I18N/L10N Requirements

for

UNIX System V Release 4 MP+

UNIX International Internationalization Work Group

1. Introduction

One goal of UNIX System V is to provide users with a ‘‘**comfortable computing environment**’’ which can support various kinds of human activities. Human activities are performed with human communication using human languages. Therefore, the facilities a system provides for processing language and cultural specific (locale specific) information is very important.

1.1 Background

The process of incorporating these types of facilities in a general way is called internationalization (I18N). The process of tuning the general facilities for a specific locale is called localization (L10N).

I18N/L10N facilities solve many of the typical problems encountered when developing applications which interact with users in a specific locale. In particular, locale specific information such as interactive messages, character classification, collation rules, date/time formats, and numerical and monetary representation can be readily provided through well defined system interfaces.

While the system can generalize a substantial portion of locale dependent information, it may not provide a complete solution for all applications. There are additional types of local specific information that may be required by certain classes of applications. An example is Value Added Tax (VAT) calculation formulas. Many regions have these taxes, and the method of calculating the tax would be very useful to certain types of financial applications. This information is too dynamic and too specific to be included in a general system facility.

1.2 The Problem

Unfortunately, traditional UNIX implementations have not been generally internationalized. Instead, they have at best had optional I18N packages, and at worst been left specific to American English. This lack of I18N support has prevented the development of internationalized applications, thereby limiting the establishment of UNIX as the first choice for users and application developers in non-english speaking markets.

1.3 The Solution

The world-wide adoption of UNIX System V requires that it be able to operate not just in American English, but in the locales of all potential system users. By implementing the requirements described in this document, UNIX System V will provide a ‘‘**comfortable computing environment**’’ for its users, and become the platform of choice for developers of internationalized applications.

In providing facilities which satisfy these requirements, AT&T USO must consider the following overriding goals:

- A single system must be able to support multiple locales simultaneously, both per machine and per user.
- It must be possible for administrators of individual systems to select the locales which are supported, thus reducing the overall resource consumption of I18N/L10N facilities.
- The general I18N and specific L10N support must be implemented such that impact on system performance is minimal. In particular, support for keyboard translation and input methods must not degrade the performance of typical interactive system usage.

In this document, Chapter 2 addresses several guidelines which should be applied as the base criteria for I18N/L10N specifications in the UNIX system. Chapter 3 covers general descriptions of required system call interfaces and library interfaces, Chapter 4 is the counterpart for commands. Chapter 5 touches on special topics which need more specific descriptions as independent features. Appendix A provides a glossary of terms used in this document. Appendix B provides a function list for a comparison of the I18N/L10N features in the related standards, as well as an indication of the priority of internationalizing each function. Appendix C serves as a comparison list of the commands in the standards, and also has a priority indication.

2. Guidelines - I18N/L10N Design Philosophy

A complete internationalized system or platform should be a ‘‘**comfortable computer environment**’’. This can be accomplished by providing both application programmers and end users with interfaces designed for human communication.

In particular, human communication should be done in the user’s native language. One of the primary obstacles to having computers communicate in the user’s native language is in processing characters. ‘‘Characters’’ are fundamental to written languages, but the definition of a character may vary from language to language. Other obstacles include providing common methods of handling locale-dependent conventions.

In order to overcome these obstacles, the following design guidelines are used:

- The system should support a ‘‘character-oriented’’ interface instead of a ‘‘byte-oriented’’ interface wherever required. This does not mean that the interfaces can be merely ‘‘8-bit clean’’, but that they have multi-byte character handling capabilities. Several traditional assumptions about characters must be changed to satisfy I18N requirements. For example:
  - — byte counts ≠ character counts
  - — byte counts ≠ display width
  - — character counts ≠ display width
- The system must support the ability to select an appropriate ‘‘localized’’ environment (*locale*) from among various locales. This means that interfaces which use character classification, date and time format, numeric and monetary representations, collation, and messaging must be ‘‘locale-independent’’.
- Both the system and application software should communicate with end users through their native languages.

Applying the above to the UNIX System V environment, the following detailed guidelines are derived.

2.1 Guidelines for Existing Interfaces

Existing interfaces in the system must be examined using the following process:

- Determine which interfaces are character-oriented
- Classify the character-oriented interfaces as follows:
  - — Character boundary recognition
  - — Limit check & truncation in various units — BUFSIZE, LINEMAX, ...
  - — Character/string width recognition
  - — Character/string parsing & manipulation

— Language dependency of text data including message data

— Culture dependency of representations

2.2 Guidelines for Designers of New Interfaces

All new interfaces introduced into the system must be designed and developed to the same rules as are used for existing interfaces. In addition, interface designers must clearly define any language and cultural dependencies in the interfaces. Further, any new character oriented interfaces must provide wide character functionality, and use underlying wide character system support, as appropriate.

3. Requirements for Application Program Interfaces

SVR4 MP+ must provide the complete set of internationalized program interfaces. Specifically, all interfaces that belong to the base system and which are not being specified as obsolescent must be internationalized. In order to accomplish this, the following rules must be applied:

1. All interfaces must provide full 8-bit support.
2. Any program interface which depends on a localized aspect of the system (date/time, data configuration, collation,...) must support these features independent of the locale.
3. Program interfaces that parse data strings must be capable of parsing and processing multi-byte character strings.
4. ''wchar_t'' based program interfaces being defined for submission to ISO SC22/WG14 as an ''Addendum to (D)IS 9899'' by ITSCJ/SC22/C Committee must be supported. Note that there are some outstanding concerns with backward compatibility. See 3.4.1 *libc and libw* for further discussion.
5. Interfaces provided in libraries should not output messages.
6. If libraries must generate output messages (character strings), that output must be internationalized.

3.1 Kernel interfaces

Kernel interfaces in UNIX System V are programmatic interfaces, and must follow the program interface guidelines. Fortunately, most kernel interfaces do not deal with characters as such. As a result, the only requirement for kernel interfaces not described below is that they be 8-bit transparent.

The two exceptions to this requirement are pathname parsing and the general TTY interface. As these two are not ‘‘byte oriented’’ but truly ‘‘character oriented’’ to users, they must allow multi-byte characters as well as single-byte characters in such a way that a multi-byte character can be handled as a ‘‘character’’ if it is appropriate from user’s viewpoint.

In the case of pathname processing, the system must allow multi-byte characters to be used in filenames. This implies that recognition of special characters sequences by the kernel (e.g. ‘/’, ‘.’, and ‘..’) must be made multi-byte aware.

In the case of the general TTY interface, the following changes must be made:

- the ERASE character must erase a ‘‘(multibyte) character’’, not a ‘‘byte’’.
- VMIN must be a number of ‘‘characters’’, not of ‘‘bytes’’

3.1.1 STREAMS modules

Another special case kernel interface is support for input of complex characters. It is understood that locale-dependent input methods are required to permit the construction of characters in some languages. In the past, these input mehods have been provided via the System V streams facility. Assuming that such interfaces are provided, it is a requirement that a common interface to these streams modules be provided and documented so that third party input processing facilities can be easily integrated into the system.

3.2 Libraries

It is mandatory that all SVR4 libraries be internationalized so that applications can also be internationalized.

In order to ensure that the most important libraries are internationalized for MP+, each library has been evaluated and prioritized by its relative importance. Each library in System V Release 4.0 is listed on the following pages, along with its priority and information as to its current status.

In the table of libraries, each library has been evaluated against the requirements for internationalization of programmatic interfaces. In the table,

Status [1] — shows the current level of the features in SVR4.0 + MNLS3.2 (= MNLS4.0? = SVR4 ES?) by five identifiers:

- 8 : Interfaces are 8-bit transparent
- l : Interfaces have locale dependent behavior
- m : Interfaces support multi-byte characters
- w : Interfaces support wide characters
  Note that this does not necessarily mean that wide character support has been provided in the traditional byte-oriented interfaces. It may mean that corresponding interfaces with wide character support have been introduced in other libraries.
- *p* : the library outputs messages via printf. These messages should be eliminated.
- **P** : the library outputs messages via printf. These messages are necessary, and have been or should be replaced with internationalized messages.
- – : no correspondence

Level — This field indicates the required level of support in SVR4 MP+, using the method described above.

Priority — This field indicates the relative priority of the interfaces in this library. priority is indicated using the numbers one (1) through three (3), indicating highest to lowest priority, respectively. (See Appendix A for a detailed analysis of system interface internationalization, including prioritization by interface.)

Note that since the meaning of the Status and Level fields are very general, some additional information may be needed for specific requirements in specific libraries. In these cases the Priority field contains some additional notation, and a detailed explanation can be found in the

1. The study has been done based upon the SVR4.0 documents and source code.

remainder of section 3.

Library	Descriptions	SVR4.0	SVID3	MNLS3.2	Status (R4+MNLS)	Level (MP+)	Priority
libadm	Administered package	3X_SS	AS_LIB	–	8---*p*	8lmwP	1
libc	Standard C library	3[CS]_PRM	BA_LIB	–	8lmwP	8lmwP	–
libcrypt	Encryption library	3X_PRM	BA_LIB	–	8----	8l---	2
libcurses	Char-based screen library	3X_PRM	TI_LIB	3X_PRM	8lmw*p*	8lmw-	1
libdl	Dynamic linking library	3X_PRM	–	–	8---*p*	8---P	1
libdbm	BSD database facility	3N_BSD	–	–	8l--*p*	8l---	3
libelf	ELF service library	3X_PRM	–	–	8----	8l---	3
libform	Char-based FORM library	3X_CHAR	TI_LIB	–	8---*p*	8lmw-	2
libgen	RE, basename, et al.	3X_PRM	BA_LIB	3X_PRM	8lm--	8lmw-	1
libm	Math library	3M_PRM	BA_LIB	–	-----	-----	–
libmalloc	Memory allocation library	3X_PRM	BA_LIB	–	-----	-----	–
libmenu	Char-based MENU library	3X_CHAR	TI_LIB	–	8----	8lmw-	2
libmp	BSD multiprecision library	3M_BSD	–	–	-----	-l---	3
libnsl	Network services library	3N_PRM	BA_LIB	–	8----	8----	–
libpanel	Char-based PANEL library	3X_CHAR	TI_LIB	–	8----	8lmw-	2
libresolv	TCP/IP domain name resolver	3N_NUA	–	–	-----	-----	–
libucb	BSD network library et al.	3N_BSD	–	–	8----	8----	–
libw	wchar_t support library	3C_PRM	BA_LIB	3W_PRM	8lmwP	8lmwP	1
	(X Window)						
libX11	X11 window library Xlib						

Library	Descriptions					
	SVR4.0	SVID3	MNLS3.2	Status (R4+MNLS)	Level (MP+)	Priority
	3X11_WPG	WS_LIB	-	8-m-P	8lmwP	1
libXt	X Toolkit library Xt					
	3Xt_WPG	-	-	8---P	8lmwP	1
libXol	OPEN LOOK GUI library					
	3OL_WPG	-	-	8---P	8lmwP	1
	(out of scope)					
libtam	PC Char-based TAM library					
	3X_CHAR	-	-	-----	-----	3
libwindows	AT&T DMD window library					
	3X_PRM	-	-	-----	-----	3

3.3 SVR4 new libraries

Some of the libraries introduced in SVR4 need to have I18N support added. In particular, high priority must be given to internationalizing any library which is used for system administration services.

3.3.1 libadm

The IWG believes that the internationalized *libadm* library would be useful for software installation/removal and administrative user interface in the end-user's native languages.

This library has a number of character or string based arguments and data structures as well as default messages for users. It is essential that these character based interfaces be internationalized.

The major elements of these interfaces are:

— Menu strings and their display formatting

must allow non-ASCII or *non-primary* characters including multibyte characters via LC_CTYPE and/or **cswidth**, and LC_COLLATE for ordering the menu items.

— Date and time format

must be *locale* sensitive via LC_TIME

— Default error and help messages

must be *locale* sensitive via LC_MESSAGES

— Regular expression for validating string input

must allow non-ASCII or *non-primary* characters including multibyte characters via LC_CTYPE and/or **cswidth**

3.3.2 FMLI libraries

The Form and Menu Language Interpreter (FMLI) itself is one of the commands in the base system. Its libraries regarding *form* and *menu* are hidden from end users and have no specific library names. For convenience here, we denote them as FMLI libraries, avoiding confusion between these and the libform/libmenu libraries of the Extended Terminal Interface (ETI).

The System Administration services in SVR4 have a high priority for internationalization (see section 5). While it is acceptable for AT&T USO to internationalize these services without internationalizing the existing FMLI libraries, it is unlikely. Assuming that the FMLI libraries are internationalized along with system administration, the FMLI libraries have a high priority.

The FMLI libraries have the same internationalization issues as the ETI libraries (see the next section).

3.3.3 ETI libraries (libform, libmenu and libpanel)

The Extended Terminal Interface (ETI) libraries libform, libmenu and libpanel provide interfaces to assist in developing user friendly applications for character cell terminals. While terminals which use high resolution graphics displays are now becoming available world-wide, character cell terminals are predominant in international markets. Applications developed to utilize such terminals will continue to be useful for some time. Therefore, it is required that the ETI libraries be internationalized.

Fortunately, the problems with the ETI libraries with respect to internationalization are "classic" problems that have already been solved in other places (for example libcurses and vi). Basically, the ETI libraries have been defined using the traditional, but mistaken assumptions that characters equal bytes and that character display widths equal character memory size equal byte counts. These assumptions can be found in the following major areas of the ETI libraries:

— Definition of *field* in the form library

— Definition and handling of *items* in the menu library

— Treatment of rows and columns

— Equation of character display width and memory size

— The availability of string/character types like *numeric* and *alpha*

— Definition of pattern matching and regular expression

It should be possible to internationalize these interfaces by making the existing interfaces 8-bit clean and then building wide character based interfaces on top. Such a solution would be acceptable.

3.3.4 libdl

The *dlerror* function returns a null-terminated character string as a diagnostic. Following the guidelines for libraries, this interface should be changed to return a diagnostic code or to return a locale-specific message string.

3.4 Libraries from SVR3.2 and MNLS3.2

3.4.1 libc and libw

In order to support I18N/L10N features defined in the ANSI C Language Standard SVR4 libc provides two locale control/inquiry functions and five multibyte character/string functions with a new data type **wchar_t** for *wide* characters:

- *setlocale()* — selects the appropriate portion of the program's locale as specified the *category* and *locale* arguments.
- *localconv()* — returns the components of an object with values appropriate for the formatting of numeric and monetary quantities according to the rules of the current locale.
- *mblen()* — determines the number of bytes comprising the specified multibyte character, or report the multibyte character encodings (state-dependent or not).
- *mbtowc(), wctomb()* — conversion between a byte sequence of a multibyte character and a wide character.
- *mbstowcs(), wcstombs()* — conversion between a multibyte character string and a wide character string.

Libc also provides locale sensitive message handling functions and uses those functions to deliver locale sensitive messages.

Unfortunately, the ANSI C multibyte character/string functions are too primitive for programmers to write internationally portable applications. Recognizing these deficiencies, AT&T USO has provided a more robust suite of interfaces through the MNLS product. These interfaces are available currently in the product MNLS 4.0, and will be incorporated into SVR4 ES.

Recent events in the international standards community have shown that there is a need for wide character handling facilities even beyond those offered in the MNLS products (and thus in SVR4 ES). In particular the ISO C Language Committee is currently considering a proposal from ITSCJ/SC22/C Committee in Japan. X/Open is actively considering the proposal for inclusion in the X/Open Portability Guide version 4. The interfaces in libw must be extended based upon the ITSCJ/SC22/C Proposal. If this proposal is required by X/Open for XPG4, then it must be provided at the same time as XPG4 compliance. If not, it must be provided after ISO standardization of these facilities is complete.

The ITSCJ/SC22/C Proposal is a superset of the current MNLS specifications. It uses as base documents AT&T USO MNLS, IBM SAA Computer Programming Interface C, HP Native Language Support (NLS), and SIGMA Japanese Extension.

The functions proposed include:

fgetwc	fgetws	fprintf‡	fputwc	fputws
fscanf	getwc	getwchar	getws	is_wctype†
iswalnum	iswalpha	iswcntrl	iswdigit	iswgraph
iswlower	iswprint	iswpunct	iswspace	iswupper
iswxdigit	printf‡	putwc	putwchar	putws
scanf‡	set_wctype†	sprintf‡	sscanf‡	towlower
towupper	ungetwc	vfprintf†	vprintf†	vsprintf†
vwsprintf†	wcscat*	wcschar*	wcscmp*	wcscoll†
wcscpy*	wcscspn*	wcsftime†	wcslen*	wcsncat*
wcsncmp*	wcsncpy*	wcspbrk*	wcsrchr*	wcsspn*
wcstod†	wcstok*	wcstol†	wcstoul†	wcswcs*
wcsxfrm†	wsprintf†	wsscanf†		

* Only name is different from that of MNLS.
(e.g. wcsxxx in ITSCJ = wsxxx in MNLS)

‡ Name is the same, but some functional enhancement is added.

† New functions.

No mark implies both the name and functionality are the same as MNLS.

There are some problems with backward compatibility of the interfaces defined in this proposal with interfaces in the existing MNLS products. Specifically function names and the interpretation of conversion specifiers for the format arguments in the *printf/scanf* function family. These issues should be addressed through participation in the C standard activity and a migration guide for application developers.

One goal of the ITSCJ/SC22/C Proposal is to provide a complete set of well defined and unified interfaces that could be portable among various single byte character environments and multibyte character environments.

3.4.2 libcurses

The MNLS product has provided internationalization of libcurses since it was first released. While this work was a good start, the internationalization of libcurses is not yet complete. Libcurses in SVR4.0 continues to be *byte* oriented, not *character* oriented. A number of new functions have been introduced in SVR4.0, and those functions are not necessarily applicable in multibyte character environments. In addition, this document has already indicated that some libraries which depend on libcurses must be internationalized. This may require the extension of single byte character features. Consequently, the libcurses interfaces must be fully internationalized. This requirement has a very high priority.

3.4.3 libcrypt

There are a number of issues with the namespace of system resources. While there is some concern with the System V support for native characters in *login* names and *password* entries, a solution is beyond the scope of these requirements. The only requirement on libcrypt is that it be 8-bit clean and that it handle multibyte characters.

Another major concern with libcrypt is the difference between the US domestic version and the international version of this library and utilities that rely upon it. Because of this difference, users outside of the US do not have access to the encryption functions of utilities like *vi* or *ed*. It is essential that the international and domestic versions of System V provide similar functionality. Consequently, it is a requirement that the encryption interfaces handle 8-bit characters and multibyte characters. Ideally, a single version of these libraries would be provided from AT&T USO.

3.4.4 libgen

In the *libgen* library there are many specialized but generally useful functions in various areas. They cover:

1. Two way process communication — *p2open/p2close* functions
2. Directory operations — *mkdirp/rmdirp* functions
3. Pathname manipulations — *basename, dirname, pathfind* functions
4. Pathname pattern matching — *gmatch* function
5. Generic Regular Expression — *regcomp, regex, regexpr(compile/step/advance)* functions
6. Text line copy — *copylist* function
7. Text field separation — *bufsplit* function
8. Character delimited input — *bgets* function
9. String manipulations — *strfind/strrspn/strtrns* functions
10. String conversions for C-escape-sequences — *strcadd/strccpy/streadd/strecpy* functions
11. Data checking for encrypted text — *isencrypt* function

Note that most of the above have the traditional ‘‘character = byte’’ interfaces.

