

INTEL CORPORATION

v.

ALACRITECH, INC.

Case Nos.: IPR2018-00234, IPR2018-01307,
IPR2018-00403

U.S. Patent No. 8,805,948 B2

Patent Owner's Demonstratives

Hearing: March 4, 2019

Overview of the '948 Patent

(12) **United States Patent**
 Boucher et al. (10) Patent No.: US 8,805,948 B2
 (45) Date of Patent: Aug. 12, 2014

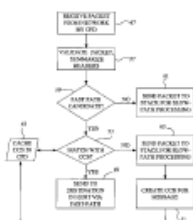
(54) INTELLIGENT NETWORK INTERFACE SYSTEM AND METHOD FOR PROTOCOL (52) U.S. CL. CPC H04L 61/25 (2013.01); H04L 60/16

INTELLIGENT NETWORK INTERFACE SYSTEM AND METHOD FOR PROTOCOL PROCESSING

Applicant: **Alacritech, Inc.**, San Jose, CA (US)

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(51) Int. Cl.		4,485,455 A	11/1984	Boone et al.
G06F 15/16	(2006.01)	4,485,460 A	11/1984	Steenhaug
H04L 29/06	(2006.01)	4,580,063 A	5/1985	Shah et al.
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H04L 29/22	(2006.01)	4,994,133 A	2/1991	Davis et al.
H04L 12/56	(2006.01)	5,056,078 A	10/1991	Harris et al.
H04Q 5/00	(2006.01)	5,058,139 A	10/1991	Smith et al.
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Ex. 1001 (“‘948 Patent”)

(57) ABSTRACT

A system for protocol processing in a computer network has an intelligent network interface card (INIC) or communication processing device (CPD) associated with a host computer. The INIC or CPD provides a fast-path that avoids host protocol processing for most large multipacket messages, greatly accelerating data communication. The INIC or CPD also assists the host for those message packets that are chosen for processing by host software layers. A communication control block (CCB) for a message is defined that allows DMA controllers of the INIC to move data, free of headers, directly to or from a destination or source in the host. The CCB can be passed back to the host for message processing by the host. The INIC or CPD contains hardware circuits configured for protocol processing that can perform that specific task faster than the host CPU. One embodiment includes a processor providing transmit, receive and management processing, with full duplex communication for four fast Ethernet nodes.

‘948 Patent, Abstract

OSI Model

The Open Systems Interconnection model (or "OSI model") is one well known example, describing a seven layer stack where a particular layer serves the layer above it and is served by the layers below it. The seven layers of the OSI model are:

- Layer 7: Application Layer
- Layer 6: Presentation Layer
- Layer 5: Session Layer
- Layer 4: Transport Layer
- Layer 3: Network Layer
- Layer 2: Data Link Layer
- Layer 1: Physical Layer

Case No. IPR
U.S. Patent N

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION, and CAVIUM, INC.,
Petitioners,

v.

ALACRITECH INC.,
Patent Owner

Case IPR2018-00234¹
U.S. Patent 8,805,948

PATENT OWNER'S EXHIBIT 2026
DECLARATION OF KEVIN ALMEROOTH, PH.D.

¹ Cavium filed a Petition in Case IPR2018-00403 and has been petitioner in this proceeding.

Alacritech Exhibit 2026

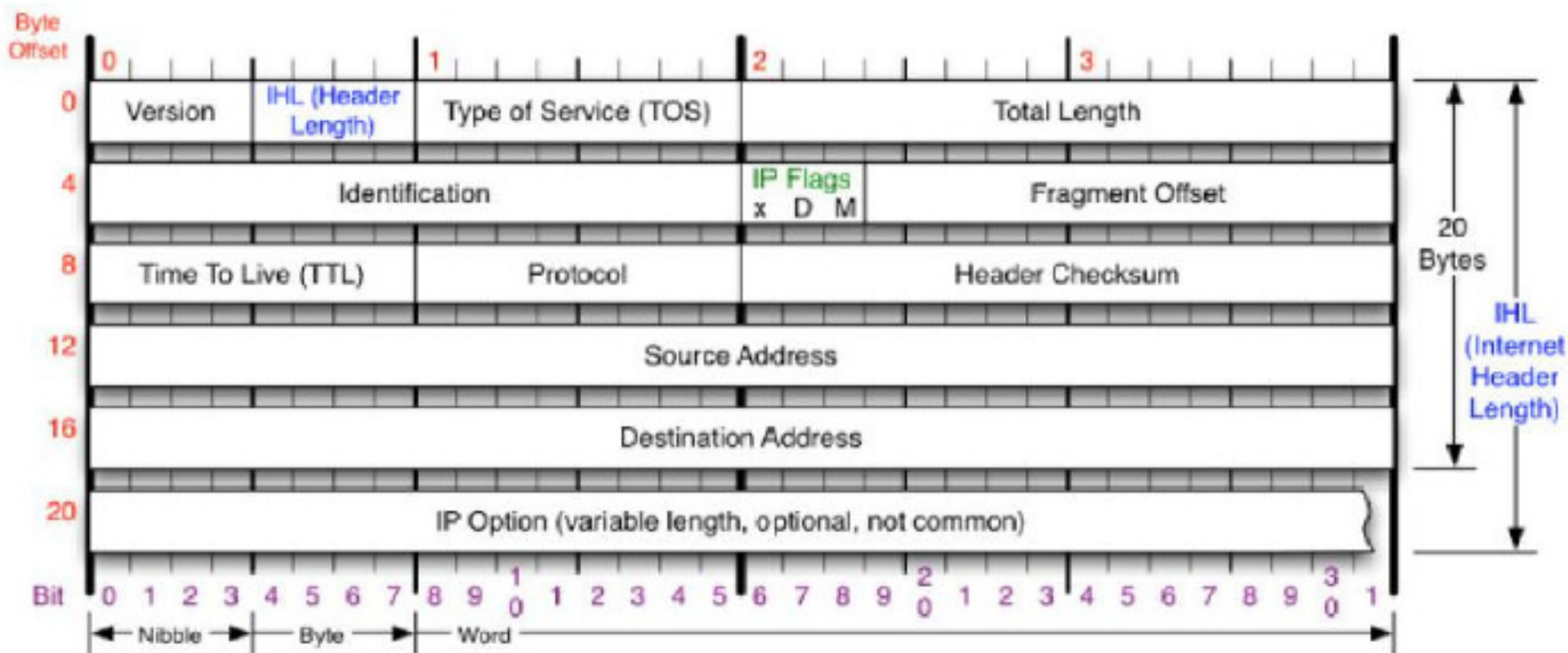
Ex. 2026 at 19-20

Layer 3: Network Layer

56. The Internet Protocol (or “IP”) is an example of a well-known network (layer 3) protocol. IPv4 was published as RFC 760 in January 1980 while its successor IPv6 was published as RFC 2460 in December 1998. The IP protocol describes a set of rules for dividing a message into multiple parts (called “IP packets”) and then transmitting those packets from an IP sender to an IP destination across multiple routers or other links in a computer network. Each packet of information includes an IP address for its destination, analogous to sending a letter through the mail by placing the letter inside an envelope that has the recipient’s postal address printed on it.

Ex. 2026 at 21

IP Header



Ex. 2042 at 2

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