# What's New in ChronoSync v4.8

ChronoSync v4.8 introduces many significant new features. This document provides a quick overview of what is neat, new and different.

Setup Assistants

Setup Assistants are the marquis feature and are hard to miss in the **ChronoSync Organizer** window. They come in two flavors: **Creation Assistants** and **Modifier Assistants**. They are grouped accordingly in the **Assistant Selector** menu, below.
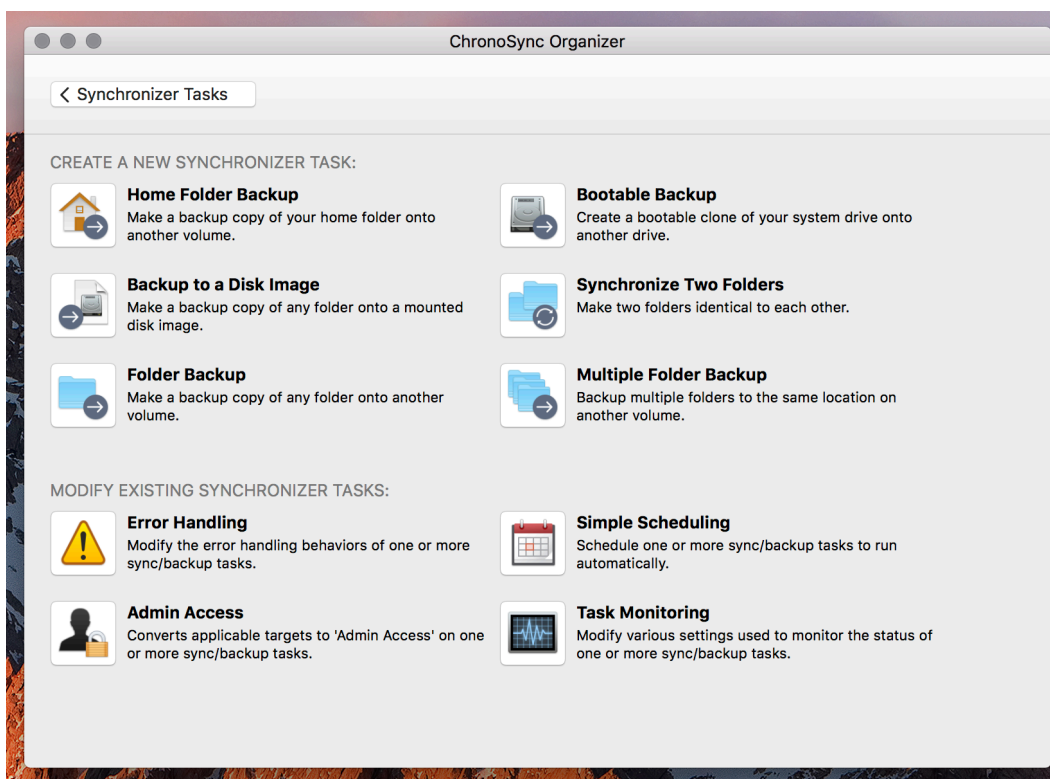
All Creation Assistants provide the option of synchronizing deletions and/or maintaining an archive, if relevant.

Home Folder Backup assumes your home folder as the source and asks you for a destination. You can filter out sub-folders at the root level of your home folder (Documents, Pictures, Movies, etc). It provides the option of skipping unnecessary files (caches, etc) and skipping your email folder.

Bootable Backup asks you to choose your source volume and destination volume. It provides the option of erasing or formatting your destination volume. You can even choose to enable encryption.

Backup to Disk Image asks you to choose a source folder and allows you to filter files by data type (Image Files, Videos, etc). For your destination, you can choose an existing disk image or have the assistant create one for you. A created disk image can be intelligently sized based on the size of your source data. It can also be encrypted.

Synchronize Two Folders creates a bidirectional synchronization between two folders of your choice. They can reside on different devices or mounted file servers (including NAS devices).

Folder Backup lets you choose a folder to backup. You can optionally filter files by data type (Image Files, Videos, etc). The backup destination can reside on a different device or a mounted file server (including an NAS device).