The IWG believes that all the traditional *char* interfaces must be 8-bit transparent, and multibyte characters be permissible wherever appropriate (e.g. pathnames).

Furthermore, all interfaces except the following:

— two way process communication

— pathname manipulations

— directory operations

— text line copy

— string conversions for C-escape-sequences

— data checking for encrypted text

must recognize character boundaries of multibyte characters as well as non-ASCII single byte characters. In conjunction with the previously proposed improvement and expansion of the *libw*, new wide character based functions corresponding to functions such as:

— text field separation

— character delimited input

— string manipulations

must also be provided. These are very useful for international portability of applications as well as system utilities.

3.5 X window libraries

The IWG believes that OPEN LOOK and the X window products must be internationalized, so that an attractive GUI can be presented in every country. The table in section 3.2 shows the results of a general study of the X window libraries. AT&T USO should work with the X Consortium to ensure that these libraries are internationalized. The X Windows System provided by AT&T USO must be compatible with that of the X Consortium.

4. Overview of I18N/L10N command interface

4.1 Commands in the Base

MNLS for SVR4.0 has approximately 100 internationalized commands in the system. After careful consideration, it is recommended that AT&T USO internationalize all commands in the base for release MP+. Also, since some of the interfaces defined in the BSD and Xenix compatibility packages will continue to be useful, it is recommended that those "useful" interfaces be moved into the base and internationalized.

The following criteria should be used when internationalizing commands:

1. All commands which process user data (command line arguments, user input, etc...) must accept multibyte information.
2. Commands which read/write characters and perform actions based on the data must be able to perform those actions on multibyte and non-multibyte data.
3. Commands which process data relating to that described in a locale must do so based on the setting of the appropriate LC_* or LANG environment variables.
4. Commands which cause actions to take place on a remote machine must provide a method for specifying an environment on the remote machine.
5. Commands which output messages to end users must be able to display the user-specified native language by the appropriate environment setting.

4.2 Commands from the BSD compatibility package

The IWG believes that useful BSD commands should be internationalized as soon as possible. The main reasons are:

- There are several variants of the internationalized and/or localized BSD commands in the market. They are unnecessarily incompatible. For example in Japan, Sun's JLE, Sony's Japanized version, Omron's Japanized version, TOSHIBA's Japanized version all currently exist.
- If we cannot provide the BSD users in the world with an actual migration path from existing BSD and SunOS to System V environments, they will not move to System V.

In other words, the real merge of the System V and BSD/SunOS will be completed when I18N/L10N of BSD commands are finished.

AT&T USO has investigated the commands in the BSD compatibility package and determined that they are not suitable for inclusion in the base system. Further investigation has shown that some of the commands are indeed suitable, and should be included.

4.3 Command Priority List

A priority list of commands to be internationalized in both the base system and BSD compatibility package will be determined through discussions with AT&T USO.

5. Special topics

5.1 System Administration

It is critical that easy to use system administration facilities be provided in System V. While there are current system adminsitration tools available in SVR4.0, it is understood that those tools are currently being examined by the marketplace and other UNIX International activities.

Therefore, the requirement is that the system administration facilities provided in SVR4 MP+ be internationalized as per the criteria for internationalizing utilities in Section 4.

5.2 ROFF

UNIX Systems have had good document processing tools since the first releases. The highlight of these tools is the Documenter's Workbench (DWB) or *roff* family of applications. UNIX System documentation has traditionally been produced using these tools. In order to continue to provide a good set of tools for the production of UNIX System documentation, the *roff* tools must be internationalized.

Unfortunately, there is some confusion over the role of DWB and the *roff* tools in UNIX System V. This package has been excluded from general releases of UNIX for some time. In the most recent release, it continued to be excluded, but similar functionality was provided through the *roff* tools in the BSD compatibility package.

The IWG understands this confusion may come from the two different decisions; AT&T USO's decision [2] and Sun's decision [3].

According to the AT&T USO document,

> *DWB is released independently from System V, and thus these commands shall be deferred from further consideration for SVR4.0.*

On other hand, Sun stated clearly,

> *Sun believes that it is very important to offer users a complete set of text processing commands. Therefore Sun will place all the commands listed in the ''DWB commands'' table in the compatibility package. In addition to these commands, Sun will add the text formatting commands listed in the ''Additional DWB Commands'' table to the compatibility package. To complete the set of text processing commands, Sun will also place several macro packages such as* **ms**, **me** *and* **man** *in the compatibility package.*

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2. Paul C. Lustgarten, *Requirements for Incorporation of BSD/SunOS Commands and Command Enhancements in System V Release 4.0 — Issue 1,* June 27, 1989 [SC90-03-N066].

3. Neguine Navab, *Definition of the BSD Compatibility Package for System V Release 4.0 — Issue 2 - Case M10200,* May 15, 1989 [SC90-03-N063].

UNIX International strongly supports Sun's opinion regarding the inclusion of DWB commands in System V.

AT&T USO has stated the following as a CLOSED ISSUE:

> *CLOSED ISSUE #4: If incorporated into an existing AT&T product, the ''DWB'' category commands would most appropriately go into the Documenter's Workbench (DWB). As such, they should evaluated by systems engineering or product management for DWB — this needs to be arranged. Pending such arrangement, further consideration of the entire DWB category is deferred past Phase 2.*

UNIX International requires that an internationalized DWB be included in future versions of System V.

5.3 MAN, manual and documents

It is important that UNIX System V documentation be available in many different languages. For each document translated, printed and Machine Readable Documents (MRD) must be made available by AT&T.

In addition, on-line versions of the reference manuals must be supplied. These on-line documents must be usable by an "international man" command.

In determining priorities, the following criteria generally apply:

- The REFERENCE MANUALS — highest priority

  Reference manuals are critical to end users. Reference manuals must be available in both printed and on-line versions (via an ‘‘internationalized *man*’’ command).

- The GUIDES — next priority

  Since these are mainly for end users and/or application programmers, the guides should have second priority. Guides are mainly used by end-users and System Administrators. It is not necessary to provide on-line versions of these manuals.

- The OTHER DOCUMENTS — as needed

  Documents for end users have the highest priority, followed by programmer's, and finally system developers. Documents which are not rerefence manuals or guides are generally not for public consumption, and therefore have little need for translation.

A survey of UNIX International member companies from Japan reveals the following priorities for translation of SVR4.0 manuals. In the list, 1 through 3 mean high through low.

TITLE	Hard Copy	MRD
Product Overview and Master Index	3	3
User's Guide	1	3
User's Reference Manual	1	1
System Administrator's Guide	1	3
System Administrator's Reference Manual	1	1
Network User's and Administrator's Guide	1	3
Programmer's Guides-		
ANSI C and Programming Support Tools	1	3
System Services and Application Packaging Tools	2	3
Character User Interface(FMLI and ETI)	1	3
Graphical User Interface OPENLOOK software	1	3
Graphical User Interface XWIN Server System	2	3
Graphical User Interface X11/NeWS Server System	2	3

TITLE	Hard Copy	MRD
POSIX Conformance	3	3
Networking Interfaces	2	3
STREAMS	2	3
Programmer's Reference Manual	1	1
DDI/DKI Reference Manual	3	3
Migration Guide	3	3
C Software Development System Transition Guide	3	3
Software Notes	3	3
BSD/XENIX Compatibility Guide	1	3

5.4 Regular expressions

Internationalization of Regular Expression (RE) processing is essential. The following principles can be applied in performing this internationalization:

1. The special (wild or meta) characters must come from the ASCII or *primary* codeset.
2. In general, REs must support multi-byte as well as single-byte characters. REs must process *characters* within them, and match *characters* in searched text.
3. RE matching must be performed based on locale specific information when that is appropriate. In particular, information like character classification and collation definitions must be made locale sensitive.
4. A complement set notation must be correctly applied to the entire set of supported characters. For example, **[ˆA-Z]** may include (normal) European single byte characters and/or (normal) multibyte characters like Japanese, Chinese and Korean characters, depending on the current locale selection.
5. Range expressions should be correctly handled through a given collation definition. As a default, it should be evaluated by internal code values for the characters. Ranges can cross code set boundaries.

Potential solutions for these issues have been proposed by X/Open (XPG4) and the IEEE (POSIX.2). These specifications, including the POSIX ‘‘file name and word expansions’’ must be supported when they are approved as *de facto* or *de jure* standards. Active participation in the efforts of organizations working in this area is strongly recommended.

5.5 Messaging

Messaging facilities are required for use by both the Operating System and by Applications. To date, no fewer than five different messaging systems exist or have been proposed. Three of these have been developed at AT&T.

1. X/Open (catgets)
2. MNLS 3.2 (gettxt)
3. Uniforum (gettext)
4. SVR4.0 (fmtmsg)
5. SVR4 ES (pfmt and lfmt)

While it might be ideal, it is not necessary for the System and for Applications to use the same messaging facilities.

1. Applications should use the X/Open messaging interfaces.
2. If X/Open should extend the XPG3 messaging interfaces in future versions of the X/Open Portability Guide, then those extensions must be included by AT&T USO in the release where they provide compliance to that issue of the XPG.
3. For performance reasons, the Operating System may need to utilize a different interface than that which X/Open specified for Applications. This interface must be carefully developed, before being added to the System, to ensure that it meets all of the requirements for internationalization.

The format of the messages must allow for complete localization. It must also allow for support of customers, since the message itself, having been translated, will no longer be meaningful to developers. The following is a possible format for consideration:

```
[Command] [Identifier (number)] , [Text]
[TAB] [Information]
```

where:

[Command]
: is the function name. ie. cat, grep, etc.

[Identifier]
: is a number which will allow the system developer to determine what part of the source code generated the output message. It could also be utilized by the user to obtain additional information from an "error message" manual.

[Text]
: is the message intended for the user.

[Information]
: is the possible means of correcting or working around the problem.

In order to provide for information only messages, the [Command] and [Identifier] fields should not be mandatory.

The messages to be output should be carefully reviewed in order to reduce the translation and support work. The messages should also be reviewed to ensure that they accurately represent what has happened or should be done.

The message format must be agreed upon by the UNIX International prior to implementation.

5.6 Email

It is essential that UNIX System electronic mail facilities allow the processing of multi-byte characters both within and among systems. In order to accomplish this, the electronic mail facilities must be made 8-bit clean. Following this, UNIX mail subsystems should have the functionality to convert the internal code to outside code. One of the outside codes supported must be ISO 2022.

5.7 Country Specific Packages

Localization support has been provided through a number of supplemental packages (e.g. European Supplement, French System Messages, Japanese System Messages). These packages, called *Country Specific Packages* (CSP), contain several components. The IWG believes that CSPs must contain, at a minimum, the following components:

- Translators for regionally popular code sets to/from EUC
- Support for regionally popular character cell terminals
- Language specific system messages
- Locale specific definitions (e.g. character classifications, collation information)
- Input methods (where appropriate, e.g. Chinese, Japanese)

Existing CSPs should be updated simultaneously with new release. Any new CSPs should be developed and released in a timely manner.

Appendix A - Glossary

8-Bit Support

To provide international character processing, it must be possible to send 8-bit character data through the kernel (including I/O subsystems), to the utility or application (including system provided libraries), and back again. Such a system is called "8 bit clean". The high-order bit is necessary for 8-bit character sets such as ISO 8859/1 (Latin 1), and encoding schemes such as the EUC that use the 8th bit.

DIS9899

DIS9899 is the Draft International Standard (DIS) 9899 which specifies the C Language Standard. It will be an International Standard (IS) 9899 after approval process of the DIS ballot. Currently, DIS9899 is almost the same as the ANSI C X3J11/88-159 except for a few editorial changes and wordings. An ‘‘Addendum to ISXXXX’’ means a supplementary standard to the ISXXXX which may be issued if such addendum is proposed and approved. As to ‘‘Addenda to (D)IS9899’’, the ITSCJ/SC22/C Committee in Japan is going to submit their ‘‘Draft Proposed Multibyte Support Extension’’ (SC22/N104, Jan.1, 1990) as one of the ‘‘Proposed Draft Addenda (PDAD)’’.

I18N

The term I18N is an abbreviations widely used by various internationalization standards groups for ‘‘internationalization’’. I18N represents ’i’ + 18-characters + ’n’.

ISO SC22/WG15

ISO SC22/WG15 is the ISO work group for ISO POSIX Standards.

ISO SC22/WG14

ISO SC22/WG14 (more precisely ISO/IEC JTC 1 SC22/WG14) is an international standard working group under the Sub-Committee 22 (SC22). The SC22 committee is in charge of programming ‘‘Language’’ elements. The WG14 has a responsibility of the C Language Standard. ANSI C Committee (X3J11) is a US national body of the ISO SC22/WG14.

ISO 2022

ISO 7-bit and 8-bit coded characters - Code extension techniques.

ITSCJ

Institute of Technology and Science Commission of Japan.

ITSCJ/SCC22/C

ITSCJ/SC22/C Committee is a Japanese national body of the ISO SC22/WG14.

Note that the ITSCJ/SC22/C Committee consists of many C Language experts from USO, UI, OSF and X/Open member companies as well as from universities in Japan.

L10N

The term L10N is an abbreviations widely used by various internationalization standards groups for ‘‘localization’’. L10N represents ’l’ + 10-characters + ’n’.

Locale Support

In an internationalized system, knowledge of national customs and languages need not reside within an application program. Instead this localization data may be selected by the application at runtime. Each application is able to choose from the same set of national data and can switch between native environments as needed. Through standard ANSI C and POSIX interfaces, an application can dynamically select the locale "running" in its environment.

Messaging Support

Messaging is a mechanism whereby programs, instead of directly outputting text strings, index a user-switchable message catalog (data file) for their strings. End-users of code built this way can see the translated message text by changing a native language environment variable.

Multibyte Character

A character, in an internationalized environment, is not synonymous with a byte. Characters may have a one, two, or longer byte representation. They are called "multibyte" character.

Multibyte Character Support

Character processing functions must be able to recognized the length of multibyte characters (one or more bytes) and process the data appropriately. For example functions for reading and writing characters must read and write data on multibyte character boundaries.

All character and string manipulations functions, must work with multibyte character data. E.g. character classification, and pattern processing (regular expressions).

SIGMA

Japanese Government MITI Information Processing Agency (IPA)

Wide Characters (wchar_t) Support

ANSI C defines the data type **wchar_t** for multibyte characters in C programs. This data type is used for internal processing of multibyte characters. All programs expected to process multibyte character data, should use the **libw** functions for wide character input, output, character classification and character conversion.

Appendix B - Functions in SVR4.0

This list contains information about all of the functions in libraries of System V Release 4.0. It shows the library, its relation to the SVID, and also its relationship to various standards. The priority column will be filled in through discussions with AT&T USO.

