

AIDE

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Chapter 1

AIDE

1.1 AIDE v1.1

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                +-----+
| AIDE v1.1 |
+-----+
```

```
Introduction
Setting Up
Using AIDE
AIDE's Make Process
Final Comments
```

1.2 Introduction

```
Introduction
```

AIDE (ACE Integrated Development Environment) is a freely distributable graphical front-end for the development of ACE programs.

It is written in ACE and currently requires AmigaOS Release 2.04 or higher to run.

AIDE uses the PIPE: device, so either your startup-sequence script must contain the line "mount PIPE:" or you must type this from a shell before running AIDE.

I will try to get a future version of AIDE running correctly under 1.3 when I get some time, but for anyone wishing to have a go at doing this I have included the source code (which is also freely distributable but I retain the copyright to it). The problems under 1.3 seem to be related to

the way in which AIDE uses a NewShell and PIPE. In any case, at present if you start the program under 1.3, a requester will appear telling you that you need Wb 2.04 or higher to run AIDE.

**** Please note that this restriction only applies to AIDE not ACE!! ****

Anyway, if you do have Release 2.04 or higher, you can start AIDE by double-clicking its icon from the Workbench. With AIDE, you never need to start from a shell again when developing ACE programs, although you may spawn a shell by selecting an item from AIDE's

Project Menu
(see below).

Before starting AIDE for the first time however, you must examine and possibly edit one file. This configuration file is discussed next.

1.3 Setting Up

Setting Up

AIDE requires a file called AIDE.config to be present in the same directory as itself. Without this, the program won't run.

A sample AIDE.config is included in the AIDE archive. It looks like this:

```
-----
#
# AIDE configuration file.
#
# For each AIDE configuration variable,
# replace its value with the full path
# of the tool or directory of your choice.
#
# All definitions are optional. Place a '#'
# before a name if you want to comment out
# the corresponding definition.
#

##
## TOOLS
##

# Editor (default=c:Ed).
#
EDITOR=sys:tools/memacs

# File viewer (default=ACE:bin/muchmore).
#
VIEWER=ACE:bin/muchmore

# Calculator tool (no default).
#
CALCTOOL=ACE:utils/ACECalc/ACEcalc
```

```
# AmigaGuide tool. If this entry is set, AIDE uses ref.guide, ace.guide
# and aide.guide instead of the equivalent .doc files.
#
# Example.Guide also relies upon this tool.
#
# The tool itself is likely to be either AmigaGuide or MultiView.
#
AGDTOOL=sys:utilities/AmigaGuide

##
## DIRECTORIES
##

# Temporary directory for preprocessor, compiler, assembler & linker
# (default=T:).
#
TMPDIR=T:

# Directory in which to (initially) look for ACE source files.
#
# If not specified, defaults to directory in which AIDE is started from.
#
SRCDIR=ACE:prgs

# Directory in which to put built executables and icons.
#
# If not specified, this defaults to the directory in which
# the source file which is being compiled resides.
#
#BLTDIR=ACE:Run

