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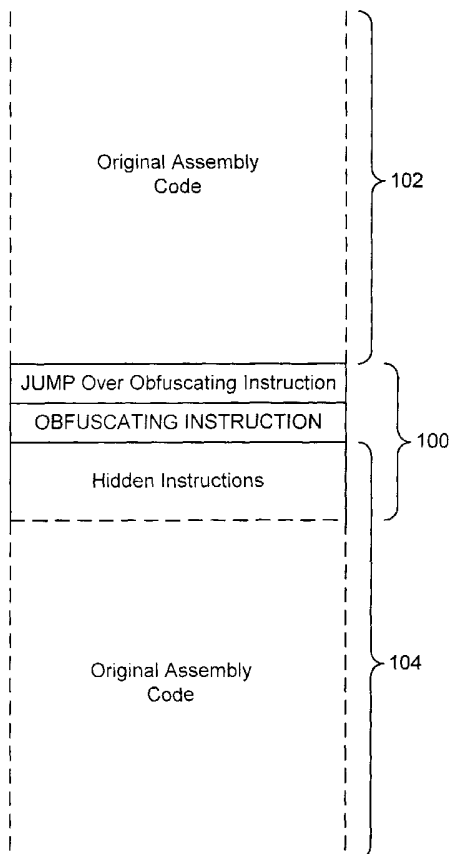
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(54) Title: SYSTEM FOR OBFUSCATING COMPUTER CODE TO PREVENT DISASSEMBLY



(57) Abstract: A system for preventing accurate disassembly of computer code. Such code masking, referred to as "obfuscation," is useful to prevent unwanted parties from making copies of an original author's software, obtaining valuable information from the software for purposes of breaking into a program, stealing secrets, making derivative works, etc. The present invention uses assembly-language instructions so as to confuse the disassembler to produce results that are not an accurate representation of the original assembly code. In one embodiment, a method is provided where an interrupt, or software exception instruction, is used to mask several subsequent instructions. The instruction used can be any instruction that causes the disassembler to assume that one or more subsequent words, or bytes, are associated with the instruction. The method, instead, jumps directly to the bytes assumed associated with the instruction and executes those bytes for a different purpose. A preferred embodiment works with a popular Microsoft "ASM" assembler language and "DASM" disassembler. The instructions used to achieve the obfuscation include "INT" instructions. Using this approach up to 17 bytes of obfuscation can be achieved with five instructions. Each instruction remains obfuscated until executed and returns to an obfuscated state afterwards.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F1/00

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)
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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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	COHEN F B: "OPERATING SYSTEM PROTECTION THROUGH PROGRAM EVOLUTION" COMPUTERS & SECURITY. INTERNATIONAL JOURNAL DEVOTED TO THE STUDY OF TECHNICAL AND FINANCIAL ASPECTS OF COMPUTER SECURITY, ELSEVIER SCIENCE PUBLISHERS. AMSTERDAM, NL, vol. 12, no. 6, 1 October 1993 (1993-10-01), pages 565-584, XP000415701 ISSN: 0167-4048	1-3,5,9,12
Y A	page 571, right-hand column, line 12 -page 572, left-hand column, line 18 page 576, left-hand column, last line -right-hand column, last line page 577, right-hand column, line 17 - line 31 -/--	6-8 4,10,11



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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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.
X	<p style="text-align: center;">----</p> J M HOFFMAN: "Re: "Hiding" variables in C" MESSAGE FROM NEWSGROUPS: COMP.LANG.C, COMP.OS.MSDOS.PROGRAMMER, SCI.CRYPT, 'Online! 4 March 1992 (1992-03-04), XP002227990 Retrieved from the Internet: <URL:http://groups.google.com/groups?selm=1992Mar4.152202.10254%40wam.umd.edu&oe=UTF-8&output=gplain> 'retrieved on 2003-01-20! the whole document	1,2,5,9, 12
X	<p style="text-align: center;">----</p> R BENTSON: "Re: "Hiding" variables in C" MESSAGE FROM NEWSGROUPS: COMP.LANG.C, COMP.OS.MSDOS.PROGRAMMER, SCI.CRYPT, 'Online! 6 March 1992 (1992-03-06), XP002227991 Retrieved from the Internet: <URL:http://groups.google.com/groups?selm=1992Mar06.191513.41268%40yuma.acns.colostate.edu&oe=UTF-8&output=gplain> 'retrieved on 2003-01-20! the whole document	1,2,5,9, 12
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