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
_d2dec	decconv(3c_PRM)	(-)	(-)	(-)	
_dec2d	decconv(3c_PRM)	(-)	(-)	(-)	
_dec2s	decconv(3c_PRM)	(-)	(-)	(-)	
_exit	exit(2_PRM)	exit(BA_OS)	P1003.1-3.2.2	(-)	
_longjmp	setjmp(3_BSD)	(-)	(-)	(-)	
_s2dec	decconv(3c_PRM)	(-)	(-)	(-)	
_setjmp	setjmp(3_BSD)	(-)	(-)	(-)	
_tolower	conv(3c_PRM)	conv(BA_LIB)	(-)	(-)	
_toupper	conv(3c_PRM)	conv(BA_LIB)	(-)	(-)	
a64l	3c_PRM	SD_LIB	(-)	(-)	
abort	3c_PRM	BA_OS	(-)	ANSI-4.10.4.1	
abs	3c_PRM	BA_LIB,m	(-)	ANSI-4.10.6.1	
access	2_PRM	BA_OS	P1003.1-5.6.3	(-)	
acct	2_PRM	KE_OS	(-)	(-)	
acos	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.1	
acosf	trig(3m_PRM)	(-)	(-)	(-)	
acosh	sinh(3m_PRM)	hyperbolic(BA_LIB,m)	(-)	(-)	
addseverity	3c_PRM	(-)	(-)	(-)	
adjtime	2_PRM	BA_OS	(-)	(-)	
advance	regexpr(3g_PRM)	regexp(BA_LIB)	(-)	(-)	
alarm	2_PRM	BA_OS	P1003.1-3.4.1	(-)	
alloca	alloca(3_BSD)	(-)	(-)	(-)	
alphasort	scandir(3_BSD)	(-)	(-)	(-)	
ascftime	strftime(3c_PRM)	(-)	(-)	(-)	
asctime	ctime(3c_PRM)	ctime(BA_LIB)	(-)	ANSI-4.12.3.1	
asin	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.2	
asinf	trig(3m_PRM)	(-)	(-)	(-)	
asinh	sinh(3m_PRM)	hyperbolic(BA_LIB,m)	(-)	(-)	
assert	3x_PRM	BA_LIB	(-)	ANSI-4.2.1.1	
asysmem	(-)	AS_LIB	(-)	(-)	
atan	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.3	
atan2	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.4	
atan2f	trig(3m_PRM)	(-)	(-)	(-)	
atanf	trig(3m_PRM)	(-)	(-)	(-)	
atanh	sinh(3m_PRM)	hyperbolic(BA_LIB,m)	(-)	(-)	
atexit	3c_PRM	BA_OS	(-)	ANSI-4.10.4.2	
atof	strtod(3c_PRM)	strtod(BA_LIB)	(-)	ANSI-4.10.1.1	
atoi	long(nsigned_PRM)	strtol(BA_LIB)	(-)	ANSI-4.10.1.2	
atol	long(nsigned_PRM)	strtol(BA_LIB)	(-)	ANSI-4.10.1.3	
basename	3g_PRM	(-)	(-)	(-)	
bcmp	bstring(3_BSD)	(-)	(-)	(-)	
bcopy	bstring(3_BSD)	(-)	(-)	(-)	
bgets	3g_PRM	(-)	(-)	(-)	
brk	2_PRM	(-)	(-)	(-)	
bsearch	3c_PRM	BA_LIB	(-)	ANSI-4.10.5.1	
bufsplit	3g_PRM	(-)	(-)	(-)	
bzero	bstring(3_BSD)	(-)	(-)	(-)	
calloc	malloc(3c_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.1	
calloc	malloc(3x_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.1	
catcose	(-)	catopen(BA_LIB)	(-)	(-)	
catgets	(-)	BA_LIB	(-)	(-)	
catopen	(-)	BA_LIB	(-)	(-)	
cbrt	exp(3m_PRM)	exp(BA_LIB,m)	(-)	(-)	
ceil	floor(3m_PRM)	floor(BA_LIB,m)	(-)	ANSI-4.5.6.1	
ceilf	floor(3m_PRM)	(-)	(-)	(-)	
cfgetispeed	termios(2_PRM)	termios(BA_OS)	P1003.1-7.1.2.7	(-)	
cfgetospeed	termios(2_PRM)	termios(BA_OS)	P1003.1-7.1.2.7	(-)	
cfsetispeed	termios(2_PRM)	termios(BA_OS)	P1003.1-7.1.2.7	(-)	
cfsetospeed	termios(2_PRM)	termios(BA_OS)	P1003.1-7.1.2.7	(-)	
cftime	strftime(3c_PRM)	(-)	(-)	(-)	
chdir	2_PRM	BA_OS	P1003.1-5.2.1	(-)	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
chmod	2_PRM	BA_OS	P1003.1-5.6.4	(-)	
chown	2_PRM	BA_OS	P1003.1-5.6.5	(-)	
chroot	2_PRM	KE_OS	(-)	(-)	
chsize	2_XENIX	(-)	(-)	(-)	
clearerr	ferror(3s_PRM)	ferror(BA_OS)	(-)	ANSI-4.9.10.1	
clock	3c_PRM	BA_LIB	(-)	ANSI-4.12.2.1	
close	2_PRM	BA_OS	P1003.1-6.3.1	(-)	
closedir	directory(3c_PRM)	directory(BA_OS)	P1003.1-5.1.2	(-)	
closelog	syslog(3_BSD)	(-)	(-)	(-)	
compile	regexpr(3g_PRM)	regexp(BA_LIB)	(-)	(-)	
conv	(-)	BA_LIB	(-)	(-)	
copylist	3g_PRM	(-)	(-)	(-)	
copysign	floor(3m_PRM)	(-)	(-)	(-)	
copysign	fp_class_type(num_BSD)	(-)	(-)	(-)	
cos	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.5	
cosf	trig(3m_PRM)	(-)	(-)	(-)	
cosh	sinh(3m_PRM)	hyperbolic(BA_LIB,m)	(-)	ANSI-4.5.3.1	
coshf	sinh(3m_PRM)	(-)	(-)	(-)	
creat	2_PRM	BA_OS	P1003.1-5.3.2	(-)	
creatsem	2_XENIX	(-)	(-)	(-)	
crypt	3c_PRM	BA_LIB	(-)	(-)	
crypt	3x_PRM	BA_LIB	(-)	(-)	
crypt_close	crypt(3x_PRM)	(-)	(-)	(-)	
ctermid	3s_PRM	BA_LIB	P1003.1-4.7.1	(-)	
ctime	3c_PRM	BA_LIB	(-)	ANSI-4.12.3.2	
ctype	(-)	BA_LIB	(-)	(-)	
cuserid	3s_PRM	BA_OS	P1003.1-4.2.4	(-)	
dbminit	dbm(3_BSD)	(-)	(-)	(-)	
dbm_clearerr	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_close	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_delete	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_error	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_fetch	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_firstkey	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_nextkey	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_open	ndbm(3_BSD)	(-)	(-)	(-)	
dbm_store	ndbm(3_BSD)	(-)	(-)	(-)	
decimal_to_double	dec2flt(3_BSD)	(-)	(-)	(-)	
decimal_to_extended	dec2flt(3_BSD)	(-)	(-)	(-)	
decimal_to_single	dec2flt(3_BSD)	(-)	(-)	(-)	
delete	dbm(3_BSD)	(-)	(-)	(-)	
des_crypt	crypt(3x_PRM)	(-)	(-)	(-)	
des_encrypt	crypt(3x_PRM)	(-)	(-)	(-)	
des_setkey	crypt(3x_PRM)	(-)	(-)	(-)	
difftime	3c_PRM	BA_LIB	(-)	ANSI-4.12.2.2	
directory	(-)	BA_OS	(-)	(-)	
dirname	3g_PRM	(-)	(-)	(-)	
div	3c_PRM	BA_LIB,m	(-)	ANSI-4.10.6.2	
dlclose	3x_PRM	(-)	(-)	(-)	
dlerror	3x_PRM	(-)	(-)	(-)	
dlopen	3x_PRM	(-)	(-)	(-)	
dlsym	3x_PRM	(-)	(-)	(-)	
double_to_decimal	flt2dec(3_BSD)	(-)	(-)	(-)	
drand48	3c_PRM	BA_LIB	(-)	(-)	
dup	2_PRM	BA_OS	P1003.1-6.2.1	(-)	
dup2	3c_PRM	BA_OS	P1003.1-6.2.1	(-)	
econvert	econvert(3_BSD)	(-)	(-)	(-)	
ecvt	3c_PRM	(-)	(-)	(-)	
elf32_fsize	elf_fsize(3e_PRM)	(-)	(-)	(-)	
elf32_getehdr	elf_getehdr(3e_PRM)	(-)	(-)	(-)	
elf32_getphdr	elf_getphdr(3e_PRM)	(-)	(-)	(-)	
elf32_getshdr	elf_getshdr(3e_PRM)	(-)	(-)	(-)	
elf32_newehdr	elf_getehdr(3e_PRM)	(-)	(-)	(-)	
elf32_newphdr	elf_getphdr(3e_PRM)	(-)	(-)	(-)	
elf32_xlatetof	elf_xlate(3e_PRM)	(-)	(-)	(-)	
elf32_xlatetom	elf_xlate(3e_PRM)	(-)	(-)	(-)	
elf_begin	3e_PRM	(-)	(-)	(-)	
elf_cntl	3e_PRM	(-)	(-)	(-)	
elf_end	3e_PRM	(-)	(-)	(-)	
elf_errno	char(onst_PRM)	(-)	(-)	(-)	
elf_fill	3e_PRM	(-)	(-)	(-)	
elf_flagdata	elf_flag(3e_PRM)	(-)	(-)	(-)	
elf_flagehdr	elf_flag(3e_PRM)	(-)	(-)	(-)	
elf_flagelf	elf_flag(3e_PRM)	(-)	(-)	(-)	
elf_flagphdr	elf_flag(3e_PRM)	(-)	(-)	(-)	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
elf_flagscn	elf_flag(3e_PRM)	(-)	(-)	(-)	
elf_flagshdr	elf_flag(3e_PRM)	(-)	(-)	(-)	
elf_getarhdr	3e_PRM	(-)	(-)	(-)	
elf_getarsym	3e_PRM	(-)	(-)	(-)	
elf_getbase	3e_PRM	(-)	(-)	(-)	
elf_getdata	3e_PRM	(-)	(-)	(-)	
elf_getident	3e_PRM	(-)	(-)	(-)	
elf_getscn	3e_PRM	(-)	(-)	(-)	
elf_kind	3e_PRM	(-)	(-)	(-)	
elf_ndxscn	elf_getscn(3e_PRM)	(-)	(-)	(-)	
elf_newdata	elf_getdata(3e_PRM)	(-)	(-)	(-)	
elf_newscn	elf_getscn(3e_PRM)	(-)	(-)	(-)	
elf_next	3e_PRM	(-)	(-)	(-)	
elf_nextscn	elf_getscn(3e_PRM)	(-)	(-)	(-)	
elf_rand	3e_PRM	(-)	(-)	(-)	
elf_rawdata	elf_getdata(3e_PRM)	(-)	(-)	(-)	
elf_rawfile	3e_PRM	(-)	(-)	(-)	
elf_strptr	3e_PRM	(-)	(-)	(-)	
elf_update	3e_PRM	(-)	(-)	(-)	
elf_version	3e_PRM	(-)	(-)	(-)	
encrypt	crypt(3c_PRM)	crypt(BA_LIB)	(-)	(-)	
encrypt	crypt(3x_PRM)	crypt(BA_LIB)	(-)	(-)	
endgrent	getgrent(3c_PRM)	getgrent(BA_LIB)	(-)	(-)	
endpwent	getpwent(3c_PRM)	getpwent(BA_LIB)	(-)	(-)	
endspent	getspent(3c_PRM)	(-)	(-)	(-)	
endusershell	getusrshl(3_BSD)	(-)	(-)	(-)	
endutent	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
endutxent	getutx(3c_PRM)	(-)	(-)	(-)	
erand48	drand48(3c_PRM)	(-)	(-)	(-)	
erf	3m_PRM	BA_LIB,m	(-)	(-)	
erfc	erf(3m_PRM)	erf(BA_LIB,m)	(-)	(-)	
exec	(-)	BA_OS	(-)	(-)	
execl	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
execle	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
execlp	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
execv	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
execve	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
execvp	exec(2_PRM)	exec(BA_OS)	P1003.1-3.1.2	(-)	
exit	2_PRM	BA_OS	(-)	ANSI-4.10.4.3	
exp	3m_PRM	BA_LIB,m	(-)	ANSI-4.5.4.1	
expf	exp(3m_PRM)	(-)	(-)	(-)	
extended_to_decimal	flt2dec(3_BSD)	(-)	(-)	(-)	
fabs	floor(3m_PRM)	floor(BA_LIB,m)	(-)	ANSI-4.5.6.2	
fabsf	floor(3m_PRM)	(-)	(-)	(-)	
fattach	3c_STRM	BA_LIB	(-)	(-)	
fchdir	chdir(2_PRM)	chdir(BA_OS)	(-)	(-)	
fchmod	chmod(2_PRM)	chmod(BA_OS)	(-)	(-)	
fchown	chown(2_PRM)	chown(BA_OS)	(-)	(-)	
fclose	3s_PRM	BA_OS	(-)	ANSI-4.9.5.1	
fcntl	2_PRM	BA_OS	P1003.1-6.5.2	(-)	
fconvert	econvert(3_BSD)	(-)	(-)	(-)	
fcvt	ecvt(3c_PRM)	(-)	(-)	(-)	
fdetach	3c_STRM	BA_LIB	(-)	(-)	
fdopen	fopen(3s_PRM)	fopen(BA_OS)	P1003.1-8.2.2	(-)	
fdopen	fopen(3_BSD)	fopen(BA_OS)	P1003.1-8.2.2	(-)	
feof	ferror(3s_PRM)	ferror(BA_OS)	(-)	ANSI-4.9.10.2	
ferror	3s_PRM	BA_OS	(-)	ANSI-4.9.10.3	
fetch	dbm(3_BSD)	(-)	(-)	(-)	
fflush	fclose(3s_PRM)	fclose(BA_OS)	(-)	ANSI-4.9.5.2	
ffs	3c_PRM	(-)	(-)	(-)	
fgetc	getc(3s_PRM)	getc(BA_LIB)	(-)	ANSI-4.9.7.1	
fgetgrent	getgrent(3c_PRM)	(-)	(-)	(-)	
fgetpos	fsetpos(3c_PRM)	fsetpos(BA_OS)	(-)	ANSI-4.9.9.1	
fgetpwent	getpwent(3c_PRM)	getgrent(BA_LIB)	(-)	(-)	
fgets	gets(3s_PRM)	gets(BA_LIB)	(-)	ANSI-4.9.7.2	
fgetspent	getspent(3c_PRM)	(-)	(-)	(-)	
fileno	ferror(3s_PRM)	ferror(BA_OS)	P1003.1-8.2.1	(-)	
finite	isnan(3c_PRM)	(-)	(-)	(-)	
floor	3m_PRM	BA_LIB,m	(-)	ANSI-4.5.6.3	
floorf	floor(3m_PRM)	(-)	(-)	(-)	
fmod	floor(3m_PRM)	floor(BA_LIB,m)	(-)	ANSI-4.5.6.4	
fmodf	floor(3m_PRM)	(-)	(-)	(-)	
fmtmsg	3c_PRM	BA_LIB	(-)	(-)	
fopen	3s_PRM	BA_OS	(-)	ANSI-4.9.5.3	
fopen	fopen(3_BSD)	BA_OS	(-)	ANSI-4.9.5.3	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
fork	2_PRM	BA_OS	P1003.1-3.1.1	(-)	
fpathconf	2_PRM	BA_OS	P1003.1-5.7.1	(-)	
fpclass	isnan(3c_PRM)	(-)	(-)	(-)	
fpgetmask	fpgetround(3c_PRM)	(-)	(-)	(-)	
fpgetround	3c_PRM	(-)	(-)	(-)	
fpgetsticky	fpgetround(3c_PRM)	(-)	(-)	(-)	
fprintf	printf(3s_PRM)	printf(BA_LIB)	(-)	ANSI-4.9.6.1	
fprintf	printf(3_BSD)	printf(BA_LIB)	(-)	ANSI-4.9.6.1	
fpsetmask	fpgetround(3c_PRM)	(-)	(-)	(-)	
fpsetround	fpgetround(3c_PRM)	(-)	(-)	(-)	
fpsetsticky	fpgetround(3c_PRM)	(-)	(-)	(-)	
fputc	putc(3s_PRM)	putc(BA_LIB)	(-)	ANSI-4.9.7.3	
fputs	puts(3s_PRM)	puts(BA_LIB)	(-)	ANSI-4.9.7.4	
fread	3s_PRM	BA_OS	(-)	ANSI-4.9.8.1	
free	malloc(3c_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.2	
free	malloc(3x_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.2	
freopen	fopen(3s_PRM)	fopen(BA_OS)	(-)	ANSI-4.9.5.4	
freopen	fopen(3_BSD)	fopen(BA_OS)	(-)	ANSI-4.9.5.4	
frexp	3c_PRM	BA_LIB,m	(-)	ANSI-4.5.4.2	
fscanf	scanf(3s_PRM)	scanf(BA_LIB)	(-)	ANSI-4.9.6.2	
fseek	3s_PRM	BA_OS	(-)	ANSI-4.9.9.2	
fsetpos	3c_PRM	BA_OS	(-)	ANSI-4.9.9.3	
fstat	stat(2_PRM)	stat(BA_OS)	P1003.1-5.6.2	(-)	
fstat	stat(2_XENIX)	stat(BA_OS)	P1003.1-5.6.2	(-)	
fstatvfs	statvfs(2_PRM)	statvfs(BA_OS)	(-)	(-)	
fsync	2_PRM	BA_OS	(-)	(-)	
ftell	fseek(3s_PRM)	fseek(BA_OS)	(-)	ANSI-4.9.9.4	
ftime	2_XENIX	(-)	(-)	(-)	
ftime	3_BSD	(-)	(-)	(-)	
ftok	stdipc(3c_PRM)	(-)	(-)	(-)	
ftruncate	truncate(3c_PRM)	(-)	(-)	(-)	
ftw	3c_PRM	BA_LIB	(-)	(-)	
fwrite	fread(3s_PRM)	fread(BA_OS)	(-)	ANSI-4.9.8.2	
gamma	3m_PRM	lgamma(BA_LIB,m)	(-)	(-)	
gcd	mp(3_BSD)	(-)	(-)	(-)	
gcd	mp(3_BSD)	(-)	(-)	(-)	
gconvert	econvert(3_BSD)	(-)	(-)	(-)	
gcvt	ecvt(3c_PRM)	(-)	(-)	(-)	
getc	3s_PRM	BA_LIB	(-)	ANSI-4.9.7.5	
getchar	getc(3s_PRM)	getc(BA_LIB)	(-)	ANSI-4.9.7.6	
getcontext	2_PRM	BA_OS	(-)	(-)	
getcwd	3c_PRM	BA_OS	P1003.1-5.2.2	(-)	
getdate	3c_PRM	BA_LIB	(-)	(-)	
getdents	2_PRM	(-)	(-)	(-)	
getdtablesize	getdtblsz(3_BSD)	(-)	(-)	(-)	
getegid	getuid(2_PRM)	getuid(BA_OS)	P1003.1-4.2.1	(-)	
getenv	3c_PRM	BA_LIB	P1003.1-4.6.1	ANSI-4.10.4.4	
geteuid	getuid(2_PRM)	getuid(BA_OS)	P1003.1-4.2.1	(-)	
getgid	getuid(2_PRM)	getuid(BA_OS)	P1003.1-4.2.1	(-)	
getgrent	3c_PRM	BA_LIB	(-)	(-)	
getgrgid	getgrent(3c_PRM)	getgrent(BA_LIB)	P1003.1-9.2.1	(-)	
getgrnam	getgrent(3c_PRM)	getgrent(BA_LIB)	P1003.1-9.2.1	(-)	
getgroups	2_PRM	BA_OS	P1003.1-4.2.3	(-)	
gethostid	3_BSD	(-)	(-)	(-)	
gethostid	3_BSD	(-)	(-)	(-)	
gethostname	3_BSD	(-)	(-)	(-)	
getitimer	3c_PRM	RT_OS	(-)	(-)	
getlogin	3c_PRM	BA_LIB	P1003.1-4.2.4	(-)	
getmntany	getmntent(3c_PRM)	(-)	(-)	(-)	
getmntent	3c_PRM	(-)	(-)	(-)	
getmsg	2_PRM	BA_OS	(-)	(-)	
getmsg	2_STRM	BA_OS	(-)	(-)	
getopt	3c_PRM	BA_LIB	(-)	(-)	
getpagesize	3_BSD	(-)	(-)	(-)	
getpass	3c_PRM	SD_LIB	(-)	(-)	
getpgid	getpid(2_PRM)	BA_OS	(-)	(-)	
getpgrp	getpid(2_PRM)	getpid(BA_OS)	P1003.1-4.3.1	(-)	
getpid	2_PRM	BA_OS	P1003.1-4.1.1	(-)	
getpmsg	getmsg(2_PRM)	getmsg(BA_OS)	(-)	(-)	
getpmsg	getmsg(2_STRM)	getmsg(BA_OS)	(-)	(-)	
getppid	getpid(2_PRM)	getpid(BA_OS)	P1003.1-4.1.1	(-)	
getpriority	3_BSD	(-)	(-)	(-)	
getpw	3c_PRM	(-)	(-)	(-)	
getpwent	3c_PRM	BA_LIB	(-)	(-)	
getpwnam	getpwent(3c_PRM)	getpwent(BA_LIB)	P1003.1-9.2.2	(-)	

