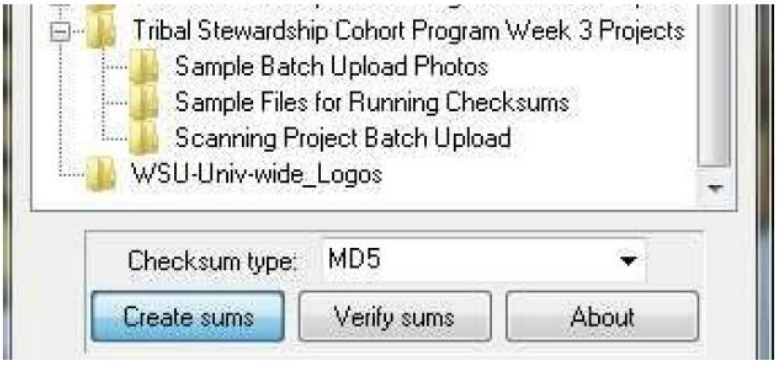
Creating Checksums in MD5Summer

This document provides step-by-step instructions for running and verifying checksums using MD5Summer. Checksums are an important tool for digital preservation to help ensure that a digital file or collection has not changed over time. A checksum is a unique set of letters and numbers that acts like a fingerprint for a digital file in that no two files have the same checksum. If a file is altered for any reason, the checksum will change. A file that has changed unexpectedly may be corrupt, which should prompt further investigation. One commonly used checksum is the MD5 checksum (abbreviation of *Message-Digest*).

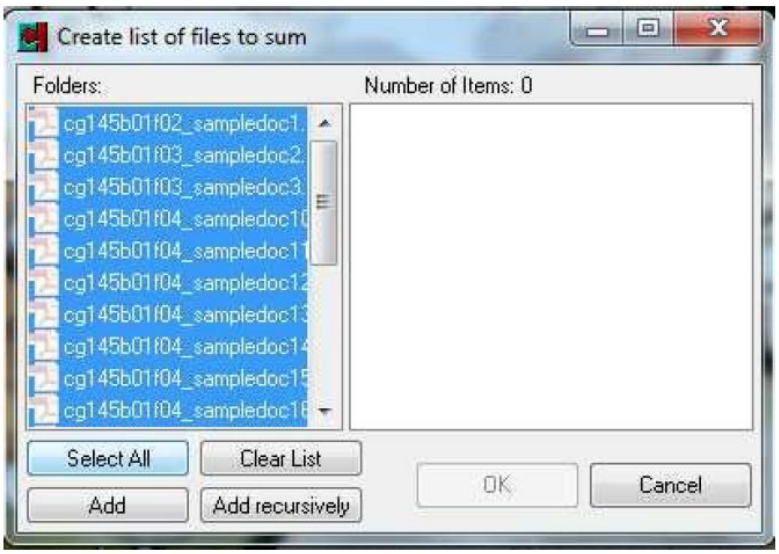
MD5summer is an application for Microsoft Windows 9x, NT, ME, 2000 and XP which generates and verifies MD5 checksums. Its output file is compatible with the output of the Linux GNU MD5Sum, and it also reads Linux generated files. It is released under the General Public License and can be downloaded here: http://www.md5summer.org/download.html

