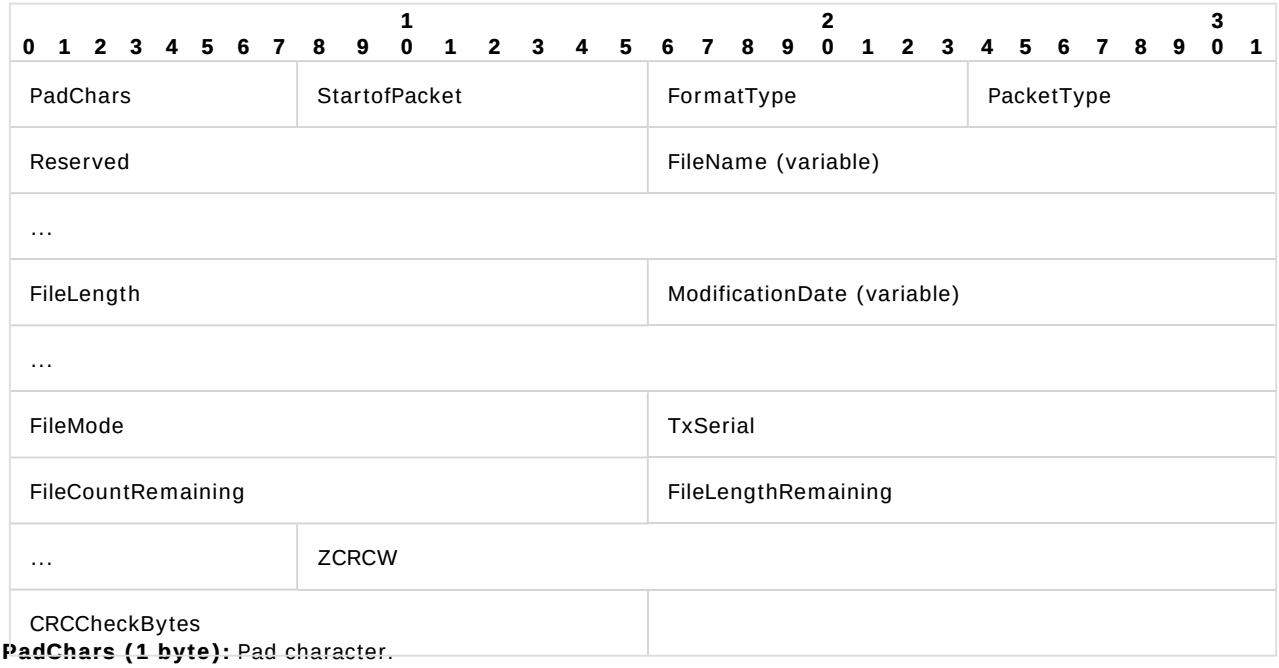
ZFILE File Attribute

The server ZFILE File Attribute packet informs the receiving client of the file name and file attributes for the next file to transfer. The packet is sent following receipt of a client ZRINIT packet that indicates that the client is ready to receive a file.

The client response to this packet is a ZRPOS packet that includes the start position in the file at which data transfer is to begin.



0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1	
PadChars	StartofPacket / FormatType / PacketType
Reserved	FileName (variable)
...	
FileLength	ModificationDate (variable)
...	
FileMode	TxSerial
FileCountRemaining	FileLengthRemaining
...	ZCRCW
CRCCheckBytes	

PadChars (1 byte): Pad character.

Value	Meaning
0x2A	Single pad character.

StartofPacket (1 byte): Packet start character.

Value	Meaning
0x18	ZDLE: Packet start.

FormatType (1 byte): Type of header format.

Value	Meaning
0x41	ASCII A: Packet has binary header with 16-bit CRC. This format is used only by a sender when the following data block is binary coded.

PacketType (1 byte): Type of packet.

Value	Meaning
0x04	ZFILE: File name from sender.

Flag3: Extended option flags. The value can be:

Value	Meaning
0x40	ZXSPARS: Encoding for sparse file operations.

Flag2: Transport option flags. The value can be one of the following:

Value	Meaning
0x01	ZTLZW: Lempel-Ziv compression.
0x02	ZTCRYPT: Encryption.
0x03	ZTRLE: Run length encoding.

