The AbleDiskTool Utility

5.2.2

Release 5.2.2 of SynclavierX includes a command-line utility called AbleDiskTool. The AbleDiskTool utility is designed to quickly convert Synclavier® files to formats that are native to the Macintosh (AIFF sound files, for example).

The InterChangeX application (included with SynclavierX) provides a high-level mechanism for transferring Synclavier® files from aging legacy hard drives into Macintosh-resident disk image files. AbleDiskTool augments the capabilities of InterChangeX by allowing you to convert Synclavier® files into Macintosh-resident files that can be processed by other Macintosh applications.

The most straightforward use of AbleDiskTool is to convert the entire contents of a Synclavier® disk image file (or legacy hard drive) into a hierarchy of files and folders stored on your Macintosh. During this conversion, Synclavier® text files will be converted to a standard format that can be edited on your Macintosh. Additionally, Synclavier® sound files will be converted to the industry-standard AIFF sound file format. The AIFF sound file format preserves all the audio information from the original Synclavier® sound file and makes the audio available to virtually all Macintosh audio applications such as QuickTime, Final Cut Pro, and all modern Macintosh sequence engines.

Other types of Synclavier® files (such as timbre libraries and sequences) are imported into your Macintosh in their native Synclavier® format. Since, as of this writing, there is no Macintosh software available to process these files (except for SynclavierX), the usefulness of this capability is limited for those file types.

Obtaining AbleDiskTool

AbleDiskTool is available for download from synclavier.com. It is included in the downloadable version of InterChangeX at http://www.synclavier.com/InterChangeX.html.

License Code

AbleDiskTool requires that an active license code for InterChangeX be installed on your computer before you use AbleDiskTool. There is no trial version of AbleDIskTool available. Users should test their setup with InterChangeX to make sure their legacy disk drives and/or disk image files can be processed by InterChangeX before purchasing a license code.

Installation

The AbleDiskTool OS-X installer places AbleDiskTool in the /usr/sbin directory automatically. You will need an administrator password to complete the installation of AbleDiskTool.

What is a command line utility?

On Mac OS X, command line utilities are hosted by the Terminal application (/Applications/Utilities/Terminal.app).

Wikipedia has a primer on Macintosh command-line utilities at:

http://en.wikipedia.org/wiki/Terminal_(application)

Apple's own command line primer is at:

http://developer.apple.com/documentation/MacOSX/Conceptual/OSX_Technology_Overview/CommandLine/chapter_950_section_1.html

Sample AbleDiskTool Import Commands

```
AbleDiskTool import file "/ImageFile" "/ToMacFolderName"
AbleDiskTool import scsi 6 "/ToMacFolderName"
AbleDiskTool import W0 "/ToMacFolderName"
AbleDiskTool import W1 ~/"Desktop/MacFolderName"
```

`AbleDiskTool` Invokes AbleDiskTool. Terminal is case-sensitive so <u>A</u>, <u>D</u> and <u>T</u> must be capitalized. A simple `AbleDiskTool` command with no arguments will print out the on-line documentation for `AbleDiskTool`.

The general `import` command line format is:

```
AbleDiskTool <command> <options>
```

The only `<command>` that is documented as of this writing is `import`. A few `-e` (export) examples are described on the following page.

The `import` keyword must be followed by `file`, `scsi`, `W0`, or `W1`.

`file` is used to specify the complete file name and path of a Synclavier® disk image file. The filename should be enclosed in quotes and begin with a `/`. An absolute complete file path is recommended. Optionally, a ~ can be used to specify a file path relative to the users home folder (~ must not be enclosed in the quotes).

`scsi 6` is used to specify a legacy hard drive connected to your computer using the Ratoc FR1SX FireWire-SCSI converter.

`W0` or `W1` is used to specify the current W0: or W1: configuration as set up in InterChangeX.

The last argument to `AbleDiskTool` is the path and name of a Macintosh folder that will be created by `AbleDiskTool`. The path and folder name should be enclosed in quotes to avoid problems with special characters and spaces. The path should generally be an absolute path that begins with a `/`. The folder must not exist; it will be created by `AbleDiskTool`.

When using the import command, the default sound file format upon import is AIFF.

The latest version of AbleDiskTool includes the ability to create a tab-delimited text file that contains information about the sound files that were imported to your Macintosh. The `-log` option activates this feature. The created log file will contain the filename, complete path, original sound file comments, and a list of optical sound file categories associated with the sound file. The tab-delimited file could be imported into a data base program (such as Microsfot Excel or Filemaker) as part of a comprehensive soundfile data base.

```
AbleDiskTool import file "/ImageFile.simg" "/ToMacFolderName" -log "/LogFile.txt"
```

Sample log file:

FileName	FilePath	Caption	Category1	Category2
ABSC#241	/Volumes/HD/ToFolder/ABSC#241	Pizzicato Acoustic Bass - soft	:ABS41	BASS:ACOUSTIC:ABS41
ABSCN141	/Volumes/HD/ToFolder/ABSCN141	Pizzicato Acoustic Bass - soft	:ABS41	BASS:ACOUSTIC:ABS41
ABSEN242	/Volumes/HD/ToFolder/ABSEN242	Acoustic Bass - bowed	:ABS42	BASS:ACOUSTIC:ABS42

Caution – an existing file of the same name as the log file will be replaced by the new log file.

