

MediaSift v1.1 – For Windows
By David Griffiths (dgriff@senkou.com)



Freely Distributable as long as all files and documentation are included and unmodified

If you find this program worthwhile, feel free to Paypal me a few bucks at dgriff@senkou.com – any amount is fine - no obligations though, if you want to use the software without sending me anything, that's fine too!

Introduction

This program was written to make life easier for Avid editors, which is to say that it makes life easier for *me*, and hopefully you as well!

Avid's major strength is cross-platform file compatibility, and project compatibility. These features are extremely valuable when editors may be sharing Avid files between multiple non-linear editing systems, and even between multiple operating systems. Digitize your footage onto a high-end machine, move your file onto a laptop and finish your edit at home, in the hotel, or on a plane; you know the drill...

But there's a catch - Media management. Avid's strength in using a centralized media repository (otherwise known as "OMFI MediaFiles" directories) to store files. This isn't a problem so long as you stay on one computer, but what happens when you want to move your entire project along with all of your files to a new computer...

Maybe you have more than one media drive on your system, and when working on your projects, digitized media (video and audio), rendered effects, titles, and imported graphics can be allocated between media drives depending on how you have configured your system.

There are ways to individually select target drives for these files, and there are ways (renaming the OMFI folder) to keep projects separate, but most of us have had the experience of having an OMFI folder with multiple projects inside it, and have been annoyed when we try to move that project to a new system.

How do you identify which media files are for which project? The filenames Avid creates when digitizing and importing media do tend to be a tad cryptic... (ie: "title1049041926V03E871C06.omf"), so trying to move files manually through windows, even when sorting by file dates and times is often labour-intensive and inefficient.

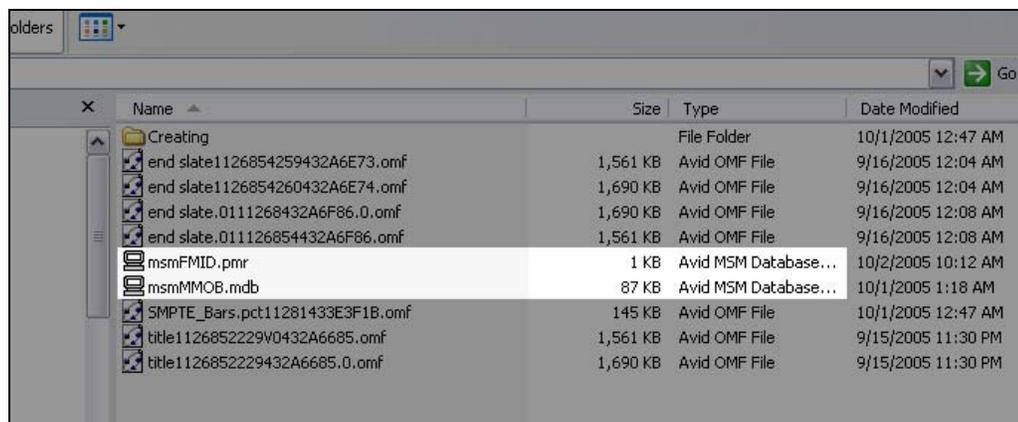
Other programs have been developed to allow editors to move files between systems, however they tend to be more expensive than what I was willing to pay, and I enjoy a bit of a challenge. It's been a few years since I've done any programming, and writing a media management tool seemed to be a challenge of about the correct size.

So, here you go – "MediaSift". The program itself is free and you can copy it for whoever you like. I figure I did pretty well for a TV/Computer guy who's kind of out of practice when it comes to programming... "At least it works".

Method of Operation

When Avid creates a media file of the OMFI variety, it is created inside an "OMFI MediaFiles" directory on the target drive. The media file itself is named with a prefix relating to the file's source, and with an alphanumeric suffix which is generated to ensure that no two files have the same name.

Aside from the media files, there are two other files in the OMFI directory, "msmFMID.pmr" and "msmMMOB.mdb".



The first file (msmFMID.pmr) is a small index file that contains information on how many media files are in the current directory, followed by a brief bit of information on the files themselves (file name, project name, and some information I haven't unraveled yet).

