

FLASH FILE TYPES

TYPE FILE STRUCTURE

FLAT FWS <Version:1> <FileLength:4> <uncompressed data...>

ZLIB CWS <Version:1> FileLength:4> <zlib data>

<CMF:1> <FLG:1> <dict>* <deflate> <adler32:4>

ZMA ZWS <Version:1> <FileLength:4> <lzma data>

*UNCOMPRESSED

Version and FileLength are not checked.

ADLER32 CHECKSUM

FOR EACH BYTE OF THE UNCOMPRESSED STREAM:

.. .. XX

S1 += XX S2 += S1

FINAL RESULT:

ADLER32 = 52 << 16 | 51

WITH BOTH S1 & S2 MODULO 65521 (LARGEST PRIME <2^16

FLASH ALLOWS APPENDED DATA AFTER END MARKER: 1. ADJUST S1:

- APPEND 0xFE TO uncompressed DATA UNTIL S1 IS VALID ([0-9a-zh-Z./]*)
 (0xFF DOESN'T WORK WELL FOR HUFFMAN MANIPULATION)
- 2. ADJUST S2:
 - APPEND 0x00 Until S2 is valid (appending 0x00 doesn't affect 51)

ZLIB STREAM START

CMF

FLG

(IRRELEVANT HERE) h

BITS 0:4 = CHECKSUM => 6843 % 31 = 0 \ C

BITS 5 : 0 = NO DICTIONARY
BITS 6:7:3 = MAX COMPRESSION

STRUCTURE OF A DEFLATE BOCK

8 = DEFLATE

HLIT LITERAL/LENGTH CODES - 257 BFINAL Length of Lengths 3 BITS LEN-OF-LEN (PRE-SET ALPHABET)

Length of Distances

00 = NO COMPRESSION 01 = FIXED HUFFMAN 10 = DYNAMIC HUFFMAN

11 = RESERVED (ERROR)

CODE LENGTH CODES - 4

Lengths of Lit/Len

compressed data

End Of Block (CODE 256)

OF DISTANCE CODES - 1