ISO/IEC 23360-4:2006-12 (E)

Linux Standard Base (LSB) core specification 3.1 - Part 4: Specification for AMD64 architecture

Contents

Page

I Introductory Elements 0

1 Scope 1
1.1 General 1
1.2 Module Specific Scope 1

2 References 2
2.1 Normative References 2
2.2 Informative References/Bibliography 4

3 Requirements 7
3.1 Relevant Libraries 7
3.2 LSB Implementation Conformance 7
3.3 LSB Application Conformance 8

4 Definitions 10

5 Terminology 11

6 Documentation Conventions 13

II Executable and Linking Format (ELF) 14

7 Introduction 15

8 Low Level System Information 16
8.1 Machine Interface 16
8.2 Function Calling Sequence 17
8.3 Operating System Interface 18
8.4 Process Initialization 18
8.5 Coding Examples 18
8.6 C Stack Frame 19
8.7 Debug Information 19

9 Object Format 20
9.1 Introduction 20
9.2 ELF Header 20
9.3 Sections 20
9.4 Symbol Table 21
9.5 Relocation 21

10 Program Loading and Dynamic Linking 22
10.1 Introduction 22
10.2 Program Header 22
10.3 Program Loading 22
10.4 Dynamic Linking 22

III Base Libraries 24

11 Libraries 25
11.1 Program Interpreter/Dynamic Linker 25

11.2 Interfaces for libc ... 25
11.3 Data Definitions for libc ... 40
11.4 Interfaces for libm ... 52
11.5 Data Definitions for libm ... 57
11.6 Interface Definitions for libm ... 58
11.7 Interfaces for libpthread ... 59
11.8 Data Definitions for libpthread ... 62
11.9 Interfaces for libgcc_s ... 62
11.10 Data Definitions for libgcc_s ... 63
11.11 Interface Definitions for libgcc_s ... 64
11.12 Interfaces for libdl ... 69
11.13 Data Definitions for libdl ... 70
11.14 Interfaces for libcrypt ... 70

Foreword ... vii

Introduction ... viii

IV Utility Libraries ... 71

12 Libraries ... 72
12.1 Interfaces for libz ... 72
12.2 Data Definitions for libz ... 72
12.3 Interfaces for libncurses ... 72
12.4 Data Definitions for libncurses ... 73
12.5 Interfaces for libutil ... 73

V Package Format and Installation ... 75

13 Software Installation ... 76
13.1 Package Dependencies ... 76
13.2 Package Architecture Considerations ... 76

A Alphabetical Listing of Interfaces ... 77
A.1 libgcc_s ... 77
A.2 libm ... 77

List of Tables 2-1 Normative References ... 2

2-2 Other References ... 4

3-1 Standard Library Names ... 7

8-1 Non Conforming Instructions ... 16

9-1 ELF Special Sections ... 20

9-2 Additional Special Sections ... 21

11-1 libc Definition ... 25

11-2 libc - RPC Function Interfaces ... 25

11-3 libc - System Calls Function Interfaces ... 26

11-4 libc - Standard I/O Function Interfaces ... 28

11-5 libc - Standard I/O Data Interfaces ... 29

11-6 libc - Signal Handling Function Interfaces ... 29

11-7 libc - Signal Handling Data Interfaces ... 30

11-8 libc - Localization Functions Function Interfaces 30
11-9 libc - Localization Functions Data Interfaces 31
11-10 libc - Socket Interface Function Interfaces 31
11-11 libc - Wide Characters Function Interfaces 32
11-12 libc - String Functions Function Interfaces 33
11-13 libc - IPC Functions Function Interfaces 34
11-14 libc - Regular Expressions Function Interfaces 34
11-15 libc - Character Type Functions Function Interfaces 34
11-16 libc - Time Manipulation Function Interfaces 35
11-17 libc - Time Manipulation Data Interfaces 35
11-18 libc - Terminal Interface Functions Function Interfaces 36
11-19 libc - System Database Interface Function Interfaces 36
11-20 libc - Language Support Function Interfaces 37
11-21 libc - Large File Support Function Interfaces 37
11-22 libc - Standard Library Function Interfaces 38
11-23 libc - Standard Library Data Interfaces 40
11-24 libm Definition 52
11-25 libm - Math Function Interfaces 53
11-26 libm - Math Data Interfaces 57
11-27 libpthread Definition 59
11-28 libpthread - Realtime Threads Function Interfaces 59
11-29 libpthread - Posix Threads Function Interfaces 60
11-30 libpthread - Thread aware versions of libc interfaces Function Interfaces 61 11-31
libgcc_s Definition 62
11-32 libgcc_s - Unwind Library Function Interfaces 63
11-33 libdl Definition 69
11-34 libdl - Dynamic Loader Function Interfaces 69
11-35 libcrypt Definition 70
11-36 libcrypt - Encryption Function Interfaces 70
12-1 libz Definition 72
12-2 libncurses Definition 73

12-3 libutil Definition 73

12-4 libutil - Utility Functions Function Interfaces 74

A-1 libgcc_s Function Interfaces 77

A-2 libm Function Interfaces 77