The second file (msmMMOB.mdb) is a larger database file which contains detailed information about each file, including what type of information each file contains (audio, video, title, precompute, etc), modification and creation dates, resolution data, sampling rates, etc. In essence, it is a highly detailed index that contains everything that the Avid software needs in order to determine the full capabilities of the file.

For the purposes of MediaSift, I chose to utilize the first file, the “msmFMID.pmr” file, as it is extremely small, has a fairly simple file structure, and contains the two essential bits of information I needed most, the filename of each file in the OMFI directory, and the project it was created by/for.

If anyone else wants to expand on this work, I have documented what little I know of Avid’s file format at the bottom of this document. Although the OMFI spec was supposed to be an (ahem) “Open Media Framework Interface”, it doesn’t seem to be very open, and there is almost no public documentation available on the file structure. I suspect that paying Avid some money would help, but if I paid for it, I’d have to charge for it, and that negates my purpose in writing a freely distributable utility for all Avid editors (the ones who edit on Windows platforms anyway).

All file operations performed within MediaSift utilize Windows API functions to copy, move and rename media files where necessary, so there’s no magical programming technique which could mangle your files.

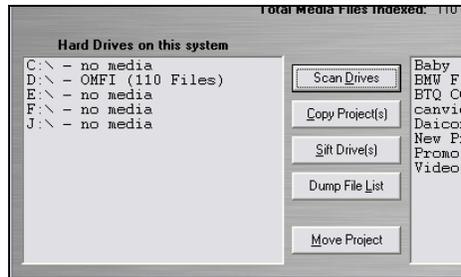
To make the utility even more safe, MediaSift *never* performs delete operations on any files, directories, or indexes. The way that I’ve designed the program, there are no “delete” commands *anywhere* inside the source code.

If you want to erase files or directories, you’ll need to do it yourself after sifting/copying/moving project files has been completed. More work for you, less risk for you, no risk for me! ☺

Instructions for Use

When you start MediaSift, the first thing the software does is check how many valid hard-drives appear on your computer. Those drives are then scanned to look for valid OMFI directories, as well as valid index files within those directories. If a drive has both, it is listed as an “OMFI” in MediaSift.

After the drives have been detected, MediaSift loads and sorts the database from each directory and displays a list of all projects on the system, as well as the number of media files associated with each project, and the project’s overall size on disk.



MediaSift relies on the Avid index files in each directory being accurate before performing any file operations. Without accurate indexes, the program will be unable to operate and may miss copying/sifting files when performing file operations.

Inaccurate indexes won't result in files being erased or damaged (I was especially careful to ensure this wouldn't happen), however you wouldn't want to move your files to another machine and later find out you missed some essential media file because the index wasn't current, then have to waste time driving back to your source system through rush-hour traffic in the middle of a blinding snow-storm, etc...

MediaSift attempts to detect when invalid indexing may have occurred (by checking to see if the number of files in the directory match the media index file, and by checking the media index to ensure that all listed files actually exist on the drive). If there are any discrepancies, you will get a warning and will just have to start up the Avid software to force a reindex:

To do this, just start the Avid software, then when you get to the “Select Project” window, quit the program - the index will have already been updated (when you see the Avid “Scanning Media Directory” message).

If you have manually copied or moved any files within the OMFI MediaFiles directory, it is essential that you start the Avid software to force a re-index to make sure all files are properly moved/copied. If you miss this step, it's not the end of the world – if you find that files were missed during a copy or sift, just start/quit the Avid as listed above then give it another shot. Any files already copied or moved will be skipped.

After the scan has completed, four more options become available – “Copy Project”, “Sift Drive(s)”, “Dump File List”, and “Move Project”.

Copy Project

This is MediaSift's most basic function, it simply scans-through the project files for all active media drives and copies all files relating to your selected project to a new location that you choose.

After clicking on project(s) in the project list in the right-hand display window, you will be prompted to choose a destination directory. I'd recommend not copying the media to another online OMFI folder as that may create media collisions if you re-start Avid with the same file in two different locations.



