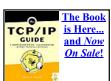


NOTE: Using software to mass-download the site degrades the server and is prohibited. If you want to read The TCP/IP Guide offline, please consider licensing it. Thank you.





The TCP/IP Guide

- 9 TCP/IP Lower-Layer (Interface, Internet and Transport) Protocols (OSI Layers 2, 3 and 4)
 9 TCP/IP Transport Layer Protocols
 - - 9 Transmission Control Protocol (TCP) and User Datagram Protocol (UDP)
 - 9 TCP/IP Transmission Control Protocol (TCP)
 9 TCP Message Formatting and Data Transfer

Read offline with no ads or diagram watermarks! The TCP/IP Guide



TCP Message Formatting and Data Transfer





TCP Checksum Calculation and the TCP "Pseudo H



TCP Message (Segment) Format

(Page 4 of 4)

TCP Options and Option Field Values

Table 157 shows the main options currently defined for TCP.

(i) ×

Table 157: TCP Options

108.000₫ GIẢM GIÁ 9.000<u>đ</u>

Option- Kind	Option- Length	Option-Data	Description
0	_	_	End Of Option List: A single byte option that marks the end of all options included in the This only needs to be included when the end of the options doesn't coincide with the end header.
1	_	_	No-Operation: A "spacer" that can be included between options to align a subsequent 32-bit boundary if needed.
2	4	Maximum Segment Size Value	Maximum Segment Size: Conveys the size of the largest segment the sender of the sewishes to receive. Used only in connection request (SYN) messages.
3	3	Window Size Shift Bits	Window Scale: Implements the optional window scale feature, which allows devices to much larger window sizes than would be possible with the normal Window field. The va Option-Data specifies the power of two that the Window field should be multiplied by to window size the sender of the option is using. For example, if the value of Option-Data means values in the Window field should be multiplied by 8, assuming both devices agrithis feature. This allows very large windows to be advertised when needed on high-perfilinks. See the topic on data transfer for more.
4	2	_	Selective Acknowledgment Permitted: Specifies that this device supports the selective acknowledgment (SACK) feature. This was implemented as a two-byte option with no of field, instead of a single-byte option like End Of Option List or No-Operation. This was repeause it was defined after the original TCP specification, so an explicit option length lindicated for backwards compatibility.
5	Variable	Blocks Of Data Selectively Acknowledged	Selective Acknowledgment: Allows devices supporting the optional selective acknowl feature to specify non-contiguous blocks of data that have been received so they are no retransmitted if intervening segments do not show up and need to be retransmitted.
		Alternate	Alternate Checksum Request: Lets a device request that a checksum generation algo-

algorithm for it to be used.

than the standard TCP algorithm be used for this connection. Both devices must agree t

14

3

Checksum

Algorithm







Square increases productivity with Jetpack Compose



Maximum Segment Size, Window Scale, Selective Acknowledgement Permitted and Alternate Checksum Request options above. In Selective Acknowledgment and Alternate Checksum options appear in regular data segments, when used.



TCP Message Formatting and Data Transfer





TCP Checksum Calculation and the TCP "Pseudo H

If you find The TCP/IP Guide useful, please consider making a small Paypal donation to help the site, using one of the buttons below. You can also donate a custom amount using button (not less than \$1 please, or PayPal gets most/all of your money!) In lieu of a larger donation, you may wish to consider purchasing a download license of The TCP/IP Guide your support!

Donate \$2
TCP/IP

Donate \$5

Donate \$10

Donate \$20 TCP/IP Donate \$30 TCP/IP Donate: \$

<u>Home</u> - <u>Table Of Contents</u> - <u>Contact Us</u>

The TCP/IP Guide (http://www.TCPIPGuide.com) Version 3.0 - Version Date: September 20, 2005

© Copyright 2001-2005 Charles M. Kozierok. All Rights Reserved. Not responsible for any loss resulting from the use of this site.