Running a checksum using MD5Summer

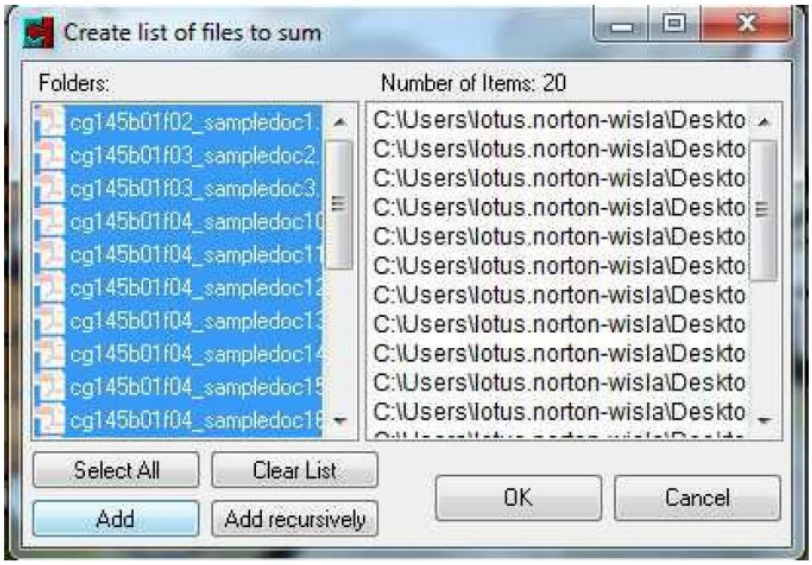
1. Open MD5Summer.
2. Choose a folder from your directory list.
3. Click **Create sums.**



4. Click **Select All** to select all files in the folder, or click *Ctrl* to select multiple files.



5. Click **Add** Once the desired files are selected.
6. Click **OK** and a dialog box will pop up to save the .md5 file.

