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(54) Title: SYSTEM AND METHOD FOR EFFICIENTLY GENERATING NATIVE CODE CALLS FROM BYTE CODE IN VIRTUAL MACHINES

(57) Abstract: A system and method for generation of efficient calls from compiled byte code within a virtual machine (VM) or Java Virtual Machine (JVM) environment. Current techniques used to interface dynamically compiled byte code with native libraries using stubs are unsatisfactory due to non-optimal performance and the large amount of manual work needed to maintain the stub generation code. An embodiment of the present invention addresses this by providing a system and a method for automatic stub generation based on a small set of parameters stored in a ParamInfo structure. In accordance with an embodiment, the system comprises a computer with native libraries; a virtual machine for executing a software application; a memory space for the compiled byte code; and a compiler with a calling convention adaptor that integrates native calls into the high level analysis step of the compilation of byte codes, so that the overhead for the native call is reduced.



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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/12639

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: **G06F 9/44( 2006.01),9/45( 2006.01)**

USPC: 717/118,134,135,136,137,138,139,140,144,145,146,147,148,151,152  
 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)  
 U.S. : 717/118,134,135,136,137,138,139,140,144,145,146,147,148,151,152

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 practicable, search terms used)  
 EAST BRS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0268309 A1 (GOVER et al) 30 December 2004 (30.12.2004), entire.	1-10
A,E	US 7,086,041 B2 (PLESKO et al) 01 August 2006 (01.08.06), entire.	1-10
A,E	US 7,152,229 B2 (CHONG et al) 19 December 2006 (19.12.2006), entire.	1-10
A	Us 2004/0168162 A1 (PARK et al) 26 August 2004 (26.08.2004), entire.	1-10

Further documents are listed in the continuation of Box C.  See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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"O" document referring to an oral disclosure, use, exhibition or other means		
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