name connect as configured in app>">	If destinationpassword is not passed with destinationusername, it will prompted and will not be stored in the database for future use. **Note:** This option cannot be associated with recurring jobs.
DestinationUserName:domain\username or user@domain.com	
<preservecredentials>	Default is Off. It will be used with sourceusername, destinationusername, and if user has not selected to prompt for password.
<fileexc:<Comma separated values>>	
<fileinc:<Comma separated values>>	
<folderexc:<Comma separated values>>	
<filderinc:<Comma separated values>>	

PARAMETER	INFORMATION
<jobinactive>	Default is Active/Enabled.
<runonservice>	Default is Off. **Note:** This parameter must be used with createandrunjob, and jobs that are scheduled.
<copyasroot>	Default is Off.
<instantcopy>	Default is Off.
<copylockedfile>	Default is Off.
<copyattributes>	Default is Off.
<preservedatetimestamp>	Default is Off.
<stopifmachineunreachable>	Default is Off.
<copyacl:FileFolder|File">	Default is Off.
<copyaclforskippedfiles> <COPYALL|MIRROR|MOVE|DIR|COPYCHANGES>	This may be used only if CopyAcl is FileFolder.
<"filecompareoption:COPY ONLY NEWLY CREATED FILES|SKIP IF DESTINATION IS NEWER|TIMESTAMP + SIZE|FILE SIZE|MODIFIED TIMESTAMP">	Default is TIMESTAMP + SIZE.
<"taskconcurrency:<1-256>">	Task Concurrency must be in the range of 1-256. Default value is 4.
<"folderdepth:<folder depth to scan>">	Default is 0. Folder depth must be in the range of 1-99.
<userealtime <realtimeonacl> <realtimeonattribute> "realtimeincext|realtimeexcext:<comma separated extension>">	**Note:** userealtime is only available in GS RichCopy 360 Enterprise.
<"datefilterfromdate:<dd-MMM-yyyy HH:mm>" "datefiltertodate:<dd-MMM-yyyy HH:mm>" | "datefilterlastdays|datefilterpriordays |datefilterlastmins:value must be 1-10000">	Default Log is Off.

PARAMETER	INFORMATION
<logenabled "loglevel:All|Error(Default)|Diagnostic " "logpath:<log file path>" logappend(Default is off) logsize:<logsize>	Log File Size must be in the range of 1-50000 MB. Default value is 5000 MB.
<mailactive mailto:<mail address> mailcc:<mail address> mailbcc:<mail address>	Default is Off.
"recurrencescheduled:RunOnSchedule|RunOnce"	
"startdatetime:<dd-MMM-yyyy HH:mm>"	
"recurstartdate:<dd-MMM-yyyy>" "recurstarttime:<HH:mm:ss>" "recurendtime:<HH:mm:ss>"	These recurrence settings are applicable only if recurrencescheduled is set to RunOnSchedule.
<TerminateCondition:<ENDAFTEROCCURENCE|ENDBYDATE> <terminateconditionvalue:<numeric with ENDAFTEROCCURENCE|date with ENDBYDATE>>	
"recurinterval:<it should be in Once, 2 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes, 60 minutes, 4 hours, 8 hours, 12 hours, 16 hours, 23 hours. Default is 2 minutes.>"	
"recurpattern:DAILY|WEEKLY|MONYHLY|YEARLY"	
"recurevery:1"	
"monthno:MonthNo must be in range 0-11." "monthdayno:MonthDayNo must be in range 0-30." "weekno:WeekNo must be in range 0-4." "weekdayno:<WeekDayNo must be in range 0-6.>"	
<usebytereplicator extensiontoexclude:<comma separated extensions> excludefilesizeinkb:<ExcludeFileSizeinKB must be in range of 0-1000000 KB. Default is 15000 KB. It must be greater than MinBlockSizeKB.>>	User can pass multiple comma-separated entries.

PARAMETER	INFORMATION
usetcpcopy	RTA Configuration if TCP Copy or Block Copy is selected. **Note:** TCP and Block copy are available only in GS RichCopy 360 Enterprise.
<"jobserial:<jobserial prefixed with 99999 and should be 13 character long numeric value.>">	If value is not passed for jobserial and TCP Copy is selected, jobserial will be calculated internally.
"ipaddress:<RTA IpAddress>"	
"port:<RTA Port must be in range of 1-65535. Default is 8008.>"	
"minblocksizekb:<MinBlockSizeKB must be in range of 50-25000 KB. Default is 10000 KB.>"	
<usecompression>	Default is Off
"<useencryption username:<minimum 8 character length> passphrase:<minimum 8 character length> encryptionkeytype:<AES-128|AES-256(Default)>>"	Encryption may be used with only usetcpcopy parameter. Default encryption is Off.

Examples

Example 1: This command will copy changes only from "c:\source" to "\\server\share" with several copy flags:

```
GSRichCopy360.exe createjob "jobname:Test Job" "source:c:\source"
"destination:\\server\share" "taskconcurrency:4" runonservice DIR
"copyacl:Folder" "filecompareoption:File Size"
"recurrencescheduled:RunOnce" "startdatetime:13-Feb-2016 19:30"
```

Example 2: This command will mirror "c:\source" to "\\server\share" and send an email to multiple recipients. The job is scheduled to run once at 19:30 of that day (7:30PM in military time):

```
GSRichCopy360.exe createjob "jobname:Test Job" "jobdescription:Mirror
Job" "source:c:\source" "destination:\\server\share" copyasroot
"taskconcurrency:4" runonservice MIRROR "copyacl:Folder"
"filecompareoption:File Size" logenabled "loglevel:Error"
"logpath:c:\logs\testjob.log" mailactive
"mailto:user1@company.com,user2@company.com"
"mailcc:user3@company.com" "mailbcc:user4@company.com"
"recurrencescheduled:RunOnce" "startdatetime:19:30"
```

Example 3: This command will move data from "c:\source" to "\\server\share" and will run every day and repeat every 5 minutes:

```
GSRichCopy360.exe createjob "jobname:Test Job" "jobdescription:Mirror
Job" "source:c:\source" "destination:\\server\share" copyasroot
"taskconcurrency:4" runonservice MOVE "copyacl:Folder"
"filecompareoption:File Size" "recurrencescheduled:RunOnSchedule"
"startdatetime:12-Feb-2016 19:30" "recurstartdate:12-Feb-2016"
"recurstarttime:00:00:00" "recurendtime:23:59:59" "recurinterval:5
minutes" "recurpattern:DAILY" "recurevery:1"
```