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getpwuid	getpwent(3c_PRM)	getpwent(BA_LIB)	P1003.1-9.2.2	(-)	
getrlimit	2_PRM	BA_OS	(-)	(-)	
getrusage	3_BSD	(-)	(-)	(-)	
getrusage	3_BSD	(-)	(-)	(-)	
gets	3s_PRM	BA_LIB	(-)	ANSI-4.9.7.7	
getsid	2_PRM	BA_OS	(-)	(-)	
getspent	3c_PRM	(-)	(-)	(-)	
getspnam	getspent(3c_PRM)	(-)	(-)	(-)	
getsubopt	3c_PRM	BA_LIB	(-)	(-)	
gettimeofday	3c_PRM	RT_OS	(-)	(-)	
gettimeofday	3_BSD	RT_OS	(-)	(-)	
gettxt	3c_PRM	BA_LIB	(-)	(-)	
getuid	2_PRM	BA_OS	P1003.1-4.2.1	(-)	
getusershell	getusrshl(3_BSD)	(-)	(-)	(-)	
getutent	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
getutid	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
getutline	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
getutmp	getutx(3c_PRM)	(-)	(-)	(-)	
getutmpx	getutx(3c_PRM)	(-)	(-)	(-)	
getutxent	getutx(3c_PRM)	(-)	(-)	(-)	
getutxid	getutx(3c_PRM)	(-)	(-)	(-)	
getutxline	getutx(3c_PRM)	(-)	(-)	(-)	
getvfsany	getvfsent(3c_PRM)	(-)	(-)	(-)	
getvfsent	3c_PRM	(-)	(-)	(-)	
getvfsfile	getvfsent(3c_PRM)	(-)	(-)	(-)	
getvfsspec	getvfsent(3c_PRM)	(-)	(-)	(-)	
getw	getc(3s_PRM)	getc(BA_LIB)	(-)	(-)	
getwd	getwd(3_BSD)	(-)	(-)	(-)	
gmtime	ctime(3c_PRM)	ctime(BA_LIB)	(-)	ANSI-4.12.3.3	
grantpt	3c_STRM	BA_LIB	(-)	(-)	
gsignal	ssignal(3c_PRM)	(-)	(-)	(-)	
hcreate	hsearch(3c_PRM)	hsearch(BA_LIB)	(-)	(-)	
hdestroy	hsearch(3c_PRM)	hsearch(BA_LIB)	(-)	(-)	
hsearch	3c_PRM	BA_LIB	(-)	(-)	
hyperbolic	(-)	BA_LIB,m	(-)	(-)	
hypot	3m_PRM	BA_LIB,m	(-)	(-)	
ieee_handler	3_BSD	(-)	(-)	(-)	
index	3_BSD	(-)	(-)	(-)	
initgroups	3c_PRM	BA_LIB	(-)	(-)	
initstate	random(3_BSD)	(-)	(-)	(-)	
insque	3c_PRM	(-)	(-)	(-)	
int	qsort(3c_PRM)	(-)	(-)	(-)	
int	scandir(3_BSD)	(-)	(-)	(-)	
int	scandir(3_BSD)	(-)	(-)	(-)	
ioctl	2_PRM	BA_OS	(-)	(-)	
isalnum	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.1	
isalpha	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.2	
isascii	ctype(3c_PRM)	ctype(BA_LIB)	(-)	(-)	
isastream	3c_STRM	BA_LIB	(-)	(-)	
isatty	ttyname(3c_PRM)	ttynameBA_LIB)	P1003.1-4.7.2	(-)	
iscntrl	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.3	
isdigit	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.4	
isgraph	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.5	
islower	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.6	
isnan	3c_PRM	BA_LIB,m	(-)	(-)	
isnan	fp_class_type(num_BSD)	BA_LIB,m	(-)	(-)	
isnand	isnan(3c_PRM)	(-)	(-)	(-)	
isnanf	isnan(3c_PRM)	(-)	(-)	(-)	
isprint	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.7	
ispunct	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.8	
isspace	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.9	
isupper	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.10	
isxdigit	ctype(3c_PRM)	ctype(BA_LIB)	(-)	ANSI-4.3.1.11	
itom	mp(3_BSD)	(-)	(-)	(-)	
j0	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	
j1	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	
jn	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	
jrand48	drand48(3c_PRM)	drand48(BA_LIB)	(-)	(-)	
kill	2_PRM	BA_OS	P1003.1-3.3.2	(-)	
killpg	3_BSD	(-)	(-)	(-)	
l3tol	3c_PRM	(-)	(-)	(-)	
l64a	a64l(3c_PRM)	a64l(SD_LIB)	(-)	(-)	
labs	abs(3c_PRM)	abs(BA_LIB,m)	(-)	ANSI-4.10.6.3	
lchown	chown(2_PRM)	chown(BA_OS)	(-)	(-)	
lckpwdf	getspent(3c_PRM)	(-)	(-)	(-)	

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lcong48	short(nsigned_PRM)	drand48(BA_LIB)	(-)	(-)	
ldexp	frexp(3c_PRM)	frexp(BA_LIB,m)	(-)	ANSI-4.5.4.3	
ldiv	div(3c_PRM)	div(BA_LIB,m)	(-)	ANSI-4.10.6.4	
lfind	lsearch(3c_PRM)	lsearch(BA_LIB)	(-)	(-)	
lgamma	gamma(3m_PRM)	BA_LIB,m	(-)	(-)	
link	2_PRM	BA_OS	P1003.1-5.3.4	(-)	
localeconv	3c_PRM	BA_LIB	(-)	ANSI-4.4.2.1	
localtime	ctime(3c_PRM)	ctime(BA_LIB)	(-)	ANSI-4.12.3.4	
lock	2_XENIX	(-)	(-)	(-)	
lockf	3c_PRM	BA_OS	(-)	(-)	
locking	2_XENIX	(-)	(-)	(-)	
log	exp(3m_PRM)	exp(BA_LIB,m)	(-)	ANSI-4.5.4.4	
log10	exp(3m_PRM)	exp(BA_LIB,m)	(-)	ANSI-4.5.4.5	
log10f	exp(3m_PRM)	(-)	(-)	(-)	
logb	frexp(3c_PRM)	scalb(BA_LIB,m)	(-)	(-)	
logf	exp(3m_PRM)	(-)	(-)	(-)	
longjmp	setjmp(3c_PRM)	setjmp(BA_LIB)	(-)	ANSI-4.6.1.2	
longjmp	setjmp(3_BSD)	setjmp(BA_LIB)	(-)	ANSI-4.6.1.2	
lrand48	drand48(3c_PRM)	drand48(BA_LIB)	(-)	(-)	
lsearch	3c_PRM	BA_LIB	(-)	(-)	
lseek	2_PRM	BA_OS	P1003.1-6.5.3	(-)	
lstat	stat(2_PRM)	stat(BA_OS)	(-)	(-)	
lstat	stat(2_XENIX)	stat(BA_OS)	(-)	(-)	
ltol3	l3tol(3c_PRM)	(-)	(-)	(-)	
madd	mp(3_BSD)	(-)	(-)	(-)	
maillock	3x_PRM	(-)	(-)	(-)	
mailunlock	maillock(3x_PRM)	(-)	(-)	(-)	
major	makedev(3c_PRM)	(-)	(-)	(-)	
makecontext	3c_PRM	(-)	(-)	(-)	
makedev	3c_PRM	(-)	(-)	(-)	
mallinfo	malloc(3x_PRM)	malloc(BA_OS)	(-)	(-)	
malloc	3c_PRM	BA_OS	(-)	ANSI-4.10.3.3	
malloc	3x_PRM	BA_OS	(-)	ANSI-4.10.3.3	
mallopt	malloc(3x_PRM)	malloc(BA_OS)	(-)	(-)	
MARK	(-)	SD_LIB	(-)	(-)	
matherr	3m_PRM	BA_LIB,m	(-)	(-)	
mbchar	(-)	BA_LIB	(-)	(-)	
mblen	mbchar(3c_PRM)	mbchar(BA_LIB)	(-)	ANSI-4.10.7.1	
mbstowcs	mbstring(3c_PRM)	mbstring(BA_LIB)	(-)	ANSI-4.10.8.1	
mbstring	(-)	BA_LIB	(-)	(-)	
mbtowc	mbchar(3c_PRM)	mbchar(BA_LIB)	(-)	ANSI-4.10.7.2	
mcmp	mp(3_BSD)	(-)	(-)	(-)	
mctl	3_BSD	(-)	(-)	(-)	
mdiv	mp(3_BSD)	(-)	(-)	(-)	
memalign	malloc(3c_PRM)	(-)	(-)	(-)	
memccpy	memory(3c_PRM)	memory(BA_LIB)	(-)	(-)	
memchr	memory(3c_PRM)	memory(BA_LIB)	(-)	ANSI-4.11.5.1	
memcmp	memory(3c_PRM)	memory(BA_LIB)	(-)	ANSI-4.11.4.1	
memcntl	2_PRM	RT_OS	(-)	(-)	
memcpy	memory(3c_PRM)	memory(BA_LIB)	(-)	ANSI-4.11.2.1	
memmove	memory(3c_PRM)	memory(BA_LIB)	(-)	ANSI-4.11.2.2	
memory	(-)	BA_LIB	(-)	(-)	
memset	memory(3c_PRM)	memory(BA_LIB)	(-)	ANSI-4.11.6.1	
mfree	mp(3_BSD)	(-)	(-)	(-)	
min	mp(3_BSD)	(-)	(-)	(-)	
mincore	2_PRM	(-)	(-)	(-)	
minor	makedev(3c_PRM)	(-)	(-)	(-)	
mkdir	2_PRM	BA_OS	P1003.1-5.4.1	(-)	
mkfifo	3c_PRM	BA_OS	P1003.1-5.4.2	(-)	
mknod	2_PRM	BA_OS	(-)	(-)	
mknod	2_XENIX	BA_OS	(-)	(-)	
mkstemp	3_BSD	(-)	(-)	(-)	
mktemp	3c_PRM	BA_LIB	(-)	(-)	
mktime	3c_PRM	BA_LIB	(-)	ANSI-4.12.2.3	
mlock	3c_PRM	RT_OS	(-)	(-)	
mlockall	3c_PRM	RT_OS	(-)	(-)	
mmap	2_PRM	KE_OS	(-)	(-)	
modf	frexp(3c_PRM)	frexp(BA_LIB,m)	(-)	ANSI-4.5.4.6	
modff	frexp(3c_PRM)	(-)	(-)	(-)	
monitor	3c_PRM	SD_LIB	(-)	(-)	
mount	2_PRM	BA_OS	(-)	(-)	
mout	mp(3_BSD)	(-)	(-)	(-)	
mprotect	2_PRM	KE_OS	(-)	(-)	
mrand48	drand48(3c_PRM)	drand48(BA_LIB)	(-)	(-)	
msgctl	2_PRM	KE_OS	(-)	(-)	

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msgget	2_PRM	KE_OS	(-)	(-)	
msgop	(-)	KE_OS	(-)	(-)	
msgrcv	msgop(2_PRM)	msgop(KE_OS)	(-)	(-)	
msgsnd	msgop(2_PRM)	msgop(KE_OS)	(-)	(-)	
msqrt	mp(3_BSD)	(-)	(-)	(-)	
msub	mp(3_BSD)	(-)	(-)	(-)	
msync	3c_PRM	KE_OS	(-)	(-)	
mtox	mp(3_BSD)	(-)	(-)	(-)	
mult	mp(3_BSD)	(-)	(-)	(-)	
munlock	mlock(3c_PRM)	mlock(RT_OS)	(-)	(-)	
munlockall	mlockall(3c_PRM)	mlockall(RT_OS)	(-)	(-)	
munmap	2_PRM	KE_OS	(-)	(-)	
nap	2_XENIX	(-)	(-)	(-)	
nbwaitsem	waitsem(2_XENIX)	(-)	(-)	(-)	
nextafter	frexp(3c_PRM)	scalb(BA_LIB,m)	(-)	(-)	
nextkey	dbm(3_BSD)	(-)	(-)	(-)	
nftw	ftw(3c_PRM)	ftw(BA_LIB)	(-)	(-)	
nice	2_PRM	KE_OS	(-)	(-)	
nice	3_BSD	KE_OS	(-)	(-)	
nlist	3e_PRM	SD_LIB	(-)	(-)	
nlist	3_BSD	SD_LIB	(-)	(-)	
nl_langinfo	(-)	BA_LIB	(-)	(-)	
nlist	3_BSD	(-)	(-)	(-)	
nrand48	drand48(3c_PRM)	drand48(BA_LIB)	(-)	(-)	
offsetof	3c_PRM	(-)	(-)	(-)	
open	2_PRM	BA_OS	P1003.1-5.3.1	(-)	
opendir	directory(3c_PRM)	directory(BA_OS)	P1003.1-5.1.2	(-)	
openlog	syslog(3_BSD)	(-)	(-)	(-)	
opensem	2_XENIX	(-)	(-)	(-)	
pathconf	fpathconf(2_PRM)	fpathconf(BA_OS)	P1003.1-5.7.1	(-)	
pause	2_PRM	BA_OS	P1003.1-3.4.2	(-)	
pclose	popen(3s_PRM)	popen(BA_OS)	(-)	(-)	
perror	3c_PRM	BA_LIB	(-)	ANSI-4.9.10.4	
pipe	2_PRM	BA_OS	P1003.1-6.1.1	(-)	
pkginfo	(-)	AS_LIB	(-)	(-)	
pkgparam	(-)	AS_LIB	(-)	(-)	
plock	2_PRM	KE_OS	(-)	(-)	
poll	2_PRM	BA_OS	(-)	(-)	
poll	2_STRM	BA_OS	(-)	(-)	
popen	3s_PRM	BA_OS	(-)	(-)	
pow	exp(3m_PRM)	exp(BA_LIB,m)	(-)	ANSI-4.5.5.1	
pow	mp(3_BSD)	exp(BA_LIB,m)	(-)	ANSI-4.5.5.1	
powf	exp(3m_PRM)	(-)	(-)	(-)	
printf	3s_PRM	BA_LIB	(-)	ANSI-4.9.6.3	
printf	3_BSD	BA_LIB	(-)	ANSI-4.9.6.3	
priocntl	2_PRM	RT_OS	(-)	(-)	
priocntlset	2_PRM	(-)	(-)	(-)	
profil	2_PRM	KE_OS	(-)	(-)	
psiginfo	psignal(3c_PRM)	(-)	(-)	(-)	
psignal	3c_PRM	(-)	(-)	(-)	
psignal	3_BSD	(-)	(-)	(-)	
ptrace	2_PRM	KE_OS	(-)	(-)	
ptsname	3c_STRM	BA_LIB	(-)	(-)	
putc	3s_PRM	BA_LIB	(-)	ANSI-4.9.7.8	
putchar	putc(3s_PRM)	putc(BA_LIB)	(-)	ANSI-4.9.7.9	
putenv	3c_PRM	BA_LIB	(-)	(-)	
putmsg	2_PRM	BA_OS	(-)	(-)	
putmsg	2_STRM	BA_OS	(-)	(-)	
putpmsg	putmsg(2_PRM)	putmsg(BA_OS)	(-)	(-)	
putpmsg	putmsg(2_STRM)	putmsg(BA_OS)	(-)	(-)	
putpwent	3c_PRM	SD_LIB	(-)	(-)	
puts	3s_PRM	BA_LIB	(-)	ANSI-4.9.7.10	
putspent	3c_PRM	(-)	(-)	(-)	
pututline	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
pututxline	getutx(3c_PRM)	(-)	(-)	(-)	
putw	putc(3s_PRM)	putc(BA_LIB)	(-)	(-)	
qsort	3c_PRM	BA_LIB	(-)	ANSI-4.10.5.2	
raise	3c_PRM	BA_OS	(-)	ANSI-4.7.2.1	
rand	3c_PRM	BA_LIB	(-)	ANSI-4.10.2.1	
rand	3_BSD	BA_LIB	(-)	ANSI-4.10.2.1	
random	3_BSD	(-)	(-)	(-)	
rdchk	2_XENIX	(-)	(-)	(-)	
read	2_PRM	BA_OS	P1003.1-6.4.1	(-)	
readdir	directory(3c_PRM)	directory(BA_OS)	P1003.1-5.1.2	(-)	
readlink	2_PRM	BA_OS	(-)	(-)	