Multiple Folder Backup is quite sophisticated. It allows you to choose many folders to backup to a single destination. They can reside at different locations in your file hierarchy or even on different devices. You can optionally filter files by data type (Image Files, Videos, etc). Based on your input selection, it intelligently determines if a single synchronizer task can get the job done or if multiple tasks must be created and combined into a single container document.

All Modifier Assistants perform **batch operations**. They begin by asking you to choose which previously created synchronizer task(s) you would like to modify. If you choose a container as your input task, you will be asked whether to recursively modify the tasks contained within it. You may choose some or all of your previously created tasks, making this the easiest and quickest way to apply mass changes.

Error Handling, as the name implies, modifies the error handling characteristics of the selected synchronizer tasks. The following settings may be changed, if relevant to the selected tasks: continue after errors (for containers), retry on errors, ignore EA and ACL errors, error predetermination, conflict predetermination, and post-task script execution.

Simple Scheduling doesn't actually modify your input tasks but it will schedule them for automatic execution. In addition to supplying a simple scheduling interval, you can optionally enable the 'prompt before running' and 'retry on errors' settings. The assistant will also check your scheduling configuration and suggest changes, if necessary.

Admin Access will convert the input documents to use 'Admin Access' to scan your local filesystem. Oftentimes you may configure several sync and backup tasks, not realizing that you should have chosen Admin Access to scan files that are normally off-limits to you. This assistant provides a convenient way to correct your mistake!
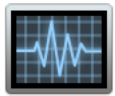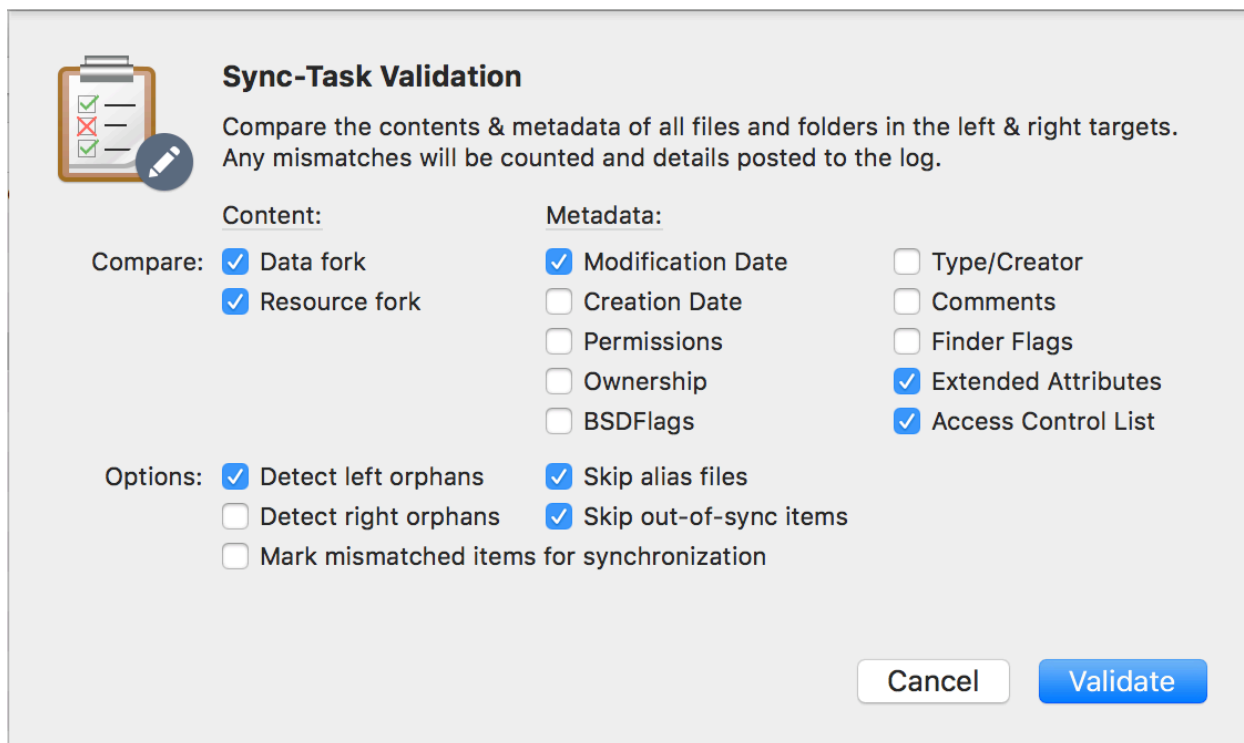
Task Monitoring modifies the myriad of settings that exist to monitor the status of your synchronizer tasks. This includes: detailed logging, log mirroring, email notifications, push notifications, screen notifications and completion sounds.

