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IEEE Std 1003.1™-2001/Cor 1-2002

**The Open Group Technical Standard
Base Specifications, Issue 6**

1003.1™-2001/Cor 1-2001

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

Technical Corrigendum 1

Sponsor

Portable Applications Standards Committee

of the

IEEE Computer Society

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Abstract

This Technical Corrigendum addresses problems discovered since the approval of The Open Group Base Specifications, Issue 6, IEEE Std 1003.1-2001, and ISO/IEC 9945:2002. These are mainly due to resolving integration issues raised by the merger of the original Base documents.

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™), parent, shell, stream, string, synchronous, system, thread, X/Open System Interface (XSI)

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1. Introduction

1.1 Scope

This Technical Corrigendum addresses issues raised in defect reports and interpretation requests submitted up until August 15, 2002, that meet all of the following criteria: (a.) They are in the scope of the approved standard. (b.) They contain no new APIs (functions/utilities); however, they may add enumeration symbols, non-function #defines, and reserve additional namespaces. (c.) They address contradictions between different parts of the standard, or add consistency between the standard and overriding standards, or address security-related problems.

2. Changes to Base Definitions

This section contains the set of changes to the original text of the Base Definitions.

```

0001 Change Number: XBD/TC1/D6/1 [XBD ERN 1]
0002 On Page: 2 Line: 69 Section: 1.1
0003 In the list of legacy interfaces not carried forward, change from:
0004 "regcmp(),"
0005 to:
0006 "regcmp(), regex(),"
0007 Change from:
0008 "step(),"
0009 to:
0010 "step(), ttyslot(), valloc(),"
0011 Rationale: This change is for consistency with the long scope document.

0012 Change Number: XBD/TC1/D6/2 [XBD ERN 3]
0013 On Page: 13 Line: 537 Section: 1.5.1
0014 In the Codes section, change from:
0015 "Thread Stack Address Size"
0016 to:
0017 "Thread Stack Size Attribute"
0018 On Page: 401 Line: 14133 Section: <unistd.h>
0019 Change from:
0020 "Thread Stack Address Size"
0021 to:
0022 "Thread Stack Size Attribute"

```

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0023 **Change Number: XBD/TC1/D6/3** [bwg2002-001]

0024 On Page: 20 Line: 794-797 Section: 2.1.4.2

0025 In XSI Shell and Utilities Conformance, in the fifth bullet (describing
0026 the XSI Development Utilities option):

0027 Add "nm" to the list of utilities in the table on Lines 794-797.

0028 **Change Number: XBD/TC1/D6/4** [XBD ERN 11]

0029 On Page: 100 Line: 3129 Section: 4.10

0030 In Memory Synchronization, add the following new paragraph in Section
0031 4.10 beneath the table of functions:

0032 "The pthread_once() function shall synchronize memory for the
0033 first call in each thread for a given pthread_once_t object."

0034 **Change Number: XBD/TC1/D6/5** [XBD ERN 13,14]

0035 On Page: 142 Line: 4882 Section: 7.3.3.1

0036 In the LC_MONETARY Category of the POSIX locale, add after Line 4882:

0037 int_p_cs_precedes -1
0038 int_p_sep_by_space -1
0039 int_n_cs_precedes -1
0040 int_n_sep_by_space -1
0041 int_p_sign_posn -1
0042 int_n_sign_posn -1

0043 Add after Line 4902 (in the table on Page 143):

0044	int_p_cs_precedes	--	N/A	{CHAR_MAX}	-1
0045	int_p_sep_by_space	--	N/A	{CHAR_MAX}	-1
0046	int_n_cs_precedes	--	N/A	{CHAR_MAX}	-1
0047	int_n_sep_by_space	--	N/A	{CHAR_MAX}	-1
0048	int_p_sign_posn	--	N/A	{CHAR_MAX}	-1
0049	int_n_sign_posn	--	N/A	{CHAR_MAX}	-1