Example 4: This command will create and run DIR command from "c:\source" to "\\server\share" using a specified username and will prompt for password then will delete the job once it is completed:

```
GSRichCopy360.exe createandrunjob "jobname:Test Job"
"jobdescription:Mirror Job" "source:c:\source"
"destination:\\server\share" destinationusername:corp\admin1
"taskconcurrency:4" runonservice DIR "copyacl:Folder"
"filecompareoption:File Size" "recurrencescheduled:RunOnce"
"startdatetime:13-Feb-2016 19:30" deletejobwhencomplete
```

Example 5: This command will enable a job on a remote machine:

```
GSRichCopy360.exe serviceip:192.168.0.10 enablejob jobid:115
```

Example 6: This command will create a TCP copy job using AES256 encryption and compression and will repeat every Monday:

```
GSRichCopy360.exe createjob "jobname:Test Job" "jobdescription:Mirror
Job" "source:c:\source" "taskconcurrency:4" runonservice DIR
"copyacl:Folder" "filecompareoption:File Size"
"recurrencescheduled:RunOnSchedule" "startdatetime:13-Feb-2016
19:30" "recurstartdate:13-Feb-2016" "recurstarttime:00:00:00"
"recurendtime:23:59:59" "recurinterval:Once" "recurpattern:WEEKLY"
"recurevery:1" "WeekDayNo:1" usetcpcopy "ipaddress:192.168.0.200"
"port:8008" "minblocksizekb:10000" usecompression useencryption
"username:DC4ZE2QOQP" "passphrase:OLMECAE4P31P3MZZ1B1UQJXDF1EFYUNR"
"encryptionkeytype:AES-256"
```

Example 7: This command will create a TCP copy job and set the Job Serial number to 9999912345678:

```
GSRichCopy360.exe createjob "jobname:Accounting Archive"
"source:c:\source" copyasroot "taskconcurrency:4" runonservice
COPYCHANGES copylockedfile copyattributes
"filecompareoption:Timestamp + Size" logenabled "loglevel:Error"
"logpath:c:\logs\accounting.log" mailactive
"mailto:itahmed@hotmail.com" "recurrencescheduled:RunOnSchedule"
"startdatetime:16-Feb-2016 21:49" "recurstartdate:15-Feb-2016"
"recurstarttime:07:00:00" "recurendtime:10:59:59" "recurinterval:5
minutes" "recurpattern:DAILY" "recurevery:1" usetcpcopy
```

```
"ipaddress:rtaserv01.acme.com"  "port:8008"  "minblocksizekb:10000"
jobserial:9999912345678
```

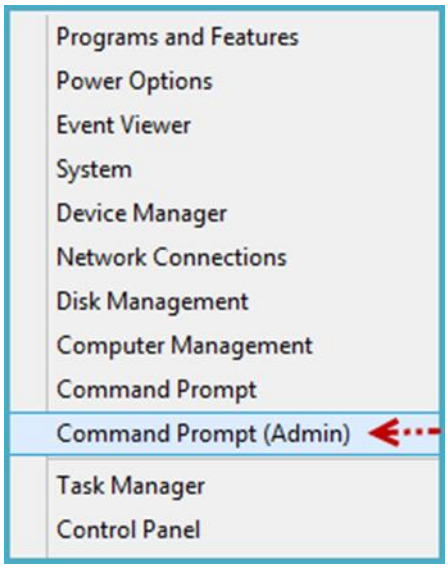
GSAPI.exe

GSAPI is used to retrieve information about jobs defined in GS RichCopy 360 Clients. It can report on job running status and job history, and give the list of jobs defined.

Access

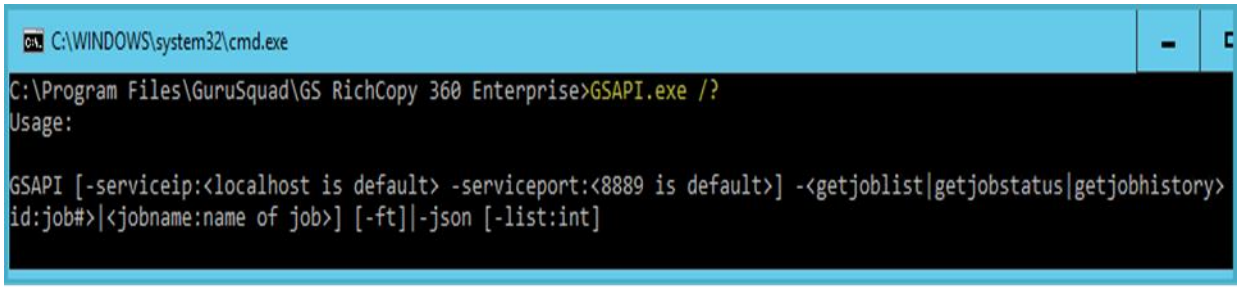
To access `GSAPI.exe`, follow these steps:

1. Run the command prompt as an administrator by right-clicking the **Start** menu and then selecting **Command Prompt (Admin)**, as shown in the following image.



2. When the Command Prompt window opens, navigate to the GS RichCopy 360 Enterprise folder: **C:\Program Files\GuruSquad\GS RichCopy 360 Enterprise**
3. To list all the available parameters in the command line, type the following line:
   `GSAPI.exe /?`

   All the available commands and optional parameters are displayed on screen as shown in the following image.



Syntax

```
GSAPI.exe [Action Command] [Options]
```

Action Commands

There are several action commands that can be issued through the CLI.

COMMAND	DESCRIPTION
Getjoblist	Provides a list of all existing jobs.
Getjobstatus	Provides status of an existing job (running, stopped, and so forth).
Getjobhistory	Provides details of the job's history.

Note: Different commands will have parameters that are required or are optional. Review the examples provided in this manual to learn when and how to use each command and parameter. Also, jobs must be configured to run as a service in order to be set to run from the CLI.

If `GSAPI.exe` is not used with any optional parameters, it will report on all jobs. However, it can also be narrowed down to a specific job using the parameters `–JobName` and `–JobID` at which point it would report information relating to the specified job.

Getjobhistory can make use of one more optional parameters, `–list`. Getjobhistory, by default, reports back the entire history when reporting on a specific job. Using `–list`, however, returns only the latest job history details for a specified job.

Results of `GSAPI.exe` will be displayed in a tabular format. The administrator may pass the parameter `–json`, which displays results in JSON format.

