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**Linux Standard Base (LSB) —**  
**Part 1-1:**  
**Common definitions**

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## Foreword

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This document was prepared by the Linux Foundation as Linux Standard Base (LSB): Common Definitions and drafted in accordance with its editorial rules. It was assigned to Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 22, *Programming languages, their environments and system software interfaces*, and adopted by National Bodies.

This first edition of ISO/IEC 23360-1-1 cancels and replaces ISO/IEC 23360-1:2006, which has been technically revised.

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## Introduction

The LSB defines a binary interface for application programs that are compiled and packaged for LSB-conforming implementations on many different hardware architectures. A binary specification must include information specific to the computer processor architecture for which it is intended. To avoid the complexity of conditional descriptions, the specification has instead been divided into generic parts which are augmented by one of several architecture-specific parts, depending on the target processor architecture; the generic part will indicate when reference must be made to the architecture part, and vice versa.

This document should be used in conjunction with the documents it references. This document enumerates the system components it includes, but descriptions of those components may be included entirely or partly in this document, partly in other documents, or entirely in other reference documents. For example, the section that describes system service routines includes a list of the system routines supported in this interface, formal declarations of the data structures they use that are visible to applications, and a pointer to the underlying referenced specification for information about the syntax and semantics of each call. Only those routines not described in standards referenced by this document, or extensions to those standards, are described in the detail. Information referenced in this way is as much a part of this document as is the information explicitly included here.

The specification carries a version number of either the form  $x.y$  or  $x.y.z$ . This version number carries the following meaning:

1. The first number ( $x$ ) is the major version number. Versions sharing the same major version number shall be compatible in a backwards direction; that is, a newer version shall be compatible with an older version. Any deletion of a library results in a new major version number. Interfaces marked as deprecated may be removed from the specification at a major version change.
2. The second number ( $y$ ) is the minor version number. Libraries and individual interfaces may be added, but not removed. Interfaces may be marked as deprecated at a minor version change. Other minor changes may be permitted at the discretion of the LSB workgroup.
3. The third number ( $z$ ), if present, is the editorial level. Only editorial changes should be included in such versions.

Since this specification is a descriptive Application Binary Interface, and not a source level API specification, it is not possible to make a guarantee of 100% backward compatibility between major releases. However, it is the intent that those parts of the binary interface that are visible in the source level API will remain backward compatible from version to version, except where a feature marked as "Deprecated" in one release may be removed from a future release. Implementors are strongly encouraged to make use of symbol versioning to permit simultaneous support of applications conforming to different releases of this specification.

LSB is a trademark of the Linux Foundation. Developers of applications or implementations interested in using the trademark should see the Linux Foundation Certification Policy for details.

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# 1 Scope

The Linux Standard Base (LSB) defines a system interface for compiled applications and a minimal environment for support of installation scripts. Its purpose is to enable a uniform industry standard environment for high-volume applications conforming to the LSB.

The LSB specification set is divided into modules, each of which provides fundamental system interfaces, libraries, and runtime environment upon which all conforming applications and libraries using that module depend.

The modules of the Linux Standard Base are:

- LSB Core - core components
- LSB Desktop - desktop related components
- LSB Languages - runtime languages
- LSB Imaging - printing and scanning
- LSB Trial Use - components that are not yet mandatory

Interfaces described in the LSB Core module specification are supplemented by other LSB module specifications. All other modules depend on the presence of LSB Core.

These specifications are composed of two basic parts: a common part describing those parts of the interface that remain constant across all implementations of the LSB, and an architecture-specific part describing the parts of the interface that vary by processor architecture. Together, the common part and the relevant architecture-specific part for a single hardware architecture provide a complete interface specification for compiled application programs on systems that share a common hardware architecture. Whenever a section of the common part is supplemented by architecture-specific information, the common part includes a reference to the architecture-specific part. Architecture-specific parts of an LSB module specification may also contain additional information that is not referenced in the common part.

The LSB contains both a set of Application Program Interfaces (APIs) and Application Binary Interfaces (ABIs). APIs may appear in the source code of portable applications, while the compiled binary of that application may use the larger set of ABIs. A conforming implementation provides all of the ABIs listed here. The compilation system may replace (e.g. by macro definition) certain APIs with calls to one or more of the underlying binary interfaces, and may insert calls to binary interfaces as needed.

The LSB is primarily a binary interface definition. Not all of the source level APIs available to applications may be contained in this specification.

## 2 Requirements

### 2.1 Relevant Libraries

The libraries listed in the following tables shall be available on a Linux Standard Base system, with the specified runtime names. The libraries listed in Table 2-2 are architecture specific, but shall be available on all LSB conforming systems under a name specified in each Architecture Specific Part of the LSB Core module.

Table 2-1 LSB Core Module Library Names

Library	Runtime Name
libcrypt	libcrypt.so.1
libdl	libdl.so.2
libgcc_s	libgcc_s.so.1
libncurses	libncurses.so.5
libncursesw	libncursesw.so.5
libnspr4	libnspr4.so
libnss3	libnss3.so
libpam	libpam.so.0
libpthread	libpthread.so.0
librt	librt.so.1
libssl3	libssl3.so
libstdcxx	libstdc++.so.6
libutil	libutil.so.1
libz	libz.so.1

Table 2-2 LSB Core Module Library Names which vary by architecture

Library	Runtime Name
libc	See architecture specific part.
libm	See architecture specific part.
proginterp	See architecture specific part.

