

I. Installation Guide

install

NAME

install - Install Guide for CXDOS86-86P36 cross compiler

SYNOPSIS

Installation of the cxdos86-86p36 cross compiler on DOS86/86P36 version 3.12.

In order to install and operate this C cross compiler package, you must provide the following:

- 1) a PC running DOS version 2.0 or greater
- 2) one 360 kByte diskette drive and a hard disk drive
- 3) at least 256 kB of memory in the PC
- 4) a IBM System/36 with SSP
- 5) a method to send assembler source files from the PC to System/36 (PC Support/36, IBM program numbers 5727-WS1, 5727-WS6)
- 6) System/36 Assembler and Macro Processor (IBM program numbers 5727-AS1, 5727-AS6)

Your Whitesmiths C cross compiler is shipped on three (3) diskettes, one (1) for the PC (labeled PC disk) and two (2) System/36 library diskettes (labeled S/36 library disk), they are also on PC/MS-DOS format.

The following manuals are also included:

- 1) C Language Manual
- 2) Interface Manual for System/36
- 3) System/36 Compiler Users' Manual for DOS/86
- 4) cxdos86-86p36 Installation Guide (the manual you are reading now)

Installation of the compiler on DOS86

On a hard disk system, the compiler will be copied to the directory `bc`, so you should include `bc` in the command search path.

- 1) Make the following empty directories on the hard disk:
 - C> mkdir bc
 - C> mkdir bc\bhdrs
 - C> mkdir bc\lib
- 1) Insert the diskette (PC disk, disk 1 of 3), in drive A: and make it the current drive by typing:
 - C> A:

- 2) Run the install.bat script by typing:

```
A> install C:
```

- 3) Make C: the current drive and BC the current directory by typing:

```
A> C:
C> cd BC
```

To use the 36 compiler you must copy the System/36 prototype file cn36.pro to c.pro. This is done by the batch file proenv36.bat:

```
C> proenv36
```

Installation of the libraries on SSP36

- 1) First you must make two temporary work files on System/36, switch to System/36 and type:

```
BLDFILE WRKCEALI,S,BLOCKS,150,8,,T,,NDFILE,,0
BLDFILE WRKCALIB,S,BLOCKS,150,8,,T,,NDFILE,,0
```

- 2) Switch back to the PC and copy the library files from PC diskettes to System/36 (PC Support/36 must be installed):

```
C> copylibs
```

you are prompted to insert the S/36 library disks, disk 1 and 2

- 3) Switch back to System/36 and build the libraries:

```
BLDLIBR #CEALIB,300,300,,WRKCEALI,F1
BLDLIBR #CALIB,100,100,,WRKCALIB,F1
```

- 4) Then copy the link procedure members to #LIBRARY:

```
LIBRLIBR #CEALIB,#LIBRARY,PROC,CEALINK
LIBRLIBR #CALIB,#LIBRARY,PROC,CALINK
```

- 5) Last delete the temporary files:

```
DELETE WRKCEALI,F1,REMOVE
DELETE WRKCALIB,F1,REMOVE
```

Verifying the installation

After the installation you should verify that your compiler operates properly, you may then follow the steps below:

- 1) Change your working directory on the PC to a scratch directory (Btmp in this example) and copy test36.c from PC disk:

```
C> cd Btmp
```

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- C) copy A:test36.c
- 2) Compile the program test36.c:
- C) c -proto cx36 test36.c
- 3) Send the assembler source test36.asm to System/36 library WRKLIB (you must already have created this library and connected the PC and System/36 via PC Support/36)
- C) lwrk36 test36
- 4) Now you have to switch to the System/36 environment and assemble the source member TEST36 in library WRKLIB.
- SLIB WRKLIB
ASM TEST36
- 5) You then have to link the resulting subroutine member (this member will get the name MAIN as main() is the first global function in the C source program)
- DEALINK MAIN
- 6) You may now run the load member MAIN, and it will print a message on the printer
- // LOAD MAIN
// RUN

Files included in this package

PC diskette files

aloc	ascii to ebcdic translation table used by pp
c.cmn	the C compiler driver
calib.lfr	transfer request file used by copylibs.bat
coalib.tfr	transfer request file used by copylibs.bat
copylibs.bat	batch file to copy System/36 libraries
cpl.exe	the C parser
cx36.pro	proto file for System/36
cche.c	example of C program
frwrk36.bat	batch file to get .asm files from S/36 source members
install.bat	batch file to copy files to hard disk
ls.exe	the listing merge utility
p236.exe	the S/36 code generator
pp.exe	the C preprocessor
pr.exe	the print utility
proenv36.bat	the batch file to set up c.pro to cx36.pro
test36.c	test file to verify the installation
twrk36.bat	batch file to send .asm files to S/36 source members
(hdrs)	directory with all header files

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(sysint) directory with all source files for the system interface

2/74 library diskette files

One file on each PC/MS-DOS diskette.

calib	ANSI library saved on FROMLIBR format
ccalib	extended ANSI library saved on FROMLIBR format

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Version 3.04 Release Notes

The following list describes the differences between earlier releases and Version 3.04 of the Whitesmiths C compiler for IBM System/36.

Compiler Passes and Utilities

- a p2 now gives correct code for all float and double computations.
- a p2 now gives correct code for bit fields.
- a p2 now gives correct code for functions returning structures.
- a p2 now gives correct effects for arguments to a function, arguments needing temporary space for evaluation did not give back this temporary space on the stack.

Libraries

- a _raise/_warn does now work.
- a _domain and _errno are now initialized to NULL so the conditions are not inhibited.
- a command line arguments to a program may be given in the first 255 bytes of the local data area (LDA).
- a redirection of STDIN and STDOUT is possible from command line.

Packaging

- a All diskettes are now on MS/PC-DOS format. (see installation guide).

Version 3.1 Release Notes

The following list describes the differences between Version 3.04 and Version 3.1 of the Whitesmiths C compiler for IBM System/36.

Libraries

- o the Whitesmiths C runtime library support is dropped.
- o drivers for SYSIN and SYSLIST are added.
STDIN is by default opened by _main() to SYSIN.
- o the "rccl=" argument to _open() does now work.

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Version 3.12 Release Notes

The following list describes the differences between Version 3.1 and Version 3.12 of the Whitesmiths C compiler for IBM System/36.

Compiler Passes and Utilities

- o p2.36 has a number of new options to make it possible to generate text and data in separate assembler files. The IBM overlay linker may then link program text into overlays and keep data in the root segments. See also p2.36 manual pages.

Libraries

- o the startup routines are put into separate text and data files.
- o all c library routines are compiled with the separate text and data option, text files are set to category 20, and data files are set to category 0.