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Information technology — Portable Operating System Interface (POSIX®) —

Part 4: Rationale

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IEEE Std 1003.1™-2001
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and IEEE Std 1003.2-1992)

The Open Group Technical Standard
Base Specifications, Issue 6

Information technology—Portable Operating System Interface (POSIX®)

Part 4: Rationale

Sponsor

Portable Applications Standards Committee
of the
IEEE Computer Society

and

The Open Group

Adopted as an International Standard by the
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IEEE

THE Open GROUP

American National Standard

Abstract

This standard defines a standard operating system interface and environment, including a command interpreter (or ‘‘shell’’), and common utility programs to support applications portability at the source code level. It is the single common revision to IEEE Std 1003.1-1996, IEEE Std 1003.2-1992, and the Base Specifications of The Open Group Single UNIX® † Specification, Version 2. This standard is intended to be used by both applications developers and system implementors and comprises four major components (each in an associated volume):

- General terms, concepts, and interfaces common to all volumes of this standard, including utility conventions and C-language header definitions, are included in the Base Definitions volume.
- Definitions for system service functions and subroutines, language-specific system services for the C programming language, function issues, including portability, error handling, and error recovery, are included in the System Interfaces volume.
- Definitions for a standard source code-level interface to command interpretation services (a ‘‘shell’’) and common utility programs for application programs are included in the Shell and Utilities volume.
- Extended rationale that did not fit well into the rest of the document structure, containing historical information concerning the contents of this standard and why features were included or discarded by the standard developers, is included in the Rationale (Informative) volume.

The following areas are outside the scope of this standard:

- Graphics interfaces
- Database management system interfaces
- Record I/O considerations
- Object or binary code portability
- System configuration and resource availability

This standard describes the external characteristics and facilities that are of importance to applications developers, rather than the internal construction techniques employed to achieve these capabilities. Special emphasis is placed on those functions and facilities that are needed in a wide variety of commercial applications.

Keywords

application program interface (API), argument, asynchronous, basic regular expression (BRE), batch job, batch system, built-in utility, byte, child, command language interpreter, CPU, extended regular expression (ERE), FIFO, file access control mechanism, input/output (I/O), job control, network, portable operating system interface (POSIX® †), parent, shell, stream, string, synchronous, system, thread, X/Open System Interface (XSI)

† See **Trademarks** (on page xxvi).

International Standard ISO/IEC 9945-4:2002(E)

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The main task of the joint technical Committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC 9945-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

This first edition of ISO/IEC 9945-4, together with ISO/IEC 9945-1, ISO/IEC 9945-2 and ISO/IEC 9945-3, cancels and replaces ISO/IEC 9945-1:1996 and ISO/IEC 9945-2:1993, which have been technically revised.

ISO/IEC 9945 consists of the following parts, under the general title *Information technology — Portable Operating System Interface (POSIX®)*:

— *Part 1: Base Definitions*

— *Part 2: System Interfaces*

— *Part 3: Shell and Utilities*

— *Part 4: Rationale*

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