Examples

Example 1:

```
GSAPI.exe -getjobhistory -jobname:"Accounting Data Archive"
```

Example 2:

```
GSAPI.exe -getjobstatus -json -jobid:103
```

Example 3:

```
GSAPI.exe -getjoblist -json
```

Example 4:

```
GSAPI.exe -getjobstatus -ft -jobid:103
```

Example 5:

```
GSAPI.exe - getjobhistory -jobname:"Accounting Data Archive" -list:5
```

Example 6:

```
GSAPI.exe - getjobhistory -jobid:"105" -list:5
```

Example 7:

```
GSAPI.exe - getjobhistory -jobid:"105"
```

Enable Remote Management and Remove Admin Privileges Restriction

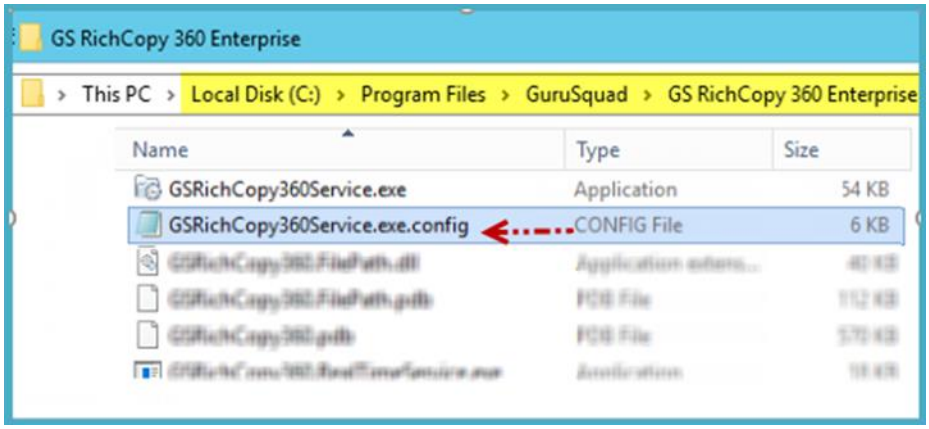
By default, the CLI commands (`GSRichCopy360.exe` and `GSAPI.exe`) will execute on the local machine they are run on. However, GS RichCopy 360 extends the option to issue commands to a remote machine. To do so, the command should include the argument: `serviceip:<IP Address or hostname>`. By default, it would use the port TCP 8889. If the default port is changed on the client, the argument `serviceport:<portnumber>` should be used.

Here is an example that would enable a job on a remote machine to further clarify:

```
GSRichCopy360.exe ServiceIP:192.168.0.10 enablejob jobid:115
GSAPI.exe -ServiceIP:192.168.0.10 -getjobhistory
```

By default, GS RichCopy 360 clients:

- Only allow the CLI from the local machine itself by default. If a client needs to be managed from another machine, a config file must be edited on the client that allows its management to specify the allowed IP addresses. Completing the following steps grants another machine remote CLI access:
    1) Go to `C:\Program Files\GuruSquad\GS RichCopy 360 Enterprise`.
    2) Open the `GSRichCopy360Service.exe.config` file with Notepad.



    3) Add the IP addresses in the key named **AllowedIpAddress** as shown in the following image.

```
<add key="AllowedIpAddress" value="127.0.0.1,192.168.0.5"/><!-- Allowed from RichCLI-->
```

    Note: IP addresses must be separated by commas. Do not leave this section blank as it would then be set up to accept commands from any IP address.
    4) Save the `GSRichCopy360Service.exe.config` file.
    5) Restart the GS RichCopy 360 Service.

- Only users with admin privileges can use the GS RichCopy 360 command line by default. If there are users that need to use the GS RichCopy 360 CLI without administrative privileges, the config file must be edited to remove the administrative privileges restriction.
    1) Go to `C:\Program Files\GuruSquad\GS RichCopy 360 Enterprise`.
    2) Open the `GSRichCopy360Service.exe.config` file with Notepad.
    3) Set the value of the key `IsOnlyAdminAllowedfromCLI` to **false** as shown in the following image.

```
<add key="IsOnlyAdminAllowedfromCLI" value="true"/>    <!-- Allowed from RichCLI-->
```

    4) Save the `GSRichCopy360Service.exe.config` file.
    5) Restart the GS RichCopy 360 Service.

GS RichCopy 360 RTA – Enterprise Only

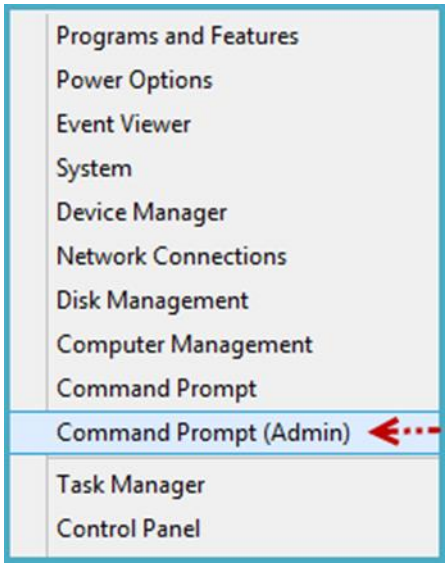
The RTA comes with its own command line (CLI) support that can be triggered directly from the RTA server or from a remote machine that has an installation of an RTA server. It uses the `GSRichCopy360.TransferAgent.exe` command.

GSRichCopy360.TransferAgent.exe

Access

To access the CLI version of RTA, follow these steps:

1. Run the command prompt as an administrator by right-clicking the **Start** menu and then selecting **Command Prompt (Admin)**, as shown in the following image.

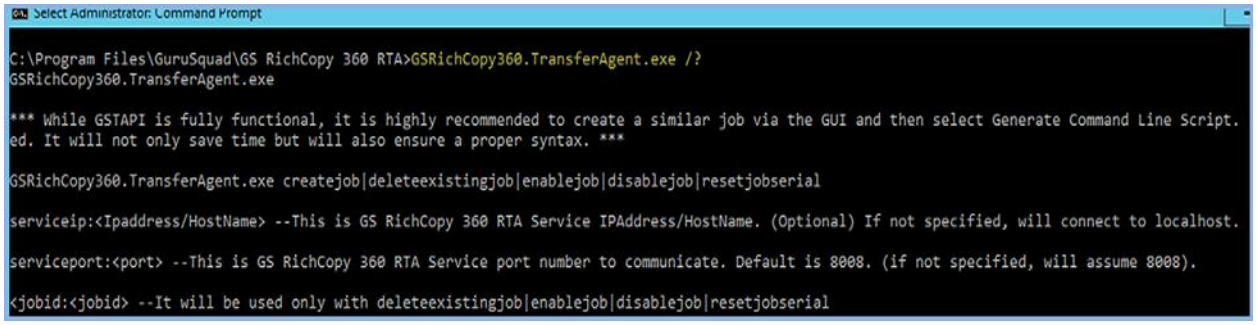


   Note: If there is a requirement where users without administrative privileges need the ability to run GS RichCopy 360 CLI, refer to *Enable RTA Remote Management and Remove Admin Privileges Restriction* for more information.

2. When the Command Prompt window opens, navigate to the GS RichCopy 360 RTA folder. By default, it is installed in **C:\Program Files\GuruSquad\GS RichCopy 360 RTA**.

