

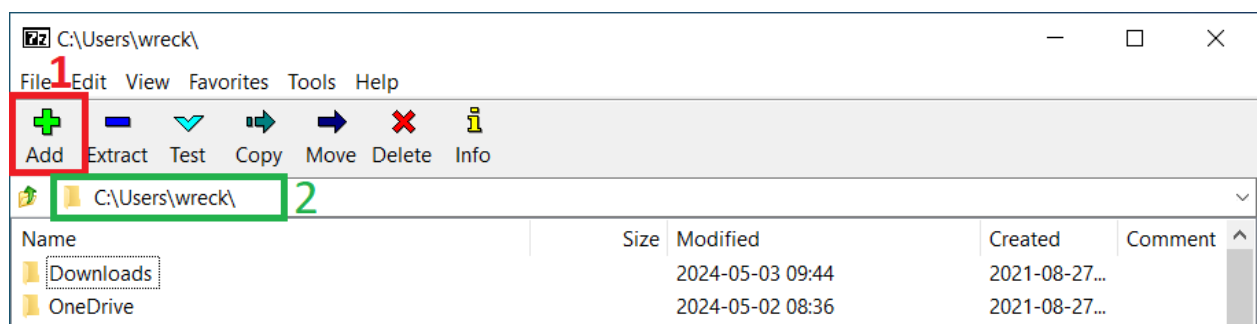
7zip Basic User Guide

Scope:

The following guide can assist new users in making a new archive or compressed folder. The advanced options and features are explained efficiently to aid in selection.

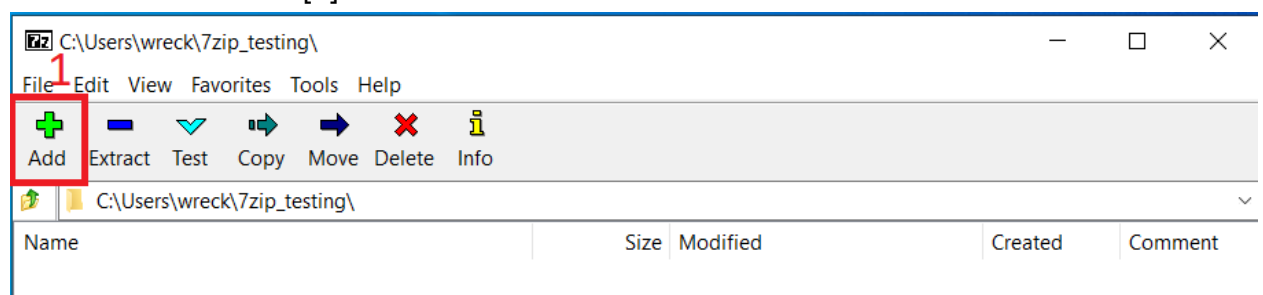
Basic Archive Build

- When opening the application, the home screen is shown

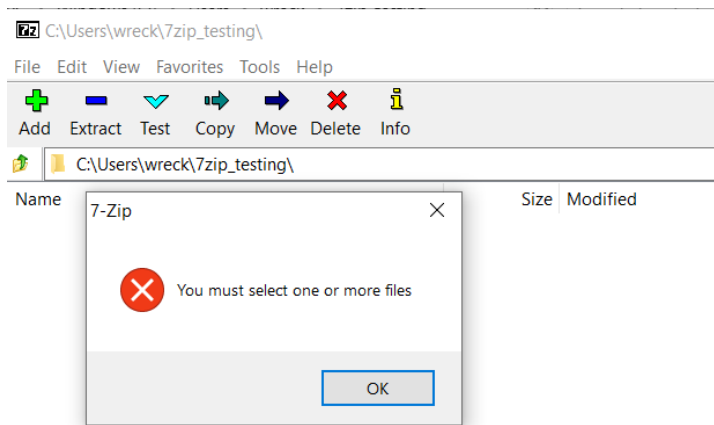


- In the green box [2] the path is shown where a NEW archive will be created. Change this path to the path where a new .zip archive is desired.