Validator

You probably have configured your backup tasks so that they run diligently and cover all of your precious documents. However, just how good is the integrity of your backup? Corruption of your backup data, especially bit-rot, may go unnoticed by your daily backup regimen. You certainly don't want to find out the hard way that your backup scheme is not as complete as you thought it was!

ChronoSync v4.8 introduces the **Validator**, which is a tool that can perform a byte-for-byte comparison of your file contents and metadata. Invoking it is similar to running a synchronization - simply choose **Validate** from the toolbar (or right click a file-pair in the **Analyze Panel** and choose **Validate Selection…**).

The Validator will let you know exactly which files differ from each other. It also provides the option to mark those mismatched files for a forced synchronization the next time you run your task. Keep in mind, however, that it may be your **source** data that has become corrupt, so you really should investigate any mismatches that occur!

Backblaze B2 Connection

In addition to Google Cloud and Amazon S3, you can now backup your files to **Backblaze B2**. Backblaze B2 is a cloud service for storing files in the cloud. Using ChronoSync a great way to store your data online or for Backblaze B2 users to take advantage of backing up their files between their Mac and the cloud.
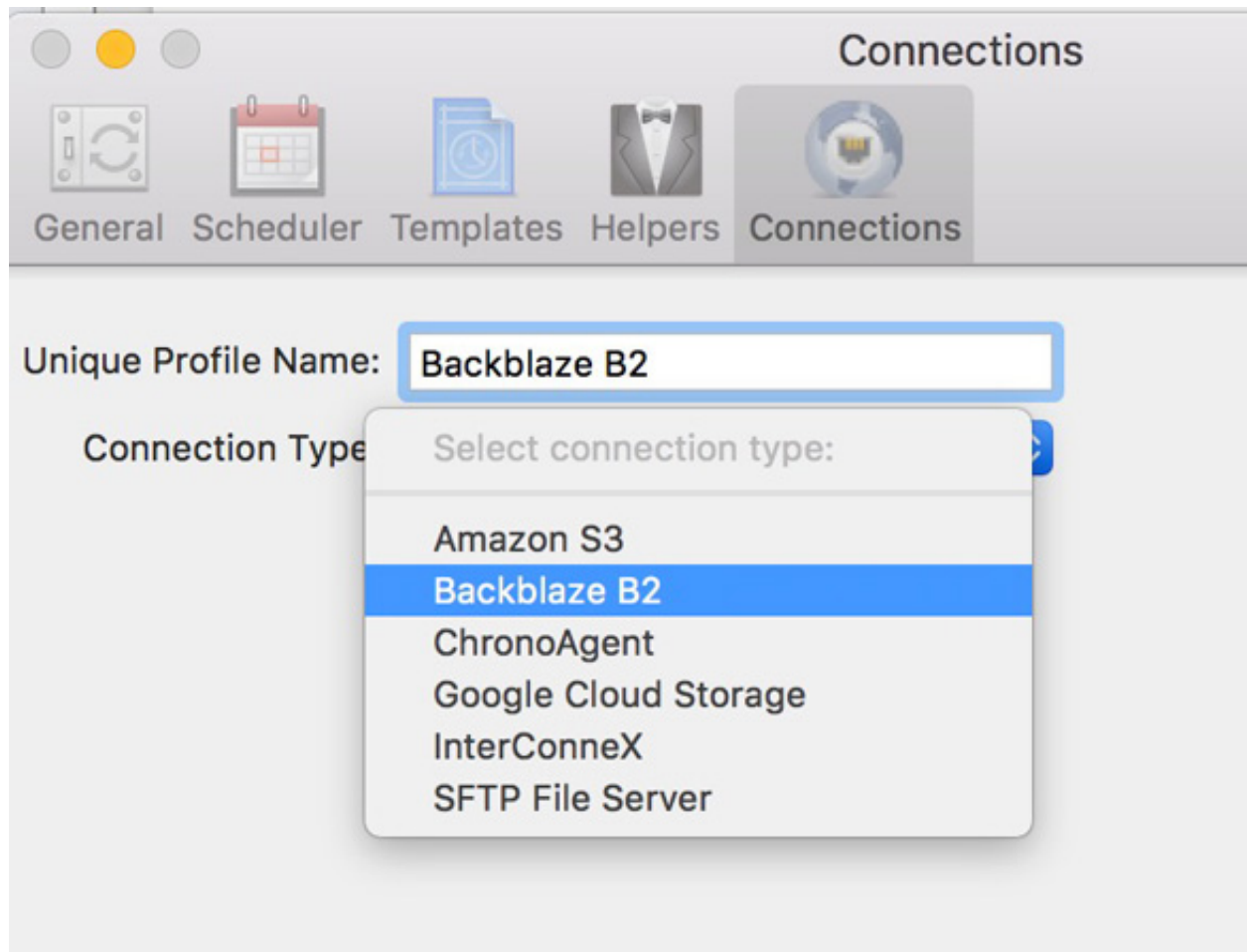
Additional cloud services can be expected in future releases!

