Files, catalogs and devices

OS-02-0990

How information is stored

Before you create many Direct-to- Disk projects or sounds andsequences with the Synclavier, you must set up a **storage system.** This process involves files, catalogs and devices.

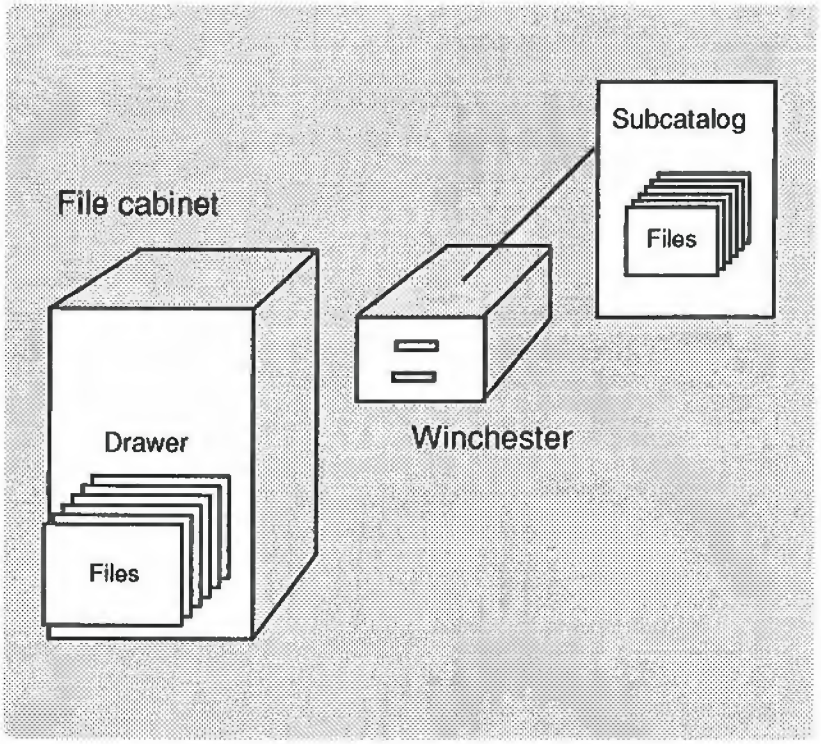
A storage system

In a traditional office, the basic unit of information storage is the file, a collection of data about one person, one business, one topic, etc. Files are stored in a storage device, or file cabinet, which is subdivided into drawers and into sections within the drawers. Each file, section, drawer and file cabinet is labeled so that information can be found quickly.

In the Synclavier and Direct-to-Disk systems, the basic unit of information is also called a **file.** Sequences, sets of timbres and sampled sounds are all stored within individual files. The files are stored in catalogs and subcatalogs on storage devices. The primary storage **device** is the **Winchester disk** or disks.

Before proceeding very far with your work on the Synclavier, you should subdivide the storage space or top-level catalog of the Winchester into the separate storage areas called **subcatalogs.** As you create new sounds and sequences, you store them with related files in the same subcatalog. You can always access files from any other subcatalog, but files which are used together should be stored together.

File management is best performed in the Monitor. If you spend a certain amount of time at the Monitor each day, week or month organizing your files, moving them around, renaming them, backing them up and discarding those you no longer need, your creative time will proceed more smoothly.


File cabinet
Drawer
Files
Winchester
Subcatalog
Files

Files

The file is the basic storage unit for the Synclavier and Direct-to-Disk. Every file has a **filename**, a **type** and a **length.**

Filenames , types and lengths

All Synclavier and Direct-to-Disk files have filenames. Many are named at New England Digital; some are named automatically as you use the system; others you name yourself.

A valid filename has up to eight consecutive characters, including letters, digits and/or some symbol characters. Spaces and the following characters, however, **cannot** be used in filenames, since they have other functions in the software system.

? ! : ; , / \ < > + = % & * | @

When you name a file, be sure to use a filename that distinguishes it from your other files. For example, **blues1, reggae6, 12bar** are all filenames that define the file without exceeding the eight-character limit or using any of the invalid characters.

