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**Information technology -- Measurement and rating of
performance of computer-based software systems**

信息技术 基于计算机软件系统的性能测量与评级

(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses the translation method identical with ISO/IEC 14756:1999 "IT performance measurement system based on computer software and rating. " this standard by the National Information Technology Standardization Technical Committee (SAC/TC28) and focal points.

This standard was drafted. Beijing University of Posts and Telecommunications, China Electronics Standardization Institute, Computing Center of Shandong Province, Shandong Province, computer network Laboratory network.

Introduction

In the design and use of a data processing system, execution speed is an important property. Mainly due to the nature of the software used in the system Efficiency. Measurement software execution speed, efficiency and impact of software, is most concerned about.

To measure the impact of software in terms of time-varying behavior of a data processing system, it is necessary to measure the time-varying behavior of the entire system. base this standard proposed measurement procedures and calculation software definable time efficiency value.

Time-varying behavior can be repeated estimate is very important. In experiments with a real user is not possible, a reason is not real user as may perform like a computer under the premise of no deviation of repeated operations, the other reason is that when the work or task flow from many users when, if the real user to perform such experiments, it takes a very high price. Thus, the need to use the test simulator, the simulation Via an auxiliary data processing system to simulate multi-user operation.

This means performance measurement and rating accordance with this standard requires the use of tools. The tool should be in accordance with the requirements of this standard specification Run the simulator. It should prove actual use of simulators to meet these specifications.

All relevant experimental details are recorded in the log file the user simulator through. By the log file, calculate the change line description A value (such as response time and throughput). Based on these performance values, calculated software efficiency rating value.

Not all property values need to be measured and ratings. For example, for a system with a simple software load, only a few Interactive tasks, or only a small batch execution requirements, only need to define a part of the performance indicators and their values. The method is also suitable for measuring and Rating large, complex computer-based software system (CBSS), CBSS handle complex work by a number of different user-generated flow or task flow. Definition necessary to include a number of mathematical terms, the purpose of computing performance and value rating value, operation and calibration measurement step rating Sudden correctness, and to determine the value and performance ratings of significance to obtain precise mathematical basis (statistical).

Performance measurement results by the calculated value, including the value of throughput and execution time. The end result CBSS performance evaluation by rating Value constituted. Rating value can be obtained by comparing the user needs performance values. Further, if necessary, by a reference with CBSS (e.g., Different versions have the

same hardware configuration, but with the same functionality of the application) performance compared to the value, you can treat the measured performance value CBSS Rating.

The rating result is a set of values, each value or greater than 1, or less than 1 or equal to 1, respectively, the performance is better than, worse than, equal to a given Demand justice (or another as a reference test system characteristics). The final rating for each set of values \u200b\u200bto assess workload defined separately Task type.

Appendix E and Appendix F contains special software and data, because they can not print, so the standard is not provided. In two appendices are

It provides a brief overview.

Information technology, computer-based Software System Performance Measurement and rating

1 Scope

This standard defines the computer-based software system (CBSS) user-oriented performance and how to measure ratings. From the user (for example, each Different kinds of user terminals, or data processing center operations and business users) point of view, CBSS is a data processing system.

CBSS includes all hardware and software (system software and application software), which are required for the implementation of user data processing functions to be Ask, or may affect the time to change the behavior of the CBSS.

This standard applies to all time-bound part of the test system or systems. Similarly, the network may be an integral part of a system Points, or may become a test subject. The method as defined in this standard is not limited to the classic image of a batch or terminal - host systems and other special cases, for example, for example, including client - server system or for broad understanding of the "mission" real-time systems defined. But it takes for the test environment to Say, practical test will be limited.

This standard provides the key indicators for the performance of the terms of users, as well as measuring and rating the performance values \u200b\u200b of the method. Of prescribed Energy describes the user command performance values \u200b\u200b (task) execution speed, that follows the "Trinity".

---execution time;

--- Throughput;

--- Timeliness.

User command, hereinafter referred to task, in the internal structure can be very simple or