Streamlined Scheduled Task Editor

The previous scheduled task editor could prove a little daunting, especially for newcomers to ChronoSync. We've completely redesigned the editor to make things much clearer and easier to use.
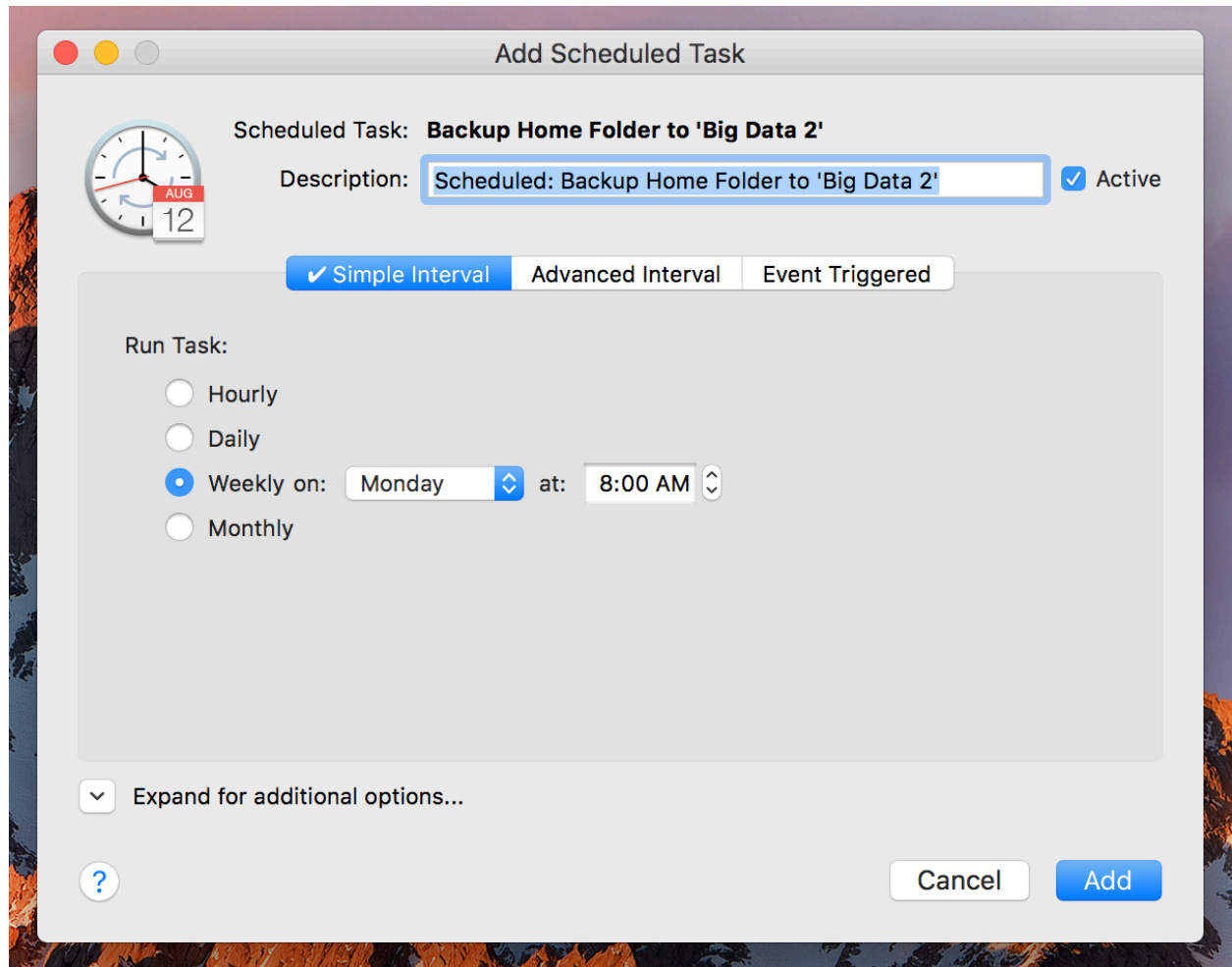
Scheduled tasks are now categorized into **simple intervals**, **advanced intervals** or **event-triggered**. The advanced options are also hidden away at the bottom of the window. Expand the window if you need them, or leave things alone if you don't. Each individual schedule type has also received subtle makeovers, including warning messages when you may not have configured things properly!