The "Copy Project" option scans through all media files indexed on the computer, and copies all media related to those projects to the destination drive and directory of your choice. Any media files which already exist at this destination with the same filename are skipped automatically.



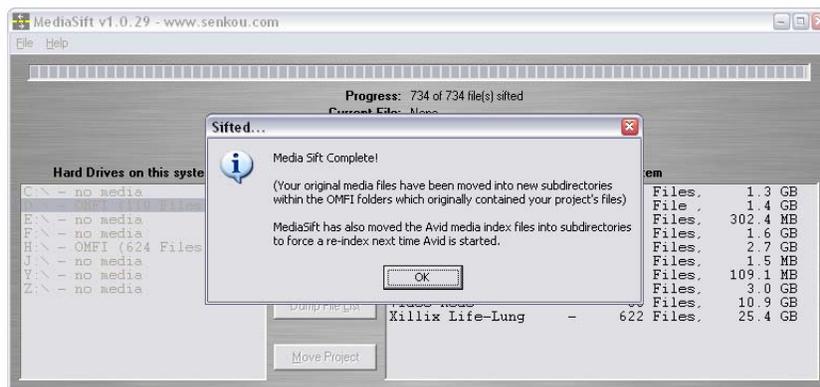
Sift Drives

The “Sift Drives” command is used to “organize” media which is inside an OMFI directory. New directories for each project on the drive are created within the OMFI folder, and the media is moved from the OMFI folder into those project sub-folders. This is a very easy way of organizing a large OMFI folder which may have a lot of “clutter” from various projects created over time.

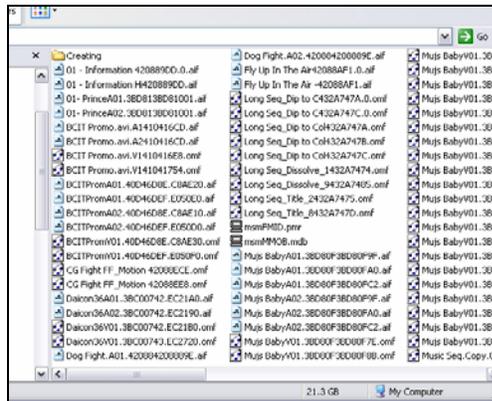
To begin, simply select one or more active media drives that you wish to perform the “sift” operation on, as well as one or more Avid projects. To select more than one drive or project, hold the shift or control keys while clicking on the file list. Then click the “Sift Drive(s)” button.



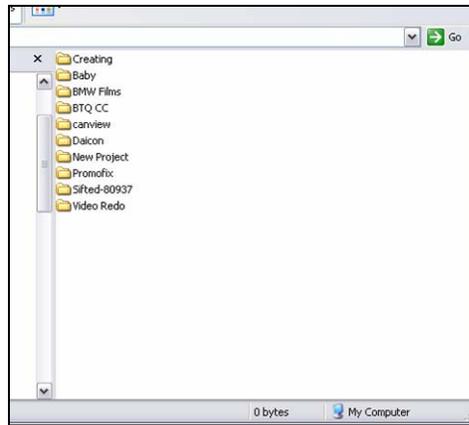
After all media has been moved into the project sub-folders, MediaSift will move the “msmFMID.pmr” media index file into a “sifted” folder, which in turn causes the OMFI folder to become inactive when the drives are again scanned from MediaSift.



Before Sift:



After Sift:



As all files are now moved-out of the OMFI folder, the drive will be shown as empty the next time the Avid software is started. Again, none of the media has been erased or modified in any way – to put the media back “on-line”, simply copy it or move it back into the main OMFI directory and Avid will re-detect it and return it to online status.