# Directory in which docs for the compiler, assembler & linker reside
# (default=ACE:docs).
#
DOCDIR=ACE:docs
-----
```

In the example above, it is assumed that ACE: is a valid ASSIGN (see the "Installation" file which comes with the ACE distribution). Notice that lines commencing with a "#" are taken to be comments.

AIDE has no built-in editor so you need to specify your favourite. I may eventually write an editor, but my current feeling is that I can spend my time more productively in other ways, given the plethora of text editors available for the Amiga. The same is true for file viewers.

If anyone wishes to write a text editor for AIDE, feel free to let me know about it. Likewise, if you think I should supply a particular FreeWare editor with AIDE, I'll be glad to consider any suggestions you have.

Note that the editor you specify in AIDE.config must be capable of taking command-line arguments (a file name). The same applies to the file viewer.

Once you have set the entries in AIDE.config to your satisfaction, you can

start AIDE from the Workbench. Note that in order to speed up the load time of AIDE.config you may wish to copy it to say, AIDE.config.full and remove all lines starting with '#' from AIDE.config.

1.4 Using AIDE

Using AIDE

There are six pull-down menus in AIDE: Project, Program, Compiler, Linker, Utilities and Help. The Project menu is for general house-keeping tasks; the Program menu is for editing, compiling and running ACE programs; the Compiler menu is for setting compiler options; the Linker menu allows you to specify a number of object files or scanned libraries to link with your main ACE program; the Utilities menu provides access to a number of useful programs; and the Help menu gives you access to documentation for the compiler, assembler, linker and the ACE language.

Project Menu

Program

Compiler

Linker

Utilities

Help

1.5 Project Menu

Project Menu

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New - Invokes the editor with a blank slate.

Open... - Invokes the editor with a file name which you must specify via a file requester.

View... - Lets you view a file which is selected via a file requester.

Delete... - Lets you delete a file specified via a file requester.

Print... - Lets you choose a file to print via a file requester.

Execute... - Allows an AmigaDOS command to be executed. The command and its arguments are entered

into an ACE input requester, a console window is opened for any I/O associated with the command and the latter is executed if possible.

Spawn Shell - A NewShell process is started for more comprehensive house-keeping than the "Execute..." option is intended for.

About - Brings up a message box telling you briefly about AIDE.

Quit AIDE - Exits from AIDE.

1.6 Program

Program

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Set Source... - Lets you specify the ACE source file to work with via a file requester. No other Program menu items are accessible until this has been done for the first time.

The file requester for "Set Source..." starts up in the directory which was referenced the last time this option was invoked (see also SRCDIR entry in AIDE.config).

If the file selected does not exist, ACE will invoke the editor.

Edit Source - Invokes the editor with the current source file as its argument.

Run - Runs the current program, compiling it first if necessary.

Run in Shell... - Runs the current program in a shell, compiling it first if necessary. Before the program is run, AIDE asks for command line arguments via an input requester. Supply no arguments if none are required.

Compile - Compiles the current program, putting the target assembly source file into the temporary working directory specified in AIDE.config. No executable is produced. This is useful if you just want to see whether a program compiles and/or want to inspect the assembly source file.

Make Executable - "Makes" the current program, putting all intermediate files and the final executable program into the temporary

working directory specified in AIDE.config.

Build Application - Does the same as "Make Executable" but also copies the final executable from temporary storage to the same directory as the original source file or to the directory specified by the BLTDIR config variable. If an icon is requested, this is also copied.

Create Linkable Module - Creates an object module which can later be linked with an ACE program. The only difference between this option and Make Executable (above) is that no linking occurs and ACE's -m switch is used. See also "Creating & using ACE subprogram modules" in ace.doc.

View Assembly

Source - Allows you to view the target assembly source file which results from compiling a program.

View Preprocessed

Source - Allows you to view the APP preprocessed source file.

View Compiler

Errors - Lets you see the errors (if any) generated by the last compilation. This pertains to ACE errors only at this stage.

1.7 Compiler

Compiler

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There are seven compiler options in this menu: Preprocess Source, Break Trapping, Assembly Comments, Create Icon, List Source Lines, Optimise Assembly and Window Trapping. The latter six correspond to the compiler's command-line switches: b,c,i,l,O and w respectively.

See Ace.Guide's "Compiler options" section for details of each of these.

