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How to use the 7z SDK to compress and decompress a file

Asked 11 years, 4 months ago Modified 2 years, 9 months ago Viewed 51k times

According to this link [How do I create 7-Zip archives with .NET?](#), WOPR tell us how to compress a file with LMZA (7z compression algorithm) using 7z SDK (<http://www.7-zip.org/sdk.html>)

```
using SevenZip.Compression.LZMA;
private static void CompressFileLZMA(string inFile, string outFile)
{
    SevenZip.Compression.LZMA.Encoder coder = new SevenZip.Compression.LZMA.Encoder();

    using (FileStream input = new FileStream(inFile, FileMode.Open))
    {
        using (FileStream output = new FileStream(outFile, FileMode.Create))
        {
            coder.Code(input, output, -1, -1, null);
            output.Flush();
        }
    }
}
```

But how to decompress it?

I try :

```
private static void DecompressFileLZMA(string inFile, string outFile)
{
    SevenZip.Compression.LZMA.Decoder coder = new SevenZip.Compression.LZMA.Decoder();
    using (FileStream input = new FileStream(inFile, FileMode.Open))
    {
        using (FileStream output = new FileStream(outFile, FileMode.Create))
        {
            coder.Code(input, output, input.Length, -1, null);
            output.Flush();
        }
    }
}
```

but without success.

Do you have a working example?

Thanks

PS: According to an other code <http://www.koders.com/csharp/?id43f85EE5AE78B255C69D18FCC3288285AD67A4A4.aspx?s=zip+encoder#L5> , it seems that the decoder needs a header, a dictionary at the beginning of the file to work. This file generated by Kodrs is not a 7z archive.

```
public static void Decompress(Stream inStream, Stream outputStream)
{
    byte[] properties = new byte[5];
    inStream.Read(properties, 0, 5);
    SevenZip.Compression.LZMA.Decoder decoder = new SevenZip.Compression.LZMA.Decoder();
    decoder.SetDecoderProperties(properties);
    long outSize = 0;
    for (int i = 0; i < 8; i++)
    {
        int v = inStream.ReadByte();
        outSize |= ((Long)(byte)v) << (8 * i);
    }
    long compressedSize = inStream.Length - inStream.Position;
    decoder.Code(inStream, outputStream, compressedSize, outSize, null);
}
```

The outSize is computed the same way than their Compress method. But how to compute the output size otherwise?

c# sdk 7zip compression lzma

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edited May 23, 2017 at 11:47

Community Bot

1 • 1

asked Oct 4, 2011 at 10:14

Djax

391 • 1 • 3 • 5

Are there any exceptions? Error messages? – PVitt Oct 4, 2011 at 10:17

I get a NullReferenceException on `m_Coders[i].Init()`; in Init() of class LiteralDecoder – Djax Oct 4, 2011 at 10:25

There is also a little bit more complete answers here: stackoverflow.com/a/8775927/220904 – Vando Jul 27, 2012 at 22:16

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3 Answers

Sorted by: Highest score (default)

This question is a little old, but google fails to provide a satisfactory answer so this is for those like me still seeking it out. If you look into the LMZAAlone folder of the SDK there is code that compresses and decompresses files. Using it as an example it would seem you need to write and read the encoder properties and decompresses file size to your output file:

```
private static void CompressFileLZMA(string inFile, string outFile)
{
    SevenZip.Compression.LZMA.Encoder coder = new SevenZip.Compression.LZMA.Encoder();
    FileStream input = new FileStream(inFile, FileMode.Open);
    FileStream output = new FileStream(outFile, FileMode.Create);

    // Write the encoder properties
    coder.WriteCoderProperties(output);

    // Write the decompressed file size.
    output.Write(BitConverter.GetBytes(input.Length), 0, 8);

    // Encode the file.
    coder.Code(input, output, input.Length, -1, null);
    output.Flush();
    output.Close();
}

private static void DecompressFileLZMA(string inFile, string outFile)
{
    SevenZip.Compression.LZMA.Decoder coder = new SevenZip.Compression.LZMA.Decoder();
    FileStream input = new FileStream(inFile, FileMode.Open);
    FileStream output = new FileStream(outFile, FileMode.Create);

    // Read the decoder properties
    byte[] properties = new byte[5];
    input.Read(properties, 0, 5);

    // Read in the decompress file size.
    byte[] fileLengthBytes = new byte[8];
    input.Read(fileLengthBytes, 0, 8);
    long fileLength = BitConverter.ToInt64(fileLengthBytes, 0);

    coder.SetDecoderProperties(properties);
}
```

