

# 可移植的软件集成测试平台设计与实现

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摘 要: 为了构建通用的软件集成测试平台框架, 设计了三类用于关联测试平台与被测软件的容器: 1) “混合类型数据容器” 用作访问软件接口的基础数据类型, 对被测软件不同类型的输入、输出数据进行统一兼容性处理; 2) “部件接入容器” 用于封装软件部件, 利用容器中的函数指针分量, 间接调用软件部件入口模块; 3) “部件接口访问容器” 作为对部件输入、输出接口变量间接访问的媒介, 实现测试平台与被测对象的解耦合. 在此基础上, 将测试平台框架划分为可变的初始化模块与固定的周期调度控制模块, 实现测试平台与被测软件之间的逻辑隔离. 案例分析表明, 通过正确配置各类容器分量, 方便实现软件集成测试平台的跨软件移植和复用.

关键词: 软件集成测试; 测试平台; 设计方案; 移植; 复用; 通用

## Design and implementation of a transplantable software integration test platform

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Abstract: In order to construct general purpose used software integration testing platform architecture, three kinds of vessels are designed. Firstly, through using mixed type data vessels as basic data type to access software interfaces, various types of input and output data are treated uniformly for compatibility. Secondly, with the adoption of part connection vessels to encapsulate software components, the function pointer portions of the vessels are utilized to call the entry module of the software component indirectly. Finally, under the support of component interfaces accessing vessels, the input and output interface variables of components being tested are accessed indirectly, which decouples the test platform from the test objects. On this basis, the testing platform architecture is divided into variable initialization module and constant periodic scheduling control module, which realizes logical isolation between the platform and the software under test. Practical application analysis demonstrated that the software integration test platform is portable and reusable across software via proper configuration of various portions of the vessels.

Key words: software integration test; test platform; design proposal; transplant; reuse; generic

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