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- (74) Agent: **JORGENSEN, Eric, D.**; Arter & Hadden LLP, 1100 Huntington Building, 925 Euclid Avenue, Cleveland, OH 44115 (US).
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- (71) Applicant: **ZARLINK SEMICONDUCTOR V. N. INC.** [US/US]; Suite 100, 121 Innovation Drive, Irvine, CA 92612 (US).
- (72) Inventors: **YIK, James, Ching-Shau**; 24682 Vesta, Mission Viejo, CA 92691 (US). **WANG, Linghsiao**; 13841 Tustin East Drive, #18, Tustin, CA 92780 (US).
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[Continued on next page]

(54) Title: HIGH SPEED MAC ADDRESS SEARCH ENGINE

PRIMARY MAC ADDRESS TABLE 220a			SECONDARY MAC ADDRESS TABLE 220b		
	MAC ADDRESS	PORT	HASH FAMILY LINK		
305a	100		1	1	A
305b	200		4	2	B
305c	300		6	3	C
305d	400		null	4	D
				5	E
				6	F
				7	G

(57) Abstract: Disclosed is an apparatus and method for storing and searching computer node addresses in a computer network system. In one embodiment, the apparatus comprises a frame forwarding device such as a switch (115). The switch (115) includes two MAC address tables including a primary MAC address table (220a) and secondary MAC address table (220b) both for storing and searching MAC addresses. The primary table (220a) stores records that contain compressed values of MAC addresses. The records are contained in storage locations that are referenced using the compressed value of the MAC address as a search index. In order to account for searching collisions that may result from different MAC addresses compressing to the same value, each record in the primary address table (220a) is linked to a chain of records in the secondary table (220b). The records in the secondary table (220b) store the full value of the MAC address. Each chain of records in the secondary address table (220b) contains MAC addresses that belong to the same hash family.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/30 H04L12/44 H04L29/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>PATENT ABSTRACTS OF JAPAN vol. 1998, no. 13, 30 November 1998 (1998-11-30) &amp; JP 10 210066 A (SUMITOMO ELECTRIC IND LTD), 7 August 1998 (1998-08-07) abstract; figure 3 paragraphs '0008!', '0009! paragraphs '0011!'-'0032!; figure 13 --- -/--</p>	<p>1,2, 4-12,14, 15,17-21</p>

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## ° Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

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\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

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\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

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15/10/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Hadziefendic, I

## INTERNATIONAL SEARCH REPORT

International Application No.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2 337 659 A (3COM TECHNOLOGIES LTD) 24 November 1999 (1999-11-24)  abstract page 1, line 15 - line 20 page 2, line 10 - line 29 page 5, line 23 -page 6, line 9 page 6, line 24 - line 31 page 7, line 12 - line 16 page 8, line 4 - line 10 figure 3  ---	1,2, 4-12,14, 15,17-21
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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