Dump File List

Dump File List creates a text file at the location of your choosing which contains information about all files within any project(s) you select. For example:

```
Project "canview" - 10/14/2005 at 10:34:04 PM
-----
D:\OMFI MediaFiles\Long Seq_Dip to C432A747A.0.omf - 9/16/2005 12:30:03 AM (1,856,968 bytes)
D:\OMFI MediaFiles\Long Seq_Dip to C432A747C.0.omf - 9/16/2005 12:30:05 AM (3,711,592 bytes)
D:\OMFI MediaFiles\Long Seq_Dip to C01432A747A.omf - 9/16/2005 12:30:02 AM (1,857,008 bytes)
D:\OMFI MediaFiles\Long Seq_Dip to C01432A747B.omf - 9/16/2005 12:30:04 AM (1,856,992 bytes)
D:\OMFI MediaFiles\Long Seq_Dip to C01432A747C.omf - 9/16/2005 12:30:04 AM (1,856,992 bytes)
D:\OMFI MediaFiles\Long Seq_Dissolve_1432A7474.omf - 9/16/2005 12:29:57 AM (1,988,000 bytes)
D:\OMFI MediaFiles\Long Seq_Dissolve_9432A7485.omf - 9/16/2005 12:30:13 AM (3,706,672 bytes)
D:\OMFI MediaFiles\Long Seq_Title_2432A7475.omf - 9/16/2005 12:30:02 AM (20,093,216 bytes)
D:\OMFI MediaFiles\Long Seq_Title_8432A747D.omf - 9/16/2005 12:30:13 AM (48,792,632 bytes)
D:\OMFI MediaFiles\scene0001.avi.A1432A6482.aif - 9/15/2005 11:23:17 PM (41,720,440 bytes)
D:\OMFI MediaFiles\scene0001.avi.A2432A6482.aif - 9/15/2005 11:23:17 PM (41,720,192 bytes)
D:\OMFI MediaFiles\scene0001.avi.V1432A648D.omf - 9/15/2005 11:23:17 PM (1,561,880,432 bytes)
-
12 Files Total - 1.61 GB

Project "fixed video" - 10/14/2005 at 10:34:04 PM
-----
H:\OMFI MediaFiles\Track06.cdA01.3BECC3BECC0CE.wav - 11/9/2001 10:53:20 PM (767,944 bytes)
H:\OMFI MediaFiles\Track06.cdA02.3BECC3BECC0CE.wav - 11/9/2001 10:53:20 PM (767,904 bytes)
-
2 Files Total - 1.46 MB
```

You can also select dumping your file in the .CSV (comma separated value) file format, which you can then import into an external database program, Microsoft Excel, etc.

Move Project(s)

This is a hybrid mode of sorts. In keeping with MediaSift's "no-delete" policy, it doesn't erase your source files after they've been "moved" to the destination directory. Instead, MediaSift creates a new sub-directory inside your source OMFI folder(s) called "*projectname-moved*".

The idea here is that MediaSift will actually copy your project files to the new location you specify, then move the original source files out of the online OMFI folder into a new folder it creates to get them "out of the way".

If you're happy with the move, then you can manually delete the source files by any means you like. Again, the idea here is to make sure that if there's any file-deleting going on, it's happening by YOU, the editor, not by means of my programming.



Options Menu

The options menu adds a “Default OMFI Directory” feature to MediaSift. This feature adds the “OMFI MediaFiles\” path to the destination directory if a user selects the root directory of a drive.

For example, if the option is selected, and a user selects the destination path “D:\” for their copy or move option, MediaSift automatically modifies the destination path to be:

D:\OMFI MediaFiles

File specs

The msmFMID.pmr file is actually pretty simple, which is the main reason I used it (as well as being extremely fast to process). The other method of operation would be to scan each media file individually, which takes a very, very long time on systems with lots of files. If you've ever had Avid re-scan all of your drives, you'll understand how painful that process can be...

The format of the "msmFMID.pmr" index file, at least as far as the information I'm interested in, is as follows:

Offset (dec)	Length	Data
08	4 bytes	Number of media files in that OMFI directory (in hex)
12	8 bytes	Unknown data (for first media file)
After 8 byte header	2 bytes	Length of the first media file's filename (in hex)
Varies	Varies	Media file name
Immediately after filename	2 bytes	Length of project name (in hex)
Varies	Varies	Project name
Immediately after project name	12 bytes	Unknown data
At this point, the file just repeats for all other files in the index, the same as from the starting point of the 8-byte file header (from offset 12)		

So in order to read this index, I read the total number of files at offset 8, jump to offset 20, then just continue looping through, reading the filename, then the project name until I've read the number of files listed. Very fast, very reliable (assuming the index is up-to-date).