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readv	read(2_PRM)	read(BA_OS)	(-)	(-)	
realloc	malloc(3c_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.4	
realloc	malloc(3x_PRM)	malloc(BA_OS)	(-)	ANSI-4.10.3.4	
realpath	3c_PRM	(-)	(-)	(-)	
reboot	3_BSD	(-)	(-)	(-)	
regcmp	3g_PRM	(-)	(-)	(-)	
regex	regcmp(3g_PRM)	(-)	(-)	(-)	
regexp	(-)	BA_LIB	(-)	(-)	
remainder	floor(3m_PRM)	floor(BA_LIB,m)	(-)	(-)	
remove	3c_PRM	BA_OS	(-)	ANSI-4.9.4.1	
remque	insque(3c_PRM)	(-)	(-)	(-)	
rename	2_PRM	BA_OS	P1003.1-5.5.3	ANSI-4.9.4.2	
rewind	fseek(3s_PRM)	fseek(BA_OS)	(-)	ANSI-4.9.9.5	
rewinddir	directory(3c_PRM)	directory(BA_OS)	P1003.1-5.1.2	(-)	
rindex	index(3_BSD)	(-)	(-)	(-)	
rint	floor(3m_PRM)	(-)	(-)	(-)	
rmdir	2_PRM	BA_OS	P1003.1-5.5.2	(-)	
rpow	mp(3_BSD)	(-)	(-)	(-)	
run_crypt	crypt(3x_PRM)	(-)	(-)	(-)	
run_setkey	crypt(3x_PRM)	(-)	(-)	(-)	
sbrk	brk(2_PRM)	(-)	(-)	(-)	
scalb	frexp(3c_PRM)	BA_LIB,m	(-)	(-)	
scalbn	fp_class_type(num_BSD)	(-)	(-)	(-)	
scandir	3_BSD	(-)	(-)	(-)	
scanf	3s_PRM	BA_LIB	(-)	ANSI-4.9.6.4	
sdenter	2_XENIX	(-)	(-)	(-)	
sdfree	sdget(2_XENIX)	(-)	(-)	(-)	
sdget	2_XENIX	(-)	(-)	(-)	
sdgetv	2_XENIX	(-)	(-)	(-)	
sdiv	mp(3_BSD)	(-)	(-)	(-)	
sdleave	sdenter(2_XENIX)	(-)	(-)	(-)	
sdwaitv	sdgetv(2_XENIX)	(-)	(-)	(-)	
seconvert	econvert(3_BSD)	(-)	(-)	(-)	
seed48	(-)	drand48(BA_LIB)	(-)	(-)	
seekdir	directory(3c_PRM)	BA_OS	(-)	(-)	
semctl	2_PRM	KE_OS	(-)	(-)	
semget	2_PRM	KE_OS	(-)	(-)	
semop	2_PRM	KE_OS	(-)	(-)	
setbuf	3s_PRM	BA_LIB	(-)	ANSI-4.9.5.5	
setbuf	3_BSD	BA_LIB	(-)	ANSI-4.9.5.5	
setbuffer	3_BSD	(-)	(-)	(-)	
setbuffer	setbuf(3_BSD)	(-)	(-)	(-)	
setcontext	getcontext(2_PRM)	getcontext(BA_OS)	(-)	(-)	
setgid	setuid(2_PRM)	setuid(BA_OS)	P1003.1-4.2.2	(-)	
setgrent	getgrent(3c_PRM)	getgrent(BA_LIB)	(-)	(-)	
setgroups	getgroups(2_PRM)	getgroups(BA_OS)	(-)	(-)	
sethostname	gethostname(3_BSD)	(-)	(-)	(-)	
setitimer	getitimer(3c_PRM)	getitimer(RT_OS)	(-)	(-)	
setjmp	3c_PRM	BA_LIB	(-)	ANSI-4.6.1.1	
setjmp	3_BSD	BA_LIB	(-)	ANSI-4.6.1.1	
setkey	crypt(3c_PRM)	crypt(BA_LIB)	(-)	(-)	
setkey	crypt(3x_PRM)	crypt(BA_LIB)	(-)	(-)	
setlinebuf	setbuf(3_BSD)	(-)	(-)	(-)	
setlinebuf	setbuffer(3_BSD)	(-)	(-)	(-)	
setlocale	3c_PRM	BA_OS	P1003.1-8.1.2	ANSI-4.4.1.1	
setlogmask	syslog(3_BSD)	(-)	(-)	(-)	
setpgid	2_PRM	BA_OS	P1003.1-4.3.3	(-)	
setpgrp	2_PRM	BA_OS	(-)	(-)	
setpriority	getpriority(3_BSD)	(-)	(-)	(-)	
setpwent	getpwent(3c_PRM)	getpwent(BA_LIB)	(-)	(-)	
setregid	3_BSD	(-)	(-)	(-)	
setreuid	3_BSD	(-)	(-)	(-)	
setrlimit	getrlimit(2_PRM)	getrlimit(BA_OS)	(-)	(-)	
setsid	2_PRM	BA_OS	P1003.1-4.3.2	(-)	
setspent	getspent(3c_PRM)	(-)	(-)	(-)	
setstate	random(3_BSD)	(-)	(-)	(-)	
settimeofday	gettimeofday(3c_PRM)	gettimeofday(RT_OS)	(-)	(-)	
settimeofday	gettimeofday(3_BSD)	gettimeofday(RT_OS)	(-)	(-)	
setuid	2_PRM	BA_OS	P1003.1-4.2.2	(-)	
setusershell	getusrshl(3_BSD)	(-)	(-)	(-)	
setutent	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
setutxent	getutx(3c_PRM)	(-)	(-)	(-)	
setvbuf	setbuf(3s_PRM)	setbuf(BA_LIB)	(-)	ANSI-4.9.5.6	
setvbuf	setbuf(3_BSD)	setbuf(BA_LIB)	(-)	ANSI-4.9.5.6	
sfconvert	econvert(3_BSD)	(-)	(-)	(-)	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
sgconvert	econvert(3_BSD)	(-)	(-)	(-)	
sgetl	sputl(3x_PRM)	sputl(SD_LIB)	(-)	(-)	
shmat	shmop(2_PRM)	shmop(KE_OS)	(-)	(-)	
shmctl	2_PRM	KE_OS	(-)	(-)	
shmdt	shmop(2_PRM)	shmop(KE_OS)	(-)	(-)	
shmget	2_PRM	KE_OS	(-)	(-)	
shmop	(-)	KE_OS	(-)	(-)	
sigaction	2_PRM	BA_OS	P1003.1-3.3.4	(-)	
sigaddset	sigsetops(3c_PRM)	sigsetops(BA_OS)	P1003.1-3.3.3	(-)	
sigaltstack	2_PRM	BA_OS	(-)	(-)	
sigblock	3_BSD	(-)	(-)	(-)	
sigdelset	sigsetops(3c_PRM)	sigsetops(BA_OS)	P1003.1-3.3.3	(-)	
sigemptyset	sigsetops(3c_PRM)	sigsetops(BA_OS)	P1003.1-3.3.3	(-)	
sigfillset	sigsetops(3c_PRM)	sigsetops(BA_OS)	P1003.1-3.3.3	(-)	
sigfpe	3_BSD	(-)	(-)	(-)	
sighold	signal(2_PRM)	signal(BA_OS)	(-)	(-)	
sigignore	signal(2_PRM)	signal(BA_OS)	(-)	(-)	
siginterrupt	sigintrp(3_BSD)	(-)	(-)	(-)	
sigismember	sigsetops(3c_PRM)	sigsetops(BA_OS)	P1003.1-3.3.3	(-)	
siglongjmp	setjmp(3_BSD)	sigsetjmp(BA_LIB)	P1003.1-8.3.1	(-)	
siglongjmp	sigsetjmp(3c_PRM)	sigsetjmp(BA_LIB)	P1003.1-8.3.1	(-)	
sigmask	sigblock(3_BSD)	(-)	(-)	(-)	
sigmask	sigsetmask(3_BSD)	(-)	(-)	(-)	
signal	2_PRM	BA_OS	(-)	ANSI-4.7.1.1	
signal	3_BSD	BA_OS	(-)	ANSI-4.7.1.1	
sigpause	3_BSD	signal(BA_OS)	(-)	(-)	
sigpause	signal(2_PRM)	signal(BA_OS)	(-)	(-)	
sigpending	2_PRM	BA_OS	P1003.1-3.3.6	(-)	
sigprocmask	2_PRM	BA_OS	P1003.1-3.3.5	(-)	
sigrelse	signal(2_PRM)	signal(BA_OS)	(-)	(-)	
sigsem	2_XENIX	(-)	(-)	(-)	
sigsend	2_PRM	BA_OS	(-)	(-)	
sigsendset	sigsend(2_PRM)	sigsend(BA_OS)	(-)	(-)	
sigset	signal(2_PRM)	signal(BA_OS)	(-)	(-)	
sigsetjmp	3c_PRM	BA_LIB	P1003.1-8.3.1	(-)	
sigsetjmp	setjmp(3_BSD)	BA_LIB	P1003.1-8.3.1	(-)	
sigsetmask	3_BSD	(-)	(-)	(-)	
sigsetops	(-)	BA_OS	(-)	(-)	
sigstack	3_BSD	(-)	(-)	(-)	
sigsuspend	2_PRM	BA_OS	P1003.1-3.3.7	(-)	
sigvec	3_BSD	(-)	(-)	(-)	
sin	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.6	
sinf	trig(3m_PRM)	(-)	(-)	(-)	
single_to_decimal	flt2dec(3_BSD)	(-)	(-)	(-)	
sinh	3m_PRM	hyperbolic(BA_LIB,m)	(-)	ANSI-4.5.3.2	
sinhf	sinh(3m_PRM)	(-)	(-)	(-)	
sleep	3c_PRM	BA_OS	P1003.1-3.4.3	(-)	
sleep	3_BSD	BA_OS	P1003.1-3.4.3	(-)	
sprintf	printf(3s_PRM)	printf(BA_LIB)	(-)	ANSI-4.9.6.5	
sprintf	printf(3_BSD)	printf(BA_LIB)	(-)	ANSI-4.9.6.5	
sputl	3x_PRM	SD_LIB	(-)	(-)	
sqrt	exp(3m_PRM)	exp(BA_LIB,m)	(-)	ANSI-4.5.5.2	
sqrtf	exp(3m_PRM)	(-)	(-)	(-)	
srand	rand(3c_PRM)	rand(BA_LIB)	(-)	ANSI-4.10.2.2	
srand	rand(3_BSD)	rand(BA_LIB)	(-)	ANSI-4.10.2.2	
srand48	drand48(3c_PRM)	drand48(BA_LIB)	(-)	(-)	
srandom	random(3_BSD)	(-)	(-)	(-)	
sscanf	scanf(3s_PRM)	scanf(BA_LIB)	(-)	ANSI-4.9.6.6	
ssignal	3c_PRM	(-)	(-)	(-)	
stat	2_PRM	BA_OS	P1003.1-5.6.2	(-)	
stat	2_XENIX	BA_OS	P1003.1-5.6.2	(-)	
statvfs	2_PRM	BA_OS	(-)	(-)	
stdio	(-)	BA_LIB	(-)	(-)	
step	regexpr(3g_PRM)	regexp(BA_LIB)	(-)	(-)	
stime	2_PRM	BA_OS	(-)	(-)	
store	dbm(3_BSD)	(-)	(-)	(-)	
strcasecmp	string(3_BSD)	(-)	(-)	(-)	
strcat	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.3.1	
strchr	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.2	
strcmp	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.4.2	
strcoll	3c_PRM	BA_LIB	(-)	ANSI-4.11.4.3	
strcpy	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.2.3	
strcspn	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.3	
strdup	string(3c_PRM)	string(BA_LIB)	(-)	(-)	
strerror	3c_PRM	BA_LIB	(-)	ANSI-4.11.6.2	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
strftime	3c_PRM	BA_LIB	(-)	ANSI-4.12.3.5	
string	(-)	BA_LIB	(-)	(-)	
strlen	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.6.3	
strncasecmp	string(3_BSD)	(-)	(-)	(-)	
strncat	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.3.2	
strncmp	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.4.4	
strncpy	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.2.4	
strpbrk	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.4	
strrchr	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.5	
strspn	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.6	
strstr	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.7	
strtod	3c_PRM	BA_LIB	(-)	ANSI-4.10.1.4	
strtok	string(3c_PRM)	string(BA_LIB)	(-)	ANSI-4.11.5.8	
strtol	3c_PRM	BA_LIB	(-)	ANSI-4.10.1.5	
strtoul	(-)	strtol(BA_LIB)	(-)	ANSI-4.10.1.6	
strxfrm	3c_PRM	BA_LIB	(-)	ANSI-4.11.4.5	
swab	3c_PRM	BA_LIB	(-)	(-)	
swapcontext	makecontext(3c_PRM)	(-)	(-)	(-)	
swapctl	2_PRM	RT_OS	(-)	(-)	
symlink	2_PRM	BA_OS	(-)	(-)	
sync	2_PRM	BA_OS	(-)	(-)	
sys3b	2_PRM	(-)	(-)	(-)	
syscall	3_BSD	(-)	(-)	(-)	
sysconf	3c_PRM	BA_OS	P1003.1-4.8.1	(-)	
sysfs	2_PRM	(-)	(-)	(-)	
sysfs	2_PRM	(-)	(-)	(-)	
sysfs	2_PRM	(-)	(-)	(-)	
sysinfo	2_PRM	(-)	(-)	(-)	
syslog	3_BSD	(-)	(-)	(-)	
sysmem	(-)	AS_LIB	(-)	(-)	
system	3s_PRM	BA_OS	(-)	ANSI-4.10.4.5	
tan	trig(3m_PRM)	trig(BA_LIB,m)	(-)	ANSI-4.5.2.7	
tanf	trig(3m_PRM)	(-)	(-)	(-)	
tanh	sinh(3m_PRM)	hyperbolic(BA_LIB,m)	(-)	ANSI-4.5.3.3	
tanhf	sinh(3m_PRM)	(-)	(-)	(-)	
tcdrain	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.2	(-)	
tcflow	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.2	(-)	
tcflush	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.2	(-)	
tcgetattr	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.1	(-)	
tcgetpgrp	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.3	(-)	
tcgetsid	termios(2_PRM)	termios(BA_OS)	(-)	(-)	
tcsendbreak	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.2	(-)	
tcsetattr	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.1	(-)	
tcsetpgrp	3c_PRM	termios(BA_OS)	P1003.1-7.2.4	(-)	
tcsetpgrp	termios(2_PRM)	termios(BA_OS)	P1003.1-7.2.4	(-)	
tdelete	tsearch(3c_PRM)	tsearch(BA_LIB)	(-)	(-)	
telldir	directory(3c_PRM)	BA_OS	(-)	(-)	
tempnam	tmpnam(3s_PRM)	tmpnam(BA_LIB)	(-)	(-)	
termios	(-)	BA_OS	(-)	(-)	
tfind	tsearch(3c_PRM)	tsearch(BA_LIB)	(-)	(-)	
time	2_PRM	BA_OS	P1003.1-4.5.1	ANSI-4.12.2.4	
times	2_PRM	BA_OS	P1003.1-4.5.2	(-)	
times	3_BSD	BA_OS	P1003.1-4.5.2	(-)	
timezone	timezone(3_BSD)	(-)	(-)	(-)	
tmpfile	3s_PRM	BA_LIB	(-)	ANSI-4.9.4.3	
tmpnam	3s_PRM	BA_LIB	(-)	ANSI-4.9.4.4	
toascii	conv(3c_PRM)	conv(BA_LIB)	(-)	(-)	
tolower	conv(3c_PRM)	conv(BA_LIB)	(-)	ANSI-4.3.2.1	
toupper	conv(3c_PRM)	conv(BA_LIB)	(-)	ANSI-4.3.2.2	
trig	(-)	BA_LIB,m	(-)	(-)	
truncate	3c_PRM	(-)	(-)	(-)	
tsearch	3c_PRM	BA_LIB	(-)	(-)	
ttyname	3c_PRM	BA_LIB	P1003.1-4.7.2	(-)	
ttyslot	3c_PRM	(-)	(-)	(-)	
twalk	tsearch(3c_PRM)	tsearch(BA_LIB)	(-)	(-)	
tzset	ctime(3c_PRM)	ctime(BA_LIB)	P1003.1-8.3.2	(-)	
uadmin	2_PRM	(-)	(-)	(-)	
ualarm	3_BSD	(-)	(-)	(-)	
ulckpwdf	getspent(3c_PRM)	(-)	(-)	(-)	
ulimit	2_PRM	BA_OS	(-)	(-)	
umask	2_PRM	BA_OS	P1003.1-5.3.3	(-)	
umount	2_PRM	BA_OS	(-)	(-)	
uname	2_PRM	BA_OS	P1003.1-4.4.1	(-)	
ungetc	3s_PRM	BA_LIB	(-)	ANSI-4.9.7.11	
unlink	2_PRM	BA_OS	P1003.1-5.5.1	(-)	

Name	SVR4(PRM/STRM /BSD/XENIX)	SVID3(BA/KE /RT/AS/SD)	P1003.1 Draft 13	ANSI/X3J11 Draft 88-159	Priority
unlockpt	3c_STRM	BA_LIB	(-)	(-)	
unordered	isnan(3c_PRM)	(-)	(-)	(-)	
updwtmp	getutx(3c_PRM)	(-)	(-)	(-)	
updwtmpx	getutx(3c_PRM)	(-)	(-)	(-)	
usleep	3_BSD	(-)	(-)	(-)	
ustat	2_PRM	BA_OS	(-)	(-)	
utime	2_PRM	BA_OS	P1003.1-5.6.6	(-)	
utimes	3_BSD	(-)	(-)	(-)	
utmpname	getut(3c_PRM)	getut(SD_LIB)	(-)	(-)	
utmpxname	getutx(3c_PRM)	(-)	(-)	(-)	
va_arg	(-)	varargs(BA_ENV)	(-)	ANSI-4.8.1.2	
va_end	(-)	varargs(BA_ENV)	(-)	ANSI-4.8.1.3	
va_start	(-)	varargs(BA_ENV)	(-)	ANSI-4.8.1.1	
valloc	malloc(3c_PRM)	(-)	(-)	(-)	
vfork	2_PRM	(-)	(-)	(-)	
vfprintf	printf(3_BSD)	vprintf(BA_LIB)	(-)	ANSI-4.9.6.7	
vfprintf	vprintf(3s_PRM)	vprintf(BA_LIB)	(-)	ANSI-4.9.6.7	
vprintf	3s_PRM	BA_LIB	(-)	ANSI-4.9.6.8	
vprintf	printf(3_BSD)	BA_LIB	(-)	ANSI-4.9.6.8	
vsprintf	printf(3_BSD)	vprintf(BA_LIB)	(-)	ANSI-4.9.6.9	
vsprintf	vprintf(3s_PRM)	vprintf(BA_LIB)	(-)	ANSI-4.9.6.9	
wait	2_PRM	BA_OS	P1003.1-3.2.1	(-)	
wait	3_BSD	BA_OS	P1003.1-3.2.1	(-)	
wait3	wait(3_BSD)	(-)	(-)	(-)	
wait4	wait(3_BSD)	(-)	(-)	(-)	
waitid	2_PRM	BA_OS	(-)	(-)	
waitpid	2_PRM	wait(BA_OS)	P1003.1-3.2.1	(-)	
waitsem	2_XENIX	(-)	(-)	(-)	
wcstombs	mbstring(3c_PRM)	mbstring(BA_LIB)	(-)	ANSI-4.10.8.2	
wctomb	mbchar(3c_PRM)	mbchar(BA_LIB)	(-)	ANSI-4.10.7.3	
write	2_PRM	BA_OS	P1003.1-6.4.2	(-)	
writev	write(2_PRM)	write(BA_OS)	(-)	(-)	
xtom	mp(3_BSD)	(-)	(-)	(-)	
y0	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	
y1	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	
yn	bessel(3m_PRM)	Bessel(BA_LIB,m)	(-)	(-)	

Appendix C - Commands in SVR4.0

This appendix is intended to be a complete list of commands in the SVR4 related products and the *de jure* or *de facto* standards, for a comparative consideration from I18N/L10N standpoints.

REFERENCES

SVR4	UNIX System V Release 4 Reference Manuals (MRD Load D6), 1989 by AT&T.
SVID3	The UNIX System V Interface definition Third Edition Vol.1-4, 1989 by AT&T.
POSIX.2	P1003.2/Draft 9, 29 August 1989, by IEEE POSIX.2 Committee. P1003.2a/Draft 3, 31 October 1989, by IEEE POSIX.2 Committee.
XPG3	The X/Open Portability Guide Issue 3 Vol.1, 1989 by X/Open Company Limited.
MNLS3.2	UNIX System V Multi-National Language Supplement Release 3.2 Product Overview, March 1989 by AT&T USOP.
MNLS4.0	(unpublished document, IL90-05-N018) MNLS4.0 Related Products, by AT&T USOP.
SIGMA	SIGMA OS V0R1x Japanese Extension Specification (in Japanese), March 1989 by IPA SIGMA System Project Headquarters.

FIELD NOTATION

Each field of the list has its own notation as follows.

SVR4 1[MCF]_{URM|PRM|SARM|BSD|XENIX|NUA|SS|STRM|..}

1_	User's command xxx(1)
1M_	System administrator's command xxx(1M)
1C_	Basic networking command xxx(1C)
1F_	FMLI utility command xxx(1F)
URM	User's Reference Manual
PRM	Programmer's Reference Manual
SARM	System Administrator's Reference Manual
BSD	BSD Compatibility Package Reference Manual
XENIX	XENIX Compatibility Package Reference Manual
NUA	Network User's & Administrator's Guide
SS	System Services and Application Packaging Tools

	STRM	STREAMS	Programmer's Guide

SVID3 {BU|AU|AS|SD|TI|RS}_CMD

- BU Basic Utilities Extension
- AU Advanced Utilities Extension
- AS Administered Systems Extension
- SD Software Development Extension
- TI Terminal Interface Extension
- RS Remote Service Extension

POSIX.2 P1003.2-m.n

The number "m.n" indicates a section of the command in the P1003.2 Draft 9.

P1003.2a-x.y
The number "x.y" points a section of the command in the P1003.2a Draft 3.

XPG3 Vm-n/warning code(s)/status/8bit-transparency

where,

Vm-n The number "m-n" denotes a volume-chapter number of the command in the XPG3.

warning code(s)

Portability warning codes for several dependencies of the specification are listed up.

- IN : Internationalized functionality
- LA : Language or cultural dependency
- MV : Marginal value
- OF : Output format incompletely specified
- OP : Dependent on optional service in X/Open System Interface (XSI)
- PI : The behaviour cannot be guaranteed to be consistent

UN : Possibly unsupportable feature

\- : None of the above

status Status of the interfaces are shown by the codes below.

M : Mandatory (default)

O : Optional

D : DEVELOPMENT systems only (special option)

N : New Interfaces (in XPG3)

W : Withdrawn

8-bit transparency

XPG3 NLS Interfaces (Vol.3, Chap.8) specify a minimum set of 8-bit transparent utility stuff.

8b : required to have 8-bit transparency

n8 : not required to have 8-bit transparency

\- : Withdrawn or linked command

MNLS3.2 Level/Message/Manual

where,

Level Functionality level.

f : Read/writes characters WITHOUT requiring recognition from from either the EUC primary code set 0 or the EUC supplementary code sets 1, 2, 3.

r : Reads/writes characters WITH requiring recognition from either the EUC primary code set 0 or the EUC supplementary code sets 1, 2, 3.

m : Has some multibyte character processing functionality, for example pattern processing.

u : Does not expect non-ASCII characters on account of functional specifications.

a : Restricted multibyte character processing functionality.

Message

\+ : Messaging facility

- : No messaging facility

Manual

sup_MNLS :
Supplementary manual pages for existing commands in the UNIX System V are provided in the MNLS document.

new_MNLS :
New manual pages are made in the MNLS document.

MNLS4.0 Level/Message/Manual

Notations are the same as MNLS3.2.