0050 On Page: 156 Line: 5477 Section: 7.4.2

0051 Add after Line 5477:

0052	'int_p_cs_precedes' 'int_p_sep_by_space'
0053	'int_n_cs_precedes' 'int_n_sep_by_space'
0054	'int_p_sign_posn' 'int_n_sign_posn'

0055 Rationale: The LC_MONETARY int_[np]_* values are missing from the POSIX
0056 locale definition.

0057 **Change Number: XBD/TC1/D6/6** [Defect raised at May 2002 Plenary]

0058 On Page: 140 Line: 4787-4792 Section: 7.3.3, LC_MONETARY

0059 Change from:

0060	int_curr_symbol	The international currency symbol. The operand shall
0061		be a four-character string, with the first three
0062		characters containing the alphabetic international
0063		currency symbol in accordance with those specified in
0064		the ISO 4217:1995 standard. The fourth character
0065		shall be the character used to separate the

0066 international currency symbol from the monetary
 0067 quantity.
 0068 to:

0069 int_curr_symbol The international currency symbol. The operand shall
 0070 be a four-character string, with the first three
 0071 characters containing the alphabetic international
 0072 currency symbol. The international currency symbol
 0073 should be chosen in accordance with those specified
 0074 in the ISO 4217 standard. The fourth character shall
 0075 be the character used to separate the international
 0076 currency symbol from the monetary quantity.

0077 Rationale: The text as written with the reference to ISO 4217:1995 did
 0078 not allow for the Euro. The correction is stated using the term
 0079 "should" intentionally, in order to make this a recommendation
 0080 rather than a restriction on implementations. This allows for
 0081 flexibility in implementations on how they handle future currency
 0082 symbol additions. The approval year of the ISO 4217 standard is
 0083 intentionally omitted to allow for future versions.

0084 **Change Number: XBD/TC1/D6/7** [XBD ERN 16]

0085 On Page: 164 Line: 5797 Section: 8.3

0086 In the TZ Environment variable, change from:

0087 "The contents of the environment variable named TZ shall be used by
 0088 the ctime(), localtime(), strftime(), and mktime() functions ..."

0089 to:

0090 "The contents of the environment variable named TZ shall be used by
 0091 the ctime(), localtime(), strftime(), mktime(),
 0092 [Shade on]ctime_r(), and localtime_r()[Shade off] functions ..."

0093 [Editorial Note: The shading denoted in [] should be marked with
 0094 the TSF margin code.]

0095 Rationale: The description of the TZ environment variable omits the
 0096 names of some functions which are defined as using it; specifically,
 0097 the thread-safe variants of the ctime() and localtime() functions.

0098 **Change Number: XBD/TC1/D6/8** [XBD ERN 20]

0099 On Page: 236 Line: 8313 Section: <glob.h>

0100 Change from:

0101 int glob(const char *restrict, int,
 0102 int (*restrict)(const char *, int), glob_t *restrict);

0103 to:

0104 int glob(const char *restrict, int, int (*)(const char *, int),
 0105 glob_t *restrict);

0106 Rationale: When the restrict type qualifier was added to the glob()
 0107 Prototype declaration in an early draft, it was applied to a function
 0108 Pointer argument; per ISO/IEC 9899:1999 such a pointer type shall not be
 0109 restrict-qualified. (The definition in System Interfaces, Page 573,
 0110 Line 18778-18779 is correct.)



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0111 **Change Number:** XBD/TC1/D6/9 [XBD ERN 21]

0112 On Page: 244 Line: 8586 Section: <langinfo.h> (CRNCYSTR)

0113 Change from:

0114 "Local currency symbol, preceded by '-' if the symbol
0115 should appear before the value, '+' if the symbol should
0116 appear after the value, or '.' if the symbol should replace
0117 the radix character."

0118 to:

0119 "Local currency symbol, preceded by '-' if the symbol
0120 should appear before the value, '+' if the symbol should
0121 appear after the value, or '.' if the symbol should replace
0122 the radix character. If the local currency symbol is the
0123 empty string, implementations may return the empty string ("")."

