United States Patent [19]

Cline et al.

[54] METHOD FOR ANALYZING CALLS OF APPLICATION PROGRAM BY INSERTING MONITORING ROUTINES INTO THE EXECUTABLE VERSION AND REDIRECTING CALLS TO THE MONITORING ROUTINES

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- [73] Assignee: 88Open Consortium, Ltd., Sunnyvale, Calif.
- [21] Appl. No.: 584,189

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- [22] Filed: Sep. 18, 1990
- [51] Int. Cl.⁵ G06F 11/30; G06F 9/45

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Patent Number: 5,313,616

[45] Date of Patent: May 17, 1994

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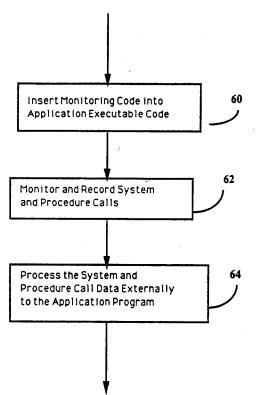
Primary Examiner—Thomas C. Lee Assistant Examiner—Paul Harrity Attorney, Agent, or Firm—Fish & Richardson

[57] ABSTRACT

[11]

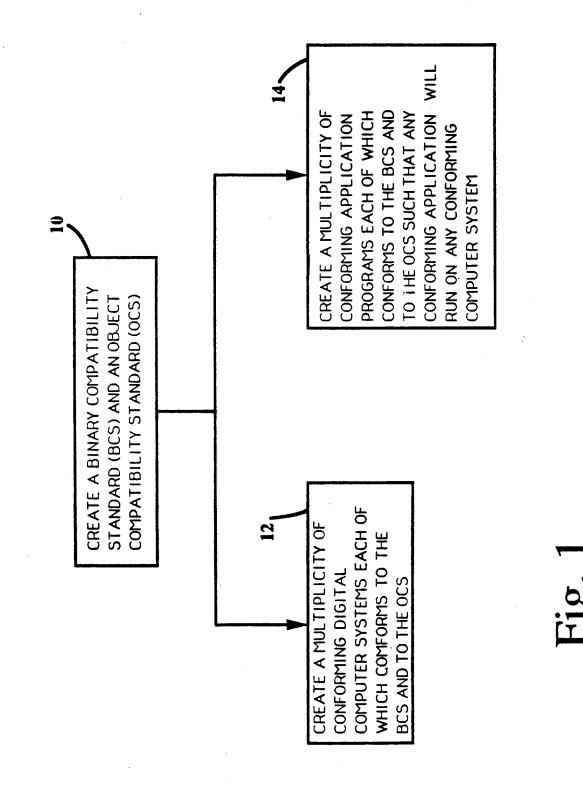
A method for verifying the conformance of an application program to a set of system rules characterized by the development of a conformance database, the performance of a static analysis of the application program to determine whether the application program is in static conformance with the conformance database and the performance of a dynamic analysis of the application program to determine whether the application program is in dynamic conformance with the conformance database. The static analysis produces a graph of the basic blocks of the application program and analyzes the graph for conformance to system rules, dead code and coverage metrics. The dynamic analysis adds a small amount of monitoring code into an executable application program which monitors the application program as it is exercised in a test harness. The monitoring code produces a log database which can be analyzed for run-time non-conformities of the application program.

11 Claims, 15 Drawing Sheets



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AND LIBRARY CALLS BASED UPON THE

BCS AND THE OCS

DEVELOP A CONFORMANCE DATABASE CONSISTING OF ACCEPTABLE SYSTEM

LIBRARY CALLS ARE NOT IN CONFORMANCE WITH THE CONFORMANCE DATABASE AND 20 PERFORM A DYNAMIC ANALYSIS OF THE DETERMINE WHETHER ANY SYSTEM OR **OBJECT CODE OF AN APPLICATION TO** OUTPUT RESULTS CONFORMANCE WITH THE CONFORMANCE PROGRAM TO DETERMINE WHETHER ANY SYSTEM OR LIBRARY CALLS ARE NOT IN THE OBJECT CODE OF AN APPLICATION DATABASE AND OUTPUT RESULTS PERFORM A STATIC ANALYSIS OF

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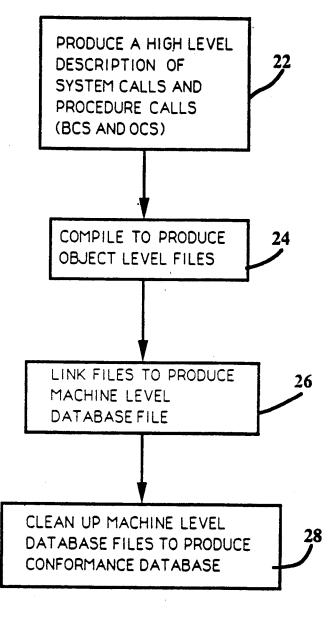
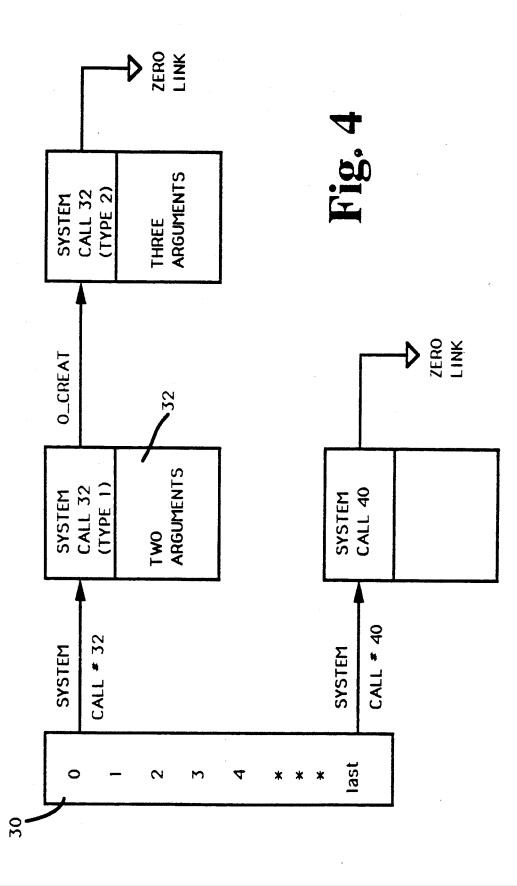


Fig. 3

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