NAME

name_hash -- Add, verify or remove a checksum as a suffix of the filename

SYNOPSIS

name_hash (**-a**|**-v**|**-r**) *input_path*
name_hash -h | -x

DESCRIPTION

Bash_AVpres is a collection of Bash scripts for audio-visual preservation. One of these small programs is **name_hash** which can perform three different tasks:

- add a checksum to the filename
- verify if the integrated checksum matches the file content
- remove the checksum from the filename

The default format is:

<path/to/><filename>_<checksum>.<extension>

The script dismisses the necessity of handling additional manifest files containing the checksums. It works with both a single file or all the files inside a folder recursively. Note that this is fully reversible and therefore adapting to an evolving archive's policy is not an issue.

This script requires Bash version 4.3 (released back on 2014-02-27) or higher, however we strongly advise using the current version 5.3.9 (released on 2025-12-10).

OPTIONS

BASIC OPTIONS

-a *input_path*, **--add=***input_path*
: path to a file or a folder

  Add the checksum as suffix of the filename.

-v *input_path*, **--verify=***input_path*
: path to a file or a folder

  Verify if the checksum matches the file's content.

  Note that the verification is faster when the **--algorithm** option is provided, especially when MD5 or CRC-32 is used.

-r *input_path*, **--remove=***input_path*

path to a file or a folder

Remove the filename's suffix containing the checksum.

ADVANCED OPTIONS

The arguments of the advanced options can be overwritten by the user. Please remember that any string containing spaces must be quoted, or its spaces must be escaped.

--algorithm=(xxh32|xxh64|xxh128|md5|sha1|sha256|sha512|crc32)

We advise to use a faster non-cryptographic hash functions, because we consider that, for archival purposes, there is no necessity to apply a more complex unkeyed cryptographic hash function. The algorithm name can be passed in upper or lower case letters.

The default algorithm is xxHash 128:

```
--algorithm='xxh128'
```

The algorithm xxHash 128 and MD5 have the same checksum size. If the algorithm is not specified, then xxHash 128 is checked before MD5. Therefore, if you verify files with an MD5 checksum, then you may pass the option **--algorithm=md5** in order to speed-up the verification.

Also xxHash 32 and CRC-32 have the same checksum size. If the algorithm is not specified, then xxHash 32 is checked before CRC-32.

The script needs external commands to compute the hash checksum of the files. Run either **name_hash -x** or **name_hash --options** to see the actual default tools on a specific computer.

--xxh32='/bin/xxhsum -H32'

xxHash 32 command

--xxh64='/bin/xxhsum -H64'

xxHash 64 command

--xxh128='/bin/xxhsum -H128'

xxHash 128 command

--md5='/bin/md5sum'

MD5 command

--sha1='/bin/sha1sum'

SHA-1 command

--sha256='/bin/sha256sum'
SHA-256 command

--sha512='/bin/sha512sum'
SHA-512 command

--crc32='/bin/crc32'
CRC-32 command

--verbosity=(path|filename|count|off)
For each processed file the Terminal will show:
path = full path
filename = only filename and extension
count = a counter (default)
off = nothing, i.e. works silently

--confirmation=(yes|no)
By default, the script demands confirmation from the user before removing any checksum. The option **--confirmation=no** avoids it, which is useful when the script is run in a batch process and/or chain of scripts.

--with_algorithm=(yes|no)
By default, the script does not include the algorithm in the filename. By setting the option **--with_algorithm=yes** the filename becomes
<path/to/><filename>_<algorithm>_<checksum>.<extension>

INFORMATIVE OPTIONS

-h, --help
display a help message

-x, --options
display the advanced options with their default arguments and indicate if a local configuration has been defined or not

NOTES

It is possible to have multiple checksum suffixes, separated by an underscore, but **name_hash** considers always the last one.

CONFIGURATION FILE

An external configuration file

${HOME}/.config/AVpres/Bash_AVpres/name_hash.txt

can be defined, allowing the script to import alternate default values for the following options:

default_algorithm
md5
sha1
sha256
sha512
xxh32
xxh64
xxh128
crc32
verbosity
confirmation
with_algorithm

Example:

default_algorithm='md5'
verbosity='off'
confirmation='no'

LOG FILES

Temporary log files are stored at

/tmp/AVpres/name_hash.XXXXXXXXXX

The log files can be used for debugging, for example by running **cat** on the address prompted with fatal error messages:

cat /tmp/AVpres/name_hash.*XXXXXXXXXX*

SEE ALSO

Yann Collet: "xxHash fast digest algorithm", version 0.2.0, 2023-06-29

https://github.com/Cyan4973/xxHash/blob/dev/doc/xxhash_spec.md

RFC 1321 -- Ronald L. Rivest: "The MD5 Message-Digest Algorithm", April 1992

https://www.rfc-editor.org/info/rfc1321

RFC 6234 -- Donald Eastlake and Tony Hansen: "US Secure Hash Algorithms (SHA and SHA-based HMAC and HKDF)", May 2011

https://www.rfc-editor.org/info/rfc6234

xxhsum(1), **md5sum**(1), **sha1sum**(1), **sha256sum**(1) and **sha512sum**(1).

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