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TFTP Timeout Interval and Transfer Size Options

Status of this Memo

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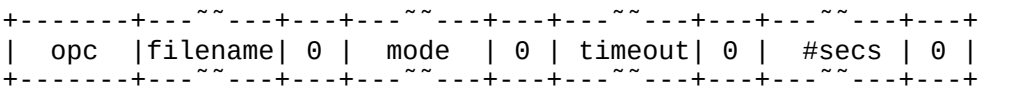
Abstract

The Trivial File Transfer Protocol [1] is a simple, lock-step, file transfer protocol which allows a client to get or put a file onto a remote host.

This document describes two TFTP options. The first allows the client and server to negotiate the Timeout Interval. The second allows the side receiving the file to determine the ultimate size of the transfer before it begins. The TFTP Option Extension mechanism is described in [2].

Timeout Interval Option Specification

The TFTP Read Request or Write Request packet is modified to include the timeout option as follows:



opc
: The opcode field contains either a 1, for Read Requests, or 2, for Write Requests, as defined in [1].

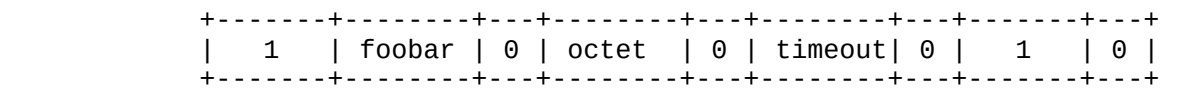
filename
The name of the file to be read or written, as defined in [1]. This is a NULL-terminated field.

mode
The mode of the file transfer: "netascii", "octet", or "mail", as defined in [1]. This is a NULL-terminated field.

timeout
The Timeout Interval option, "timeout" (case in-sensitive). This is a NULL-terminated field.

#secs
The number of seconds to wait before retransmitting, specified in ASCII. Valid values range between "1" and "255" seconds, inclusive. This is a NULL-terminated field.

For example:

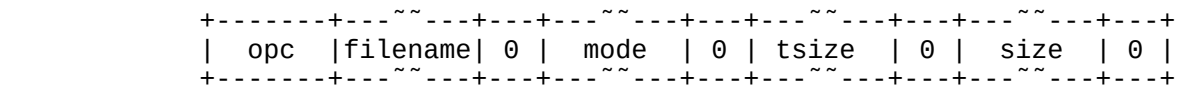


is a Read Request, for the file named "foobar", in octet (binary) transfer mode, with a timeout interval of 1 second.

If the server is willing to accept the timeout option, it sends an Option Acknowledgment (OACK) to the client. The specified timeout value must match the value specified by the client.

Transfer Size Option Specification

The TFTP Read Request or Write Request packet is modified to include the tsize option as follows:



opc
The opcode field contains either a 1, for Read Requests, or 2, for Write Requests, as defined in [1].

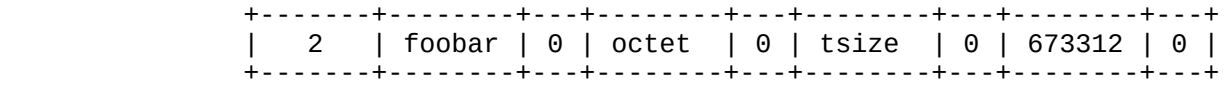
filename
The name of the file to be read or written, as defined in [1]. This is a NULL-terminated field.

mode
The mode of the file transfer: "netascii", "octet", or "mail", as defined in [1]. This is a NULL-terminated field.

tsize
The Transfer Size option, "tsize" (case in-sensitive). This is a NULL-terminated field.

size
The size of the file to be transfered. This is a NULL-terminated field.

For example:



is a Write Request, with the 673312-octet file named "foobar", in octet (binary) transfer mode.

In Read Request packets, a size of "0" is specified in the request and the size of the file, in octets, is returned in the OACK. If the file is too large for the client to handle, it may abort the transfer with an Error packet (error code 3). In Write Request packets, the size of the file, in octets, is specified in the request and echoed back in the OACK. If the file is too large for the server to handle, it may abort the transfer with an Error packet (error code 3).

Security Considerations

The basic TFTP protocol has no security mechanism. This is why it has no rename, delete, or file overwrite capabilities. This document does not add any security to TFTP; however, the specified extensions do not add any additional security risks.

References

[1] Sollins, K., "The TFTP Protocol (Revision 2)", STD 33, RFC 1350, October 92.

[2] Malkin, G., and A. Harkin, "TFTP Option Extension", RFC 2347, May 1998.

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