SIGMA Class,Level/pathname/arguments;data/format/sub-command/Manual

where,

Class

- UE_CMD :
  SIGMA UNIX Extension (to the base UNIX SVID2)
- NE_CMD :
  SIGMA Network Extension (maily from BSD4.2)
- JE_CMD :
  SIGMA Japanese Extension (nearly like JAE2.0 or MNLS1.0, but different)
- others :
  The same as the SVID (Issue 2) identifiers

Level

- MB : Japanese character (Multi-Byte character) support
- PN : 8-bit transparent Path Name support
- UN : other than the above (unspecified for Japanese character support)

pathname

- P : Has pathname arguments in the command line which may include Japanese (multibyte) characters
- u : Has pathname arguments but does not allow other than 7-bit characters
- - : No pathname arguments

arguments

- A : Has character string arguments other than pathnames in the command line which may include Japanese (multibyte) characters
- u : Has character string arguments but does not allow other than 7-bit characters
- - : None of the above

data

- DA : Has Japanese (Multibyte + Singlebyte) text data as input and/or output of the command.
- u : No text data support beyond 7-bit data

- - : No text data

format

- OF : Has output format issue of Japanese (Multibyte + Singlebyte) character string and/or text, in general. Recognition of several varieties of the character width are required, as well as 8-bit transparency.
- OW : Output field width recognition is required.
- u : Has output format issue but does not allow other than 7-bit characters
- - : Other than the above

sub-command

- C : Has own command syntax (sub-command) which should be extended to allow a Japanese (multibyte) character string or literal, in general.
- RE : Has a Regular Expression syntax covering Japanese (multibyte) characters
- - : Other than the above

Manual

- MA : Additional manual pages are provided in the Japanese Extension for the detailed description of the command.
- 8b : No additional manual pages, but only 8-bit transparency is required. Or, the specification of the command is no more than the table contents of several features in the Japanese Extension.
- - : Other than the above

Special notation common/specific to several topics

- JC : Japanese character specific issues
- LT : Literal issues
- SH : Shell variables
- PTN: String as "pattern"
- JIO: Japanese I/O specific issues
- JTI: Japanese terminal interface like terminfo
- JTE: Japanese terminal environment setting issues on tty line other than terminfo

Priority This field will be filled in through discussions with AT&T USO.

