

Whitesmiths, Ltd.

## C INTERFACE MANUAL FOR PDP-11

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The C language was developed at Bell Laboratories by Dennis Ritchie; Whitesmiths, Ltd. has endeavored to remain as faithful as possible to his language specification. The external specifications of the Idris operating system, and of most of its utilities, are based heavily on those of UNIX, which was also developed at Bell Laboratories by Dennis Ritchie and Ken Thompson. Whitesmiths, Ltd. gratefully acknowledges the parentage of many of the concepts we have commercialized, and we thank Western Electric Co. for waiving patent licensing fees for use of the UNIX protection mechanism.

The successful implementation of Whitesmiths' compilers, operating systems, and utilities, however, is entirely the work of our programming staff and allied consultants.

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## C INTERFACE MANUAL FOR PDP-11

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### SCOPE

This manual describes the PDP-11 dependent aspects of the C programming environment provided by Whitesmiths, Ltd. In addition, it documents all of the utilities necessary for building new programs. Section I introduces the conventions and describes the format used by the Idris assembler, which is downward compatible with the UNIX assembler. Section II succinctly describes the programming utilities of Idris, which also serve as cross support utilities for other host machines. Each subsection of Section III describes the library functions that interface the portable C library to Idris (UNIX), RSX-11M (RSTS/E, IAS, VMS/AME), or RT-11 (RSTS/E); and Section IV describes the runtime routines called upon by code produced by the PDP-11 C compiler.

Information on the C language and the portable library may be found in the C Programmers' Manual, while information peculiar to other machines supported by Whitesmiths, Ltd. is given in other C Interface Manuals.

THIS MANUAL IS PROVIDED WITH SEVERAL SOFTWARE PACKAGES, SOME OF WHICH USE ONLY A SUBSET OF THE FACILITIES DOCUMENTED. THE PRESENCE OF A MANUAL PAGE HERE DOES NOT IMPLY THAT THE CORRESPONDING SOFTWARE IS ALSO SUPPLIED.

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### II. Programming Utilities

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II - 10	as.11	assembler for PDP-11
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II - 15	cpm	maintain CP/M diskettes
II - 17	db	binary file editor/debugger
II - 23	hex	translate object file to ASCII formats
II - 26	lib	maintain libraries
II - 29	link	combine object files
II - 33	lord	order libraries
II - 35	p1	parse C programs
II - 37	p2.11	generate code for PDP-11 C programs
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III.a - 7	faout	convert UNIX a.out to Idris PDP-11 object
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III.a - 11	Crt	C runtime entry
III.a - 12	Crtp	set up profiling at runtime
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III.a - 15	close	close a file



III.a - 16	<b>create</b>	open an empty instance of a file
III.a - 17	<b>exit</b>	terminate program execution
III.a - 18	<b>lseek</b>	set file read/write pointer
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III.b - 8	<b>_main</b>	setup for main call
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III.b - 20	<b>onintr</b>	capture interrupts
III.b - 21	<b>open</b>	open a file
III.b - 22	<b>read</b>	read from a file
III.b - 23	<b>remove</b>	remove a file
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IV - 15	c~irsh	signed right shift
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IV - 17	c~lils	long left shift
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IV - 21	c~lret	return from long runtime function
IV - 22	c~ltd	convert long to double
IV - 23	c~lxor	exclusive or long by long
IV - 24	c~repk	repack a double number
IV - 25	c~ret	return from a C function
IV - 26	c~rets	return from a C function
IV - 27	c~sav	save register on entering a C function
IV - 28	c~savs	save register on entering a C function
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IV - 31	c~uldiv	unsigned long divide
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IV - 35	c~unpk	unpack a double number