                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.

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].

   This document assumes that the reader is familiar with the
   terminology and notation of both [1] and [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 insensitive).
   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" octets,
   inclusive. This is a NULL-terminated field.

For example:

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

is a Read Request, for the file named "foobar", in 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 insensitive). This is
    a NULL-terminated field.

size
    The size of the file to be transfered, specified as a
    NULL-terminated ASCII string.

For example:

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

is a Write Request, with the 673312-octet file named "foobar", in
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

    Security issues are not discussed in this memo.

References

    [1] Sollins, K., "The TFTP Protocol (Revision 2)", STD 33, RFC 1350,
        MIT, July 1992.

    [2] Malkin, G., and A. Harkin, "TFTP Option Extension", RFC 1782,
        Xylogics, Inc., Hewlett Packard Co., March 1995.

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