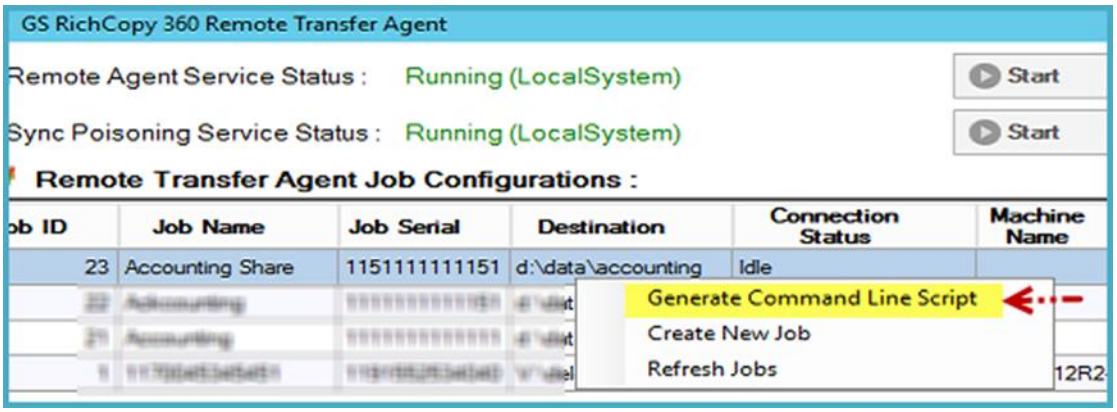
3. To list all the available parameters in the command line, type the following line:
   `GSRichCopy360.TransferAgent.exe /?`

   All the available commands and optional parameters are displayed on screen as shown in the following image.



An administrator can create a template RTA job in the GS RichCopy 360 RTA GUI and generate a command line script for that job. This would simplify the need of having to find out the right syntax and save on time spent to script the job through the CLI.

This is most useful when the intent is to write a script for the RTA job creation process. It is extremely easy to generate a command line script from the GUI. All that is required after the "dummy RTA job" is created with all of its options (Job Name, Description, Job Serial, and so forth) is to right-click the job and select **Generate Command Line Script**.



This copies the full syntax to the clipboard, which can later be pasted to Notepad, allowing the CLI to be changed or executed.

Syntax

```
GSRichCopy360.TransferAgent.exe [Action Command] [Required Parameters]
[Options]
```

Action Commands

There are several action commands that can be issued through the CLI.

Command	Description
enablejob	Enables an existing RTA job.

Command	Description
disablejob	Disables an existing RTA job.
deleteexistingjob	Deletes existing RTA job.
resetjobserial	Replaces jobserial with another one.
resetclient	Allows a different client to use this job.
createjob	Creates a new RTA job.

Note: Different commands will have parameters that are required or are optional. Review the examples provided in this manual to learn when and how to use each command and parameter. Also, jobs must be configured to run as a service in order to be set to run from the CLI.

The commands **EnableJob**, **DisableJob**, **DeleteExistingJob**, and **ResetClient** share the same mandatory parameters that are associated with the specific job. Jobs can be referenced by Job ID (JobID) or Job Name (JobName). The syntax would look something similar to this:

- `GSRichCopy360.TransferAgent.exe Enablejob jobname:"Account Job"`
- `GSRichCopy360.TransferAgent.exe DeleteExistingJob jobid:115`

The optional parameters that can be used are Jobname, JobSerial, and JobId.

Note: Only one parameter can be used.

The ResetJobSerial command requires one more additional parameter, which is NewJobSerial. Refer to the following example for the proper syntax:

```
GSRichCopy360.TransferAgent.exe jobserial:1234567890123
newjobserial:1122334455667
```

In the example, the old jobserial "1234567890123" is replaced with a new jobserial of "1122334455667".

The CreateJob command has several mandatory and optional parameters. Refer to the next section to learn more about the available parameters.

Note: Using the **Generate Command Line Script** feature from the GUI would save administrators from having to assemble a job creation command. However, it is strongly advised to get familiar with the different options so that once a job is generated from the GUI, it can be modified as required.

Parameters

PARAMETER	INFORMATION
`"jobname:<jobname>"`	Required
`"jobdescription:<jobdescription>"`	Required
`"destination:<destination folder path>"`	Required
`"jobserial:<jobserial>"`	Required
`<jobdisabled>`	Optional

	Default is Active/Enabled.
"<useencryption username:<minimum 8 character length> passphrase:<minimum 8 character length> (Optional)	Optional
encryptionkeytype:<AES-128|AES-256(Default)>>"	Optional
"<usesyncpoison backuppath:<backuppath> backupsize:<1-99999 GB>>"	Optional

Examples

Example 1: This command creates an RTA job.

```
GSRichCopy360.TransferAgent.exe createjob "jobname:test"
"jobdescription:test" "destination:c:\destination"
"jobserial:2034241500223" useencryption "username:dsfdsfsdfsd"
"passphrase:dfsfdsfdsfsdf" "encryptionkeytype:AES-256" usesyncpoison
"backuppath:c:\destination11" "backupsize:111"
```

Example 2: This command will create an RTA job with the name Accounting, the following as destination "d:\data\accounting", a JobSerial value of "1234567890123", and Sync Poisoning value of 5GB:

```
GSRichCopy360.TransferAgent.exe createjob "jobname:Accounting"
"jobdescription:Accounting Server" "destination:d:\data\accounting"
"jobserial:1234567890123" useencryption "username:ABCDEFGHI"
"passphrase:12345678" "encryptionkeytype:AES-256" usesyncpoison
"backuppath:e:\sync\accounting" "backupsize:5"
```

Example 3: This command will enable an existing RTA job with the name Accounting:

```
GSRichCopy360.TransferAgent.exe enablejob jobname:"accounting"
```

Another example using the JobSerial parameter:

```
GSRichCopy360.TransferAgent.exe enablejob jobserial:1234567890123
```

Example 4: This command will change JobSerial value from 1234567890123 to 1111111111111 for an existing RTA job:

```
GSRichCopy360.TransferAgent.exe resetjobserial
jobserial:1234567890123 newjobserial:1111111111111
```

Another example using the JobName parameter:

```
GSRichCopy360.TransferAgent.exe resetjobserial jobname:"accounting"
newjobserial:1111111111111
```

Example 5: This command will reset an existing RTA job so that it can be used by another GS RichCopy 360 client:

```
GSRichCopy360.TransferAgent.exe resetclient jobserial:1234567890123
```

Another example using the JobName parameter:

```
GSRichCopy360.TransferAgent.exe resetclient jobname:"accounting"
```

Example 6: This command will delete an existing RTA job:

```
GSRichCopy360.TransferAgent.exe deleteexistingjob
jobserial:1234567890123
```