Special Thanks!

Special thanks to Ken Cathro at Studio Post and Imaging Inc. (SPI) in Vancouver, Canada for allowing me to test my software on one of his Avid Symphony Universal systems to ensure compatibility with alternate operating systems and Avid platforms. It worked fine, BTW – and Ken gave me some valuable ideas for improving the program.

Also special thanks to everyone on the Avid support forums:

- <http://www.avid.com/exchange/forums/>

It's a great source of editing knowledge, and I'd like to thank the members and moderators for the comments and suggestions and praise!

FAQ

- But I have a Macintosh, will you write a Mac version?
 - Nope, sorry – Although I do have a Mac as well, I don't have any experience writing software for it, and it's not really high on my list of things to do (all of my paying editing jobs are on the PC platform). That said, if you store your Avid media files to portable drive(s) formatted with FAT32 from your Mac, you can always move those drives to a PC and run MediaSift on them from there, which should work fine. If you want to write a Mac version, then feel free to use the information here, or to contact me if you need any advice.
- What about other commercial software that is also for managing Avid media?
 - Other management software works in a different method than mine does (ie: by analyzing all files without using the indexes), and can handle other tasks mine can't (dealing with locked files, for example). They also make Mac versions which are beyond the scope of my project. If you want those features, you're going to need to pay for that version instead.
- Does it work with any other file formats like MXF?
 - Not yet, but it looks like it will be pretty easy to add MXF as the index files appear to be in the same format (although the directory structure is a bit different). If there's sufficient demand, I'll add this later. I don't think many people are using MXF files yet.
- Why not index the media files directly and skip starting the Avid software to update the index if it's not current?
 - Two reasons – first off, the file structure of the media files themselves was sufficiently difficult that I didn't want to have to decode it by hand without any file documentation. Second was the fact that the media index loads very quickly on a fast computer, even with full media drives; the index has all of the information I need, and is extremely simple to parse.

- Can you add (some) feature for me?
 - Let me know and I'll see what I can do!
- Your program is great and saves me a lot of time - it's wonderful that it's free, but I still want to send you some money!
 - How very kind! Feel free to Paypal me whatever you think is fair at dgriff@senkou.com – no amount is too small (or too large ☺).
- Ok, I understand you're not a programmer, so what DO you do?
 - I'm an instructor in the Broadcast and Media Communications program at the British Columbia Institute of Technology (www.bcit.ca) in Burnaby, B.C., Canada.

Over the course of our two-year program, our students learn camera operation, lighting, directing, editing (tape-based linear, and of course, Avid), writing, production planning, budgeting, and more!

We produce many great projects every year, and if you're a producer, a director, or the manager of a production facility, who would like to get a free DVD in the mail with some sample projects showing what our students can do, drop me an email at dgriff@senkou.com and I'll ship one out to you, anywhere in the world (until my boss grumbles about too many freebies) – and if you're looking to hire someone, let me know and we'll find a student or graduate who is perfect for the job you have available!

Still to come...

- Support for networked drives?

Version 1.1 – Oct 20/05

- Updated to allow a user to select only certain projects in the list to be “sifted” on the selected drives, rather than sifting entire drives.
- Added more verbose error-checking for non-media files in the OMFI directory, will show why the scan failed (usually non-media files which exist in the OMFI files directory). Will expand on this more later. Also allows users to continue despite an index that doesn’t match the number of files on the drive if they desire (doing a sift on that drive may help identify the file that’s not indexed properly)
- Added CSV data export.
- Detect empty OMFI dirs (except for 2 index files) and skip them.
- Added “Default OMFI Directory” mode, adds “OMFI MediaFiles\” if no directory is chosen on a destination drive.
- Made the copy dialog a bit more verbose – when it says “files skipped”, it really means “files skipped because they already exist at the destination”, so there’s no point re-copying them over themselves.

Version 1.0 – Oct 15/05

- Initial Release