Flag1: File management option flags. The value can be one of the following:

Value	Meaning
0x80	ZMSKNOLOC: Skip file if not present at receiver.
0x01	ZMNEWL: Transfer if source is newer or longer.
0x02	ZMCRC: Transfer if different file CRC or length.
0x03	ZMAPND: Append contents to existing file (if any).
0x04	ZMCLOB: Replace existing file.
0x05	ZMNEW: Transfer if source is newer.
0x06	ZMDIFF: Transfer if dates or lengths are different.
0x07	ZMPROT: Protect destination file.

Flag0: If the packet type is ZFILE, the flag value can be a combination of the following:

Value	Meaning
0x01	ZCBIN: Binary transfer—inhibit conversion.
0x02	ZCNL: Convert new line character to local end of line convention.
0x03	ZCRESUM: Resume interrupted file transfer.

Reserved (2 bytes): Reserved.

FileName (variable): Name of file to be transferred. Null-terminated.

FileLength (2 bytes): Estimate of file length in decimal. Terminated by ASCII SPACE character.

ModificationDate (variable): Time the contents were last changed, measured in seconds from January 1, 1970, Universal Coordinated Time (UTC). Terminated by ASCII SPACE character. A zero value indicates that the value is unknown, an example value is: "0x3734636231313333353220".

FileMode (2 bytes): File mode. Terminated by ASCII SPACE character.

Value	Meaning
0x3020	HyperTerminal Zmodem transmitter serial number (ASCII 0 ASCII SPACE).

TxSerial (2 bytes): Transmitting program serial number. Terminated by ASCII SPACE character.

Value	Meaning
0x3020	HyperTerminal Zmodem transmitter serial number (ASCII 0 ASCII SPACE).

FileCountRemaining (2 bytes): Estimate of the number of files remaining to transfer, including the current file. Terminated by a blank character. For example, if only one file is to be transferred: "0x3120".

FileLengthRemaining (3 bytes): Estimate of file length remaining in decimal, null-terminated. For example, if 54 bytes remain: "0x353400".

ZCRCW (3 bytes): ZCRCW string. Indicates that CRC check bytes are following and an acknowledgment is expected. Null-terminated.

Value	Meaning
0x186B00	ZCRCW string. Equivalent to <ZDLE><ASCII K><NULL>.

CRCCheckBytes (2 bytes): 16-bit CRC check field. For information on the polynomial used for 16-bit CRC calculation, see ITU-T Recommendation V.41, "Code-independent error-control system," November 1989.

For more information about CRC, see http://www2.rad.com/networks/1994/err_con/crc.htm [http://www2.rad.com/networks/1994/err_con/crc.htm] .

Zmodem Hexadecimal Format

Fields in this packet are in Zmodem binary format and are transmitted without further encoding.

Line Control and Escape Sequences

Both a line control sequence and an escape sequence consist of the ZDLE character (0x18) followed by a single character. A line control sequence is a command sent as a character outside the regular packet structure. An escape sequence allows the receiver to ignore the character following the ZDLE character.

Value	Description
0x180D	Ignored by receiver.
0x1810	Ignored by receiver.
0x1811	Ignored by receiver.
0x1813	Ignored by receiver.
0x1868 (ZDLE + ASCII h)	ZCRCE : CRC next, packet ends, header packet follows.
0x1869 (ZDLE + ASCII I)	ZCRCG: CRC next, packet continues nonstop.
0x186A (ZDLE + ASCII j)	ZCRCQ: CRC next, packet continues, ZACK expected.
0x186B (ZDLE + ASCII k)	ZCRCW: CRC next, ZACK expected, end of packet.
0x186C (ZDLE + ASCII l)	ZRUB0: Translate to rubout 0177.
0x186D (ZDLE + ASCII m)	ZRUB1: Translate to rubout 0377.
0x187F	Ignored by receiver.
0x188D	Ignored by receiver.
0x1890	Ignored by receiver.
0x1891	Ignored by receiver.
0x1893	Ignored by receiver.
0x18FF	Ignored by receiver.