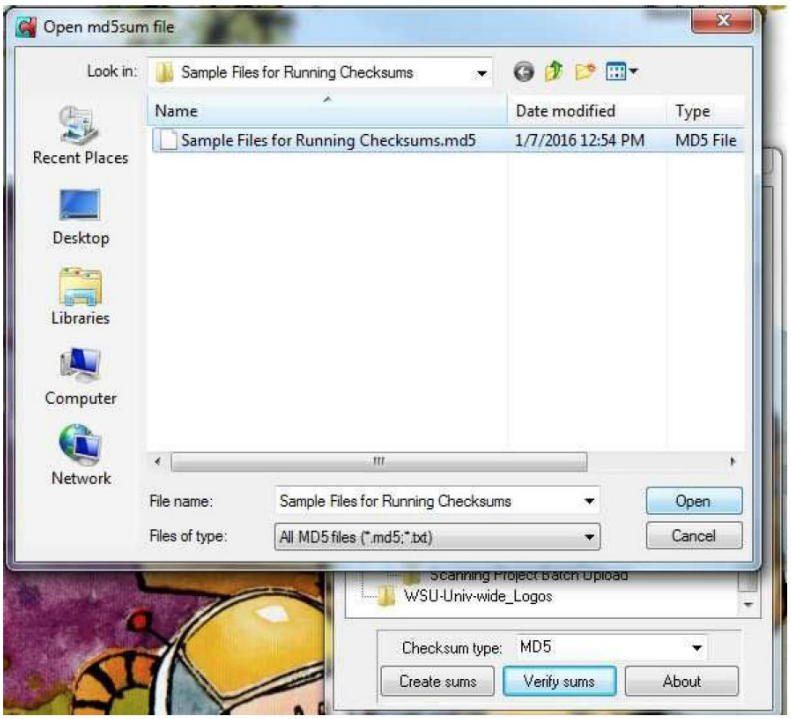


7. Name the checksum file and **Save** it within the folder you are checking. Then **Save**.

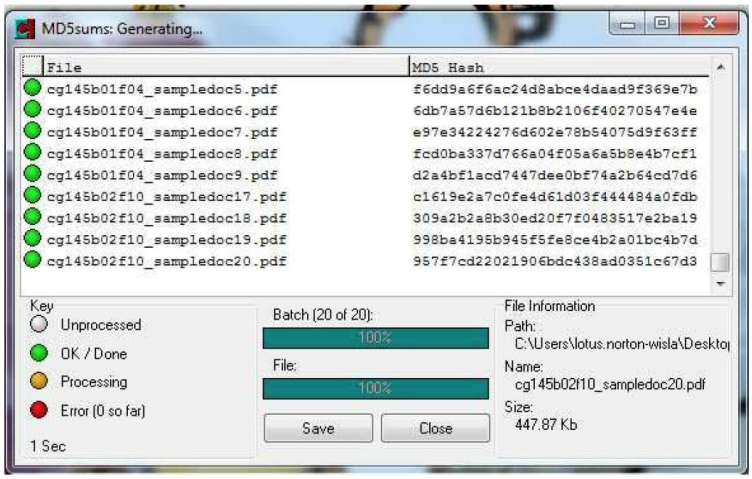
Verifying Checksums in MD5Summer

After you have created a checksum, you will want to check it periodically to ensure that your files have not changed. Follow the instructions below to verify that your files have not changed.

1. Open MD5Summer from your Desktop.
2. Click **Verify sums.**
3. Select the checksum file (.md5 extension) you wish to verify.

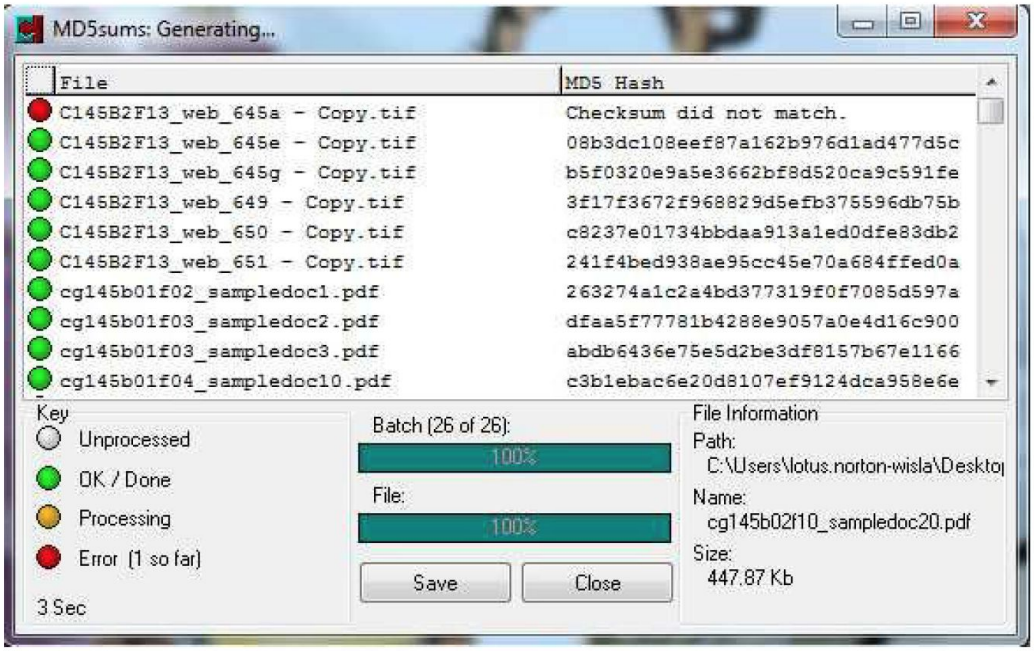


4. The program will compare the current files to the previously generated checksum. If nothing has changed, a green dot will appear next to all files. This means that the file is OK/Done (or unchanged).



5. If you would like to see what happens when a file is changed, change the filename of one of the files, delete a file, or change the file in another way.

6. Click **Verify Sums** again. The following screenshot shows the results of manually changing the filename, resulting in an error: “Checksum did not match” with a red dot next to the file. The same result would come from any other change to the file, such as data loss or deletion.



7. Investigate the changed file. If the change is due to an intentional action by you or your institution, then run another checksum to replace the old checksum. If the change is not intentional, look at the last modified date and open the file to see if there is any meaningful difference. If the file is corrupt or cannot be recovered, you will need to replace it with a backup. This action should be recorded and the directory drive containing the file should be monitored closely to ensure that the corrupted file is not a sign of equipment failure. After the problem has been fixed, create another checksum to replace the old checksum.