Protocoll

Important

- UDP MTU
- Don't create packages with a size of (bit-size mod 8) != 0. It makes it hard on the receiver side to interpret those!

General field descriptions

Type [4 Bit]:
0000 => Client-Hello-Handshake
0001 => Server-Hello-Handshake
0010 => File-Creation
0011 => File-Transfer
0100 => File-Status
0101 => ACK
0110 => Ping
0111 => Transfer-Ended
1000 => Auth-Request
1001 => Auth-Result

Client ID [32 Bit]:
An unique client id generated by the client on first contact.
E.g. A random int

Checksum [32 Bit]:
CRC32 Algorithm Wiki Link

Sequence Number [32 bit]:
Like TCP.

FID Length [64 Bit]:
The length of the `FID` field in bytes.

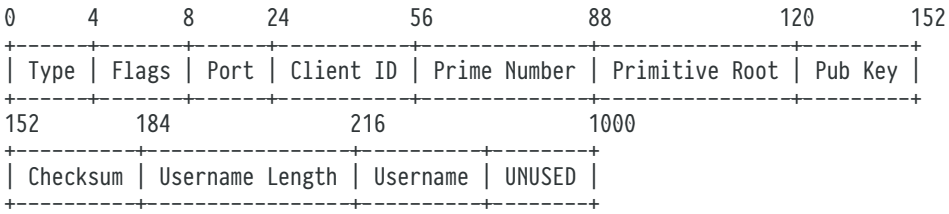
FID [Defined in the `FID Length` filed]: The relative path to the file. Includes the file name e.g. `folder/file.txt`.

FID Part Number [32 Bit]:
The file part number.

Pub Key [32 Bit]:
The client public key for the Diffie Hellman encryption.

Client-Hello-Handshake

The initial connection message that gets send by the client.



Flags [4 Bit]:

Port [16 Bit]:
The port on which the client listens to server messages.

Prime Number [32 Bit]:
The client prime number for the Diffie Hellman encryption.

Primitive Root [32 Bit]:
The client primitive root for the Diffie Hellman encryption.

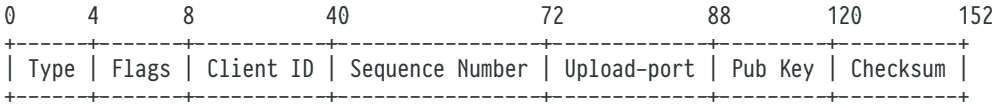
Username Length [32 Bit]:
Describes how long the the following Username is in byte.

Username [X Byte]:
Defined via the `Username Length`.

UNUSED [816-X Bit]:
To "prevent" DoS attacks. Ensures the package is a least 1000 Bit long.

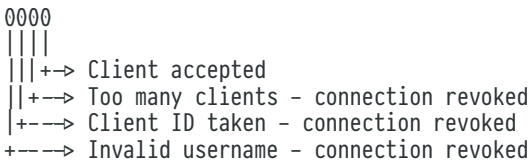
Server-Hello-Handshake

Once the server received a `Client-Hello-Handshake` message he should reply with this message.



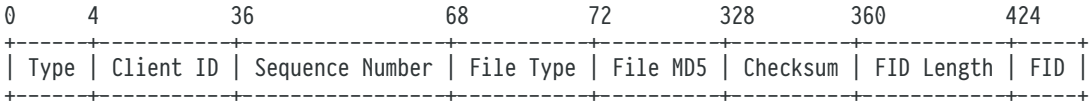
Upload-port [16 Bit]:
The Port where the client should send all following messages to.

Flags [4 Bit]:

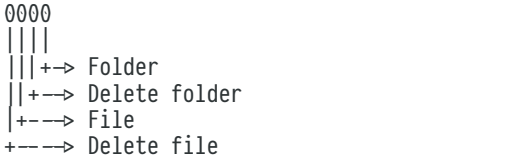


File-Creation

Marks the start of a file transfer. Tells the server to create the given file with the given path.



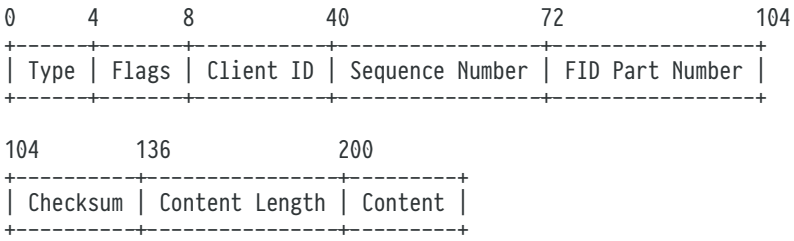
File Type [4 Bit]:



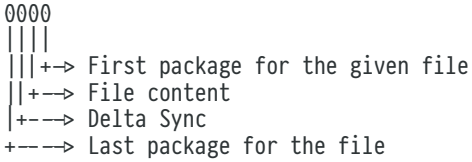
File MD5 hash [256 Bit]:
The file MD5 hash to check if the file was transmitted correctly. Unused for folders. [Wiki Link]

File-Transfer

The actual file transfer message containing the file content.



