

# TECHNICAL REPORT

**ISO/IEC  
TR  
24715**

First edition  
2006-11-01

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## **Information technology — Programming languages, their environments and system software interfaces — Technical Report on the Conflicts between the ISO/IEC 9945 (POSIX) and the Linux Standard Base (ISO/IEC 23360)**

*Technologies de l'information — Langages de programmation, leurs environnements et interfaces de logiciel système — Rapport technique sur les conflits entre l'ISO/CEI 9945 (POSIX) et la base normalisée Linux (ISO/CEI 23360)*

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Reference number  
ISO/IEC TR 24715:2006(E)



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Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
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Published in Switzerland

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard (“state of the art”, for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TR 24715, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*.

# Introduction

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The purpose of this Type 3 Technical Report (informative) is to document the areas of conflict between ISO/IEC 9945 (POSIX<sup>1</sup>) and the Free Standards Group's Linux<sup>®</sup> Standard Base specification (ISO/IEC 23360) such that it can be utilized by the appropriate technical committees when considering harmonization between the standards efforts.

ISO/IEC 9945 (POSIX) is an important International Standard in use throughout the world. There is a significant investment in applications developed for the ISO POSIX International Standard. With the emergence of a standardization initiative for the Linux operating system, there are some areas of conflict that have been identified between the Linux Standard Base specification (ISO/IEC 23360) and the ISO POSIX International Standards. There is an essential market requirement that the conflicts be resolved so that an application can be written to conform to both International Standards. Hundreds of millions of dollars of applications are built upon these International Standards. This Technical Report is intended as a starting point to look at resolution of this issue.

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<sup>1</sup> POSIX<sup>®</sup> is a registered trademark of the IEEE.

<sup>2</sup> Linux<sup>®</sup> is a registered trademark of Linus Torvalds.

## Participants

*The following people contributed work to this Technical Report:*

Stuart Anderson

Andrew Josey

The Austin Group

Paul Eggert

Nick Stoughton

The LSB Workgroup

# Information technology — Programming languages, their environments and system software interfaces — Technical Report on the Conflicts between the ISO/IEC 9945 (POSIX) and the Linux Standard Base (ISO/IEC 23360)

## 1 Scope

The scope of this Technical Report is to identify areas of conflict between the Linux Standard Base (LSB<sup>3</sup>) 3.1 specification (ISO/IEC 23360) and the ISO/IEC 9945 (POSIX) standard.

It is based on the Linux Standard Base Core Specification 3.1, which was submitted to ISO/IEC on 2005-10-31 for publication as ISO/IEC 23360; and ISO/IEC 9945:2003 edition dated 2003-08-15 with ISO/IEC 9945:2003/Cor.1:2004 (published 2004-09-15).

The audience for this Technical Report is the technical workgroups that develop the standards; that is, the Austin Group and the Linux Standard Base workgroup. It is also intended to be of interest to systems engineers, technical managers and procurement officers.

This document is organized in the following clauses:

- Clause 2 provides a list of normative references.
- Clause 3 provides the terms and definitions used in this document.
- Clause 4 provides a list of differences that could be possible conflicts or extensions in the System Interfaces.
- Clause 5 provides a list of differences that could be possible conflicts or extensions in the Shell and Utilities.
- Appendix A provides background information on the POSIX standards and the LSB.

<sup>3</sup> LSB™ is a trademark of the Free Standards Group.

## 2 Normative References

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The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9945-1:2003, *Information technology — Portable Operating System Interface (POSIX) — Part 1: Base Definitions*

ISO/IEC 9945-1:2003/Cor 1:2004

ISO/IEC 9945-2:2003, *Information technology — Portable Operating System Interface (POSIX) — Part 2: System Interfaces*

ISO/IEC 9945-2:2003/Cor 1:2004

ISO/IEC 9945-3:2003, *Information technology — Portable Operating System Interface (POSIX) — Part 3: Shell and Utilities*

ISO/IEC 9945-3:2003/Cor 1:2004

ISO/IEC 9945-4:2003, *Information technology — Portable Operating System Interface (POSIX) — Part 4: Rationale*

ISO/IEC 9945-4:2003/Cor 1:2004

ISO/IEC 23360 (all parts), *Linux Standard Base (LSB) Core Specification 3.1*