FINAL DRAFT International Standard

ISO/IEC/IEEE FDIS 9945

Information technology — Portable Operating System Interface (POSIX®) Base Specifications, Issue 8

ISO/IEC JTC **1**/SC **22**

Secretariat: **ANSI**

Voting begins on:
2025-09-18

Voting terminates on:
2026-02-05

This document is circulated as received from the committee secretariat.

FAST TRACK PROCEDURE

Reference number
ISO/IEC/IEEE FDIS 9945:2025(en)

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Published in Switzerland

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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ISO/IEC/IEEE 9945 was prepared by the Microprocessor Committee of the IEEE Computer Society (as IEEE Std 1003.1-2024) and The Open Group (as The Open Group Technical Standard Base Specifications, Issue 8) and drafted in accordance with its editorial rules. It was adopted, under the “fast-track procedure” defined in the Partner Standards Development Organization cooperation agreement between ISO and IEEE, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 9945:2009), which has been technically revised. It also incorporates the Technical Corrigenda ISO/IEC/IEEE 9945:2009/Cor. 1:2013 and ISO/IEC/IEEE 9945:2009/Cor. 2:2017.

The main changes are as follows:

— Change history is described in the Rationale (Informative) volume of POSIX.1-2024 and in the CHANGE HISTORY section of reference pages.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

IEEE Std 1003.1™-2024
(Revision of IEEE Std 1003.1-2017)

The Open Group Standard, Base Specifications, Issue 8

IEEE Standard for Information Technology—Portable Operating System Interface (POSIX™)

Base Specifications, Issue 8

Developed by the

Microprocessor Committee
of the
IEEE Computer Society

and

The Open Group

Approved 20 May 2024

IEEE SA Standards Board

IEEE Std 1003.1™-2024 (Revision of IEEE Std 1003.1-2017)
IEEE Standard for Information Technology—Portable Operating System Interface (POSIX®)
The Open Group Standard, Base Specifications, Issue 8

Abstract: POSIX.1-2024 is simultaneously IEEE Std 1003.1™-2024 and The Open Group Standard Base Specifications, Issue 8.

POSIX.1-2024 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. POSIX.1-2024 is intended to be used by both application 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 POSIX.1-2024 and why features were included or discarded by the standard developers, is included in the Rationale (Informative) volume.

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Published 14 June 2024 by IEEE in the United States of America.
PDF: ISBN 979-8-8557-0793-9 STD26978
Print: ISBN 979-8-8557-0794-6 STDPD26978

Published 14 June 2024 by The Open Group in the United Kingdom
Doc. Number: C243
ISBN: 1-957866-40-6

This release of this standard is dedicated to the memory of Jörg Schilling and Donn Terry.

This standard has been prepared by the Austin Group. Feedback relating to the material contained within this standard may be submitted by using the Austin Group web site at www.opengroup.org/austin/defectform.html.

The following areas are outside the scope of POSIX.1-2024:

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

POSIX.1-2024 describes the external characteristics and facilities that are of importance to application 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), built-in utility, byte, child, command language interpreter, CPU, extended regular expression (ERE), FIFO, file access control mechanism, IEEE 1003.1™, input/output (I/O), job control, network, parent, portable operating system interface (POSIX™), shell, stream, string, synchronous, system, thread, X/Open System Interface (XSI)

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