Live-Change Trigger

One of the most frequently requested features was the ability to trigger a synchronization based on real-time changes to the file system. Thus instead of scheduling tasks to run at a predefined interval, they will only run when an actual change is made. ChronoSync v4.8 delivers!
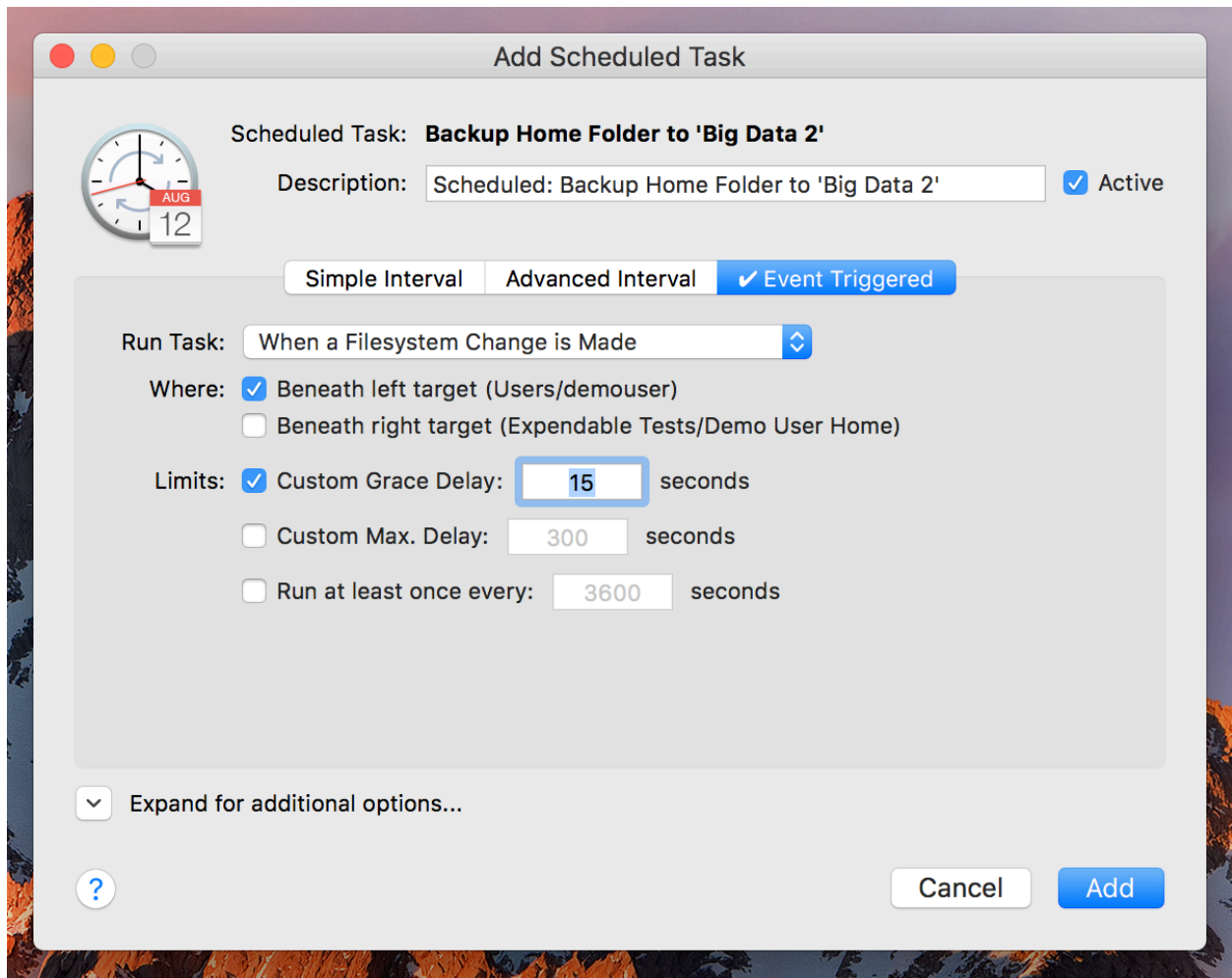

