

Network Working Group
Request for Comments: 2349
Updates: [1350](#)
Obsoletes: [1784](#)
Category: Standards Track

G. Malkin
Bay Networks
A. Harkin
Hewlett Packard Co.
May 1998

TFTP Timeout Interval and Transfer Size Options

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Copyright Notice

Copyright (C) The Internet Society (1998). All Rights Reserved.

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   |filename|  0  |  mode   |  0  | timeout|  0  |  #secs |  0  |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

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:

```
+-----+-----+-----+-----+-----+-----+-----+-----+
|  1   |foobar|  0 | octet |  0 | timeout|  0 |   1   |  0 |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

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  |filename|  0 |  mode  |  0 | tsize  |  0 |  size  |  0 |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

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:

```
+-----+-----+-----+-----+-----+-----+-----+-----+
|  2    | foobar | 0 | octet | 0 | tsize | 0 | 673312 | 0 |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

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.

Authors' Addresses

Gary Scott Malkin
Bay Networks
8 Federal Street
Billerica, MA 01821

Phone: (978) 916-4237
EMail: gmalkin@baynetworks.com

Art Harkin
Internet Services Project
Information Networks Division
19420 Homestead Road MS 43LN
Cupertino, CA 95014

Phone: (408) 447-3755
EMail: ash@cup.hp.com

Full Copyright Statement

Copyright (C) The Internet Society (1998). All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.