Sample AbleDiskTool Export Commands

AbleDiskTool can be used to export a Macintosh-resident sound file library (a folder hierarchy of AIFF, WAVE or SND2 files) to a Synclavier® disk image file or to a legacy SCSI hard drive. The general capabilities of AbleDiskTool include:

- Creating a Synclavier® disk image file
- Erasing a disk image file or legacy hard drive
- Exporting a Macintosh folder as the complete contents of an image file or hard drive
- Exporting a Macintosh folder as a specific subcatalog (including nested folders)
- Exporting a single Macintosh file
- Items can be renamed as they are exported
- Hand-edited __SIZE__ files can control the size of created subcatallogs

Creating a disk image file with AbleDiskTool

A blank Synclavier® disk image file can be created with AbleDiskTool:

```
AbleDiskTool -create "/ANewImageFile.simg" 10485760 -zero
```

The size must be specified in bytes (one megabyte = 1048576 bytes); the -zero option forces the file to be filled with zeroes so that it may be more easily compressed for e-mailing.

Note: AbleDiskTool will generaly over-write an existing file without indicating an error and without prompting for confirmation. Make sure your file paths are correct! The use of the .simg file name extension is recommended for all Synclavier® disk image files.

Erasing a disk image file with AbleDiskTool

An existing Synclavier® disk image file can be completely "erased" with AbleDiskTool:

```
AbleDiskTool -file "/ANewImageFile.simg" -q ZQX3
```

The erase function is activated by the -q ZQX3 option. -q is short for 'quick-erase'; the ZQX3 is a security password to avoid accidentally erasing a device.

Using AbleDiskTool witn InterChangeX and SynclavierX

InterChangeX and SynclavierX are not updated in real time with changes to the file system made by AbleDiskTool. When sound files are exported to a Synclavier® disk image file or legacy drive using AbleDiskTool, InterChangeX windows and the SynclavierX sound file cache must be manually updated. InterChangeX windows can be updated by re-opening the root-level device or by choosing Update from the pull-down menu. SynclavierX is updated by using Update from the Sound File Directory screen ("B" page).

Exporting Sound Files with AbleDiskTool

In general, Macintosh-resident sound files may be exported individually (and optionally renamed during export), or by exporting an entire Macintosh folder hierarchy either as the entire "device" or as a subcatalog in the resulting image file. Examples of exporting a complete Macintosh folder follow; the rules for exporting individual files are essentially identical.

Exporting to the top level (W0:) with AbleDiskTool

The **entire contents** of a Macintosh folder (including sub-folders) may be exported to the **top level** of a Synclavier® disk image file or legacy disk drive by combining the `-e` command with either a quick-erase function ("-q ZQX3") or by using the `–m3` option:

```
AbleDiskTool -file "/ANewImageFile.simg" -q ZQX3 -e "/MacFolder" :
```

or

```
AbleDiskTool -file "/ANewImageFile.simg" -m3 -e "/MacFolder" :
```

The general format of the command line for export is:

```
AbleDiskTool <image-file> <options> -e <Mac folder/file> <destination>
```

`file` is used to specify the complete file name and path of a Synclavier® disk image file. The filename should be enclosed in quotes and begin with a `/`. An absolute complete file path is recommended. Optionally, a `~` can be used to specify a file path relative to the users home folder (`~` must not be enclosed in the quotes).

The quick-erase ("-q ZQX3") function is described on the previous page. The `-m3` option directs AbleDiskTool to "merge Macintosh folder contents into destination subcatalog".

The export function is initiated by `-e` in the command line. `-e` is followed by the path of the Macintosh folder that is to be exported, and then by the the Synclavier® path of the destination (":" to indicate the top level).

Exporting a Macintosh folder as a subcatalog

A Macintosh folder (including sub-folders) may be exported **as a subcatalog** of a Synclavier® disk image file or legacy disk drive by using the `-e` command **without** the `-q` and `–m3` options:

```
AbleDiskTool -file "/ANewImageFile.simg" -e "/MacFolder" :MACFOLDR
```

The above exmple shows the folder `MacFolder` being renamed to `MACFOLDR` as it is being exported (required to stay within the 8-character filename limitation of the Synclavier® operatings system).

Other export command options of interest include:
```
-p   emit folder-level progress info
-fp  emit progress info for every file
-n1  truncate long Macintosh file names on export; default is to stop
-n2  fix illegal Macintosh file name characters on export; default is to stop
-w1  warn instead of overwriting file or folder on export; default is to replace files as needed
-w2  stop  on any error during folder export; default is to continue with next file
-m1  merge files into existing subcats; stop if file exists
-m2  merge files into existing subcats; replace files as needed
-m3  merge Macintosh folder contents into destination subcatalog
```

__size__ files

This control lets you influence the size of subcatalogs that are created when Macintosh folders are exported to a Synclavier® hard drive.