Note that the files created this way can be extracted by the 7zip program as well but will not retain their filename or any other metadata.

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edited May 13, 2016 at 11:35

Ricky

9,836 • 3 • 25 • 31

answered Dec 22, 2011 at 15:12

Fr33dan

4,188 • 3 • 35 • 61

I know this is an old comment (and post), but I tried this code and it doesn't work. When opening new archive file, Windows 10 says it is invalid and won't open it. – user1618054 Dec 16, 2015 at 14:56

I tried it with the latest version of the 7zip program and library and it still works for me. What do you mean Windows 10 says it is invalid? Are you trying to open the file with the compressed file viewer built into Windows Explorer? I do not think that supports 7zip/LZMA – Fr33dan Dec 16, 2015 at 15:23

Turns out Windows 10's archive viewer doesn't support 7z. Your code works, however, when extracting the archived file, the file extension does not appear to be present, even though it is included in the input string. The file is still valid, it's just missing the extension; how can you correct this? – user1618054 Dec 16, 2015 at 15:36

3 It is stated in the answer that the file name and all other metadata is lost. This question and answer is about decompressing files using the 7zip sdk, issues with compressing files to be decompressed with the 7zip application are outside the scope of this question. The fact that the files we created can be extracted with the program at all was an unexpected bonus. – Fr33dan Dec 16, 2015 at 15:46

1 This piece is incorrect and results in a broken archive: `output.Write(BitConverter.GetBytes(input.Length), 0, 8);` Replace it with this: `for (int i = 0; i < 8; i++) { outputStream.WriteByte((byte)(inputStream.Length >> (8 * i))); }` – znelson Sep 23, 2019 at 18:15

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I highly recommend managed-lzma: <https://github.com/weltkante/managed-lzma>

It preserves file info and directory structure in file encoding.

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answered May 30, 2015 at 10:11

SepehrM

1,067 • 2 • 19 • 44

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I needed LZMA compression for sending images over network, not sure it's the best alternative but at least it works in my ecosystem! So here is something that should work right away for that purpose.

```
using System;
using System.IO;
using SevenZip;

public class LZMA{
    public static byte[] Compress(byte[] toCompress)
    {
        SevenZip.Compression.LZMA.Encoder coder = new SevenZip.Compression.LZMA.Encoder();

        using(MemoryStream input = new MemoryStream(toCompress))
        using(MemoryStream output = new MemoryStream()){

            coder.WriteCoderProperties(output);

            for (int i = 0; i < 8; i++) {
                output.WriteByte((byte)(input.Length >> (8 * i)));
            }

            coder.Code(input, output, -1, -1, null);
            return output.ToArray();
        }
    }

    public static byte[] Decompress(byte[] toDecompress)
    {
        SevenZip.Compression.LZMA.Decoder coder = new SevenZip.Compression.LZMA.Decoder();

        using(MemoryStream input = new MemoryStream(toDecompress))
        using(MemoryStream output = new MemoryStream()){

            // Read the decoder properties
            byte[] properties = new byte[5];
            input.Read(properties, 0, 5);
        }
    }
}
```

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answered Apr 16, 2020 at 1:32

Dominic Grenier

167 • 1 • 2 • 12

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