NAME

verify_manifest -- Verify a checksum manifest of a folder or file

SYNOPSIS

verify_manifest -i *input_path* [**-m** *manifest_file*]
verify_manifest -h | -x

DESCRIPTION

Bash_AVpres is a collection of Bash scripts for audio-visual preservation. One of these small programs is **verify_manifest**. It creates a checksum manifest of a folder or file.

This script should work correctly with Bash from version 3.2 (released back on 2006-10-11), however we strongly advise using the current version 5.3.9 (released on 2025-12-10).

OPTIONS

BASIC OPTIONS

-i *input_path*, **--input=***input_path*
path to an input folder or file

-m *manifest_file*, **--manifest=***manifest_file*
path to the manifest file

If this parameter is not passed, then the script uses for a folder
<*input_path*>_<*algorithm*>.txt
and for a file
<*input_path*>_<*extension*>_<*algorithm*>.txt

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

Note that until end of 2020 the default algorithm was MD5, which has the same checksum size

than the xxHash 128 algorithm. Therefore, if you verity 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 recursively the hash checksums of all elements inside the folder. Run either **make_manifest -x** or **make_manifest --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

--exclusion=(*file_list***)**
The exclusion *file_list* is defined as an array and its default value is
exclusion=('.DS_Store' 'desktop.ini')

To avoid any exclusion, use an empty array:
exclusion=()

Output file default parameters:

--suffix='*suffix*'
The *suffix* is inserted at the end of the filename, immediately before the period and the extension. The suffix consist in upper and lower case letters as well as numbers. Note that a preceding underscore, if wished, must be added.

The default *suffix* value is the chosen *algorithm* preceded by an underscore.

--extension='*extension*'
The file extension consist in upper and lower case letters as well as numbers.

As the manifest is a text file the default value is "txt", but some prefer to use the chosen *algorithm*.

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

The ".DS_Store" files generated by macOS and the "desktop.ini" files generated by Windows are deleted before verifying the checksum manifest. You can modify the default exclusion file list in the configuration file.

CONFIGURATION FILE

An external configuration file
${HOME}/.config/AVpres/Bash_AVpres/verify_manifest.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
suffix
extension
exclusion

Example:
default_algorithm=’md5’
suffix=’’
extension=’md5’

LOG FILES

Temporary log files are stored at
/tmp/AVpres/verify_manifest.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/verify_manifest.*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

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

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