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
300	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
300s	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
4014	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
450	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
accept	1M_SARM	(-)	(-)	(-)	u/-/sup_MNLS	u?/-/man?	UE_CMD,UN/-/-;-/-/-/-	
acct	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
acctcms	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctcom	1_URM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctcon	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
acctcon1	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctcon2	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctdisk	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctdusg	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,UN/-/-;-/-/-/-	
acctmerg	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
accton	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctprc	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
acctprc1	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctprc2	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
acctsh	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
acctwtmp	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
addbib	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
admin	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/sup_MNLS	(-)	SD_CMD,MB/P/A;DA/d/C/MA	
adv	(-)	RS_CMD	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
alias	(-)	(-)	P1003.2a-5.1	(-)	(-)	(-)	(-)	
apply	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
apropos	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
ar	1_PRM,1_URM	BU_CMD	P1003.2-6.1	V1-3/UN,IN/M/8b	f/+/-	f?/-/man?	BU_CMD,PN/P/u;-/-/-/-	
arch	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
arp	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
as	1_PRM	SD_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	SD_CMD,PN/P/-;u/u/u/-	
asa	(-)	(-)	P1003.2-C.1	(-)	(-)	(-)	UE_CMD,UN/-/-;-/-/-/-	
assist	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
astgen	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
at	1_URM	AU_CMD	P1003.2a-5.2	V1-3/OF/M/n8	f/+/-	f?/-/man?	AU_CMD,MB/-/u;DA/-/-/MA	
atq	1_URM	AU_CMD	(-)	(-)	(-)	(-)	(-)	
atrm	1_URM	AU_CMD	(-)	(-)	(-)	(-)	(-)	
automount	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
autopush	1M_SARM,1M_STRM	(-)	(-)	(-)	(-)	(-)	(-)	
awk	1_URM	BU_CMD	P1003.2-4.1	V1-3/PI,IN/M/8b	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/P/RE;DA/d/C/MA	
backup	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
backup	1_XENIX	AS_CMD	(-)	(-)	(-)	(-)	(-)	
banner	1_URM	BU_CMD	(-)	V1-3/OF/M/n8	a/+/sup_MNLS	a?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
basename	1_BSD	BU_CMD	P1003.2-4.2	V1-3/-/M/n8	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
basename	1_URM	BU_CMD	P1003.2-4.2	V1-3/-/M/n8	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
batch	1_URM	AU_CMD	P1003.2a-5.3	(-)	f/+/-	f?/-/man?	AU_CMD,MB/-/-;DA/-/-/8b	
bc	1_URM	(-)	P1003.2-4.3	(-)	f/-/-	(-)	UE_CMD,PN/P/-;d/u/-/-	
bcheckrc	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
bdiff	1_URM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/-;DA/d/-/MA	
bfs	(-)	(-)	(-)	(-)	m/-/sup_MNLS	(-)	UE_CMD,MB/P/-;DA/JC/RE/MA	
bg	(-)	(-)	P1003.2a-5.4	(-)	(-)	(-)	(-)	
bkexcept	1_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
bkhistory	1_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
bkoper	1_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
bkreg	1_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
bkstatus	1_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
bootparamd	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
brc	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
buildsys	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
c89	(-)	(-)	P1003.2-A.1	(-)	(-)	(-)	(-)	
cal	1_URM	BU_CMD	(-)	V1-3/LA,OF/M/n8	a/-/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
calendar	1_URM	BU_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	BU_CMD,MB/-/-;DA/d/-/MA	
cancel	1_URM(->lp)	AU_CMD	(-)	V1-3(->lp)	u/+/-	u?/-/man?	AU_CMD,UN/-/-;-/-/-/-	
captoinfo	1M_CHAR,1M_SARM	TI_CMD	(-)	(-)	u/-/-	(-)	(-)	
cat	1_URM	BU_CMD	P1003.2-4.4	V1-3/PI/M/8b	f/+/sup_MNLS	f?/+/man?	BU_CMD,MB/P/-;DA/OF/-/MA	
catman	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
cb	1_PRM	(-)	(-)	(-)	f/-/sup_MNLS	f?/-/man?	UE_CMD,MB/P/-;DA/d/-/MA	
cc	1_BSD	SD_CMD	(-)	V1-3/PI,OP,UN/M/8b	f/-/sup_MNLS	(-)	SD_CMD,MB/P/-;DA/d/-/MA	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
cc	1_PRM	SD_CMD	(-)	V1-3/PI,OP,UN/M/8b	f/-/sup_MNLS	(-)	SD_CMD,MB/P/-;DA/d/-/MA	
cd	1_URM	BU_CMD	P1003.2-4.5	V1-3/-/M/8b	u/-/-	u?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
cdc	1_PRM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/JTX;DA/-/-/MA	
cflow	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/-	f?/-/man?	SD_CMD,MB/P/-;DA/d/-/MA	
chargefee	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
checkall	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,UN/-/-;-/-/-/-	
checkfsys	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
checknr	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
chgrp	1_URM	AU_CMD	P1003.2-4.6	V1-3(->chown)	u/+/-	u?/-/man?	AU_CMD,PN/P/u;-/-/-/-	
chkey	1_NI,1_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
chmod	1_URM	BU_CMD	P1003.2-4.7	V1-3/-/M/8b	u/+/-	u?/-/man?	BU_CMD,PN/P/u;-/-/-/-	
chown	1_BSD	AU_CMD	P1003.2-4.8	V1-3/-/M/8b	u/+/-	u?/-/man?	AU_CMD,PN/P/u;-/-/-/-	
chown	1_URM	AU_CMD	P1003.2-4.8	V1-3/-/M/8b	u/+/-	u?/-/man?	AU_CMD,PN/P/u;-/-/-/-	
chroot	1M_SARM	SD_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	SD_CMD,UN/-/-;-/-/-/-	
chrtbl	1M_SARM	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
ckauto	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
ckbinarsys	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ckbupscd	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
ckdate	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckgid	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckint	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckitem	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckkeywd	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckpacct	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
ckpath	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckrange	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckstr	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
cksum	(-)	(-)	P1003.2-4.9	(-)	(-)	(-)	(-)	
cktime	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckuid	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
ckyorn	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
clear	1_URM	TI_CMD	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
clri	(-)	(-)	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
cmp	1_URM	BU_CMD	P1003.2-4.10	V1-3/OF/M/8b	f/+/-	f?/-/man?	BU_CMD,MB/P/-;d/d/-/8b	
cmpress	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
cof2elf	1_PRM	(-)	(-)	(-)	(-)	(-)	(-)	
col	1_URM	BU_CMD	(-)	V1-3/-/M/n8	a/+/-	a?/-/man?	BU_CMD,MB/-/-;DA/JC/-/MA	
colltbl	1M_SARM	(-)	(-)	(-)	r/-/new_MNLS	(-)	(-)	
colrm	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
comb	1_PRM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/u;DA/u/-/8b	
comm	1_URM	BU_CMD	P1003.2-4.11	V1-3/OF,IN/M/8b	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/d/-/MA	
command	(-)	(-)	P1003.2-4.12	(-)	(-)	(-)	(-)	
compress	1_URM	BU_CMD	P1003.2a-5.5	(-)	(-)	(-)	(-)	
comsat	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
conv	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
convert	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
coproc	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
copy	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
cp	1_URM	BU_CMD	P1003.2-4.13	V1-3/IN/M/8b	f/+/-	f?/-/man?	BU_CMD,PN/P/-;d/-/-/-	
cpio	1_URM	BU_CMD	(-)	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,PN/P/u;d/d/-/-	
cpp	(-)	SD_CMD	(-)	V1-3/-/W/-	f/-/sup_MNLS	f?/-/man?	SD_CMD,MB/P/u;DA/d/u/MA	
cprs	(-)	(-)	(-)	(-)	f/-/-	(-)	(-)	
crash	1M_SARM	(-)	(-)	(-)	a/-/sup_MNLS	(-)	(-)	
create	(-)	(-)	P1003.2-4.14	(-)	(-)	(-)	(-)	
cron	1M_SARM	AU_CMD	(-)	(-)	u/+/-	u?/-/man?	AU_CMD,MB/-/-;DA/-/u/8b	
crontab	1_URM	AU_CMD	P1003.2a-5.6	V1-3/-/M/n8	f/+/-	f?/-/man?	AU_CMD,MB/-/-;DA/d/u/8b	
crypt	1_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
cscope	1_PRM	(-)	(-)	(-)	(-)	(-)	(-)	
csh	1_URM	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/A;DA/d/C/MA	
csplit	1_URM	AU_CMD	P1003.2a-5.7	V1-3/-/M/n8	m/+/sup_MNLS	m?/-/man?	AU_CMD,MB/P/u;DA/d/-/MA	
ct	1C_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
ctags	1_URM	BU_CMD	P1003.2a-5.8	(-)	(-)	(-)	UE_CMD(BSD),MB/P/u;DA/d/-/MA	
ctccpio	1M_SARM	(-)	(-)	(-)	a/-/sup_MNLS	(-)	(-)	
ctcfmt	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
ctcinfo	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
ctrace	1_PRM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/u;DA/d/-/MA	
cu	1C_URM	AU_CMD	(-)	V1-3/UN/M/n8	f/-/sup_MNLS	f?/-/man?	AU_CMD,MB/-/u;DA/d/u/MA	
cunix	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
custom	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
cut	1_URM	BU_CMD	P1003.2-4.15	V1-3/-/M/n8	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/P/u;DA/d/-/MA	
cxref	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	r/-/sup_MNLS	r?/-/man?	SD_CMD,MB/P/u;DA/OW/-/MA	
date	1_URM	BU_CMD	P1003.2-4.16	V1-3/OF,LA,UN,IN/-/M/8b	f/+/sup_MNLS	f?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
dc	1_URM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,PN/P/-;u/u/u/-	
dcopy	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
dcopy_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
dd	1M_SARM,1M_URM	AU_CMD	P1003.2-4.17	V1-3/-/M/n8	a/+/sup_MNLS	a?/-/man?	AU_CMD,MB/P/u;DA/u/-/MA	
delsysadm	1M_SARM,1M_SS	(-)	(-)	(-)	(-)	(-)	(-)	
delta	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/sup_MNLS	(-)	SD_CMD,MB/P/A;DA/d/-/8b	
deroff	1_BSD,1_URM	(-)	(-)	(-)	a/-/-	(-)	(-)	
devattr	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
devfree	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
devinfo	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
devnm	1M_SARM	AS_CMD	(-)	(-)	f/+/-	f?/-/man?	AS_CMD,UN/-/-;-/-/-/-	
devreserv	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
df	1M_SARM,1M_URM	BU_CMD	P1003.2a-5.9	V1-3/OF,UN/M/n8	u/+/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
df	1_BSD	BU_CMD	P1003.2a-5.9	V1-3/OF,UN/M/n8	u/+/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
df_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
df_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
dfmounts	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	(-)	(-)	(-)	
dfmounts_nfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
dfmounts_rfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
dfsck	(-)	(-)	(-)	(-)	f/-/-	(-)	(-)	
dfshares	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	(-)	(-)	(-)	
dfshares_nfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
dfshares_rfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
diff	1_URM	BU_CMD	P1003.2-4.18	V1-3/PI/M/8b	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/d/-/MA	
diff3	1_URM	BU_CMD	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/-;DA/d/-/MA	
diffmk	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
dircmp	1_URM	AU_CMD	(-)	V1-3/OF/M/n8	r/-/sup_MNLS	(-)	AU_CMD,MB/P/-;DA/OW/-/MA	
dirname	1_URM	BU_CMD	P1003.2-4.19	V1-3(->basename)	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
dis	1_PRM	SD_CMD	(-)	V1-3/PI,MV/O,D/n8	u/-/-	(-)	SD_CMD,UN/-/-;-/-/-/-	
disable	1_URM	(-)	(-)	(-)	f/-/-	f?/-/man?	UE_CMD,MB/-/A;-/-/-/MA	
disks	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
diskusg	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
dispadmin	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
dispgid	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
dispuid	1_SARM,1_SS	(-)	(-)	(-)	(-)	(-)	(-)	
dname	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
dodisk	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
domainname	1M_NI	(-)	(-)	(-)	(-)	(-)	(-)	
drvinstall	1M_SARM	(-)	(-)	(-)	a/-/-	(-)	(-)	
dsconfig	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
du	1M_BSD	BU_CMD	P1003.2a-5.10	V1-3/OF,PI,UN/M/n8	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
du	1M_SARM,1M_URM	BU_CMD	P1003.2a-5.10	V1-3/OF,PI,UN/M/n8	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
dump	1_PRM	(-)	(-)	V1-3/-/M/n8	f/-/-	(-)	UE_CMD,PN/P/u;d/d/-/-	
echo	1F_CHAR	BU_CMD	P1003.2-4.20	V1-3/-/M/8b	f/-/sup_MNLS	(-)	BU_CMD,MB/-/A;-/-/u/MA	
echo	1_BSD	BU_CMD	P1003.2-4.20	V1-3/-/M/8b	f/-/sup_MNLS	(-)	BU_CMD,MB/-/A;-/-/u/MA	
echo	1_URM	BU_CMD	P1003.2-4.20	V1-3/-/M/8b	f/-/sup_MNLS	(-)	BU_CMD,MB/-/A;-/-/u/MA	
ed	1_URM	BU_CMD	P1003.2-4.21	V1-3/IN,LA,OF/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/d;DA/OF/RE/MA	
edit	1_URM	(-)	(-)	(-)	m/+/sup_MNLS	m?/-/man?	UE_CMD,MB/P/-;DA/OF/PTN/MA	
editsa	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
edittbl	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
edquota	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
edsysadm	1M_SARM,1M_SS	(-)	(-)	(-)	(-)	(-)	(-)	
egrep	1_URM	AU_CMD	(-)	V1-3/LA,IN/M/8b	m/+/sup_MNLS	m?/-/man?	AU_CMD,MB/P/RE;DA/d/-/MA	
egrep	1_XENIX	AU_CMD	(-)	V1-3/LA,IN/M/8b	m/+/sup_MNLS	m?/-/man?	AU_CMD,MB/P/RE;DA/d/-/MA	
enable	1_URM	(-)	(-)	(-)	u/-/sup_MNLS	u?/-/man?	UE_CMD,UN/-/u;-/-/-/-	
env	1_URM	SD_CMD	P1003.2-4.22	V1-3/-/M/n8	f/-/sup_MNLS	(-)	SD_CMD,MB/-/SH;-/d/-/MA	
eqn	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
errdump	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
eucset	(-)	(-)	(-)	(-)	u/-/sup_MNLS	u?/-/man?	(-)	
ex	1_URM	AU_CMD	P1003.2a-5.11	V1-3/OP,MV/M/n8	m/+/sup_MNLS	m?/-/man?	AU_CMD,MB/P/RE;DA/OF/RE/MA	
expand	(-)	(-)	P1003.2a-5.12	(-)	(-)	(-)	UE_CMD(BSD),MB/P/-;DA/OW/-/MA	
expr	1_URM	BU_CMD	P1003.2-4.23	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/-/RE;-/d/-/MA	
exstr	1_URM	(-)	(-)	(-)	f/-/sup_MNLS	f?/-/man?	(-)	
f77	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,MB/P/-;DA/-/-/MA	
face	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
factor	1_URM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
false	1_URM	BU_CMD	P1003.2-4.24	V1-3(->true)	u/-/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
fastboot	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
fdetach	1M_STRM	(-)	(-)	(-)	(-)	(-)	(-)	
fdisk	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
fdp	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
ff	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,MB/P/-;d/-/-/MA	
ff_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ff_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ffile	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
fg	1_URM(->jsh)	BU_CMD	P1003.2a-5.13	(-)	(-)	(-)	(-)	
fgrep	1_URM	AU_CMD	(-)	V1-3(->egrep)	m/+/sup_MNLS	m?/+/man?	AU_CMD,MB/P/PTN;DA/d/-/MA	
fgrep	1_XENIX	AU_CMD	(-)	V1-3(->egrep)	m/+/sup_MNLS	m?/+/man?	AU_CMD,MB/P/PTN;DA/d/-/MA	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
file	1_URM	BU_CMD	P1003.2a-5.14	V1-3/-/W/-	f/+/sup_MNLS	f?/-/man?	BU_CMD,MB/P/-;DA/OF/-/MA	
fimage	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
finc	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,PN/P/-;-/-/-/-	
find	1_URM	BU_CMD	P1003.2-4.25	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,PN/P/u;-/-/-/-	
finger	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
finger_tcp	1_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
fingerd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fixperm	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
fltboot	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
fmlcut	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
fmlexpr	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
fmlgrep	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
fmli	1_CHAR,1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
fmt	1_URM	BU_CMD	(-)	(-)	(-)	(-)	(-)	
fmtflop	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
fmthard	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
fmtmsg	1_URM	BU_CMD	(-)	(-)	(-)	(-)	(-)	
fold	1_URM	(-)	P1003.2-4.26	(-)	(-)	(-)	UE_CMD(BSD),MB/P/-;DA/OF/-/MA	
format	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fort77	(-)	(-)	P1003.2-C.2	(-)	(-)	(-)	(-)	
frec	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,PN/P/u;d/d/-/-	
from	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
fromsmtp	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsba	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsck	1M_SARM	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,PN/P/u;d/d/-/-	
fsck_bfs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsck_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsck_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsdb	1M_SARM	AS_CMD	(-)	(-)	f/-/sup_MNLS	(-)	AS_CMD,UN/-/-;-/-/-/-	
fsdb_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsdb_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fsirand	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
fsplit	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,MB/P/u;DA/d/-/MA	
fsstat	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
fstyp	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	(-)	
ftp	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
ftpd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
fumount	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
fusage	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
fuser	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;d/d/-/-	
fwtmp	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
gcore	1_URM	SD_CMD	(-)	(-)	(-)	(-)	(-)	
gdev	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
ged	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
gencat	1_URM	(-)	(-)	V1-3/-/M,N/8b	(-)	(-)	(-)	
gencc	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
get	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/-	(-)	SD_CMD,MB/P/u;DA/d/-/MA	
getconf	(-)	(-)	P1003.2-4.27	(-)	(-)	(-)	(-)	
getdev	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
getdgrp	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
getfrm	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
getitems	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
getmajor	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
getopt	1_URM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	UE_CMD,MB/-/-;DA/-/-/MA	
getoptcvt	(-)	(-)	(-)	(-)	f/-/-	(-)	(-)	
getopts	1_URM	(-)	P1003.2-4.28	(-)	f/-/sup_MNLS	f?/-/man?	(-)	
gettable	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
gettxt	1_URM	BU_CMD	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
getty	1M_SARM	(-)	(-)	(-)	u/-/sup_MNLS	(-)	UE_CMD,MB/u/u;-/-/-/MA	
getvol	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
glossary	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
gptof	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/d;-/d/-	
greek	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
graph	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
graphics	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
grep	1_URM	BU_CMD	P1003.2-4.29	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/RE;DA/d/-/MA	
grep	1_XENIX	BU_CMD	P1003.2-4.29	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/RE;DA/d/-/MA	
groupadd	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
groupdel	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
groupmod	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
groups	1_BSD	AU_CMD	(-)	(-)	(-)	(-)	(-)	
groups	1_URM	AU_CMD	(-)	(-)	(-)	(-)	(-)	
grpchk	(-)	(-)	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
grpck	1M_BSD	AS_CMD	(-)	(-)	u/-/-	(-)	(-)	
gutil	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
halt	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
hashcheck	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
hashmake	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
hd	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
hdeadd	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
hdefix	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
hdelogger	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
head	1_URM	BU_CMD	P1003.2-4.30	(-)	(-)	(-)	UE_CMD(BSD),MB/P/u;DA/d/-/MA	
help	1_PRM	(-)	(-)	(-)	a/-/-	(-)	(-)	
helpadm	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
hexdump	(-)	(-)	P1003.2-4.31	(-)	(-)	(-)	(-)	
hist	(-)	(-)	P1003.2a-5.15	(-)	(-)	(-)	(-)	
holdcon	(-)	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
holdline	(-)	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
hostid	1_BSD	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
hostname	1_BSD	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
hp	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
hpio	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
htable	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
hyphen	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,PN/P/-;d/-/-/-	
iconv	1_URM	(-)	(-)	V1-3/-/M,N/8b	(-)	(-)	(-)	
id	1M_SARM,1M_URM	AU_CMD	P1003.2-4.32	V1-3/OF/M/n8	u/-/-	(-)	AU_CMD,UN/-/-;-/-/-/-	
idload	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
ifconfig	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ifind(1M)	(-)	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
ilook(1M)	(-)	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
incfile	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
indent	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/u;DA/d/-/MA	
indicator	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
indxbib	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
inetd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
infocmp	1M_CHAR,1M_SARM	TI_CMD	(-)	(-)	u/-/-	(-)	(-)	
init	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/u;d/-/u/-	
install	1M_PRM,1M_SARM	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,PN/P/u;-/-/-/-	
install	1_BSD	(-)	(-)	(-)	f/-/-	(-)	UE_CMD,PN/P/u;-/-/-/-	
installf	1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
intro	1M_SARM,1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
intro_ccs	1_PRM	(-)	(-)	(-)	(-)	(-)	(-)	
ipcrm	1_URM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
ipcs	1_URM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
ismpx	1_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
jis20	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/-/-;DA/OF/-	
jis26	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/-/-;DA/OF/-	
jobs	1_URM(->jsh)	BU_CMD	P1003.2a-5.16	(-)	(-)	(-)	(-)	
join	1_URM	AU_CMD	P1003.2-4.33	V1-3/IN/M/n8	m/+/sup_MNLS	m?/+/man?	AU_CMD,MB/P/u;FL/FL/-/MA	
jsh	1_URM(->sh)	BU_CMD	(-)	(-)	(-)	?/-/man?	(-)	
jterm	1_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
jtos	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
jtou	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
jwin	1_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
kbdcomp	(-)	(-)	(-)	(-)	f/-/new_MNLS	f?/-/man?	(-)	
kbdload	(-)	(-)	(-)	(-)	f/-/new_MNLS	f?/-/man?	(-)	
kbdpipe	(-)	(-)	(-)	(-)	r/-/new_MNLS	r?/-/man?	(-)	
kbdset	(-)	(-)	(-)	(-)	f/-/new_MNLS	f?/-/man?	(-)	
keylogin	1_NI,1_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
keyserv	1M_NI,1M_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
kill	1_URM	BU_CMD	P1003.2-4.34	V1-3/-/M/8b	u/+/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
kill	1_URM	BU_CMD	P1003.2a-4.34+	V1-3/-/M/8b	u/+/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
killall	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
ksh	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
labelit	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
labelit_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
labelit_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
last	1_URM	AS_CMD	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
lastcomm	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lastlogin	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
layers	1_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
lc	1_XENIX(->ls)	(-)	(-)	(-)	(-)	(-)	(-)	
ld	1_BSD	SD_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	SD_CMD,PN/P/u;d/d/u/-	
ld	1_PRM	SD_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	SD_CMD,PN/P/u;d/d/u/-	
ldd	1_PRM	(-)	(-)	(-)	(-)	(-)	(-)	
ldsysdump	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
leave	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
led	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
lex	1_PRM	SD_CMD	P1003.2-A.2	V1-3/MV,UN/D/8b	m/-/sup_MNLS	(-)	SD_CMD,MB/P/u;DA/d/C/MA	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
line	1_URM	BU_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	BU_CMD,MB/-/-;DA/-/-/MA	
link	1M_SARM	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
lint	1_PRM	SD_CMD	(-)	V1-3/PI/D/n8	f/-/-	f?/-/man?	SD_CMD,MB/P/u;DA/d/u/MA	
lint89	(-)	(-)	P1003.2a-5.17	(-)	(-)	(-)	(-)	
list	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
listdgrp	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
listen	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
listusers	1_URM	BU_CMD	(-)	(-)	(-)	(-)	(-)	
ln	1_BSD	BU_CMD	P1003.2-4.35	V1-3(->cp)	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
ln	1_URM	BU_CMD	P1003.2-4.35	V1-3(->cp)	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
locale	(-)	(-)	P1003.2-4.36	(-)	(-)	(-)	(-)	
localedef	(-)	(-)	P1003.2-4.37	(-)	(-)	(-)	(-)	
locate	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
logger	1_BSD	(-)	P1003.2-4.38	(-)	(-)	(-)	(-)	
login	1_URM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/d;u/-/-/-	
logins	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
logname	1_URM	AU_CMD	P1003.2-4.39	V1-3/-/M/n8	u/-/-	(-)	AU_CMD,UN/-/-;-/-/-/-	
longline	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
look	1_BSD	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
lookbib	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lorder	1_PRM	SD_CMD	(-)	V1-3/-/W/-	f/-/-	(-)	SD_CMD,PN/P/-;d/d/u/-	
lp	1_URM	AU_CMD	P1003.2-4.40	V1-3/PI,UN,OF/M/8b	f/+/sup_MNLS	f?/-/man?	AU_CMD,PN/P/d;d/d/-/8b	
lpadmin	1M_SARM	(-)	(-)	(-)	u/-/-	u?/-/man?	UE_CMD,UN/-/d;-/-/u/-	
lpc	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lpfilter	1M_SARM	(-)	(-)	(-)	(-)	?/-/man?	(-)	
lpforms	1M_SARM	(-)	(-)	(-)	(-)	?/-/man?	(-)	
lpmove	1M_SARM	(-)	(-)	(-)	u/-/-	u?/-/man?	UE_CMD,UN/-/u;-/-/u/-	
lpq	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lpr	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lprm	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lprof	1_PRM	(-)	(-)	(-)	(-)	(-)	(-)	
lpsched	1M_SARM	(-)	(-)	(-)	u/-/-	u?/-/man?	(-)	
lpshut	1M_SARM	(-)	(-)	(-)	u/-/-	u?/-/man?	UE_CMD,UN/-/-;-/-/u/-	
lpsched	(-)	(-)	(-)	(-)	(-)	(-)	(-),UN/-/-;-/-/u/-	
lpstat	1_URM	AU_CMD	(-)	V1-3/UN,OF,PI,IN/M/8b	f/+/sup_MNLS	f?/-/man?	AU_CMD,UN/-/d;d/d/-/-	
lpsystem	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
lptest	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
lpusers	1M_SARM	(-)	(-)	(-)	(-)	?/-/man?	(-)	
ls	1_BSD	BU_CMD	P1003.2-4.41	V1-3/OF,UN,IN/M/8b	r/+/sup_MNLS	r?/+/man?	BU_CMD,MB/P/u;DA/OW/-/MA	
ls	1_URM	BU_CMD	P1003.2-4.41	V1-3/OF,UN,IN/M/8b	r/+/sup_MNLS	r?/+/man?	BU_CMD,MB/P/u;DA/OW/-/MA	
ls	1_XENIX	BU_CMD	P1003.2-4.41	V1-3/OF,UN,IN/M/8b	r/+/sup_MNLS	r?/+/man?	BU_CMD,MB/P/u;DA/OW/-/MA	
m4	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/sup_MNLS	(-)	SD_CMD,MB/P/u;DA/d/u/MA	
mach	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
machid	1_URM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
mail	1_URM	BU_CMD	(-)	V1-3/UN,PI,IN/M/8b	f/+/-	f?/+/man?	BU_CMD,MB/P/u;DA/d/u/8b	
mail_pipe	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mailalias	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
mailstats	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
mailx	1_URM	AU_CMD	P1003.2a-5.18	V1-3/UN,PI,MV,IN/O/8b	r/+/sup_MNLS	r?/+/man?	AU_CMD,MB/P/subject;DA/d/u/MA	
make	1_PRM	SD_CMD	P1003.2-6.2	V1-3/UN/D/n8	f/-/-	(-)	SD_CMD,MB/P/d;DA/d/u/MA	
makefsys	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
makehdfsys	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
makekey	1_URM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
man	1_BSD	(-)	P1003.2a-5.19	(-)	(-)	(-)	UE_CMD,UN/-/-;-/-/-/-	
mcs	1_PRM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
mesg	1_URM	AU_CMD	P1003.2a-5.20	V1-3/OF/M/n8	u/+/-	u?/-/man?	AU_CMD,UN/-/-;-/-/-/-	
message	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
migration	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
mkboot	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
mkdir	1_URM	BU_CMD	P1003.2-4.42	V1-3/-/M/8b	u/+/-	u?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
mkfifo	1M_SARM	(-)	P1003.2-4.43	V1-3/-/M,N/n8	(-)	(-)	(-)	
mkfs	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
mkfs_bfs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mkfs_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mkfs_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mkmsgs	1_URM	AS_CMD	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
mknod	1M_SARM	AS_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
mkshlib	(-)	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
mkstr	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/-;DA/d/-/MA	
mkunix	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
monacct	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
montbl	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
more	1_URM	BU_CMD	P1003.2a-5.21	(-)	(-)	(-)	UE_CMD(BSD),MB/P/RE;DA/d/RE/MA	
mount	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
mount_bfs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
mount_nfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mount_rfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mount_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mount_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mountall	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
mountd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
mountfsys	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
mt	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
mv	1_URM	BU_CMD	P1003.2-4.44	V1-3(->cp)	f/+/-	f?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
mvdir	1M_SARM	AS_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
named	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
nawk	1_URM	BU_CMD	(-)	(-)	(-)	(-)	(-)	
ncheck	1M_SARM	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
ncheck_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ncheck_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
netstat	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
newaliases	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
newboot	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
newform	1_URM	(-)	(-)	(-)	r/-/sup_MNLS	r?/-/man?	UE_CMD,PN/P/u;d/d/-/-	
newfs	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
newgrp	1M_SARM,1M_URM	AU_CMD	P1003.2a-5.22	V1-3/-/O/n8	u/+/-	u?/-/man?	AU_CMD,UN/-/-;-/-/-/-	
newkey	1M_NI,1M_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
news	1_URM	AU_CMD	(-)	V1-3/-/W/-	f/+/-	f?/-/man?	AU_CMD,MB/-/A;DA/d/-/MA	
nfsd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
nice	1_URM	AS_CMD	P1003.2a-5.23	(-)	u/-/-	(-)	AS_CMD,MB/P/A;-/-/-/MA	
nl	1_URM	BU_CMD	(-)	V1-3/UN/M/n8	r/+/sup_MNLS	r?/-/man?	BU_CMD,MB/P/RE;DA/OF/-/MA	
nlsadmin	1M_SARM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
nm	1_PRM	SD_CMD	P1003.2a-5.24	V1-3/PI,UN,MV/D/n8	f/-/-	(-)	SD_CMD,PN/P/-;-/d/-/-	
nohup	1_URM	BU_CMD	P1003.2-4.45	V1-3/-/M/n8	f/+/-	f?/-/man?	BU_CMD,MB/P/A;-/-/-/MA	
notify	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
nroff	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
nslookup	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
nsquery	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
nulladm	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD,UN/-/-;-/-/-/-	
od	1_URM	AU_CMD	(-)	V1-3/OF,PI/M/n8	a/+/sup_MNLS	a?/-/man?	AU_CMD,MB/P/u;DA/OF/-/MA	
pack	1_URM	BU_CMD	(-)	V1-3/OF/-/M/8b	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/-/-/MA	
page	1_URM(->more)	BU_CMD	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/d;DA/OF/RE/8b	
pagesize	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
passmgmt	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
passwd	1_URM	AU_CMD	P1003.2a-5.25	V1-3/-/W/-	u/+/-	u?/-/man?	UE_CMD,UN/-/-;-/-/-/-	
paste	1_URM	BU_CMD	P1003.2-4.46	V1-3/-/M/n8	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/P/u;DA/OW/-/MA	
patch	(-)	(-)	P1003.2a-5.26	(-)	(-)	(-)	(-)	
pathconv	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
pax	(-)	(-)	P1003.2-4.47	(-)	(-)	(-)	(-)	
pcat	1_URM(->pack)	BU_CMD	(-)	V1-3(->pack)	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/d/-/MA	
pdp11	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
pg	1_URM	BU_CMD	(-)	V1-3/PI,UN,IN/M/8b	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/P/RE;DA/d/RE/MA	
ping	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
pkgadd	1M_SARM,1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgask	1M_SARM,1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgchk	1M_SARM,1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkginfo	1_SARM,1_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgmk	1_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgparam	1_SARM,1_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgproto	1_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgrm	1M_SARM,1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
pkgtrans	1_SARM,1_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
plot	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
pmadm	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
powerdown	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
pr	1_URM	BU_CMD	P1003.2-4.48	V1-3/PI,IN/M/8b	r/+/sup_MNLS	r?/+/man?	BU_CMD,MB/P/A;DA/OF/-/MA	
prctmp	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
prdaily	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
prfdc	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
prfld	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
prfpr	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
prfsnap	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
prfstat	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
printenv	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
printf	1_URM	BU_CMD	P1003.2-4.49	(-)	(-)	(-)	(-)	
priocntl	1_URM	BU_CMD?	(-)	(-)	(-)	(-)	(-)	
prof	1_PRM	SD_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
profiler	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
prs	1_PRM	SD_CMD	(-)	V1-3/UN/D/n8	f/-/-	(-)	SD_CMD,MB/P/u;DA/d/u/8b	
prt	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
prtacct	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
prtconf	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	(-)	
prtvtoc	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
ps	1_BSD	BU_CMD	P1003.2a-5.27	V1-3/OF,PI,UN,IN/M/8b	r/+/-	r?/-/man?	BU_CMD,MB/d/u;DA/d/-/MA	
ps	1_URM	BU_CMD	P1003.2a-5.27	V1-3/OF,PI,UN,IN/M/8b	r/+/-	r?/-/man?	BU_CMD,MB/d/u;DA/d/-/MA	
pseudo	(-)	(-)	(-)	(-)	f/-/new_MNLS	f?/-/man?	(-)	
pshar	(-)	(-)	P1003.2a-5.28	(-)	(-)	(-)	(-)	
pump	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
putdev	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
putdgrp	1M_SARM	AS_CMD?	(-)	(-)	(-)	(-)	(-)	
pwck	1M_BSD	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
pwck	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
pwconv	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
pwd	1_URM	BU_CMD	P1003.2-4.50	V1-3/-/M/8b	u/+/-	u?/-/man?	BU_CMD,PN/P/-;-/d/-/-	
pwunconv	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
quot	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
quota	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
quotacheck	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
quotaoff	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
quotaon	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
random	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
rarpd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ratfor	(-)	(-)	(-)	(-)	(-)	(-)	SVR2V2	
rc0	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
rc2	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
rc6	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rcp	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
rdate	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
read	1_URM(->sh)	(-)	P1003.2-4.51	(-)	(-)	(-)	(-)	
readfile	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
reboot	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
red	1_URM(->ed)	BU_CMD	(-)	V1-3(->ed)	m/+/-	m?/+/man?	BU_CMD,MB/P/d;DA/OF/RE/MA	
refer	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
regcmp	1_PRM	(-)	(-)	(-)	m/-/sup_MNLS	(-)	(-)	
regex	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
reinit	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
reject	(-)	(-)	(-)	(-)	f/-/sup_MNLS	f?/-/man?	UE_CMD,MB/-/A;u/d/-/MA	
relogin	1M_SARM,1M_URM	(-)	(-)	(-)	u/-/-	(-)	(-)	
removef	1M_SS	AS_CMD	(-)	(-)	(-)	(-)	(-)	
remsh	(-)	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD-rsh),MB/P/A;DA/d/-/MA	
renice	1M_BSD	(-)	P1003.2a-5.29	(-)	(-)	(-)	(-)	
repquota	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
reset	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
restore	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
restore	1_XENIX	AS_CMD	(-)	(-)	(-)	(-)	(-)	
rev	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),PN/P/-;d/d/-/-	
rexecd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rfadmin	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
rfpasswd	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
rfstart	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
rfstop	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
rfuadmin	1M_NUA,1M_SARM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
rfudaemon	1M_NUA,1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
rksh	1_URM(->ksh)	(-)	(-)	(-)	(-)	(-)	(-)	
rlogin	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),MB/-/-;d/-/-/MA	
rlogind	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rm	1_URM	BU_CMD	P1003.2-4.52	V1-3/IN/M/8b	f/+/-	f?/-/man?	BU_CMD,PN/P/u;d/d/-/-	
rmail	1_URM(->mail)	BU_CMD	(-)	(-)	f/+/-	f?/-/man?	BU_CMD,MB/P/u;DA/d/u/8b	
rmdel	1_PRM	SD_CMD	(-)	(-)	f/-/-	(-)	SD_CMD,MB/P/u;DA/d/u/8b	
rmdir	1_URM(->rm)	BU_CMD	P1003.2-4.53	V1-3(->rm)	f/+/-	f?/-/man?	BU_CMD,PN/P/-;d/-/u/-	
rmntstat	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	f/-/-	(-)	(-)	
rmnttry	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rmount	1M_NUA,1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
rmountall	1M_NUA,1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
roffbib	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
route	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
routed	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rpcbind	1M_NI,1M_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
rpcgen	1_NI	RS_CMD	(-)	(-)	(-)	(-)	(-)	
rpcinfo	1M_NI,1M_NUA	RS_CMD	(-)	(-)	(-)	(-)	(-)	
rsh	1_NUA,1_URM	BU_CMD	(-)	(-)	m/+/-	m?/-/man?	BU_CMD,MB/P/A;DA/u/C/MA	
rshd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rsnotify	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
rsoper	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
rsstatus	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
rumount	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
rumountall	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
run	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
runacct	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
ruptime	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
rusers	1_NI,1_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
rusersd	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
rwall	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
rwalld	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
rwho	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
rwhod	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
sa1	1M_SARM(->sar)	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
sa2	1M_SARM(->sar)	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
sac	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
sacadm	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
sact	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/-	(-)	SD_CMD,MB/P/-;DA/u/u/8b	
sadc	1M_SARM(->sar)	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
sadp	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	(-)	
sag	1_URM	(-)	(-)	(-)	a/-/-	(-)	(-)	
sar	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
sar	1_URM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
sccs	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
sccsdiff	1_PRM	(-)	(-)	(-)	f/-/-	(-)	SD_CMD,MB/P/u;DA/d/u/8b	
script	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
sdb	1_PRM	SD_CMD	(-)	V1-3/OP,UN/O,D/n8	m/-/sup_MNLS	m?/-/man?	SD_CMD,MB/P/u;DA/d/RE/MA	
sdiff	1_URM	(-)	(-)	(-)	r/-/sup_MNLS	r?/-/man?	UE_CMD,MB/P/u;DA/OW/-/MA	
sed	1_URM	BU_CMD	P1003.2-4.54	V1-3/IN,OF/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/A;DA/d/RE/MA	
sendmail	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
sendto	(-)	(-)	P1003.2-4.55	(-)	(-)	(-)	(-)	
set	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
setclk	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
setcolor	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
setmnt	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
setterm	(-)	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
settime	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
setuname	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
setup	1M_SARM	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
sh	1_URM	BU_CMD	P1003.2-4.56	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/A;DA/d/C/MA	
sh	1_URM	BU_CMD	P1003.2a-4.56+	V1-3/IN/M/8b	m/+/sup_MNLS	m?/-/man?	BU_CMD,MB/P/A;DA/d/C/MA	
share	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	(-)	(-)	(-)	
share_nfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
share_rfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
shareall	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
shell	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
shl	1_URM	AU_CMD	(-)	V1-3/-/W/-	u/+/sup_MNLS	u?/-/man?	BU_CMD,UN/-/-;d/-/d/-	
shutacct	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
shutdown	1M_BSD	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
shutdown	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
size	1_PRM	SD_CMD	(-)	V1-3/-/W/-	u/-/-	(-)	SD_CMD,PN/P/-;-/u/-/-	
sjtty	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/-/jenv;-/d/-	
sleep	1_URM	BU_CMD	P1003.2-4.57	V1-3/-/M/8b	u/+/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
slink	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
smtp	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
smtpd	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
smtpqer	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
smtpsched	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
soelim	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
sort	1_URM	BU_CMD	P1003.2-4.58	V1-3/PI,IN/M/8b	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/P/-;DA/d/-/MA	
sortbib	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
spell	1_URM	BU_CMD	P1003.2a-5.30	V1-3/OF,LA/M/n8	u/-/-	(-)	BU_CMD,PN/P/-;u/u/-/-	
spellin	1_URM(->spell)	(-)	(-)	(-)	u/-/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
spline	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
split	1_URM	BU_CMD	P1003.2a-5.31	V1-3/-/M/n8	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/d/-/8b	
spray	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
sprayd	1M_NI,1M_NUA	(-)	(-)	(-)	(-)	(-)	(-)	
srchtxt	1_URM	AS_CMD	(-)	(-)	f/-/sup_MNLS	f?/-/man?	(-)	
starter	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
startup	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
stat	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
stoj	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
stop	1_URM(->jsh)	BU_CMD	(-)	(-)	(-)	(-)	(-)	
stou	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
strace	1M_SARM,1M_STRM	(-)	(-)	(-)	u/-/-	(-)	(-)	
strchg	1_STRM,1_URM	BU_CMD	(-)	(-)	(-)	(-)	(-)	
strclean	1M_SARM,1M_STRM	(-)	(-)	(-)	u/-/-	(-)	(-)	