Within any catalog or subcatalog, each file must have a unique filename.

File types and lengths

Each file has a computer format called a **file type** which indicates what type of information it stores. The contents of text files can be viewed and edited at the terminal. Data filescontain data in the form of binary code (0's and 1's) and cannot be edited at the terminal.

file type	contents	example
data	binary code	.newdata or timbre file
exec	binary code	software programs
index	binary code	optical disk index file
sound	binary code	sampled sounds
sync	binary code	.sq[n]data or sequence file
text	lines of text	sequence written in script or computer music format

Every file has a length measured in sectors. Certain files, such as **.newdata** and **.sq[n]data** files, have predetermined lengths set at New England Digital. Other files, such as named sequence files and sound files, are as long as the information stored in them.

Current file and stored file

A file that exists in computer memory is called the **current file.** All information in the current file is lost whenever you turn off the system. To save that information for future use, you copy the file onto disk where it becomes a **stored file.** When a copy of a stored file is recalled into memory, it becomes the new current file.

In the Monitor and Screen Editor, only one file can be current at a time. That is, when you recall a file to the Monitor or Screen Editor, the previous current file is erased as the new file is placed into computer memory.

When a file has been recalled into computer memory, there are two copies of that file in existence on the system: one copy is the current file in computer memory and one copy remains stored on disk.

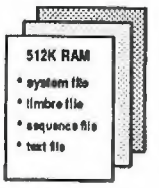
In the RTP system, there can be several current files.

- The **current sequence** is the sequence in the Memory Recorder (including its related timbres).
- The **current timbre** is the timbre on the keyboard.
- **Current sound files** can include any newly recorded sound file as well as all sound files that are part of the current timbre or sequence.

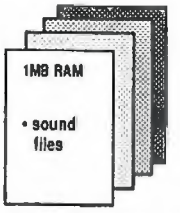
In the RTP system, it is possible to lose the information in any of these current files whenever you record a new sound or sequence or recall another sequence or timbre into memory. All current files are lost whenever you turn off the system.

It is a good idea to save your current file(s) to disk frequently as you work on them. This insures against loss through operator error or power failure.

Current files: copies of stored files active in computer memory

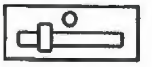


External memory

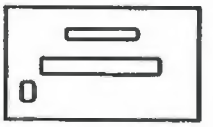


Polyphonic sampling memory

Stored files: inactive, but always available from storage devices.



Floppy



Winchester

Timbre files

Timbres are stored in **timbre files.** Each timbre file has the same filename, **.newdata.**

A timbre file has eight banks, each of which can hold up to eight timbres. Thus each .newdata file can hold up to 64 timbres.

Each Winchester leaves the factory with one .newdata file located in its main or top-level catalog. Since there can be only one .newdata file in each subcatalog, you will need to set up your storage system with different subcatalogs and copy a .newdata file into each of them.

Sequence files

Sequences are stored in **sequence files.** There are eight possible filenames for a sequence file within the format **.sq[n]data** (where [n] stands for a number between 0 and 7).

.sq0data	.sq1data	.sq2data	.sq3data
.sq4data	.sq5data	.sq6data	.sq7data

Each Winchester leaves the factory with eight .sq[n]data files located in the main or top-level catalog. Each file can hold one sequence that corresponds to one of the numbered buttons on panel 4. Since there can be only eight .sq[n]data files in each catalog or subcatalog, you will need to set up your storage system with different subcatalogs and copy up to eight .sq[n]data files into each of them.

Sound files

Each sample recorded with the polyphonic sampling system is automatically placed temporarily in polyphonic sampling memory with the name

newf [four-digit number]

You can store it to disk under this name or rename it with a name you choose.

You can also give each sound file a descriptive caption of up to 128 characters that describes it in more detail. Instructions for naming and captioning sound files are in the manual *Sampling and Sound Editing*.