Table 2-3 LSB Desktop Module Library Names

Library	Runtime Name
libGL	libGL.so.1
libGLU	libGLU.so.1
libICE	libICE.so.6
libQtCore	libQtCore.so.4
libQtGui	libQtGui.so.4



<b>Library</b>	<b>Runtime Name</b>
libQtNetwork	libQtNetwork.so.4
libQtOpenGL	libQtOpenGL.so.4
libQtSql	libQtSql.so.4
libQtSvg	libQtSvg.so.4
libQtXml	libQtXml.so.4
libSM	libSM.so.6
libX11	libX11.so.6
libXext	libXext.so.6
libXft	libXft.so.2
libXi	libXi.so.6
libXrender	libXrender.so.1
libXt	libXt.so.6
libXtst	libXtst.so.6
libasound	libasound.so.2
libatk-1.0	libatk-1.0.so.0
libcairo	libcairo.so.2
libcairo-gobject	libcairo-gobject.so.2
libcairo-script-interpreter	libcairo-script-interpreter.so.2
libfontconfig	libfontconfig.so.1
libfreetype	libfreetype.so.6
libgdk-x11-2.0	libgdk-x11-2.0.so.0
libgdk_pixbuf-2.0	libgdk_pixbuf-2.0.so.0
libgdk_pixbuf_xlib-2.0	libgdk_pixbuf_xlib-2.0.so.0
libgio-2.0	libgio-2.0.so.0
libglib-2.0	libglib-2.0.so.0
libgmodule-2.0	libgmodule-2.0.so.0
libgobject-2.0	libgobject-2.0.so.0
libgthread-2.0	libgthread-2.0.so.0
libgtk-x11-2.0	libgtk-x11-2.0.so.0
libjpeg	libjpeg.so.62
libpango-1.0	libpango-1.0.so.0
libpangocairo-1.0	libpangocairo-1.0.so.0
libpangoft2-1.0	libpangoft2-1.0.so.0

Library	Runtime Name
libpangoxft-1.0	libpangoxft-1.0.so.0
libpng12	libpng12.so.0
libtiff	libtiff.so.5
libxcb	libxcb.so.1

Table 2-4 LSB Imaging Module Library Names

Library	Runtime Name
libcups	libcups.so.2
libcupsimage	libcupsimage.so.2
libsane	libsane.so.1

Table 2-5 LSB Languages Module Library Names

Library	Runtime Name
libxml2	libxml2.so.2
libxslt	libxslt.so.1

## 2.2 Relevant Commands

The commands listed in the following tables shall be available on a Linux Standard Base system, with the specified runtime names.

Table 2-6 LSB Core Module Command Names

[	du	install	mv	strings
ar	echo	install_initd	newgrp	strip
at	ed	ipcrm	nice	stty
awk	egrep	ipcs	nl	su
basename	env	join	nohup	sync
batch	expand	kill	od	tail
bc	expr	killall	passwd	tar
cat	false	ln	paste	tee
chfn	fgrep	locale	patch	test
chgrp	file	localedef	pathchk	tic
chmod	find	logger	pax	time
chown	fold	logname	pidof	touch
chsh	fuser	lp	pr	tput
cksum	genscat	lpr	printf	tr
cmp	getconf	ls	ps	true

col	gettext	lsb_release	pwd	tsort
comm	grep	m4	remove_initd	tty
cp	groupadd	mailx	renice	umount
cpio	groupdel	make	rm	uname
crontab	groupmod	man	rmdir	unexpand
csplit	groups	md5sum	sed	uniq
cut	gunzip	mkdir	sendmail	useradd
date	gzip	mkfifo	seq	userdel
dd	head	mknod	sh	usermod
df	hostname	mktemp	shutdown	wc
diff	iconv	more	sleep	xargs
dirname	id	mount	sort	zcat
dmesg	infocmp	msgfmt	split	

Table 2-7 LSB Desktop Module Command Names

fc-cache	fc-match	xdg-desktop-menu	xdg-icon-resource	xdg-open
fc-list	xdg-desktop-icon	xdg-email	xdg-mime	xdg-screensaver

Table 2-8 LSB Imaging Module Command Names

foomatic-rip	gs			
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Table 2-9 LSB Languages Module Command Names

perl	python			
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## 2.3 LSB Implementation Conformance

A conforming implementation is necessarily architecture specific, and must provide the interfaces specified by both the generic LSB specifications and the applicable architecture specific part.

**Rationale:** An implementation must provide *at least* the interfaces specified in these specifications. It may also provide additional interfaces.

A conforming implementation shall satisfy the following requirements:

- A processor architecture represents a family of related processors which may not have identical feature sets. The architecture specific part of the LSB Core Specification for a given target processor architecture describes a minimum acceptable processor. The implementation shall provide all features of this processor, whether in hardware or through emulation transparent to the application.