0124 Rationale: The addition of the last sentence has been made to
0125 accommodate historic practice. This is an application-visible change.
0126 Implementations may choose either behavior. Applications should allow
0127 for the empty string to be returned.

0128 **Change Number:** XBD/TC1/D6/10 [XBD ERN 22]

0129 On Page: 253 Line: 8923 Section: <limits.h>

0130 In Minimum Values, _POSIX_CHILD_MAX, change from:

0131 "Value: 6"

0132 to:

0133 "Value: 25"

0134 Rationale: This corrects an editorial error in misapplying the
0135 FIPS 151-2 alignment for this value.

0136 **Change Number:** XBD/TC1/D6/11 [XBD ERN 23,24]

0137 On Page: 277 Line: 9873,9906 Section: <netdb.h>

0138 Insert the following text between Lines 9873 and 9874:

0139 NI_NUMERICSCOPE For IPv6 addresses, the numeric form of the scope
0140 identifier is returned instead of its name.

0141 On Line 9906, change from:

0142 int getnameinfo(const struct sockaddr *restrict, socklen_t,
0143 char *restrict, socklen_t, char *restrict,
0144 socklen_t, unsigned);

0145 to:

0146 int getnameinfo(const struct sockaddr *restrict, socklen_t,
0147 char *restrict, socklen_t, char *restrict,
0148 socklen_t, int);

0149 Rationale: IETF IPv6 API specification alignment.

0150 **Change Number: XBD/TC1/D6/12** [XBD ERN 25,26]

0151 On Page: 279 Line: 9979 Section: <netinet/in.h>

0152 On Page 279, Line 9979, insert "const" in front of

0153 "struct in6_addr in6addr_any".

0154 On Page 280, Line 9985, insert "const" in front of

0155 "struct in6_addr in6addr_loopback"

0156 Rationale: IETF IPv6 API specification alignment.

0157 **Change Number: XBD/TC1/D6/13** [XBD ERN 27,28,30,31]

0158 On Page: 287 Line: 10196-10198 Section: <pthread.h>

0159 Shade Line 10196 and mark with the TPI margin code.

0160 Shade Line 10197 and mark with the TPP|TPI margin codes.

0161 Shade Line 10198 and mark with the TPP margin code.

0162 On Page 288, shade Lines 10238 and 10250 and mark with the TSS

0163 margin code.

0164 On Page 289-290, shade Lines 10310-10311, 10317, 10333-10334, and 10336

0165 and mark with the TSH margin code.

0166 On page 290, shade Lines 10324-10327 and mark with the TMO margin code.

0167 Rationale: Shading errors in contradiction with the function definitions

0168 in the System Interfaces volume.

0169 **Change Number: XBD/TC1/D6/14** [XBDft3 ERN 2]

0170 On Page: 303 Line: 10810-10816 Section: <signal.h>

0171 In the DESCRIPTION on Line 10810, change from:

0172 "What to do on receipt of signal"

0173 to:

0174 "Pointer to a signal-catching function or one of the macros

0175 SIG_IGN or SIG_DFL".

0176 On Lines 10815-10816, change from:

0177 "Pointer to signal handler function or one of the macros SIG_IGN

0178 or SIG_DFL"

0179 to:

0180 "Pointer to a signal-catching function".

0181 **Change Number: XBD/TC1/D6/15** [XBDft3 ERN 3]

0182 On Page: 303 Line: 10814 Section: <signal.h>

0183 Change from:

0184 void (*)(int, siginfo_t *, void *) sa_sigaction

0185 to:

0186 void (*sa_sigaction)(int, siginfo_t *, void *)

0187 Rationale: The declaration given for the sa_sigaction member of

0188 struct sigaction is not syntactically valid.

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0189 **Change Number:** XBD/TC1/D6/16 [XBD ERN 36]

0190 On Page: 340 Line: 12114 Section: <sys/mman.h>

0191 Change the margin code for Line 12114 to MLR.

0192 Add ML as the margin code for Line 12115.

0193 Change the margin code for Line 12119 to MLR.

0194 Add ML as the margin code for Line 12120.

0195 Rationale: Margin code and shading errors. The functions mlock()
0196 and munlock() should be marked as part of the _POSIX_MEMLOCK_RANGE
0197 option.