Example 7: This command will create an RTA job from a remote machine:

```
GSRichCopy360.TransferAgent.exe serviceip:192.168.0.5 createjob
"jobname:Accounting" "jobdescription:Accounting Server"
"destination:d:\data\accounting" "jobserial:1111111111111"
useencryption "username:ABCDEFGHI" "passphrase:12345678"
"encryptionkeytype:AES-256" usesyncpoison
"backuppath:e:\sync\accounting" "backupsize:5"
```

Enable RTA Remote Management and Remove Admin Privileges Restriction

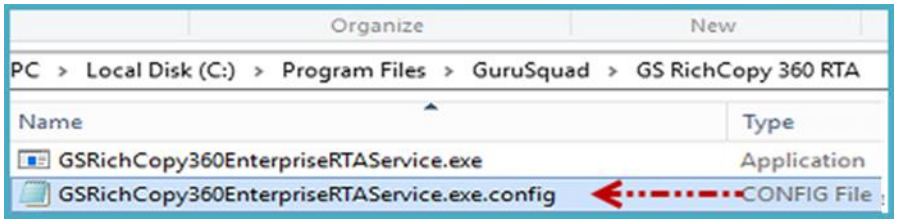
By default, the RTA CLI command (`GSRichCopy360.TransferAgent.exe`) will execute on the local machine That it is run on. However, GS RichCopy 360 RTA extends the option to issue commands to a remote machine. To do so, the command should include the argument: `serviceip:<IP Address or hostname>`. By default, it would use the port TCP 8008. If the default port is changed on the client, the argument `serviceport:<portnumber>` should be used.

Here is an example that would enable a job on a remote machine to further clarify:

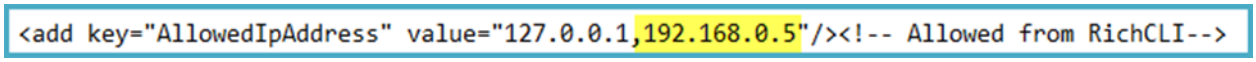
```
GSRichCopy360.TransferAgent.exe serviceip:192.168.0.10 enablejob
jobid:115
```

By default, GS RichCopy 360 RTA:

- Only allow the CLI from the local machine itself by default. If a client needs to be managed from another machine, a config file must be edited on the client that allows its management to specify the allowed IP addresses. Completing the following steps grants another machine remote CLI access:
    1) Go to `C:\Program Files\GuruSquad\GS RichCopy 360 RTA`.
    2) Open the `GSRichCopy360EnterpriseRTAService.exe.config` file with Notepad.



    3) Add the IP addresses in the key named **AllowedIpAddress** as shown in the following image.



Note: IP addresses must be separated by commas. Do not leave this section blank as it would then be setup to accept commands from any IP address.

4) Save the `GSRichCopy360EnterpriseRTAService.exe.config` file.
5) Restart the GS RichCopy 360 Enterprise RTA Service.

- Only users with admin privileges can use the GS RichCopy 360 command line by default. If there are users that need to use the GS RichCopy 360 CLI without administrative privileges, the config file must be edited to remove the administrative privileges restriction.
  1) Go to `C:\Program Files\GuruSquad\GS RichCopy 360 RTA`.
  2) Open the `GSRichCopy360EnterpriseRTAService.exe.config` file with Notepad.
  3) Set the value of the key `IsOnlyAdminAllowedfromCLI` to **false** as shown in the following image.

```
<add key="IsOnlyAdminAllowedfromCLI" value="true"/>    <!-- Allowed from RichCLI-->
```

  4) Save the `GSRichCopy360EnterpriseRTAService.exe.config` file.
  5) Restart the GS RichCopy 360 Enterprise RTA Service.

Environment Variables

GS RichCopy 360 (Standard and Enterprise) support environment variables in the GUI and the command line interface (CLI). Environment variables support is not limited to paths only; it is fully supported in the following areas:

- Source and Destination
- Log location
- Folder and File (Inclusion/Exclusion) filters
- Mail fields (from, to, CC, and BCC)
- Destination path and Sync Poisoning path on RTA server (Enterprise only)

All Windows environment variables can be used to include system and user-defined variables. They can be inserted like these: **%VARIABLE%** or **^VARIABLE^**

Note: It is recommended to use the ^VARIABLE^ format if using the CLI.

To find out about the environment variables defined in a Windows system, open a the Command Prompt window and then enter **SET**.

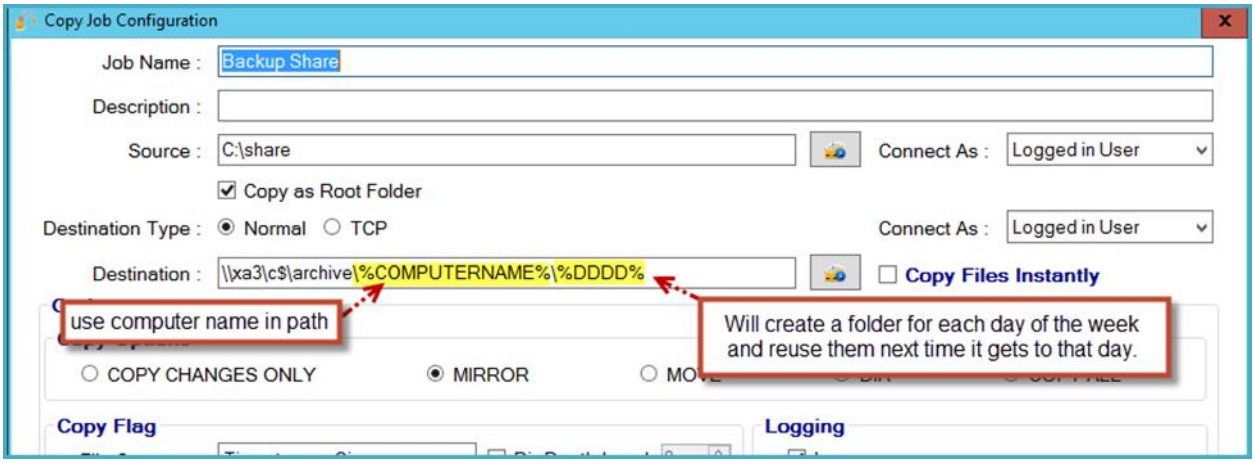
The following are some popular environment variables:

- **%USERNAME%**—current Windows user name.
- **%USERPROFILE%**—current user profile directory.
- **%COMPUTERNAME%**—the Windows name of this computer.

