

# INTERNATIONAL STANDARD

# ISO/IEC 9945-1

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The Open Group Technical Standard**  
Includes IEEE Std 1003.1™-2001 and IEEE Std 1003.1™-2001/Cor 1-2002

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

### Part 1: Base Definitions

*Technologies de l'information — Interface pour la portabilité des systèmes  
(POSIX®) —*

*Partie 1: Définitions de base*

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# Information Technology — Portable Operating System Interface (POSIX®)

## Part 1: Base Definitions

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

This fourth edition of ISO/IEC 9945-1 is a minor revision and, together with ISO/IEC 9945-2, ISO/IEC 9945-3, and ISO/IEC 9945-4, cancels and replaces ISO/IEC 9945-1:2002, ISO/IEC 9945-2:2002, ISO/IEC 9945-3:2002 and ISO/IEC 9945-4:2002.

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

- *Part 1: Base Definitions*
- *Part 2: System Interfaces*
- *Part 3: Shell and Utilities*
- *Part 4: Rationale*



## Abstract

This standard is simultaneously ISO/IEC 9945:2003, IEEE Std 1003.1-2001, and forms the core of the Single UNIX Specification, Version 3.

The IEEE Std 1003.1, 2003 Edition includes IEEE Std 1003.1-2001/Cor 1-2002 incorporated into IEEE Std 1003.1-2001 (base document). The Corrigendum addresses problems discovered since the approval of IEEE Std 1003.1-2001. These changes are mainly due to resolving integration issues raised by the merger of the base documents that were incorporated into IEEE Std 1003.1-2001, which is the single common revision to IEEE Std 1003.1<sup>TM</sup>-1996, IEEE Std 1003.2<sup>TM</sup>-1992, ISO/IEC 9945-1:1996, ISO/IEC 9945-2:1993, and the Base Specifications of The Open Group Single UNIX<sup>®</sup> Specification, Version 2.

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. 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, which contains 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<sup>®</sup>), parent shell, stream, string, synchronous, system, thread, X/Open System Interface (XSI)

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