

# [MS-MCI]: MCI Compression and Decompression

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# 1 Introduction

This document specifies the format of MSZIP compressed data as used in the MSZIP compression mode of cabinet files. The purpose of this specification is to allow anyone to encode or decode MSZIP compressed data.

## 1.1 Glossary

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 1.2 References

### 1.2.1 Normative References

[RFC1951] Deutsch, P., "DEFLATE Compressed Data Format Specification version 1.3", RFC 1951, May 1996, <http://www.ietf.org/rfc/rfc1951.txt>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt>.

### 1.2.2 Informative References

None.

## 1.3 Structure Overview

MSZIP compression is a derivative of Phil Katz's DEFLATE Compressed Data Format. For more information about the DEFLATE Compressed Data Format, see [RFC1951]. MSZIP uses only the three basic modes of deflate: stored, fixed Huffman tree, and dynamic Huffman tree.

## 1.4 Relationship to Protocols and Other Structures

None.

## 1.5 Applicability Statement

None.

## 1.6 Versioning and Localization

None.

## ***1.7 Vendor-Extensible Fields***

None.

## **2 Structures**

Each MSZIP data block is the result of a complete "deflate" compression operation. Each block **MUST** be flushed out of the compressor before the next block begins. The last sub-block in each block **MUST** be marked as the "end" of the stream. Decoding trees **MUST** be discarded after each block. The history buffer **MUST** survive from one block to the next. Each data block that is not the last block in a folder **MUST** represent 32k of uncompressed data. The last block in a folder might be smaller than 32k of compressed data. A 2-byte MSZIP signature **MUST** precede the compressed encoding in each block. The 2-byte MSZIP signature **MUST** consist of the bytes 0x43 and 0x4B.

The maximum compressed size of each MSZIP block is 32k + 12 bytes. This allows for the data to be passed as two separate "stored" sub-blocks. Each sub-block **MUST** have a 5-byte overhead and the 2-byte MSZIP signature. The MSZIP compressor **MUST** emit "stored" sub-blocks with a length of exactly 32k. MSZIP **MUST** use a compression window of size 32KB.

The compression history **MUST** be discarded when a cabinet folder boundary is reached so that decoding folders do not require prior data.

## **3 Structure Examples**

None.

## **4 Security Considerations**

None.

## **5 Appendix A: Office/Exchange Behavior**

The information in this specification is applicable to the following versions of Office/Exchange:

- Office 2003 with Service Pack 3 applied
- Exchange 2003 with Service Pack 2 applied
- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms **SHOULD** or **SHOULD NOT** implies Office/Exchange behavior in accordance with the **SHOULD** or **SHOULD NOT** prescription. Unless otherwise specified, the term **MAY** implies Office/Exchange does not follow the prescription.

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