NAME

make_manifest -- Make a checksum manifest of a folder or file

SYNOPSIS

make_manifest -i *input_path* [**-o** *output_file*]
make_manifest -h | -x

DESCRIPTION

Bash_AVpres is a collection of Bash scripts for audio-visual preservation. One of these small programs is **make_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

-o *output_file*, **--output=***output_file*
path to the manifest file

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

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 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***)**
THIS IS NOT IMPLEMENTED YET, because it may be dangerous, as it deletes the files! Please use a configuration file instead.

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='*_algorithm***'**

The suffix is inserted at the end of the filename, immediately before the period and the extension. Note that a preceding underscore, if wished, must be added.

To avoid any suffix, use:
--suffix='#'

--extension='txt'
As it is a text file the default value is "txt".

Terminal verbosity default parameter for folder processing:

--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. work silently

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 creating 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/make_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
verbosity

Example:
default_algorithm='md5'
suffix=''
extension='md5'

Set the default algorithm to MD5 rather than xxHash 128, avoid adding a suffix to the filename and use the file extension 'md5' rather than the default 'txt'. Of course, these values can be overwritten when the script is executed.

LOG FILES

Temporary log files are stored at
/tmp/AVpres/make_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/make_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

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

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