GS RichCopy 360 also provides another set of variables that can be used in creating dynamic archives for yearly, monthly, weekly, and daily backups or based on date:

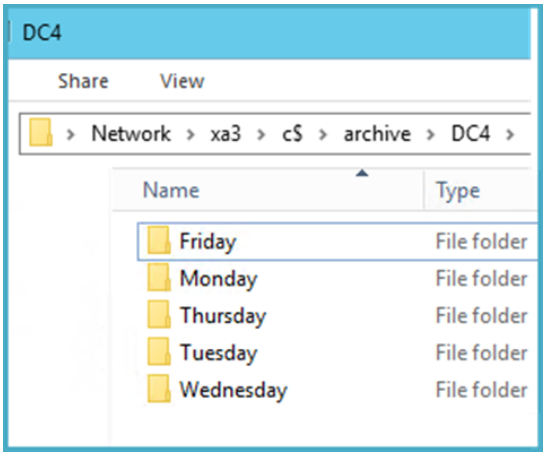
VARIABLE	DESCRIPTION
%GSRICH%	App Startup path
%YYYY%	YEAR 4 Digit 2016
%YY%	YEAR 2 Digit 16
%MM%	MONTH 2 DIGIT 02 (case-sensitive)
%MMM%	MONTH Feb
%MMMM%	MONTH February
%DD%	Day 26
%DDD%	Day Fri
%DDDD%	Day Friday
%DOW%	Day of Week 5
%hh%	Hour 05 in 12 hour format (case-sensitive)
%HH%	Hour 17 in 24 hour format (case-sensitive)
%mm%	Minute (case-sensitive)
%SS%	Seconds
%TT%	AM/PM
%MS%	Milliseconds
%WOM%	Week of Month

Here is a good example of using GS RichCopy 360 special variables:

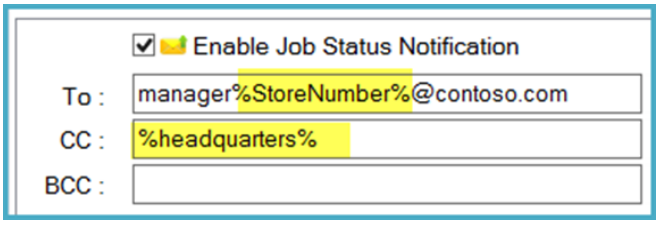


Assuming the job above is scheduled to run only on weekdays, it would create this folder structure in the destination folder.

Note: DC4 is the name of the computer used in this example.



Another good example of using environment variables is in the To, CC, and BCC fields in an email. Variables can be appended to an email address or act as a full email address if desired. In the image below, %StoreNumber% would be an environment variable that is pre-defined by the system administrator. If the value for instance was 12, the email would have been sent to manager12@contoso.com. Similarly, if the %headquarters% is translated to a value of management@contoso.com, an email is sent to this address. For more information, refer to the following image:



Frequently Asked Questions (FAQs)

This section discusses the frequently asked questions our support and sales staff have received. We have compiled this list and are continually updating it to provide you with the best support possible.

If you do not find your question or need some assistance, feel free to contact us by email or by phone and we will gladly work with you:

- Email: support@gurusquad.com
- Phone: +1 703 868-9252

Assigning Log On as a Service

Question: When we specify a username and password to use for our GS RichCopy 360 server, the service fails to start. This account is already an administrator. How can we start the service?

Answer: In Windows 2008 R2 and later, when specifying a user name and password for GS RichCopy Service to use (under Configuration tab) if the service fails and cannot start, the user should set Log on as a service privilege. This can be accomplished in two different methods.

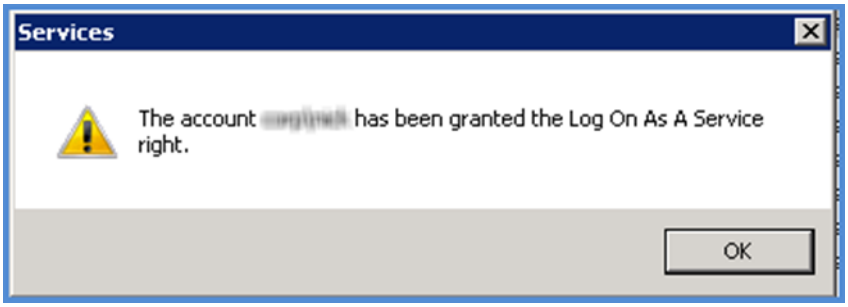
Method 1

1. Go to the **Start** menu and then type **services.msc** as shown in the following image.

2. Locate the **GS RichCopy 360 Service** and then double-click it.

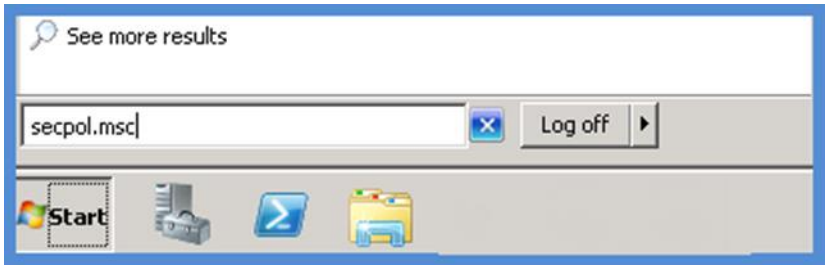
3. Select the **Log On** tab, and then select **This account**.
4. Enter the user name and password for the user you want GS RichCopy 360 Service to use.
5. Select **OK**.

These steps automatically grant the user name you specified with Log on as a service rights. You should receive a notification that the right to log on as a service has been granted. Make sure to stop and then start the service for the change to take effect.