Flags [4 Bit]:

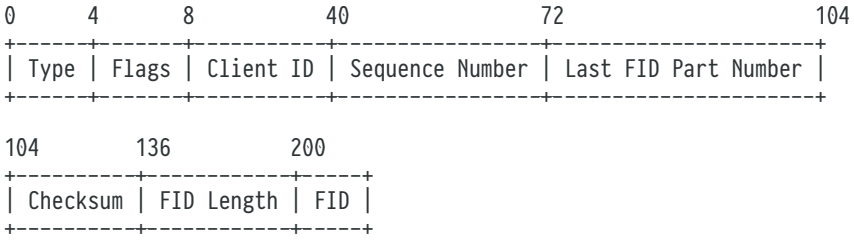


Content Length [max 900 Bit]:
The length of the `Content` field.

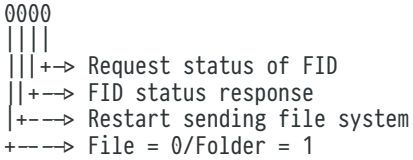
Content [defined in "Content Length" in Bit]:
The actual file content.

File-Status

Used for requesting and responding the current file status bevor a file gets transfered.



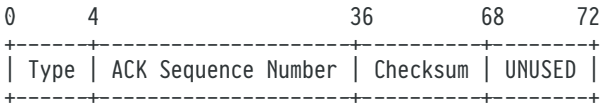
Flags [4 Bit]:



Last FID Part Number [32 Bit]: The last received `FID Part Number`. Ignored if `Request status of FID` is set.

ACK

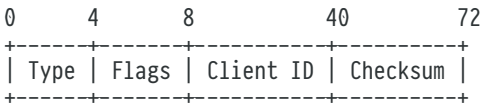
For acknowledging `Ping`, `File-Creation` and `File-Transfer` messages.



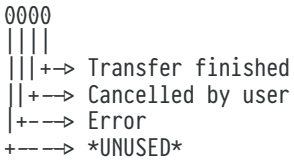
ACK Sequence Number [32 Bit]:
The acknowledged `Sequence Number` or `Ping Sequence Number`.

Transfer-Ended

Gets send by the client once he wants to end the transfer/close the connection.

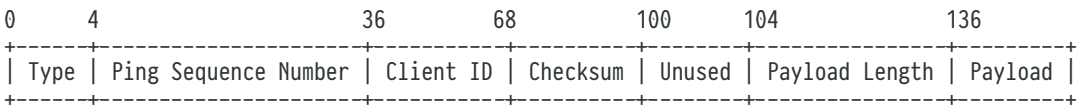


Flags [4 Bit]:



Ping

This message is used for ensuring the opponent is still there. The opponent should acknowledge each received `Ping` message with an `Server-ACK`.Should get send by each side if there was no message exchange for more than 2 seconds. It also can be used for package loss and throughput tests with a modified `Payload Length`.



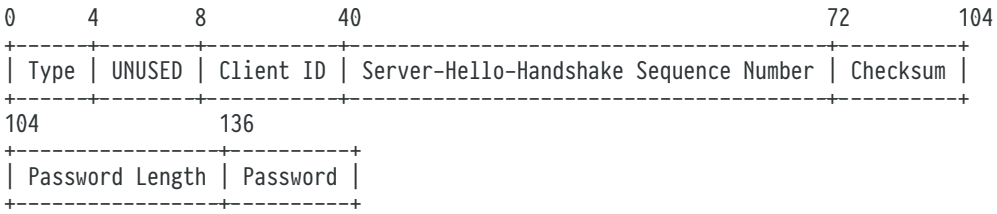
Ping Sequence Number [32 Bit]
An unique number for identifying each ping.

Payload Length [32 Bit]:
Describes how long the the following payload is in byte.

Payload [X Byte]:
Defined via the `Payload Length`.

Auth-Request

Send by the client to authentificate at the server.



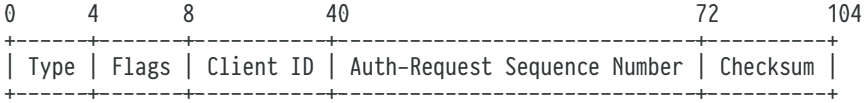
Server-Hello-Handshake Sequence Number [32 Bit]:
The sequence number of the `Server-Hello-Handshake` message.

Password Length [32 Bit]:
Describes how long the the following password is in byte.

Password [X Byte]:
Defined via the `Password Length`.

Auth-Result

Send by the server with the authentification result.



Flags [4 Bit]:

```
0000
||||
|||+-> Authentification successfull
||+--> *UNUSED*
|+---> *UNUSED*
+----> *UNUSED*
```

Auth-Request Sequence Number [32 Bit]:
The Sequence number of the received `Auth-Request` message.

Process example