To: Stephanie Stewart, Rachel Bauer, Vishnu Jani

CC: Brandon Burke, Haidar Hadi

From: Jim Sam

Subject: MD5 checksum creation on the lab Macintosh computer

Date: 13 May 2016

This memo follows oral discussions between A/V staff about checksums, especially being able to create checksums on the lab Mac that can then be validated by FastSum on a Windows computer. The crux of the problem is that FastSum expects a file index following the hexadecimal hash code, while every Mac-based MD5 generator does not create a similar index, including SMPL’s workflows.

**Solution:**

I (Jim) wrote a script (make\_md5.py) that uses software that comes pre-installed on all Macs (Python 2.7) to produce an external checksum that FastSum can verify. As luck would have it, I had planned to come up with such a script for a talk I am scheduled to give at the 2016 IASA conference this September. Talking to you and Rachel about checksum issues sped up the process. I have tested it, and it works.

Presently, you can find this script and some examples on the box.com folder “MD5 Generator for Mac.” If you open up the two different MD5 files—one made by Python, one by FastSum—in a text editor of your choice, you’ll see that they’re virtually identical.

**How It Works:**

The script takes a folder to be processed and creates external .md5’s for each individual file in that folder. If MD5 files already exist for a given file, the script does not overwrite them.

It does not process sub-folders at this time. As your workflows change, if such sub-folder processing is necessary, we can explore adding that, though that may take some time.

**Use:**

Instructions for using this script are at the top of the script itself, should you open it in your text editor of choice. Beyond that:

1. Place the make\_md5.py file in the home directory of the user (generally the person’s name)
2. Open the app Terminal (Applications > Utilities > Terminal… or just do a spotlight search for Terminal)
3. Navigate by the command line to the folder you want to process with the command “cd /path/to/folder/”. Encapsulate the path with quotes if there are spaces in folder names.
   1. For a local folder, it would look like: cd /users/stephaniestewart/music/
   2. For an external drive folder, it would look like: cd ‘/volumes/g-raid 16tb raid 1/2000c71\_rfe\_rl/’(note the single quotes)
4. Write the command: python ~/make\_md5.py
5. The script will then do its thing, showing you what file it is working on. This will take some time for large video files.
6. At the end, it will display “Done!” The files are then OK to move to the server, etc.

**ADDENDUM - 25 May 2016**

I went ahead and wrote a companion script, verify\_md5.py for local verification of checksums.

**How It Works:**

The script takes a folder to be processed and finds all of the external .md5’s in the folder. It then checks to see if that checksum is valid.

IMPORTANT: It totally ignores files without checksums.

At the end, it tells you what verified and what did not verify.

It does not process sub-folders at this time. As your workflows change, if such sub-folder processing is necessary, we can explore adding that, though that may take some time.