Silent Cubes TechNote #01/2010, v2.

Version	Date	Description	Author
v2	2010-06-04	Improved the "size" description	JJR/BSN
v1	2010-01-10	Originating version.	BSN

What's in a ".safe -file"?

A so-called ".safe-file" contains information describing the status of a file which was copied to the network share or mount point of the Silent Cubes Head Unit.
A ".safe-file" is a virtual file that has the same path as the "real" file, with a file extension appended. The default extension is **'.safe'**, but can be changed on a per-volume basis using the "Safe Files" tab under "Management".

This tab also allows you to specify if the data should displayed in **"text" (.txt)** format or in **XML**.

In "txt"-format a ".safe-file" can look like:

```
hash=4216475b55472f890aff212079ffa303b6f1cfb33e5fa5802882aa37968f78a4…
lookupkey=64c26d29cf7ffce5333957539d8bbb04c7d2a556dad5ed967f3eb6dfea6…
size=17210
stored=1
safe=1
ciphercode=0
compressioncode=12289
online=1
ingest_epoche=1250155996
ingest_iso8601=2009-08-13T11:33:16+0200
creation_epoche=1250095987
creation_iso8601=2009-08-12T18:53:07+0200
```


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Formatted as XML the same information would be:

```
<?xml version="1.0" encoding="UTF-8"?>
<fileData>
<hash>4216475b55472f890aff212079ffa303b6f1cfb33e5fa5802882aa37968f78a4…
<lookupkey>64c26d29cf7ffce5333957539d8bbb04c7d2a556dad5ed967f3eb6dfea6…
<size>17210</size>
<stored>1</stored>
<safe>1</safe>
<ciphercode>0</ciphercode>
<compressioncode>12289</compressioncode>
<online>1</online>
<ingest_epoche>1250155996</size>
<ingest_iso8601>2009-08-13T11:33:16+0200</ingest_iso8601>
<creation_epoche>1250095987</creation_epoche>
<creation_iso8601>2009-08-12T18:53:07+0200</creation_iso8601>
</fileData>
```

The various fields in the '.safe-files' have the following meaning:

`hash`

The SHA512 hash of the original file at the time of the ingest. This value can be used to check the integrity of the file.

`lookupkey`

Only used internally The key to use to retrieve the container of the file from our storage (i.e. a Cube). Can be identical to the **`hash`**, but can also be different (e.g. when the file has been compressed or packetised).

`size`

The size of the file in bytes. This is the size of the file after compression or packetising.

Usually, for packetised files the size is bigger then the "original" size that is displayed in the file system. For compressed files, the size is usually smaller.

`stored`

Is the file being stored on the Cube?

If set to 0, the file is currently only on the HU and not on a Cube.

If set to 1, the file is currently in the process of being stored on a Cube. See **`safe`** below if you want to make sure that the file is safely stored on a Cube.

`safe`

Is the file safely stored on a Cube?

If set to 0, the file is currently on the HU (but the transfer process to the Cube could have started, see **`stored`** above) and not on a Cube (yet).

If set to 1, the file is currently on a Cube, but might also be on the HU (see **`online`**, below, also).

Note: files can therefore have **`stored`** set to 1, but not yet have **`safe`** set to 1. They will however never have a **`safe`** value of 1 and at the same time have a **`stored`** set to zero.

ciphercode

Only used internal Code to describe the actual storage of the file system on the HU. Is 0 for all versions up to "1.00.18". May change in the future though.

compressioncode

Is this file compressed or not, can (currently, i.e. "1.00.18") have the following values:

- 0, file is uncompressed
- 4100 (0x1004;), compressed, as of "1.00.15"
- 8196 (0x2004;), compression of version "1.00.0"
- 12289 (0x3001;), internal packetising identifier

online

If set to 0, the file is currently only in a Cube and will be put in the local cache of the HU when retrieved.

If set to 1, the file is currently in the local cache of the HU and doesn't have to be read from the Cubes when retrieved.

ingest_epoche

The time of successful ingest of this file into a Cube, defined as number of seconds elapsed since 01.01.1970 (also known as the Unix epoch, which was 00:00:00 UTC on 1 January 1970, or 1970-01-01T00:00:00Z in ISO 8601).

ingest_iso8601

The time of successful ingest of this file into a Cube, defined as an ISO8601 timestamp.

creation_epoche

The time of creation of this file in the file system, defined as number of seconds elapsed since 01.01.1970;00:00.

creation_iso8601

The time of creation of this file in the file system, defined as an ISO8601 timestamp.

On versioned volumes there are a few more properties, i.e.:

`top_revision`

The revision number of the top (the newest or most current) revision.

`active_revision`

The currently activated revision. This is version you will get if you “now” copy the file from the Head Unit.

See also Silent Cubes TechNote #36/2009: HowTo Work with Versioned Volumes.