Live-change triggers will now monitor a target for changes. The **Grace Delay** allows changes to 'settle down' before the task is run. You can limit the **Max. Delay** of the grace value so that files that are constantly changing will eventually trigger the sync. Lastly, you can guarantee that the task will run at a predefined interval, if you are paranoid about changes not being detected by ChronoSync. This can happen if files are kept open by the process that is modifying them and/or the folder hierarchy being monitored does not experience any changes.

Concurrent Operations

The synchronizer and copy engines have been significantly enhanced so that multiple operations can be performed during a synchronization. This will increase cloud-based backup performance and can also modestly increase performance on local syncs and backup.

To modify the number of concurrent operations that will be allowed during a synchronization, visit the **Special File/Folder Handling** section on the **Options** panel of your synchronizer task.
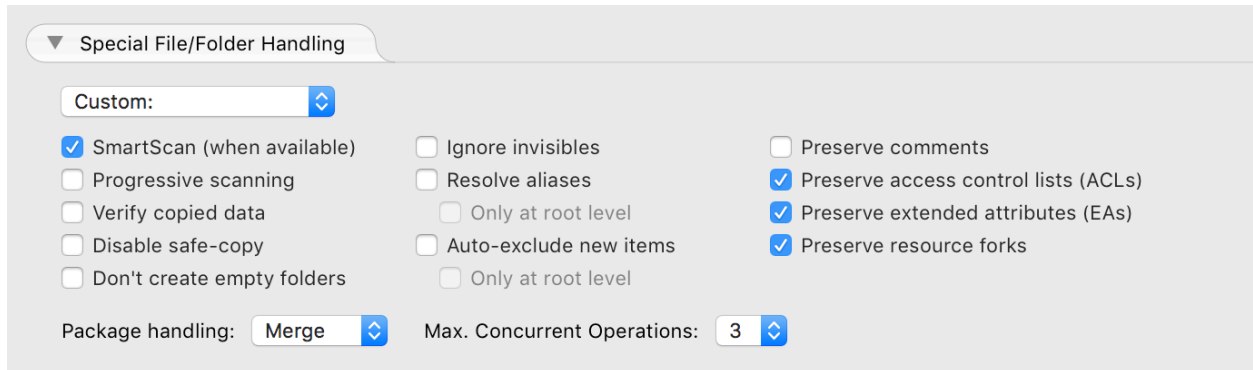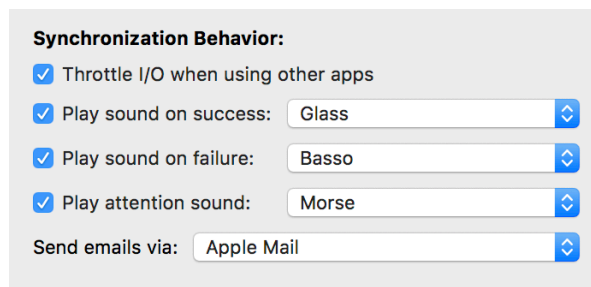

