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Part 2: Shell and utilities

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Partie 2: Enveloppe et utilités

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Information Technology — Test Methods for Measuring Conformance to POSIX® — Part 2: Shell and Utilities

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Abstract: A definition of the requirements placed upon providers of a POSIX® Conformance Test Suite for the POSIX.2 standard (ISO/IEC 9945-2:1993, IEEE/ANSI Std. 1003.2-1992) is provided. These requirements consist of a list of assertions defining those aspects of POSIX.2 that are to be tested and the associated test methods that are to be used in performing those tests. This standard is primarily aimed at test suite providers but it also defines to POSIX.2 implementors those aspects of the standard that will be verified by a conformance test suite.

Keywords: conformance, POSIX, Shell and Utilities, test methods

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— *Part 1: System interfaces*

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Introduction

(This introduction is not a normative part of IEEE Std 1003.2-1996, IEEE Standard for Information Technology — Test Methods for Measuring Conformance to POSIX® — Part 2: Shell and Utilities Interfaces, but is included for information only.)

The primary purpose of this standard is to define test methods for POSIX.2 {9}. It is intended for systems implementors and verification software developers. It is complementary to POSIX.2 {9} (second in a family of "POSIX" standards), which specifies a standard interface and environment for application programs that require the services of a "shell" command language interpreter and a set of common utility programs. (See 1.1 for a full description of the relationship between the standards.)

The majority of this standard describes the assertions that a test suite shall provide for the execution of a conformance test for the POSIX.2 {9} standard. The standard also describes the various other test methods that are to be used in the development or execution of such a test suite, and it describes the complimentary procedures that are needed to assess the results of the execution of the test suite. This standard should be read in conjunction with ISO/IEC 13210:1994 (ANSI/IEEE Std 1003.3-1991) Standard for Information Technology — Test Methods for Measuring Conformance to POSIX {11}, which defines the general test method requirements applicable to POSIX Conformance Testing.

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The standard is divided into nine parts:

— General, including a statement of scope, normative references, a description of test suite conformance requirements, and a description of the test methods specific to POSIX.2 {9} testing (Section 1).

— Assertions for definitions, general requirements, and the environment available to applications (Section 2).

— Assertions for the shell command language interpreter (Section 3).

— Assertions for the utilities in the required "Execution Environment Utilities" (Section 4).

— Assertions for the utilities in the optional "User Portability Utilities" (Section 5).

— Assertions for the utilities in the optional "Software Development Utilities" (Section 6).

— Assertions for the utilities in the optional "C Language Development Utilities" (Annex A).

— Assertions for C Language Bindings option (Annex B).

— Assertions for the utilities in the optional "FORTRAN Development and Runtime Utilities" (Annex C).

This introduction, any footnotes, notes accompanying the text, and the *informative* annexes are not considered part of the standard. Annexes A through C are normative and the other annexes are informative.

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Also we wish to thank the organizations employing the members of the working group and the balloting group for both covering the expenses related to attending and participating in meetings, and for donating the time required both in and out of meetings for this effort.

Related Standards Activities

Activities to extend this standard to address additional requirements are in progress, and similar efforts can be anticipated in the future.

The following areas are under active consideration at this time or are expected to become active in the near future:[1)]

(1) Language-independent service descriptions of POSIX.1 {8}

(2) C, Ada, and FORTRAN language bindings to (1)

(3) Verification testing methods

(4) Realtime facilities

(5) Secure/Trusted system considerations

(6) Network interface facilities

(7) System administration

(8) Graphical user interfaces

(9) Profiles describing application- or user-specific combinations of open systems standards for: supercomputing, multiprocessor, and batch extensions; transaction processing; realtime systems; and multiuser systems based on historical models

(10) An overall guide to POSIX-based or related open systems standards and profiles

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1.1 Scope

This document defines a standard for test methods for the interface to command interpretation, or "shell," services and common utility programs for application programs. These test methods are derived from the definitions contained in ISO/IEC 9945-2:1993 (IEEE Std 1003.2-1992) {9}, hereinafter referred to as "POSIX.2 {9}." The services and programs described in POSIX.2 {9} are complementary to those specified by ISO/IEC 9945-1:1990 (IEEE Std 1003.1-1990) {8}, hereinafter referred to as "POSIX.1 {8}."

This standard has been designed to be used by both verification suite authors and system implementors. However, it is intended to be a reference document and not a tutorial on the construction of verification suites or implementations.

1.2 Normative References

The following standards contain provisions that, through references in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.