Since AIDE always uses ACE's -E switch to create an error file, this option is not available in this menu. Compilation errors are however, viewable from the Program menu's "

View Compiler Errors

"

item.

Items in this menu which have a check mark to their left are set.

The "Optimise Assembly" option is set by default when AIDE starts.

"Preprocess Source" is also checked at startup. To prevent ACE source code from being preprocessed by APP, uncheck this item.

Note that if you want AIDE to create an icon for an executable, the file ACE:icons/exe.info MUST exist. This is required by ACE as well (see Ace.Guide).

To save the current compiler options, select the last item in the menu: "Save Options". Next time AIDE is run, the Compiler menu will be restored accordingly.

1.8 Linker

Linker

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In addition to the normal assembled program file and the scanned libraries incorporated by the linker into the final executable, additional object files to be linked can be specified via this menu.

Unless you are using external functions from other scanned libraries or modules (written in ACE, C or assembly etc), you may never have cause to use this facility.

The list of extra modules to be linked is displayed as part of the menu. These new items cannot be selected and are for display purposes only.

Add Module... - Adds an object file or scanned library to the list of modules to be linked.

Remove Module... - Removes an object file or scanned library from the list of modules to be linked.

Remove All Modules - Removes all modules from the list of extra files to be linked.

1.9 Utilities

Utilities

=====

Calculator - Invokes the calculator of your choice as specified by CALCTOOL in AIDE.config.

Create BMAP file * - Converts the FD file for a library into a .bmap file used by ACE and AmigaBASIC when calling shared library functions. The .bmap file

is stored in the ACEbmaps: directory.

AmigaBASIC to ASCII * - Converts a compressed AmigaBASIC file into an ASCII text file for use by ACE.

* AIDE expects the utility to be in ACE:utils.

1.10 Help

Help

====

This menu provides access to the documentation for the compiler, assembler and linker from within AIDE.

In addition, access to the ACE Language Reference manual, ACE examples, ACE history and this document can be gained via the Help menu.

1.11 AIDE's Make Process

AIDE's Make Process

As you may have gleaned from the above, AIDE has a simple inbuilt "make" capability.

This means that before it builds or makes an executable and prior to compiling or running a program, AIDE checks to see whether compilation needs to take place at all.

If you have created an executable and then decide to run it, AIDE will not re-compile the source first. Likewise, if you want to build an executable and the program has already been compiled, the executable will be copied from AIDE's temporary workspace.

In like manner, if you have compiled a program to produce an assembly source file, so long as you don't edit the ACE source file, AIDE will not recompile the program before assembling and linking it.

On the other hand if you edit a source file, next time you go to run it, AIDE will "bring the program up to date" by compiling, assembling and linking it first.

If you modify the modules list in the Linker menu, AIDE will recompile everything. This is overkill really and a future version will limit this to the link phase.

Making a change to any of the options in the Compiler menu will cause previous makes to be ignored also.

In order to preprocess, compile, assemble and link a program, AIDE first

creates a shell script and then executes it, opening a shell in order to do so.

Meanwhile, AIDE awaits a final message from the shell process via a PIPE before continuing. In addition to some status messages which AIDE will display, one of two final messages will be received.

```
MakeDone
or
MakeAborted
```

If an error or user break occurs during preprocessing or compilation, the shell process returns a "MakeAborted" message and AIDE acts accordingly, by, for example, not running the program.

If an error or user break occurs during assembly or linking however, you will be left staring at a shell prompt. The simplest way out of this is to issue the following two commands at the shell prompt:

```
QuitMake
EndCli
```

one at a time. These will: (i) send a message back to AIDE telling it that something has gone awry during assembly or linking; (ii) close the shell. In case you are interested, "QuitMake" is an alias (for "MakeAborted") set up by AIDE.

This is one area in which AIDE could be improved, but at least this solution is workable.

1.12 Final Comments

Final Comments

As you can see, there is certainly scope for improvement and it is my hope that AIDE will continue to get better over time.

Feel free to make any suggestions about AIDE and please report any bugs to me. See Ace.Guide for details of how to contact me by e-mail, snail-mail or telephone.

If you make any substantial changes to AIDE I'd appreciate knowing about them, since I may be able to incorporate such modifications into the next release. Naturally any contributions will be acknowledged.

In any case, I hope you find AIDE to be a pleasant environment in which to develop ACE programs.

programs.

Regards,
David Benn, Tasmania

12th October 1994