It's usually best to stick with the default unless you are performing a cloud-based task, in which case you may want to double or even triple the default value.
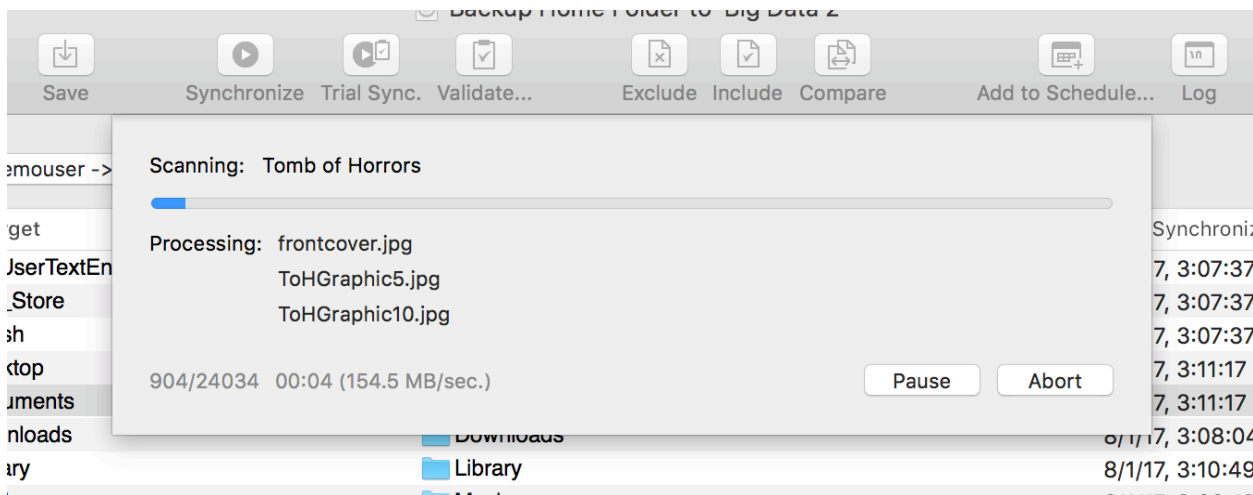
When running the task, you will see multiple items processed concurrently, wherever possible. ChronoSync must finish processing all files and folders in a single folder branch before moving on, however, so you might not always see multiple items being copied concurrently.

I/O Throttling

Large sync and backup tasks can perform tremendous amounts of disk I/O operations when running. This can place such a burden on your system that using other software while the task is running can become quite sluggish. If you schedule your tasks to occur after hours, this isn't a problem. If you must continue to use your computer while they run, however, this can be quite annoying.

Synchronization Behavior:
- ☑ Throttle I/O when using other apps
- ☑ Play sound on success: Glass
- ☑ Play sound on failure: Basso
- ☑ Play attention sound: Morse
- Send emails via: Apple Mail

ChronoSync v4.8 adds a new feature known as "I/O throttling." When enabled (in ChronoSync Preferences), it instructs ChronoSync to perform its disk I/O operations at a low priority, allowing you to continue using other applications unimpeded. This feature is intelligent and will only slow down when it detects you are actively using other applications, thus there is no harm leaving it turned on all the time. In fact, that is the default setting!