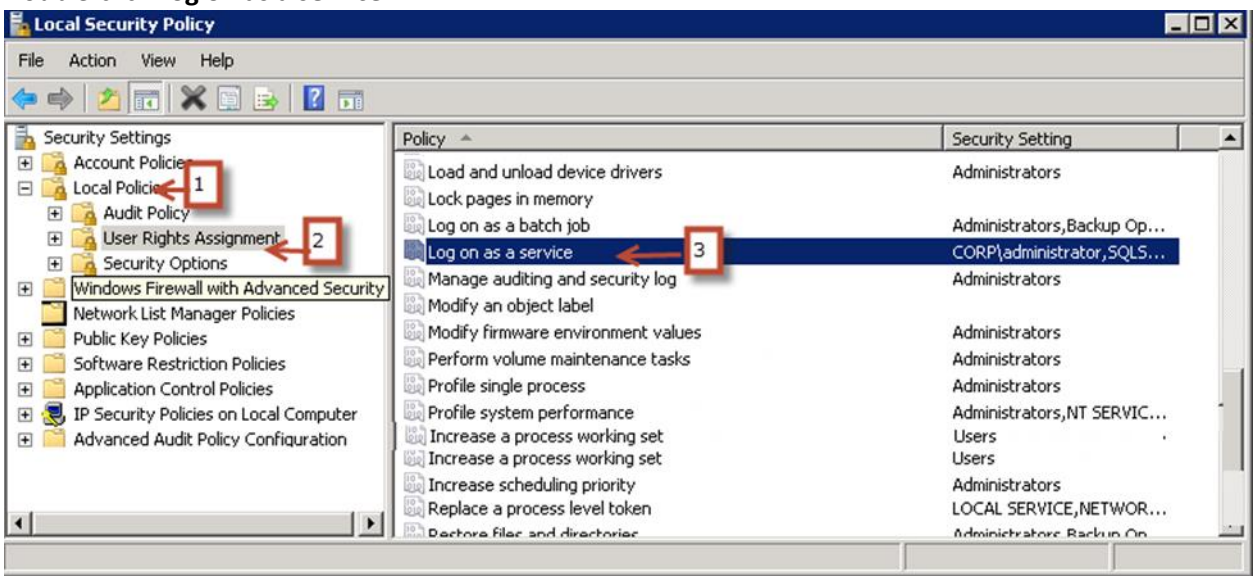


Method 2

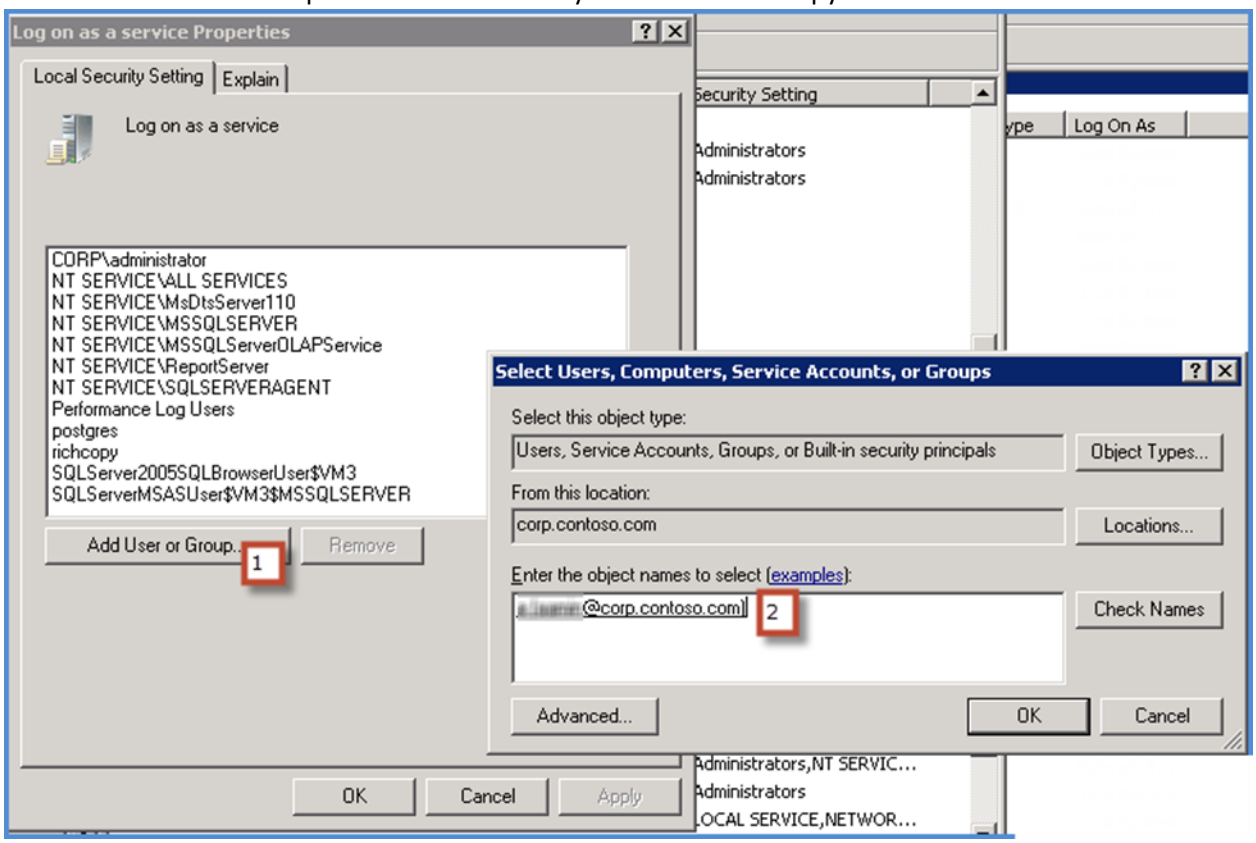
1. Go to the **Start** menu and then type **secpol.msc** as shown in the following image.



2. Select **Local Policies → User Rights Assignment**.
3. Double-click **Log on as a service**.



4. Select **Add User or Group**.
5. Enter the user name and password for the user you want GS RichCopy 360 Service to use.



6. Select **OK** on all windows.

These steps grant the user name you specified with Log on as service rights. Make sure to stop and then start the GS RichCopy 360 service for the change to take effect.

Cannot See Mapped Drives

Issue: It says you need to restart after applying the registry key, but from our testing, a restart was not needed, but who knows.

Answer: Check out the following two options that you can follow to see the mapped drives.

