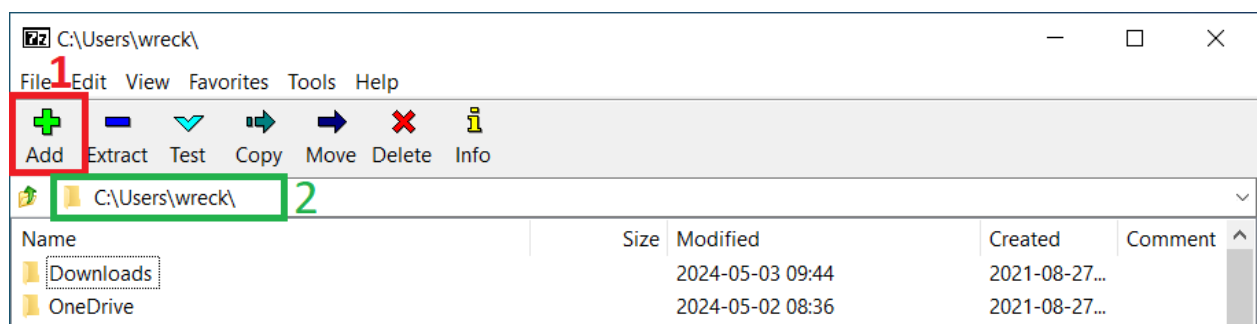# 7zip Basic User Guide

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.
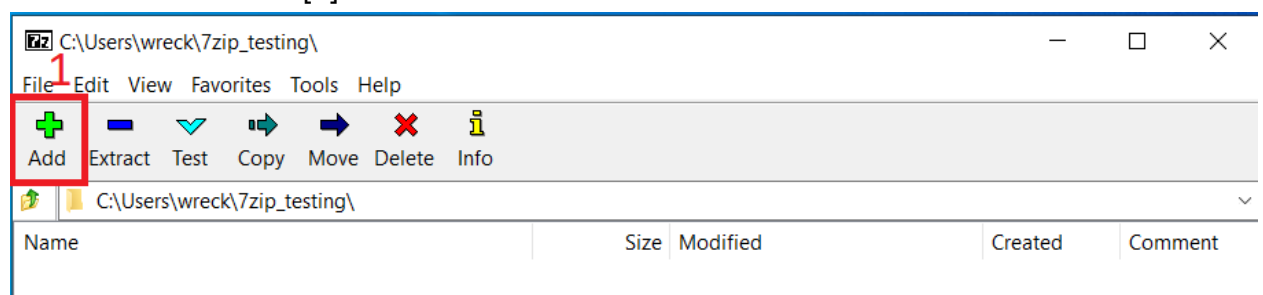
Basic Archive Build

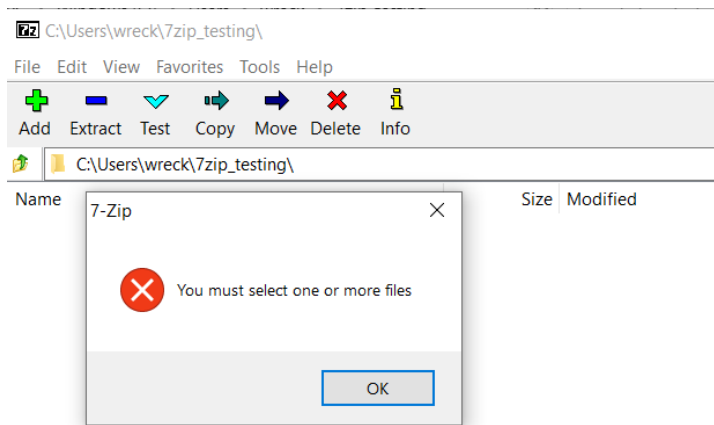- When opening the application, the home screen is shown

- 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.
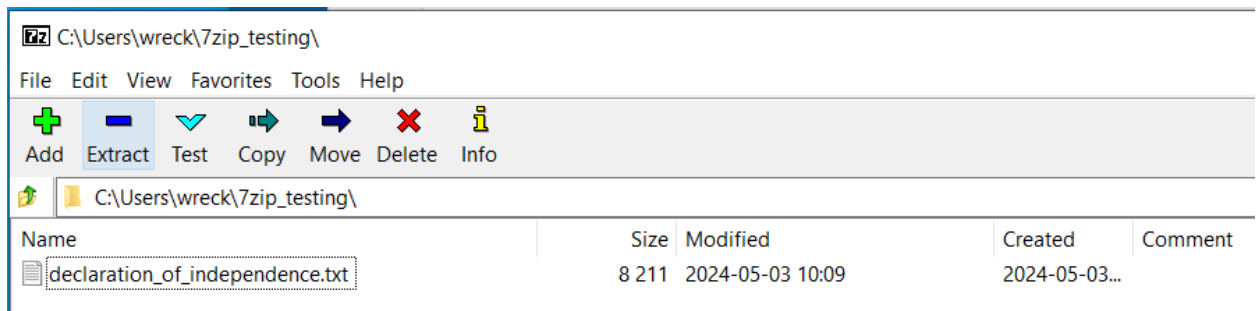
- Press the Add button [1]

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

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.