When AbleDiskTool exports a Macintosh folder as a Synclavier® subcatalog, a special file of the name "__size__" can be used within each Macintosh folder to control the size of the created sub-catalog. This text file may be edited with any Macintosh text editor (such as SimpleText). It contains a description as to whether the subcatalog was a large subcatalog (128 maximum files) or a small subcatalog (32 maximum files). Here is what a __size__ file looks like:

Note: Yes, the number in the __size__ file is in <u>sectors</u>, not megabytes. This was done to provide 100% accuracy when a subcatalog is imported to a Macintosh and then later exported. To compute sectors from megabytes multiply the number of megabytes by 2048.

```
small, 200
```

The first word in a __size__ file must be the word "large" or "small" followed by a comma and an optional space. A decimal number then appears that specifies the size of the subcatalog in sectors.

__size__ files may be freely edited on the Macintosh. They will influence the size of the enclosing subcatalog the next time it is exported.

Support

Fee-based support for AbleDiskTool is available by purchasing an Email Technical Support Incident for InterChangeX/AbleDiskTool from the synclavier.com on-line store at:

http://www.synclavier.com/store

Requests for additional specific documentation will normally be responded to by email within 24 hours.

AbleDiskTool: Version 1.7 dated 1/1/09

    Usage: AbleDiskTool <command> <options>

commands:
    import <drive> "/ToMacFolderName"   import entire drive or image file to Macintosh folder converting sound files to AIFF

drives:
    file "FileName"   specify a Macintosh-resident Synclavier Disk Image File - use quotes if needed
    scsi 6   specify legacy SCSI drive connected via Ratoc FR1SX FireWire-SCSI Converter
    W0   specify source is current InterChange? setting for W0:
    W1   specify source is current InterChange? setting for W1:

Examples:
    AbleDiskTool import file "/ImageFile" "/ToMacFolderName"
    AbleDiskTool import scsi 6 "/ToMacFolderName"
    AbleDiskTool import W0 "/ToMacFolderName"
    AbleDiskTool import W0 "~/Desktop/MacFolderName"

Other options not formally supported:
    -s scsi_id   specify SCSI id to use
    -pci   use Synclavier D24 bus
    -inq   perform Inquiry before operation
    -t   perform Test Unit Ready before operation
    -d   dump out catalog sectors in hex
    -e mac_entity   syncl_name   export Macintosh entity to Synclavier Drive or Disk Image File
    -i syncl_entity mac_name   import Synclavier file or subcatalog to the Macintosh
    -p   emit folder-level progress info
    -fp   emit progress info for every file
    -n1   truncate long Macintosh file names on export; default is to stop
    -n2   fix illegal Macintosh file name characters on export; default is to stop
    -w1   warn instead of overwriting file or folder on export; default is to replace files
    -w2   stop on any error during folder export; default is to continue with next file
    -m1   merge files into existing subcats; stop if file exists
    -m2   merge files into existing subcats; replace files as needed
    -m3   merge Macintosh folder contents into destination subcatalog
    -v   verify export sizes & filenames; do not actually write to disk
    -ignore   ignore __SIZE__ file information on export
    -nosize   do not create __SIZE__ files when importing
    -image   import entity as a disk image file
    -subimages   import nested subcatalogs as disk images
    -squeeze   squeeze disk images to minimum size on import
    -create name size_bytes   create a new Disk Image File
    -zero   zero out new disk Image file
    -x percentage   make each newly created subcatalog x bigger than minimum needed
    -c   dump raw catalog contents of Synclavier SCSI drive
    -r   recurse down Synclavier catalog structure
    -text   import only text files
    -skip.   skip import of files that start with '.'
    -system   only import or export Synclavier system files
    -delete   delete the Macintosh file after exporting it
    -o path:name   only access this particular Synclavier file/catalog
    -q ZQX3   quick erase hard drive (e.g. initialize) before export
    -j   eject media after operation
    -allow   allow erase of Macintosh hard drives
    -recognize   recognize Synclavier disks in all cases
    -aiff   import soundfiles as AIFF files
    -sd2f   import soundfiles as Sd2f files
    -wave   import soundfiles as WAVE files
    -rates48   limit sample rates of AIFF, Sd2f and Wave files to 48.0 Khz
    -log logfile   create a tab-delimited log file of imported AIFF file with comments

For -e (export):
  mac_entity   is the name of a file or a folder on the mac
  syncl_name if syncl_name ends in : then syncl_name is name of subcatalog to create; mac_entity will be
           stored therein; else syncl_name will be name of mac_entity when transferred

For -i (import):
  syncl_entity is the name of a file or a subcatalog on the Synclavier disk
  mac_name   if mac_name ends in : mac_name is name of folder to create or use; syncl_entity will be
           stored therein; else mac_name will be name of syncl_entity on the mac