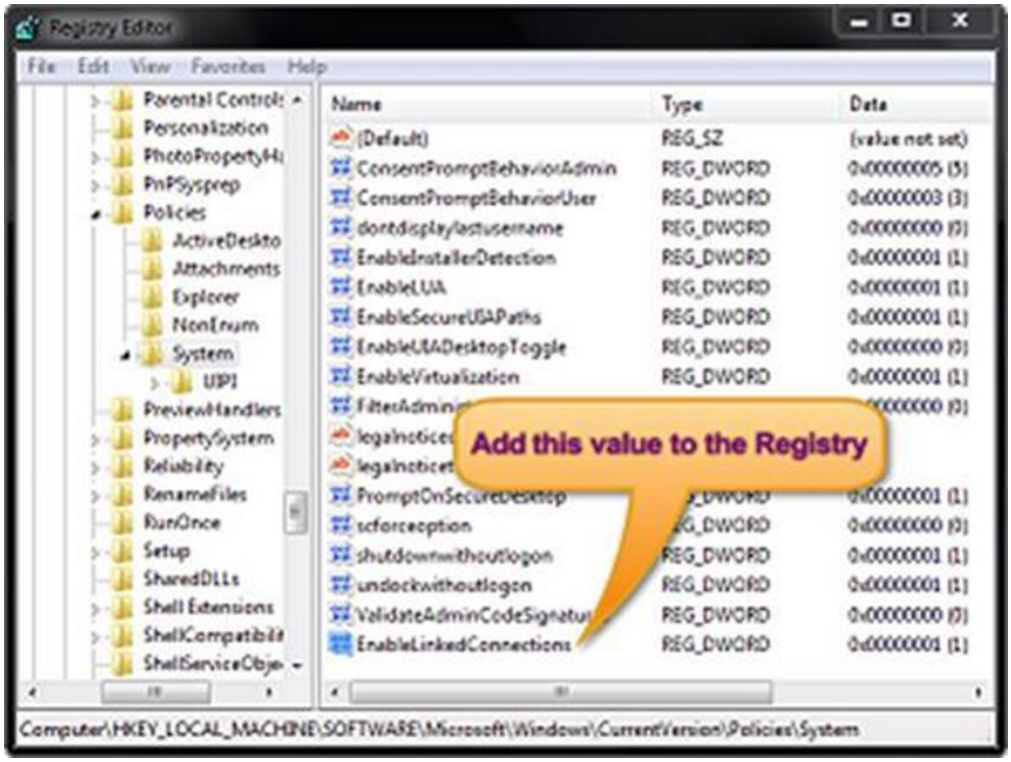
Option A

There is a way to force Windows to automatically make the network drives available to both the standard and administrator accounts. To do this, follow these steps:

1. Run the **Registry Editor** (`regedit.exe`) and then locate the following key:

   HKEY_LOCAL_MACHINE/SOFTWARE/Microsoft/Windows/CurrentVersion/Policies/System

2. Create a new DWORD entry with the following details:
   - Name: **EnableLinkedConnections**
   - Value: **1**



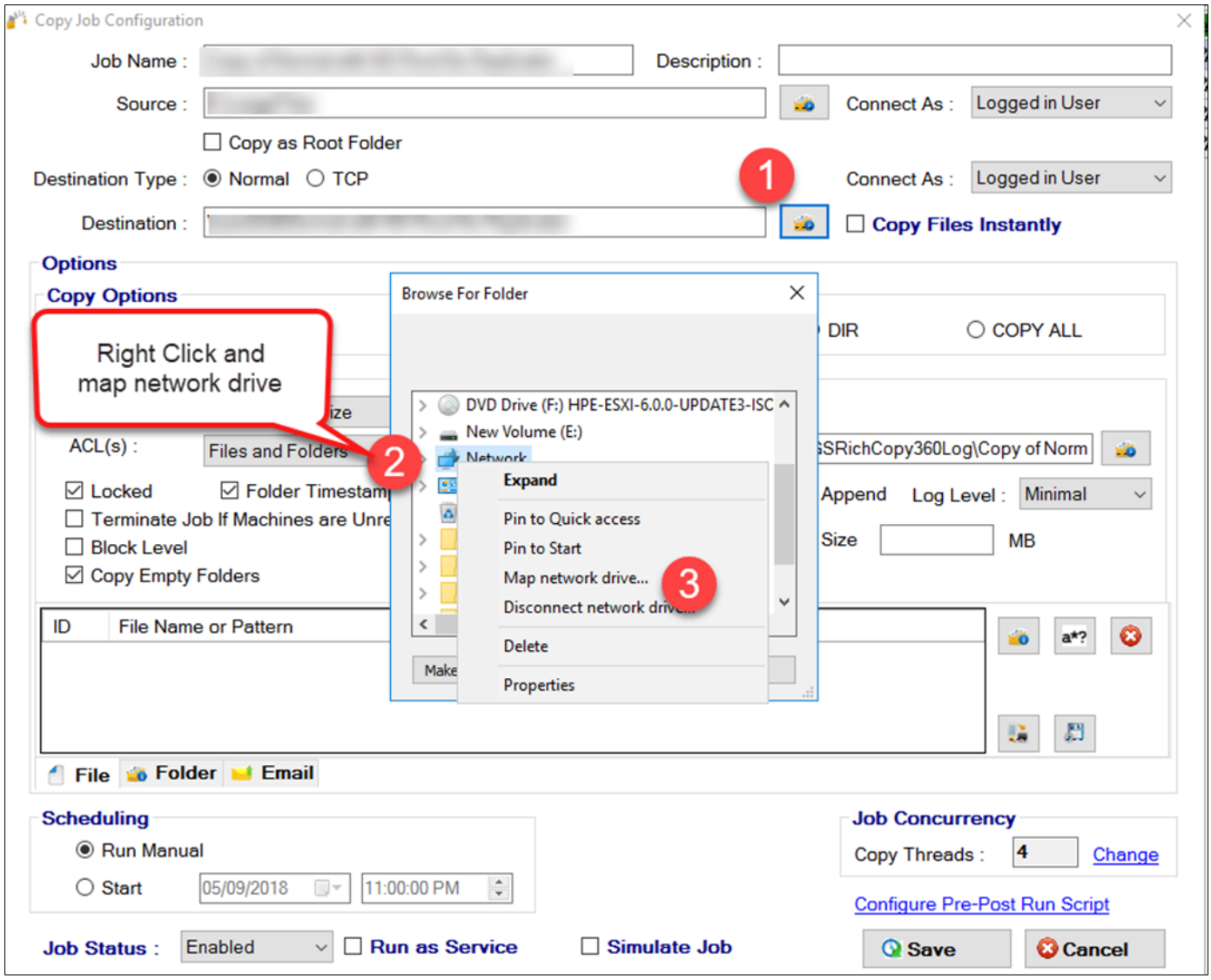
Caution: If you are not very experienced with Registry Editor, please be extra careful. It is a powerful tool that can do a lot of damage to your system if used carelessly.

3. After you've added the EnableLinkedConnections value to the registry, restart the computer. The network drives you to create should become available to the elevated applications, as well.

Please know this is a limitation in Windows. The following is an article from the Microsoft website that discusses it in more detail: https://support.microsoft.com/en-us/help/3035277/mapped-drives-are-not-available-from-an-elevated-prompt-when-uac-is-co.

Option B

Please follow the instructions below to map a network drive.


Copy Job Configuration
Job Name :
Description :
Source :
Connect As :
Logged in User
Copy as Root Folder
Destination Type :
Normal
TCP
Connect As :
Logged in User
Destination :
Copy Files Instantly
Options
Copy Options
Right Click and map network drive
Browse For Folder
DIR
COPY ALL
DVD Drive (F:) HPE-ESXI-6.0.0-UPDATE3-ISC
New Volume (E:)
Network
ACL(s) :
Files and Folders
Locked
Folder Timestamp
Terminate Job If Machines are Unre
Block Level
Copy Empty Folders
Expand
Pin to Quick access
Pin to Start
Map network drive...
Disconnect network drive...
Delete
Properties
Append
Log Level :
Minimal
Size
MB
ID
File Name or Pattern
File
Folder
Email
Scheduling
Run Manual
Start
05/09/2018
11:00:00 PM
Job Concurrency
Copy Threads :
4
Change
Configure Pre-Post Run Script
Job Status :
Enabled
Run as Service
Simulate Job
Save
Cancel