MIDI 2.0 Container File Binary Format Specification

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1. Introduction

This documents proposes a binary file container format for MIDI 2.0. The file contains container meta data and one or more clips. The clips follow the MIDI 2.0 clip file specification

The binary format is useful for small devices that just perform simple binary read/write operations. This keeps the format simple and can be realized simple file/read write operations by software

2. File definition

2.1 File data

Each element in the file is a 32 bit word in big endian format.

2.2 File name

The suggestion for the extension is ".midi2bc" for binary container data.

Though any extension can be used as software just needs to check the first 32 bits signature of the file to identify a MIDI 2.0 container file

2.3 File structure

The container file consist of a signature, container data followed by clip data.

Signature (8 bytes) header data clip offset data Clip data

2.4 Signature

The signature is ASCII string from Byte 0 to 7: "SMF2CON1" The one indication the version of the binary container specification, which is "1"

2.5 Header data

The header data starts with a 32 bit words for the length of the header, the value is the number of 32 bits words including the header length word itself and all UMP messages and clip offset data.

Total header length ump data length ump messages Clip offset data

The container header length is followed by the a 32 bit value for the length of ump messages . This value can be zero for no data. After this the clip offset data follows. The header may use any of the UMP messages . These UMP messages are defined in the UMP specification. The software processing the messages may decide to consume or ignore the messages. DSC and DCTPQ messages as defined in the clip specification file must be ignored.

2.6 Clip offset data

The clip offset data is defined a the number of 32 bit words since the end of the header data
A value of zero means that the first clip data follows the header immediately.
The start of the clip offset data. To allow small and large files, the offset type define the number of 32 bits works for the offset.

offset type [4 bits] offset data 0 [28 bits] offset data 1...n

type = 0 for offsets less than the maximum value that fits in 28 bits, total 32 bit words
type = 1 for offsets less than the maximum value that fits in 60 bits, total two 32 bits words
type = 2 for offsets less than the maximum value that fits in 92 bits . total three 32 bits words

The offset starts with the least significant part of the offset.

2.6 Clip data

The clip data is define in the MIDI 2.0 clip file specification. Any UMP messages will override the data defined in the header, such as time signature and tempo.