System files

There are special files stored on your system that contain the software that runs the system. Most of these files have names beginning with a period and are stored in a subcatalog called **.system**. You should be extremely careful not to disturb these files unless specifically instructed to do so by an N.E.D. Customer Service Representative.

Catalogs

Catalogs and subcatalogs are the subdivided storage areas on your Winchester and other storage devices in which your files are stored.

Catalog structure

Each Winchester disk attached to your system can store a vast number of sequences, sound files, timbres and other information.

Without a method for organizing this information, the Winchester would soon become cluttered, and you would have a hard time finding the files you want. In addition, only one timbre file and eight sequence files can be stored in one storage area.

A customized storage system can be created by dividing the Winchester into a group of separate storage areas, called **subcatalogs,** each of which holds a manageable number of files as well as other subcatalogs if desired. You set up your subcatalog structure according to how you use the Synclavier. For example, you can use subcatalogs to separate projects. You can also use them to provide separate workspace for different users of the same system.

You use the Monitor to create subcatalogs of different sizes, depending on what you plan to store in each one. Once files have been stored in them, you can view a directory of the contents or move from subcatalog to subcatalog from any software module.

Catalog names

The overall catalog of each Winchester, or any other storage device, is called the **top-level catalog.** It is automatically accessed when you turn on the system or enter a new storage device.

When you create a subcatalog, you assign a name to it. Subcatalog names follow the same rules as filenames. They may include up to eight consecutive characters, including letters, digits and/or some symbol characters. Spaces and the following characters cannot be used in subcatalog names.

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? ! : ; , / \ < > + = % & * | @
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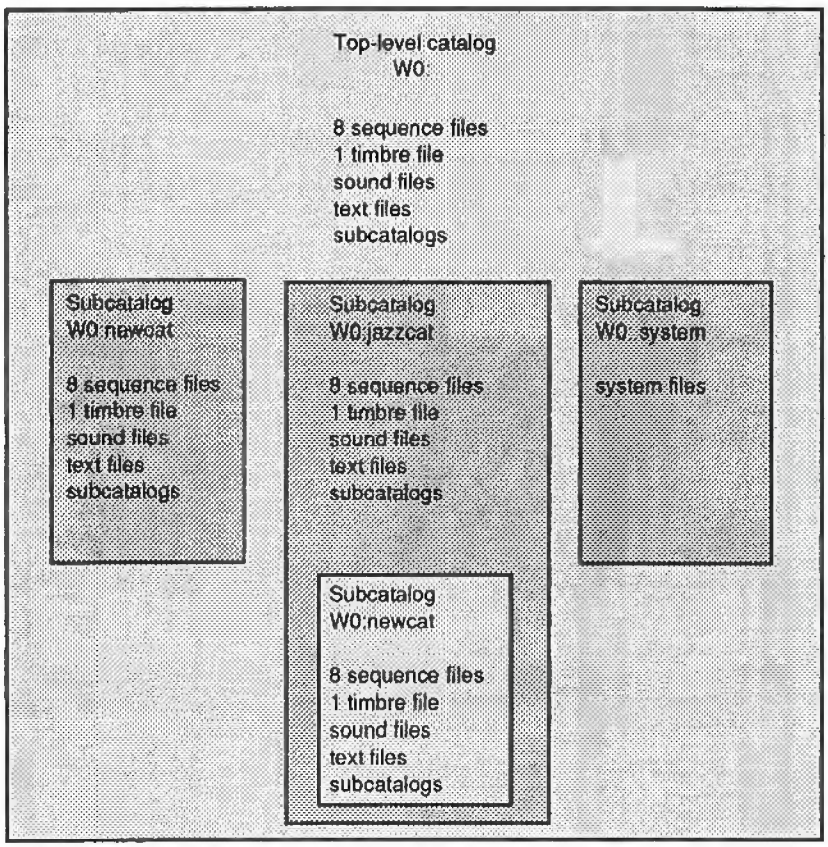
System subcatalog

A special subcatalog with the name **.system** is on your Winchester. This subcatalog contains all the system files for running the Synclavier. Most of the filenames in this subcatalog begin with a period.

