Using LLDB in iOS

Finding Help and Creating Aliases

LLDB Command Syntax

<command> **<action>** **[options]** **[arguments]**

```
(lldb) breakpoint set --selector speakAgain
```

```
(lldb) process launch --stop-at-entry -- -program_arg1 value
```

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LLDB Command Syntax (cont'd)

- Options can be placed anywhere
- For arguments that are preceded with a "-", separate the options from the arguments with --
- Quotes can protect spaces
- Quotes can be escaped: "\"
- Some commands are unparsed after options. (script and expression)

Three Syntax Forms

Discoverable form

```
(lldb) expression --objective-description -- myString
```

Abbreviated form

```
(lldb) e -O -- myString
```

Alias

```
(lldb) po myString
```

Asking for Help

```
(lldb) help watchpoint
```

```
(lldb) help watchpoint set
```

```
(lldb) help <byte-size>
```

```
(lldb) help po
```

```
(lldb) help -a
```

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Asking for Help (cont'd)

```
(lldb) apropos break

The following built-in commands may relate to 'break':
_regexp-break              -- Set a breakpoint using a regular expression to
                              specify the location, where <linenum> is in
                              decimal and <address> is in hex.
_regexp-tbreak             -- Set a one shot breakpoint using a regular
                              expression to specify the location, where
                              <linenum> is in decimal and <address> is in hex.
breakpoint                 -- A set of commands for operating on breakpoints.
                              Also see _regexp-break.
breakpoint clear           -- Clears a breakpoint or set of breakpoints in the
                              executable.
```

Creating an Alias

⚙ Positional Aliases:
  ⚙ Provides simple substitution
  ⚙ Additional arguments are appended to the end

```
(lldb) command alias <alias-name> <substitute>
```

  ⚙ Ability to position arguments in the command line
  ⚙ %n in the command line will match the argument

```
(lldb) command alias sbr breakpoint set -l %1
```

Creating an Alias (cont'd)

⚙ Regular Expression Aliases:

  ⚙ Alias arguments are matched against a regular expression

  ⚙ Multiple regular expressions may be included

  ⚙ First regular expression match wins

```
(lldb) command regex sbr 's/([0-9]+)/breakpoint set -l %1/'
```
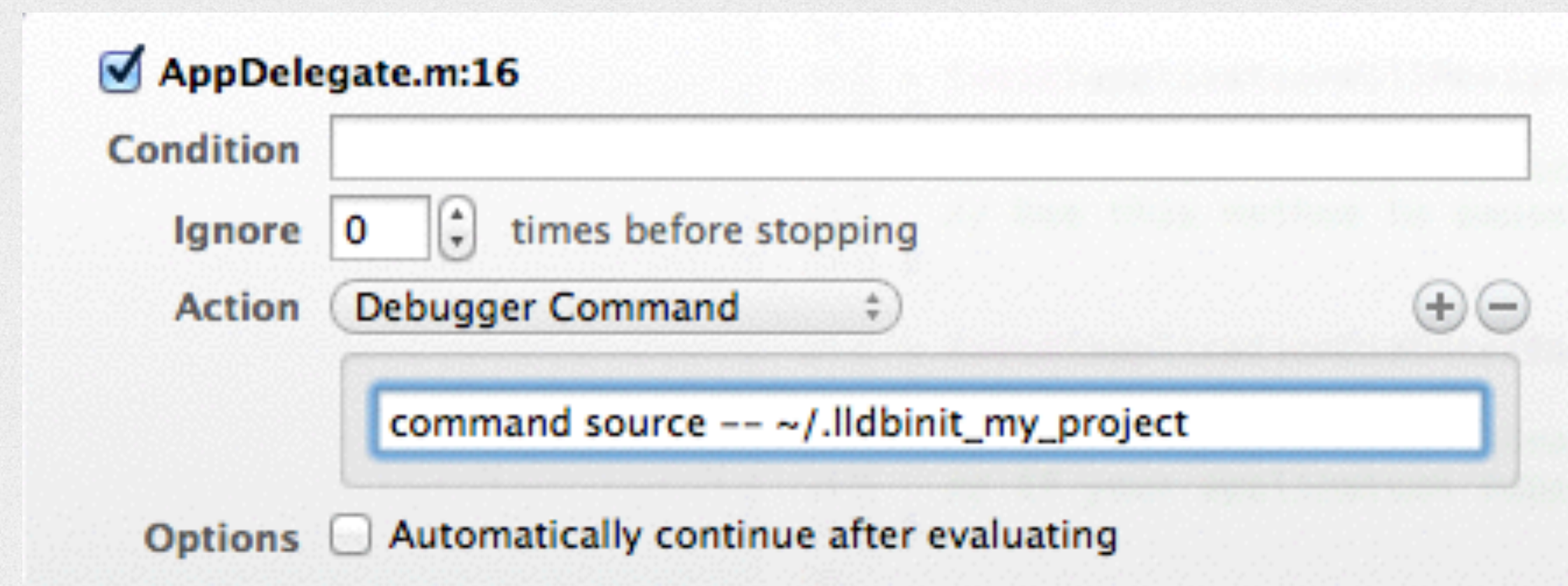
Creating an Alias (cont'd)

⚙ Creating global aliases

⚙ Save LLDB command in file: ~/.lldbinit

⚙ Creating project aliases

⚙ Save LLDB commands in file: ~/.lldbinit_my_project

⚙ Create new breakpoint with the following LLDB command:

☑ **AppDelegate.m:16**

Condition [   ]

Ignore [0] ⬍ times before stopping

Action (Debugger Command ⬍)   ⊕⊖

[command source -- ~/.lldbinit_my_project   ]

Options ☐ Automatically continue after evaluating

Demo: Revealing the Data

⚙ Demonstrate positional alias

⚙ Demonstrate regex alias

⚙ Show how to persist aliases between debugging sessions

Challenge Time