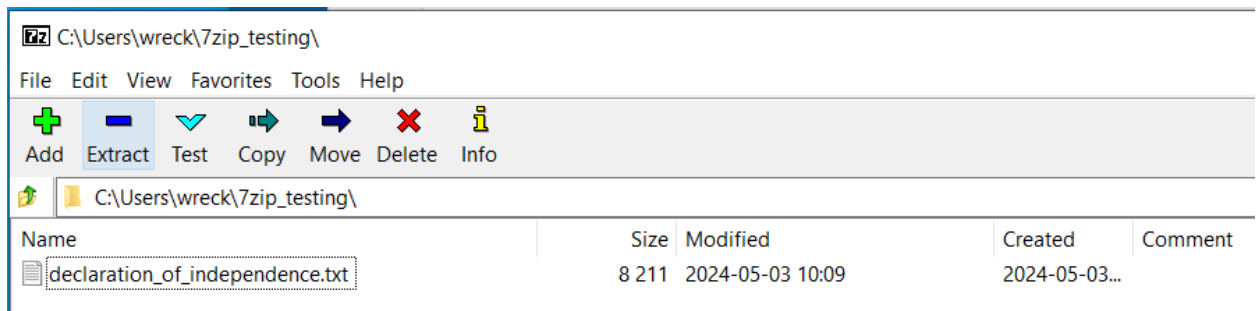
- Press the Add button [1]



The directory must contain files or an error will be produced. Add files or select a directory with the files to be compressed.



- Add a file to the directory, if there is more than one file they all need to be in the same directory. Select all the files by holding ctrl. And clicking the files.



- Press “Add” again and the archive add menu will pop up

Add to Archive ✕

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: * Deflate

Dictionary size: * 32 KB

Word size: * 32

Solid Block size:

Number of CPU threads: * 8 / 8

Memory usage for Compressing: 544 MB / 12920 MB / 16150 MB * 80%

Memory usage for Decompressing: 2 MB

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

- ☐ Create SFX archive
- ☐ Compress shared files
- ☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

This shows the name of the archive, which can be changed, and the location it will be created.

- **Choose an Archive format:** zip is the default. The differences between them are generally the compression ratio. Not all operating systems support all types so consider who/what will be opening the archive. 7z archives require the 7zip application. 7z has the highest compression but is not supported without the application.

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip
7z
bzip2
gzip
tar
wim
xz
zip

Compression level: * 32

Compression method:

Dictionary size:

Word size: * 32

Solid Block size:

Number of CPU threads: * 8 / 8

Memory usage for Compressing: 544 MB / 12920 MB / 16150 MB * 80%

Memory usage for Decompressing: 2 MB

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

- **Compression Level:** Select a level of compression which is a measure of how much 7zip will try to reduce the archive size. The is directly related to the time it will take to make the archive. Large archives at Ultra compression levels will take some time to produce. For few and small files, Ultra compression will be very fast.

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Update mode: Add and replace files

Path mode: Relative pathnames

Compression level: 5 - Normal

Compression method: 0 - Store
1 - Fastest
3 - Fast
5 - Normal
7 - Maximum
9 - Ultra

Dictionary size: *

Word size: 32

Solid Block size:

Number of CPU threads: 8 / 8

Memory usage for Compressing: 544 MB / 12920 MB / 16150 MB
80%

Memory usage for Decompressing: 2 MB

Split to volumes, bytes:

Parameters:

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

Options

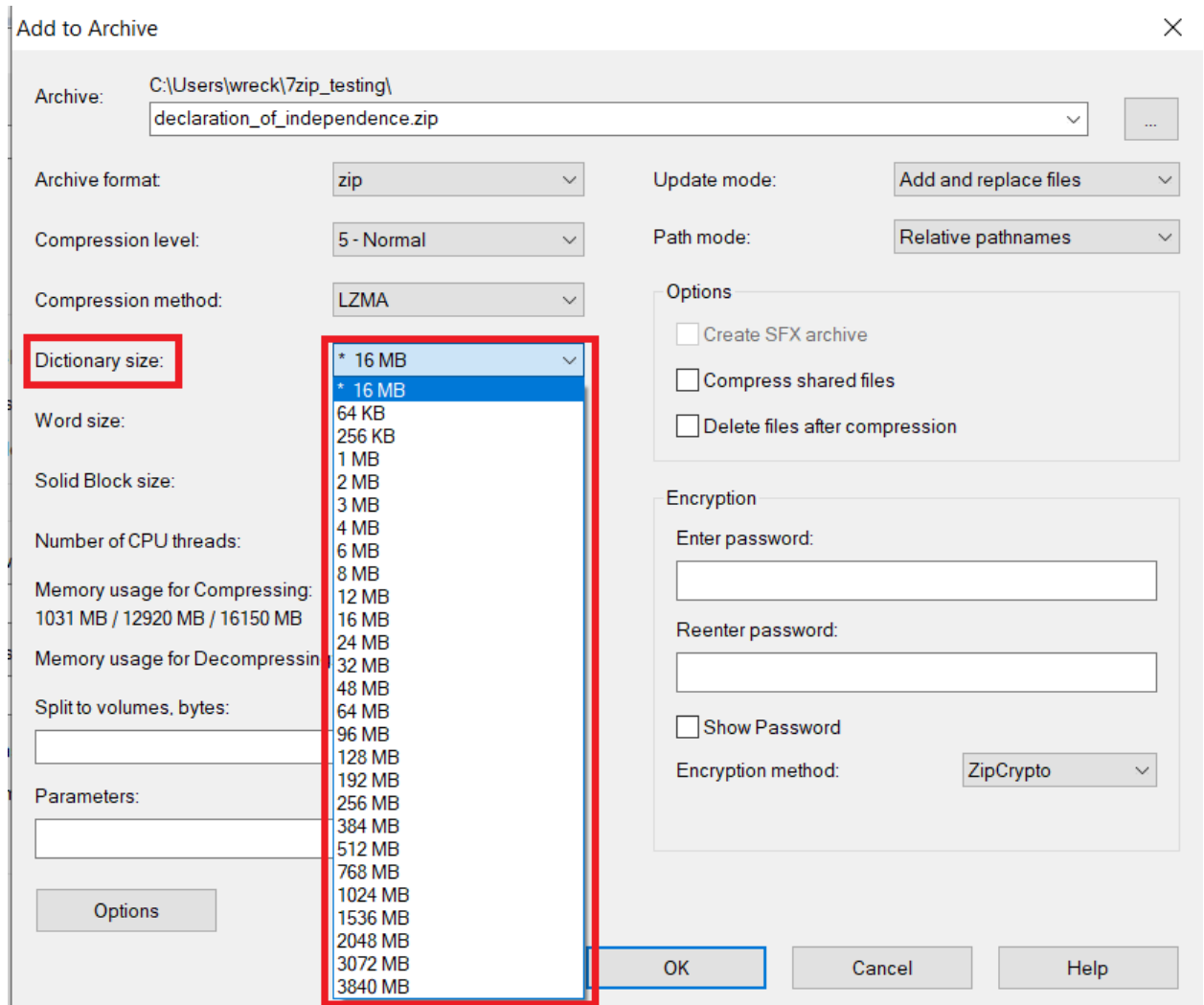
OK Cancel Help

- **Choose a Compression Method:**

- Deflate\Deflate64 as the name suggests supports 32 bit and 64bit dictionary sizes using an implementation of the “zlib” library in C. This library has been optimized by 7zip at the expense of CPU usage to get high compression.
- Bzip2 compresses most files more effectively than older LZW and Deflate compression algorithms but is slower. Bzip2 is particularly efficient for text data, and decompression is relatively fast.
- LZMA is the default for 7z file extensions. It improves on all other methods in terms of sheer file compression. Select this option if min file size is the desired result.
- PPMd: It is effective at compressing text files containing natural language text. So for example a archive of .log files.

The screenshot shows the 'Add to Archive' dialog box in 7-Zip. The 'Archive' field is set to 'C:\Users\wreck\7zip_testing\declaration_of_independence.zip'. The 'Archive format' is 'zip'. The 'Update mode' is 'Add and replace files'. The 'Path mode' is 'Relative pathnames'. The 'Compression level' is '5 - Normal'. The 'Compression method' dropdown is highlighted with a red box, showing a list of options: * Deflate, * Deflate64, BZip2, LZMA, and PPMd. The 'Deflate' option is currently selected. The 'Options' section includes checkboxes for 'Create SFX archive', 'Compress shared files', and 'Delete files after compression'. The 'Encryption' section includes fields for 'Enter password' and 'Reenter password', a 'Show Password' checkbox, and an 'Encryption method' dropdown set to 'ZipCrypto'. The 'Number of CPU threads' is set to '8'. The 'Memory usage for Compressing' is '544 MB / 12920 MB / 16150 MB' with a '* 80%' dropdown. The 'Memory usage for Decompressing' is '2 MB'. The 'Split to volumes, bytes' field is empty. The 'Parameters' field is empty. The 'Options' button is at the bottom left. The 'OK', 'Cancel', and 'Help' buttons are at the bottom right.