- **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.
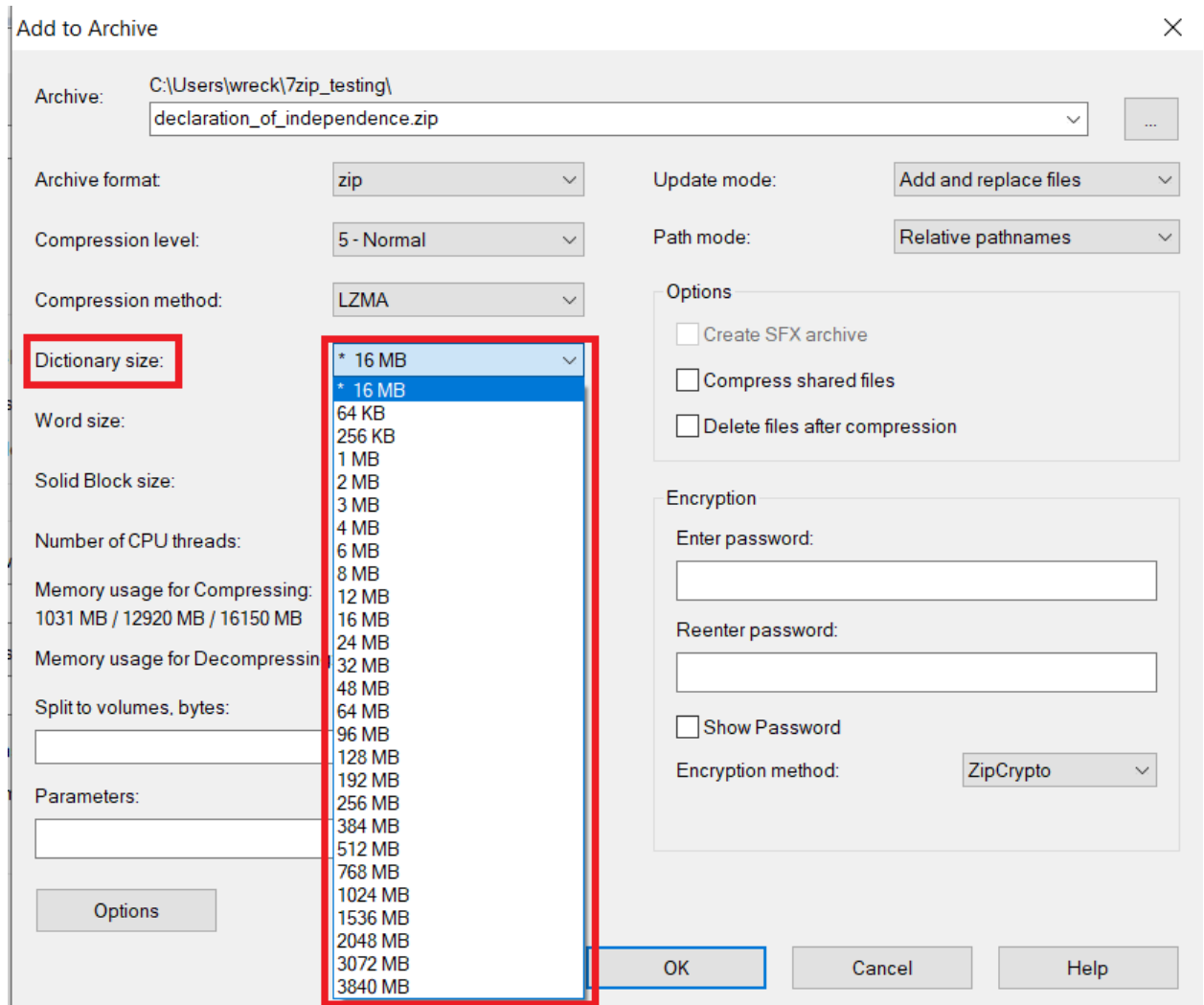
- **Choose a Compression Method:**
  - Deflate\Deflate64 as the name suggests supports 32 bit and 64bit dictionary sizes using an implementation of the "zlib" library in C. This library has been optimized by 7zip at the expense of CPU usage to get high compression.
  - Bzip2 compresses most files more 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 shear 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.

- **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.

- **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).

- **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.

- **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 *\".

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."

- **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.

- **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.

- **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   Update mode: Add and replace files

Compression level: 5 - Normal   Path mode: Relative pathnames

Compression method: * LZMA2   ┌─ Options ──────────────────────────┐
                                                          │ ☐ Create SFX archive   │
Dictionary size: * 16 MB   │ ☑ Compress shared files   │
                                                          │ ☐ Delete files after compression │
Word size: * 32   └────────────────────────────────────┘

Solid Block size: * 4 GB   Encryption

Number of CPU threads: * 8   / 8   Enter password:

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

Memory usage for Decompressing: 18 MB

Split to volumes, bytes: ☐ Show Password

                                                         Encryption method: AES-256
Parameters:
                                                         ☐ Encrypt file names

Options

                              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.

- Press OK to create the archive!