**ALD**

**Assembly Language Debugger 0.1.7**

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To run type ald

**help**

Commands may be abbreviated.

If a blank command is entered, the last command is repeated.

Type `help <command>' for more specific information on <command>.

General commands

attach continue detach disassemble display

enter examine file help ldisplay

load next quit register run

set step undisplay unload

Breakpoint related commands

break dbreak disable enable ignore

lbreak tbreak

**General commands**

help **attach**

attach: Attach to a running process

Usage: attach <pid>

<pid> - process id to attach to

help **enter**

enter: Change the contents of the program's memory

Usage: enter <address> [value]

<address> - Memory address to change

[value] - New value

If no value is given, you will be prompted for values for

successive memory addresses until a blank value is input.

Alias: store

help **load**

load: Loads a new file into memory for debugging

Usage: load <filename>

Previous file, if any, is unloaded first

help **set**

set: Configure various settings

Usage: set [option] [value]

Options:

args

disasm-show-syms

entry-point

file-offset

output

pause-print

prompt

step-display-regs

step-display-fpregs

step-display-mmxregs

Type "help set <option>" for more information on <option>

help **continue**

continue: Continue execution of debugged process

Usage: continue

Alias: c

help **examine**

examine: Examine the contents of the program's memory

Usage: examine [start]|[register]|[section]|[symbol] [stop] [-num <num>] [-size <value>] [-output <letter>]

[start] - Memory address to start from

[register] - Memory dump begins at register contents

[section] - Memory dump begins at section start

[symbol] - Memory dump begins at symbol start

[stop] - Memory address to stop dump

[-num <num>] - Number of elements to dump (default: 20)

[-size <value>] - Size of each element in bytes (default: 1)

[-output <letter>] - Output format for each element (default: x)

'x' = hexadecimal

'o' = octal

'd' = decimal

Example:

examine -n 50 -s 1 -o x 0xABCD

Dumps 50 elements each of size 1 byte in hexadecimal format,

starting at location 0xABCD.

If no starting address is given, the address specified in

"set entry-point" is used. A register name, section name,

or symbol name may be given in place of a starting address.

Aliases: e, dump

[start] - Memory address to start from

[register] - Memory dump begins at register contents

[section] - Memory dump begins at section start

[symbol] - Memory dump begins at symbol start

[stop] - Memory address to stop dump

[-num <num>] - Number of elements to dump (default: 20)

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Aliases: e, dump

ald>

help **next**

next: Step one instruction, stepping over any subroutines

Usage: next [num]

[num] - number of instructions to step over (default: 1)

Alias: n

ald> help **step**

step: Step one instruction, stepping into any subroutines

Usage: step [num]

[num] - number of instructions to step through (default: 1)

Alias: s

ald> help **detach**

detach: Detach from current process

Usage: detach

Detaches the debugger from the current process (see help attach)

ald> help **file**

file: Outputs specified information on current file

Usage: file <header | secinfo | syminfo>

header - Output information about the file's object header

secinfo [name] - Output information about the file's sections. If

[name] is given, output information about that

specific section.

syminfo [sym] - Output information about the file's symbols, if any.

If [sym] is given, output information about that

specific symbol.

ald> help **quit**

quit: Exit the debugger

Usage: quit

ald> help **undisplay**

undisplay: Remove a display address

Usage: undisplay <number | all>

number - number (can be obtained from "ldisplay")

all - Delete all display addresses

See also: display, ldisplay

ald> help **disassemble**

disassemble: Disassembles machine code into assembly language instructions

Usage: disassemble [start [stop]] [-num <number>] [flags]

[start [stop]] - Starting and stopping memory locations - All opcodes

inside this range will be disassembled. For this to

work, you must be working with an executable file.

[-num <num>] - Number of instructions to disassemble (default: all)

[flags] - Various flags

Flags:

-section <name> - disassemble specific section <name> - you can

use the "file secinfo" command to get a list

of available sections.

The output of this command is as follows:

<offset> <opcode> <instruction>

<offset> - Virtual offset from beginning of file, or memory address

<opcode> - Machine language instruction

<instruction> - Assembly language instruction

Disassembly begins at the address specified by "set file-offset",

unless a start/stop memory address is given.

Alias: d

ald> help **help**

help: Displays commands, or gives specific help on commands

Usage: help [optional commands]

ald> help **register**

register: Display and/or manipulate the process' registers

Usage: register [-all] [name [value]]

[-all] - display all registers

[name] - name of a specific register

[[value]] - if a name is given, it is set to this value

With no arguments, the most common registers are displayed

along with their values.

ald> help **unload**

unload: Unloads the current debug file from memory

Usage: unload

ald> help **display**

display: Display memory after single steps

Usage: display [start]|[register]|[section]|[symbol] [stop] [-num <num>] [-size <value>] [-output <letter>]

[start] - Memory address to start from

[register] - Memory dump begins at register contents

[section] - Memory dump begins at section start

[symbol] - Memory dump begins at symbol start

[stop] - Memory address to stop dump

[-num <num>] - Number of elements to dump (default: 20)

[-size <value>] - Size of each element in bytes (default: 1)

[-output <letter>] - Output format for each element (default: x)

'x' = hexadecimal

'o' = octal

'd' = decimal

Example:

display -n 50 -s 1 -o x 0xABCD

After each single step, 50 bytes of memory starting at location

0xABCD will be printed.

See also: ldisplay, undisplay

ald> help **ldisplay**

ldisplay: Print list of memory addresses to be displayed after single stepping

Usage: ldisplay

See also: display, undisplay

ald> help **run**

run: Start program from beginning

Usage: run [arguments]

[arguments] - runtime arguments to pass to program - if not supplied,

the arguments given with "set args" are used.

Alias: r

**Breakpoint related commands**

help **break**

break: Set a breakpoint

Usage: break <address | symbol>

<address> - This is the break address. It must be set at the first

byte of the instruction where you wish to break. You

can use the "disassemble" command to determine

where a specific instruction begins.

<symbol> - Alternatively, you can specify a debugging symbol

such as the name of a function. The executable must

have been compiled with debugging symbols enabled.

ald> help **lbreak**

lbreak: List all breakpoints

Usage: lbreak

ald> help **dbreak**

dbreak: Delete a breakpoint

Usage: dbreak <number | all>

number - Breakpoint number (can be obtained from "lbreak")

all - Delete all breakpoints

Alias: delete

ald> help **tbreak**

tbreak: Set a temporary breakpoint

Usage: tbreak <address>

<address> - Breakpoint address

A temporary breakpoint is cleared after the first time it is hit.

ald> help **disable**

disable: Disable a breakpoint

Usage: disable <number | all>

number - Breakpoint number (can be obtained from "lbreak")

all - Disable all breakpoints

When a breakpoint is disabled, it has no effect until it is

reactivated using the "enable" command.

ald> help **enable**

enable: Reenable a breakpoint

Usage: enable <number | all>

number - Breakpoint number (can be obtained from "lbreak")

all - Enable all breakpoints

This reverses the effect of the "disable" command.

ald> help **ignore**

ignore: Set the ignore count for a breakpoint

Usage: ignore <number> <count>

number - Breakpoint number (can be obtained from "lbreak")

count - New ignore count

When a breakpoint has an ignore count set, it will not be

triggered until it has been hit <count> times.

ald>