- **Dictionary Size:** Depends on compression method chosen. It is not an option for Deflate. The dictionary is used by the compression method and is placed entirely in memory. The larger the dictionary size the slower the compression process will be but the smaller the archive will be. A dictionary the size of the files to be compressed is optimal. It changes the memory required for decompressing.



- **Word Size:** Unfortunately, it depends on both the compression method and the type of data being compressed, image files vs. text and so forth. For PPMd, this value affects the compression ratio a lot. Generally bigger values give a smaller file at a slower speed for LZMA.

Add to Archive ✕

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: PPMd

Dictionary size: * 16 MB

Word size:

Solid Block size:

Number of CPU threads:

Memory usage for Compressing:
656 MB / 12920 MB / 16150 MB

Memory usage for Decompressing:

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

- ☐ Create SFX archive
- ☐ Compress shared files
- ☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

- **Number Of CPU Threads:** If the local computer supports multithreading this number can be changed. To check follow these steps on a windows machine. Adding parallelism will reduce the compression times.
 - **Press *Ctrl+Alt+Delete***, and **select *Task Manager***.
 - **Click *More details***.
 - **Click *Performance***.
 - **Click *CPU***.
 - **Check *Cores* number.**
 - **Check *logical processors* number (threads).**

Utilization	Speed	Base speed:	2.80 GHz
23%	3.00 GHz	Sockets:	1
Processes	Threads	Cores:	4
340	5395	Logical processors:	8
Handles		Virtualization:	Enabled
153312		L1 cache:	320 KB
Up time		L2 cache:	5.0 MB
2:14:12:33		L3 cache:	12.0 MB

Add to Archive ✕

Archive: C:\Users\wreck\7zip_testing\
 declaration_of_independence.zip

Archive format: zip Update mode: Add and replace files

Compression level: 5 - Normal Path mode: Relative pathnames

Compression method: LZMA

Dictionary size: * 16 MB

Word size: * 32

Solid Block size:

Number of CPU threads: * 8 / 8

Memory usage for Compressing: 1031 MB / 12920 MB / 16150 MB

Memory usage for Decompressing: 18 MB

Split to volumes, bytes:

Parameters:

Options

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

- **Memory Usage For Compressing:** This specifies a limit to how much available system memory will be allocated to the compression operation. This is also a function of the dictionary size selected, and the number of threads selected. 80% is typical, higher can cause system instability.

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: LZMA

Dictionary size: 16 MB

Word size: 32

Solid Block size:

Number of CPU threads: 8 / 8

Memory usage for Compressing: 1031 MB / 12920 MB / 16150 MB

Memory usage for Decompressing:

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

- ☐ Create SFX archive
- ☐ Compress shared files
- ☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

Memory usage for Compressing dropdown list:

- * 80%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%
- 256 MB
- 384 MB
- 512 MB
- 768 MB
- 1024 MB
- 1536 MB
- 2 GB
- 3 GB
- 4 GB
- 6 GB
- 8 GB
- 12 GB
- 16 GB
- 24 GB
- 32 GB
- 48 GB
- 64 GB
- 96 GB
- 128 GB

- **Split To Volumes, Bytes:** This feature will split up what would be 1 single perhaps large archive file into small archives specified by size. This might be for sending over a network or placing on a CD/DVD. All the part files must be present and named as they were originally in order to reconstruct the single archive using “Extract to *\\”.

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: LZMA

Dictionary size: 16 MB

Word size: 32

Solid Block size:

Number of CPU threads: 8 / 8

Memory usage for Compressing: 1031 MB / 12920 MB / 16150 MB 80%

Memory usage for Decompressing: 18 MB

Update mode: Add and replace files

Path mode: Relative pathnames

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

Split to volumes, bytes:

10M
100M
1000M
650M - CD
700M - CD
4092M - FAT
4480M - DVD
8128M - DVD DL
23040M - BD

OK Cancel Help

CompressedFiles.7z.001	5/31/2013 9:27 AM	001 Archive	10,240 KB
CompressedFiles.7z.002	5/31/2013 9:24 AM	002 File	10,240 KB
CompressedFiles.7z.003	5/31/2013 9:24 AM	003 File	10,240 KB
CompressedFiles.7z.004	5/31/2013 9:24 AM	004 File	10,240 KB
CompressedFiles.7z.005	5/31/2013 9:24 AM	005 File	10,240 KB
CompressedFiles.7z.006	5/31/2013 9:24 AM	006 File	10,240 KB
CompressedFiles.7z.007	5/31/2013 9:25 AM	007 File	10,240 KB
CompressedFiles.7z.008	5/31/2013 9:25 AM	008 File	10,240 KB
CompressedFiles.7z.009	5/31/2013 9:25 AM	009 File	10,240 KB
CompressedFiles.7z.010	5/31/2013 9:25 AM	010 File	10,240 KB
CompressedFiles.7z.011	5/31/2013 9:26 AM	011 File	10,240 KB
CompressedFiles.7z.012	5/31/2013 9:26 AM	012 File	10,240 KB
CompressedFiles.7z.013	5/31/2013 9:26 AM	013 File	10,240 KB
CompressedFiles.7z.014	5/31/2013 9:26 AM	014 File	10,240 KB
CompressedFiles.7z.015	5/31/2013 9:27 AM	015 File	10,240 KB
CompressedFiles.7z.016	5/31/2013 9:27 AM	016 File	10,240 KB
CompressedFiles.7z.017	5/31/2013 9:27 AM	017 File	2,507 KB

- Parameters:** This is for advanced users and or for those familiar with command line parameters. This feature offers the ability to turn on and off features of the compression operation that are based on the archive format. The parameter list is extensive and can be found using Help and under “Switches.”

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: LZMA

Dictionary size: 16 MB

Word size: 32

Solid Block size:

Number of CPU threads: 8 / 8

Memory usage for Compressing: 1031 MB / 12920 MB / 16150 MB

Memory usage for Decompressing: 18 MB

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

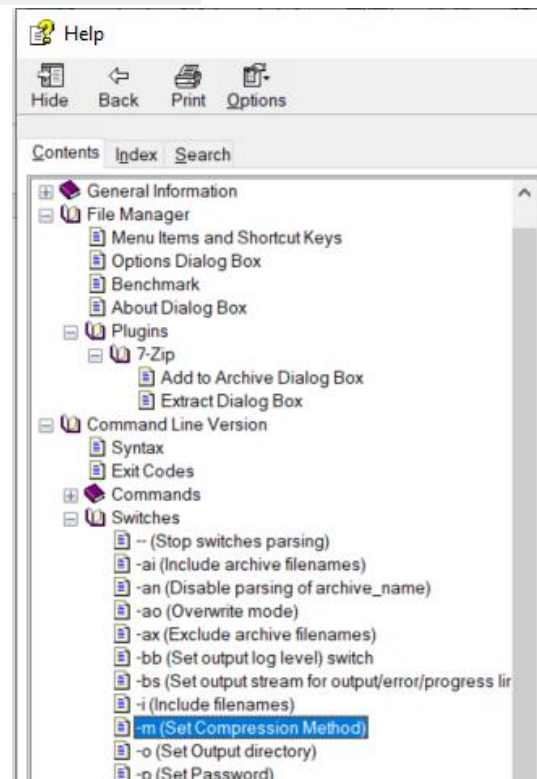
Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help



- **Update Mode:**

Add and replace files	Add all specified files to the archive.
Update and add files	Update older files in the archive and add files that are new to the archive.
Freshen existing files	Update specified files in the archive that are older than the selected disk files.
Synchronize files	Replace specified files only if added files are newer. Always add those files, which are not present in the archive. Delete from archive those files, which are not present on the disk.