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
strconf	1_URM(->strchg)	BU_CMD	(-)	(-)	(-)	(-)	(-)	
strerr	1M_SARM,1M_STRM	(-)	(-)	(-)	u/-/-	(-)	(-)	
strings	1_URM	(-)	P1003.2a-5.32	(-)	(-)	(-)	UE_CMD(BSD),MB/P/u;DA/d/-/MA	
strip	1_PRM	SD_CMD	P1003.2-6.3	V1-3/MV,UN/D/n8	f/-/-	(-)	SD_CMD,PN/P/-;u/-/-/-	
struct	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),UN/-/-;-/-/-/-	
stty	1_BSD	AU_CMD	P1003.2-4.59	V1-3/UN,OP/M/8b	u/+/-	u?/-/man?	AU_CMD,UN/-/d;-/-/-/-	
stty	1_URM	AU_CMD	P1003.2-4.59	V1-3/UN,OP/M/8b	u/+/-	u?/-/man?	AU_CMD,UN/-/d;-/-/-/-	
sttydefs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
su	1M_SARM,1M_URM	AU_CMD	(-)	V1-3/-/W/-	u/+/-	u?/-/man?	AU_CMD,PN/P/d;-/-/-/-	
sulogin	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
sum	1_BSD	BU_CMD	(-)	V1-3/OF,PI,UN/M/n8	u/+/-	u?/-/man?	BU_CMD,PN/P/-;d/d/-/-	
sum	1_URM	BU_CMD	(-)	V1-3/OF,PI,UN/M/n8	u/+/-	u?/-/man?	BU_CMD,PN/P/-;d/d/-/-	
suspend	1_URM(->jsh)	BU_CMD	(-)	(-)	(-)	(-)	(-)	
swap	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
sync	1M_SARM,1M_URM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
sysadm	1M_SARM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
sysdef	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
syslogd	1M_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
tabs	1_URM	AU_CMD	P1003.2a-5.33	V1-3/MV,UN/M/n8	u/+/-	u?/-/man?	AU_CMD,PN/P/-;-/-/-/-	
tail	1_URM	BU_CMD	P1003.2-4.60	V1-3/-/M/8b	f/+/sup_MNLS	f?/-/man?	BU_CMD,MB/P/-;DA/JC/-/MA	
talk	1_NUA,1_URM	AU_CMD?	P1003.2a-5.34	(-)	(-)	(-)	(-)	
talkd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
tar	1_URM	AU_CMD	(-)	V1-3/IN,PI/M/8b	f/+/-	f?/-/man?	AU_CMD,MB/P/u;DA/d/-/MA	
tbl	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
tcopy	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
tee	1_URM	BU_CMD	P1003.2-4.61	V1-3/-/M/8b	f/+/-	f?/-/man?	BU_CMD,MB/P/-;d/d/-/8b	
telinit	(-)	(-)	(-)	(-)	u/-/-	(-)	UE_CMD,UN/-/-;-/-/-/-	
telnet	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	NE_CMD(BSD),UN/-/-;-/-/-/-	
telnetd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
test	1F_CHAR	BU_CMD	P1003.2-4.62	V1-3/-/M/8b	f/-/sup_MNLS	f?/-/man?	BU_CMD,MB/-/A;-/-/-/MA	
test	1_BSD	BU_CMD	P1003.2-4.62	V1-3/-/M/8b	f/-/sup_MNLS	f?/-/man?	BU_CMD,MB/-/A;-/-/-/MA	
test	1_URM	BU_CMD	P1003.2-4.62	V1-3/-/M/8b	f/-/sup_MNLS	f?/-/man?	BU_CMD,MB/-/A;-/-/-/MA	
tftp	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
tftpd	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
tic	1M_CHAR,1M_SARM	TI_CMD	(-)	(-)	u/-/sup_MNLS	(-)	TI_CMD,MB/P/-;JTI/JTI/-/MA	
time	1_URM	SD_CMD	(-)	V1-3/-/M/n8	u/-/-	(-)	SD_CMD,MB/P/A;-/u/-/MA	
timex	1_URM	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,MB/P/A;-/u/-/MA	
tnamed	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
toc	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
tosmtp	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
touch	1_URM	BU_CMD	P1003.2-4.63	V1-3/UN/M/n8	u/+/-	u?/-/man?	BU_CMD,PN/P/-;-/-/-/-	
tplot	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
tput	1_URM	TI_CMD	P1003.2a-5.35	(-)	u/-/sup_MNLS	(-)	jtinfo	
tr	1_BSD	BU_CMD	P1003.2-4.64	V1-3/UN,IN/M/8b	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/-/PTN;DA/d/-/MA	
tr	1_URM	BU_CMD	P1003.2-4.64	V1-3/UN,IN/M/8b	m/+/sup_MNLS	m?/+/man?	BU_CMD,MB/-/PTN;DA/d/-/MA	
troff	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
trpt	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
true	1_URM	BU_CMD	P1003.2-4.65	V1-3/-/M/8b	u/-/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
truss	1_URM	SD_CMD	(-)	(-)	(-)	(-)	(-)	
tset	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
tset	1_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
tsort	1_PRM	SD_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	SD_CMD,MB/P/-;DA/d/-/MA	
tty	1_URM	AU_CMD	P1003.2-4.66	V1-3/-/M/8b	u/+/-	u?/-/man?	AU_CMD,UN/-/-;-/-/-/-	
ttyadm	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ttymon	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
tunefs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
turnacct	1M_SARM(->acctsh)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
u370	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
u3b	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
u3b2	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
u3b5	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
uadmin	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
ufsdump	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ufsrestore	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
ul	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
umask	1_URM	BU_CMD	P1003.2-4.67	V1-3/-/M/8b	u/-/-	(-)	BU_CMD,UN/-/-;-/-/-/-	
umount	1M_SARM(->mount)	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
umountall	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
umountfsys	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
unadv	(-)	RS_CMD	(-)	(-)	u/-/-	(-)	(-)	
unalias	(-)	(-)	P1003.2a-5.36	(-)	(-)	(-)	(-)	
uname	1_URM	BU_CMD	P1003.2-4.68	V1-3/OF/M/8b	u/+/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
uncompress	1_URM(->compress)	BU_CMD	P1003.2a-5.37	(-)	(-)	(-)	(-)	
unexpand	(-)	(-)	P1003.2a-5.38	(-)	(-)	(-)	UE_CMD(BSD),MB/P/-;DA/OW/-/8b	
unget	1_PRM	SD_CMD	(-)	V1-3/-/M/n8	f/-/-	(-)	SD_CMD,MB/P/-;-/-/-/8b	

UI I18N Requirements for SVR4 ES/MP

Name	SVR4(URM/PRM /SARM/BSD/...)	SVID3(BU/AU /AS/SD/...)	P1003.2/D9, P1003.2a/D3	XPG3	MNLS 3.2	MNLS 4.0	SIGMA V0R1x	Priority
unifdef	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
uniq	1_URM	BU_CMD	P1003.2-4.69	V1-3/IN/M/8b	r/+/sup_MNLS	r?/+/man?	BU_CMD,MB/P/-;DA/JC/-/MA	
units	1_URM	(-)	(-)	(-)	u/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
unlink	1M_SARM(->link)	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,PN/P/-;-/-/-/-	
unpack	1_URM(->pack)	BU_CMD	(-)	V1-3(->pack)	f/+/-	f?/-/man?	BU_CMD,MB/P/-;DA/d/-/MA	
unset	1F_CHAR(->set)	(-)	(-)	(-)	(-)	(-)	(-)	
unshare	1M_NUA,1M_SARM	RS_CMD	(-)	(-)	(-)	(-)	(-)	
unshare_nfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
unshare_rfs	1M_NUA,1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
uptime	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
urestore	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
ursstatus	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
usage	(-)	(-)	(-)	(-)	a/-/-	(-)	(-)	
useradd	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
userdel	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
usermod	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
users	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
utoj	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
utos	(-)	(-)	(-)	(-)	(-)	(-)	JE_CMD,MB/P/-;DA/d/-	
uucheck	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
uucico	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
uucleanup	1M_SARM	(-)	(-)	(-)	f/-/sup_MNLS	(-)	(-)	
uucp	1C_URM	AU_CMD	(-)	V1-3/UN,OF,IN/M/8b	f/-/sup_MNLS	(-)	AU_CMD,MB/P/u;DA/d/JTE/8b	
uudecode	1C_URM(->uuencode)	AU_CMD	P1003.2a-5.39	(-)	(-)	(-)	(-)	
uuencode	1C_URM	AU_CMD	P1003.2a-5.40	(-)	(-)	(-)	(-)	
uugetty	(-)	(-)	(-)	(-)	u/-/sup_MNLS	(-)	(-)	
uuglist	1C_URM	(-)	(-)	(-)	(-)	(-)	(-)	
uulog	1C_URM(->uucp)	AU_CMD	(-)	V1-3(->uucp)	f/-/-	(-)	AU_CMD,UN/-/-;-/-/-/-	
uuname	1C_URM(->uucp)	AU_CMD	(-)	V1-3(->uucp)	u/-/-	(-)	AU_CMD,UN/-/-;-/-/-/-	
uupick	1C_URM(->uuto)	AU_CMD	(-)	V1-3(->uuto)	f/-/-	(-)	AU_CMD,UN/-/u;d/d/u/-	
uusched	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
uustat	1C_URM	AU_CMD	(-)	V1-3/UN,IN/M/8b	u/-/-	(-)	AU_CMD,UN/-/u;d/d/-/-	
uuto	1C_URM	AU_CMD	(-)	V1-3/UN,IN/M/8b	f/-/-	(-)	AU_CMD,MB/P/u;DA/d/-/8b	
uux	1C_URM	AU_CMD	(-)	V1-3/UN,IN/M/8b	f/-/sup_MNLS	(-)	AU_CMD,MB/P/A;DA/d/JTE/8b	
uuxqt	1M_SARM	(-)	(-)	(-)	f/-/-	(-)	(-)	
vacation	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
vacation	1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
val	1_PRM	SD_CMD	(-)	V1-3/-/D/n8	f/-/-	(-)	SD_CMD,MB/P/u;DA/d/u/8b	
vax	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
vc	1_PRM	(-)	(-)	(-)	a/-/sup_MNLS	(-)	SD_CMD,MB/-/A;DA/d/LT/8b	
vedit	1_URM(->vi)	(-)	(-)	(-)	m/+/-	m?/-/man?	AU_CMD,MB/P/A;DA/OF/RE/MA	
vi	1_URM	AU_CMD	P1003.2a-5.41	V1-3/OP/M/n8	m/+/sup_MNLS	m?/-/man?	AU_CMD,MB/P/A;DA/OF/RE/MA	
view	1_URM(->vi)	(-)	(-)	(-)	m/+/-	(-)	AU_CMD,MB/P/A;DA/OF/RE/MA	
volcopy	1M_SARM	AS_CMD	(-)	(-)	f/-/-	(-)	AS_CMD,UN/-/-;-/-/-/-	
volcopy_s5	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
volcopy_ufs	1M_SARM	(-)	(-)	(-)	(-)	(-)	(-)	
vsig	1F_CHAR	(-)	(-)	(-)	(-)	(-)	(-)	
w	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
wait	1_URM	BU_CMD	P1003.2-4.70	V1-3/-/M/8b	u/-/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
wait	1_URM	BU_CMD	P1003.2a-4.70+	V1-3/-/M/8b	u/-/-	u?/-/man?	BU_CMD,UN/-/-;-/-/-/-	
wall	1M_SARM	AU_CMD	(-)	V1-3/-/M/n8	f/+/-	f?/+/man?	AU_CMD,UN/-/-;d/d/-/-	
wc	1_URM	BU_CMD	P1003.2-4.71	V1-3/OF,IN/M/8b	a/+/sup_MNLS	a?/-/man?	BU_CMD,MB/P/u;d/d/d/MA	
wchrtbl	(-)	(-)	(-)	(-)	u/-/sup_MNLS	u?/-/man?	(-)	
what	1_PRM	SD_CMD	(-)	V1-3/-/M/n8	f/-/sup_MNLS	(-)	SD_CMD,MB/P/u;DA/d/u/8b	
whatis	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
which	1_BSD	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/A;DA/d/-/8b	
who	1_URM	AU_CMD	P1003.2a-5.43	V1-3/OF,UN,IN/M/8b	f/+/-	f?/-/man?	AU_CMD,PN/P/u;d/d/u/-	
whoami	1_BSD	(-)	(-)	(-)	(-)	(-)	(-)	
whodo	1M_SARM	AS_CMD	(-)	(-)	u/-/-	(-)	AS_CMD,MB/-/-;d/d/u/8b	
whois	1_NUA,1_URM	(-)	(-)	(-)	(-)	(-)	(-)	
write	1_URM	AU_CMD	(-)	V1-3/-/M/n8	f/+/-	f?/+/man?	AU_CMD,MB/-/u;DA/d/u/MA	
wtinit	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
wtmpfix	1M_SARM(->fwtmp)	AS_CMD	(-)	(-)	(-)	(-)	AS_CMD,UN/-/-;-/-/-/-	
xargs	1_URM	SD_CMD	P1003.2-4.72	V1-3/-/M/n8	f/-/-	(-)	SD_CMD,MB/P/A;DA/d/u/MA	
xinstall	1M_XENIX	(-)	(-)	(-)	(-)	(-)	(-)	
xstr	(-)	(-)	(-)	(-)	(-)	(-)	UE_CMD(BSD),MB/P/-;DA/d/-/MA	
xtd	(-)	(-)	(-)	(-)	u/-/-	(-)	(-)	
xts	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
xtt	1M_SARM	(-)	(-)	(-)	u/-/-	(-)	(-)	
yacc	1_PRM	SD_CMD	P1003.2-A.3	V1-3/MV,UN,IN/M/8b	f/-/sup_MNLS	f?/-/man?	SD_CMD,MB/P/u;DA/d/C/MA	
yes	1_XENIX	(-)	(-)	(-)	(-)	(-)	UE_CMD,MB/-/A;-/d/-/MA	
zcat	1_URM(->compress)	BU_CMD	P1003.2a-5.44	(-)	(-)	(-)	(-)	
zdump	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	
zic	1M_SARM	AS_CMD	(-)	(-)	(-)	(-)	(-)	

I18N/L10N Requirements

for

UNIX System V Release 4 MP+

UNIX International Internationalization Work Group

ABSTRACT

This document contains the UNIX International Requirements for the Internationalization of UNIX System V. UI member companies, with assistance from UI and AT&T USO staff, have developed these requirements through the UI Open Decision Process. While this document does not reflect a complete solution to internationalization of UNIX System V, it does contain requirements for extending existing interfaces in internationalized ways. The methodology described herein will make the existing product UNIX System V more useful for a substantial portion of the non-english speaking computing community.

In particular, this document addresses:

- Existing Libraries
  - Extended Terminal Interfaces
  - OA&M related libraries
- New Libraries
- Existing Commands
- New Commands
- Messaging Facilities
- Regular Expressions
- System Administration
- Streams

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