You have no reason to enter this subcatalog, since the software within it is used automatically by the system.

> **WARNING:** Do not tamper with the **.system** subcatalog unless directed to do so by New England Digital.



Typical Winchester catalog structure including .system catalog

Devices

Devices are the Winchester disks, floppy drives, optical disks and tape drives used to store Synclavier data.

Device names

Every device has a preset name which identifies it to the computer. Each name is an abbreviation for the connector on the Synclavier control unit to which the storage device is attached.

F0: floppy drive connected to FLOPPY DRIVE 0
F1: floppy drive connected to FLOPPY DRIVE 1
W0: all of the Winchesters connected to WINCHESTER 0
W1: all of the Winchesters connected to WINCHESTER 1
T0: tape drive
O0: optical drive connected to OPTICAL DRIVE 0

The **current device** is the storage device in which you are working. It is the part of the storage system that the computer automatically searches to recall and store files, unless you tell it to look elsewhere. When you first turn on the system, **W0:** is the current device.

Treenames

A treename identifies a file by its filename, the name of the subcatalog in which it is stored and the name of the device on which the subcatalog is located. A treename may include several subcatalogs. All elements of the treename are separated by a colon (:). Nested subcatalogs must be listed in descending order.

The order of names in a treename is

<device name>:<subcatalog name(s)>:<filename>

The colons following the device name and each subcatalog name are essential. There must be no spaces between colons and names.

The top-level of the current device can be designated by the colon only; ie., : is equivalent to <current device>:

The current file can be designated by the colon only; ie., : is equivalent to :<current filename>

Treenames (con't)

A treename can specify subcatalogs as well as files. In this case, the final element of the treename is a subcatalog name rather than a filename. Whether the last name is a subcatalog name or a filename depends on the type of command you are giving to the computer.

<device name>:<subcatalog name>

Treename examples

treename	meaning
trumpet	file or subcatalog trumpet stored in current catalog
horns:trumpet	file or subcatalog trumpet stored in subcatalog horns located in current catalog
:trumpet	file or subcatalog trumpet stored in top-level catalog of current device
:horns:trumpet	file or subcatalog trumpet stored in subcatalog horns located in top-level catalog of current drive
F0:horns:trumpet	file or subcatalog trumpet stored in subcatalog horns located in catalog of floppy disk in F0 drive

Note: The last name of a treename can be either a filename or a subcatalog name.

Catalog and subcatalog directories

Each catalog or subcatalog has a directory that contains information about all files and subcatalogs stored in that catalog or subcatalog.

Included in the directory is the name and type of each file or subcatalog, where each file or subcatalog begins on the disk (sector number) and how many sectors of diskspace is required to store it.

There is a maximum number of files or subcatalogs that can be listed in a directory. The directory of a Winchester catalog is a large directory holding up to 128 names of files and subcatalogs. The directory of a floppy disk catalog is a small directory holding up to 32 names of files and subcatalogs. When you create your own catalog system, you designate either a large or small directory for each subcatalog. (See "Basic Storage Systems.")

term	definition
catalog	an area of storage space contained on a device.
current catalog	the catalog or subcatalog the computer is currently addressing for recall or storage of files or subcatalogs.
device	a Winchester disk, floppy disk, tape drive or optical disk used to store data.
device name	the system designated name that identifies a storage device and its top-level catalog.
directory	a list of the files and subcatalogs stored in a catalog or subcatalog.
file	a block of data with a filename and type contained within a catalog or subcatalog.
filename	a user or system designated name of up to eight characters that identifies a file.
subcatalog	an area of storage space contained within a catalog or another subcatalog.
subcatalog name	a user or system designated name of up to eight characters that identifies a subcatalog.
top-level catalog	the original area of storage space contained on a device.
treename	the name that specifies the location of a catalog, subcatalog or file.