# LZMA SDK (Software Development Kit)

The **LZMA SDK** provides the documentation, samples, header files, libraries, and tools you need to develop applications that use **LZMA** compression.

| Link | Size | Date | Version | Description |
|---|---|---|---|---|
| Download | 1 MB | 2022-07-15 | 22.01 | LZMA SDK<br>C, C++, C#, Java<br>x86/x64 binaries for Windows |
| Download | 1 MB | 2019-02-21 | 19.00 | |
| Download | 1 MB | 2016-10-04 | 16.04 | |
| Download | 12 KB | 2015-06-14 | | LZMA Specification (Draft) |

**What's new:**

- **21.07:** Some minor changes and fixes.
- **21.06:** The bug in LZMA encoding function was fixed.
- **21.03 beta:** LZMA dicrionary up to 4 GB. Speed optimizations.
- **21.02 alpha:** macOS and Linux support. Speed optimizations.
- **19.00:** Encryption strength for 7z archives was increased.
- **18.06:** Some speed optimiztions in LZMA/LZMA2 code.
- **18.05:** Some speed optimiztions in LZMA/LZMA2 code.
- **18.01:** Some changes in LZMA2/xz multithreading code for compressing. Some bugs were fixed.
- **9.35:** AES code and SFXs modules were included to SDK.
- **9.20:** New small SFX module for installers.
- **9.11:** PPMd support.
- **9.04:** LZMA2 and XZ support.
- **4.62:** LZMA SDK is placed in the public domain.

**LZMA / LZMA2** are default and general compression methods of **7z format** in the **7-Zip** program. **LZMA** provides a high compression ratio and fast decompression, so it is very suitable for embedded applications. For example, it can be used for ROM (firmware) compressing.

**LZMA SDK** includes:

- **C++** source code of **LZMA** Encoder and Decoder
- **C++** source code for **.7z** compression and decompression (reduced version)
- **ANSI-C** compatible source code for **LZMA / LZMA2 / XZ** compression and decompression
- **ANSI-C** compatible source code for **7z** decompression with example
- **C#** source code for **LZMA** compression and decompression
- **Java** source code for **LZMA** compression and decompression
- **lzma.exe** for .lzma compression and decompression
- **7zr.exe** to work with 7z archives (reduced version of 7z.exe from 7-Zip)
- **SFX modules** to create self-extracting packages and installers

**ANSI-C** and **C++** source code in LZMA SDK is subset of source code of 7-Zip.

**LZMA** features:

- Compression speed: 3 MB/s on 3 GHz dual-core CPU.
- Decompression speed:
  - 20-50 MB/s on modern 3 GHz CPU (Intel, AMD, ARM).
  - 5-15 MB/s on simple 1 GHz RISC CPU (ARM, MIPS, PowerPC).
- Small memory requirements for decompression: 8-32 KB + DictionarySize
- Small code size for decompression: 2-8 KB (depending on speed optimizations)

The **LZMA** decoder uses only CPU integer instructions and can be implemented for any modern 32-bit CPU.

## License

**LZMA SDK** is placed in the **public domain.**

Anyone is free to copy, modify, publish, use, compile, sell, or distribute the original LZMA SDK code, either in source code form or as a compiled binary, for any purpose, commercial or non-commercial, and by any means.

## LZMA Links

- LZMA at Wikipedia
- LZMA Benchmark results for different CPUs
- XZ Utils / LZMA utils
- Port of LZMA SDK for JAVA from independent developer
- Port of LZMA SDK to Pascal (Delphi, Kylix and Freepascal)
- PyLZMA: Python bindings for LZMA
- LZMA Streams in Java
- Zip-Ada : LZMA in Ada