The screenshot shows the 'Add to Archive' dialog box with the following settings:

- Archive:** C:\Users\wreck\7zip_testing\declaration_of_independence.zip
- Archive format:** zip
- Compression level:** 5 - Normal
- Compression method:** LZMA
- Dictionary size:** 16 MB
- Word size:** 32
- Solid Block size:** (empty)
- Number of CPU threads:** 8 / 8
- Memory usage for Compressing:** 1031 MB / 12920 MB / 16150 MB (80%)
- Memory usage for Decompressing:** 18 MB
- Split to volumes, bytes:** (empty)
- Parameters:** (empty)
- Options:**
 - ☐ Create SFX archive
 - ☐ Compress shared files
 - ☐ Delete files after compression
- Encryption:**
 - Enter password: (empty)
 - Reenter password: (empty)
 - ☐ Show Password
 - Encryption method: ZipCrypto

The 'Update mode' dropdown is highlighted with a red box, and its menu is open, showing the following options:

- Add and replace files (selected)
- Add and replace files
- Update and add files
- Freshen existing files
- Synchronize files

- **Path Mode:**

Relative pathnames	Store file paths relative to current folder.
Full pathnames	Store file paths relative to root of the volume, excluding volume name prefix.
Absolute pathnames	Store fully qualified file paths including volume name.

Add to Archive ✕

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.zip

Archive format: zip

Compression level: 5 - Normal

Compression method: LZMA

Dictionary size: 16 MB

Word size: 32

Solid Block size:

Number of CPU threads: 8 / 8

Memory usage for Compressing: 1031 MB / 12920 MB / 16150 MB 80%

Memory usage for Decompressing: 18 MB

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode:

- Relative pathnames
- Relative pathnames
- Full pathnames
- Absolute pathnames

Options

☐ Create SFX archive

☐ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: ZipCrypto

OK Cancel Help

- **Options:**

Create SFX archive	(advanced) Create self-extracting archive. You can use this option only for 7z archives. See this resource on how to use the function. https://ntsblog.homedev.com.au/index.php/2015/05/14/self-extracting-archive-runs-setup-exe-7zip-sfx-switch/
Compress shared files	Compress files open for writing by another applications.
Delete files after compression	Delete files after including to archive. So it works like moving files to archive. 7-Zip deletes files at the end of operation and only if archive was successfully created.

Add to Archive

Archive: C:\Users\wreck\7zip_testing\
declaration_of_independence.7z

Archive format: 7z

Compression level: 5 - Normal

Compression method: * LZMA2

Dictionary size: * 16 MB

Word size: * 32

Solid Block size: * 4 GB

Number of CPU threads: * 8 / 8

Memory usage for Compressing: 1248 MB / 12920 MB / 16150 MB * 80%

Memory usage for Decompressing: 18 MB

Split to volumes, bytes:

Parameters:

Options

Update mode: Add and replace files

Path mode: Relative pathnames

Options

☐ Create SFX archive

☒ Compress shared files

☐ Delete files after compression

Encryption

Enter password:

Reenter password:

☐ Show Password

Encryption method: AES-256

☐ Encrypt file names

OK Cancel Help

- Encryption:** Password sets an archive access password to open or extract the archive. Encryption method specifies the encryption method. For 7z format, it can be only AES-256. For ZIP format you can select ZipCrypto or AES-256. Use ZipCrypto, if you want to get the archive compatible with most of the ZIP archivers. AES-256 provides stronger encryption, but now AES-256 is supported only by 7-Zip, WinZip and some other ZIP archivers. Encrypt file names enables or disables archive header encryption, including file name encryption. AES-256 is done by default when using .7z archives.

The screenshot shows the 'Add to Archive' dialog box in 7-Zip. The 'Archive' field is set to 'C:\Users\wreck\7zip_testing\declaration_of_independence.zip'. The 'Archive format' is 'zip', 'Compression level' is '5 - Normal', 'Compression method' is 'LZMA', 'Dictionary size' is '16 MB', 'Word size' is '32', 'Solid Block size' is empty, 'Number of CPU threads' is '8 / 8', 'Memory usage for Compressing' is '1031 MB / 12920 MB / 16150 MB' with a slider at '80%', 'Memory usage for Decompressing' is '18 MB', 'Split to volumes, bytes' is empty, and 'Parameters' is empty. The 'Update mode' is 'Add and replace files' and 'Path mode' is 'Relative pathnames'. The 'Options' section has 'Create SFX archive' unchecked, 'Compress shared files' checked, and 'Delete files after compression' unchecked. The 'Encryption' section is highlighted with a red box and contains: 'Enter password:' (empty text box), 'Reenter password:' (empty text box), 'Show Password' (unchecked checkbox), and 'Encryption method:' (dropdown menu set to 'ZipCrypto'). At the bottom are 'Options', 'OK', 'Cancel', and 'Help' buttons.

- Press OK to create the archive!