SERVER – CLIENT COMMUNICATION PROTOCOL

Offset	0								1								2								3							
Octet	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
0	BEGIN SEQUENCE																VER								RES/VER							C
4	PAYLOAD LENGTH																															
8	PAYLOAD CHECKSUM																															
12	RES																HEADER CHECKSUM															
16	DATA 0								DATA 1								DATA 2								DATA 3							
N	DATA 4 - DATA N																															

Header takes minimum length of 12 bytes and maximum of 16, depending if we are using a payload checksum or not. This is determined by a C field. If the C field is set, the payload checksum is included, otherwise it is not.

Fields:

- BEGIN SEQUENCE – two bytes of begin sequence, equal to 0xABDA.
- VER – version of the protocol, that tells us what is included in the datagram payload. For example different version can mean different *flatbuffers* file serialization.
- RES – reserved fields for future use. First reserved field can be used as VER extension.
- C – if this bit is set, PAYLOAD CHECKSUM is included in the header.
- PAYLOAD LENGTH – payload length in bytes.
- PAYLOAD CHECKSUM – payload checksum. Included only when C is set. Checksum algorithm included later in the document.
- HEADER CHECKSUM – header checksum is obligatory. Checksum algorithm included later in the document.
- DATA – Flatbuffers payload. The serialization file is determined by the VER field.

All fields in the header are little endian.

CHECKSUM ALGORITHMS

HEADER CHECKSUM – CRC-16/ARC:

Width	16 bits
Initial remainder	0x0000
Final XOR Value	0x0000
Reflect Input	True
Reflect Output	True
Polynomial	0x8005
Check value	0xBB3D

PAYLOAD CHECKSUM – CRC-32:

Width	32 bits
Initial remainder	0xFFFFFFFF
Final XOR Value	0xFFFFFFFF
Reflect Input	True
Reflect Output	True
Polynomial	0x04C11DB7
Check value	0xCBF43926