0198 **Change Number:** XBD/TC1/D6/17 [XBD ERN 34]

0199 On Page: 359 Line: 12743 Section: <sys/stat.h>

0200 Add the following text to the RATIONALE:

0201 "The unit for the st_blocks member of the stat structure is not
0202 defined within the standard. In some implementations it is 512 bytes.
0203 It may differ on a filesystem basis. There is no correlation between
0204 values of the st_blocks and st_blksize, and the f_bsize (from
0205 <sys/statvfs.h>) structure members.

0206 Traditionally some implementations defined the multiplier for st_blocks
0207 in <sys/param.h> as the symbol DEV_BSIZE."

0208 **Change Number:** XBD/TC1/D6/18 [XBDft2 ERN 2]

0209 On Page: 360 Line: 12795 Section: <sys/statvfs.h>

0210 Change from:

0211 "ST_NOSUID Does not support setuid()/setgid() semantics."

0212 to:

0213 "ST_NOSUID Does not support the semantics of the ST_ISUID and
0214 ST_ISGID file mode bits."

0215 **Change Number:** XBD/TC1/D6/19 [XBD ERN 42]

0216 On Page: 382 Line: 13468 Section: <termios.h>

0217 Change from:

0218 "ECHOK"

0219 to:

0220 "ECHOKE"

0221 Rationale: The APPLICATION USAGE is inconsistent with the symbols
0222 reserved in System Interfaces, Section 2.2.2, Page 18.

0223 **Change Number:** XBD/TC1/D6/20 [XBD ERN 37]

0224 On Page: 399,407-408 Line: 14061,14443,14460 Section: <unistd.h>

0225 Add after Line 14061 (before `_POSIX_JOB_CONTROL`):

0226 `"_POSIX_IPV6`
 0227 `The implementation supports the IPv6 option. If this symbol has a`
 0228 `value other than -1 or 0, it shall have the value 200112L."`

0229 Add to the list of symbolic constants for `sysconf()` after Line 14443
 0230 (before `_SC_JOB_CONTROL`):

0231 `"_SC_IPV6"`

0232 Add to the list of symbolic constants for `sysconf()` after Line 14460
 0233 (before `_SC_RE_DUP_MAX`):

0234 `"_SC_RAW_SOCKETS"`

0235 Rationale: The `_POSIX_IPV6` symbol appears in Section 2.1.3, Conformance,
 0236 but is not included in <unistd.h>; similarly `_POSIX_RAW_SOCKETS` is
 0237 included in <unistd.h> and should have a corresponding `_SC` entry.

0238 **Change Number:** XBD/TC1/D6/21 [XBDft3 ERN 4]

0239 On Page: 405 Line: 14325,14329,14333 Section: <unistd.h>

0240 In the DESCRIPTION, Constants for Functions, on Lines 14325, 14329,
 0241 and 14333, change from:

0242 `"... a programming model with 64-bit int, long, pointer, and`
 0243 `off_t types."`

0244 to:

0245 `"... a programming model with 32-bit int and 64-bit long, pointer,`
 0246 `and off_t types."`

0247 **Change Number:** XBD/TC1/D6/22 [XSH ERN 12]

0248 On Page: 406-409 Line: 14384-14520 Section: <unistd.h>

0249 Remove all margin codes and shading for the `_PC*` and `_SC*` constants
 0250 in this header.

0251 Rationale: These constants are required to be mandatory.

0252 **Change Number:** XBD/TC1/D6/23 [XBDft4 ERN 1]

0253 On Page: 407,408 Line: 14400,14477 Section: <unistd.h>

0254 Insert before `_PC_SYNC_IO` on Line 14400:

0255 `_PC_SYMLINK_MAX`

0256 Insert before `_SC_SYNCHRONIZED_IO` on Line 14477:

0257 `_SC_SYMLINK_MAX`

0258 Rationale: These constants were omitted.