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Xcode开发心得

- 最新版本： v0.7.1
- 更新时间： 20241007

简介

总结Xcode相关的开发心得。先是概览；然后总结Xcode开发的心得，包括安装和升级Xcode；Command Line Tools命令行工具，包括xcodebuild和xcrun；以及Signing签名、iOS设备的iPhone和iOS模拟器；日志，包括调试和崩溃；以及其他心得；以及相关子教程。

源码+浏览+下载

本书的各种源码、在线浏览地址、多种格式文件下载如下：

HonKit源码

- [crifan/xcode_dev_summary: Xcode开发心得](#)

如何使用此HonKit源码去生成发布为电子书

详见：[crifan/honkit_template: demo how to use crifan honkit template and demo](#)

在线浏览

- [Xcode开发心得 book.crifan.org](#)
- [Xcode开发心得 crifan.github.io](#)

离线下载阅读

- [Xcode开发心得 PDF](#)
- [Xcode开发心得 ePub](#)
- [Xcode开发心得 Mobi](#)

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此电子书教程的全部内容，如无特别说明，均为本人原创。其中部分内容参考自网络，均已备注了出处。如发现有侵权，请通过邮箱联系我 [admin 艾特 crifan.com](#)，我会尽快删除。谢谢合作。

各种技术类教程，仅作为学习和研究使用。请勿用于任何非法用途。如有非法用途，均与本人无关。

鸣谢

感谢我的老婆陈雪的包容理解和悉心照料，才使得我 [crifan](#) 有更多精力去专注技术专研和整理归纳出这些电子书和技术教程，特此鸣谢。

其他

作者的其他电子书

本人 `crifan` 还写了其他 150+ 本电子书教程，感兴趣可移步至：

[crifan/crifan_ebook_readme](#): Crifan的电子书的使用说明

关于作者

关于作者更多介绍，详见：

[关于CrifanLi李茂 – 在路上](#)

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Xcode开发概览

在弄[苹果相关开发](#)期间，往往要用到Apple苹果自带的这个IDE：`Xcode`

此处就整理相关的开发心得。

- `Xcode`
 - 是什么：Apple苹果生态中，用来开发的**IDE**
 - 支持各种Apple的平台和系统
 - 桌面端：`macOS`
 - 移动端：
 - iPhone类：`iOS`
 - iPad类：`ipadOS`
 - Apple TV：`tvOS`
 - Apple Watch：`watchOS`
 - 功能
 - IDE的标准功能：编写代码、调试等
 - 额外：还内置附带了其他一些**命令行工具**

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Xcode开发心得

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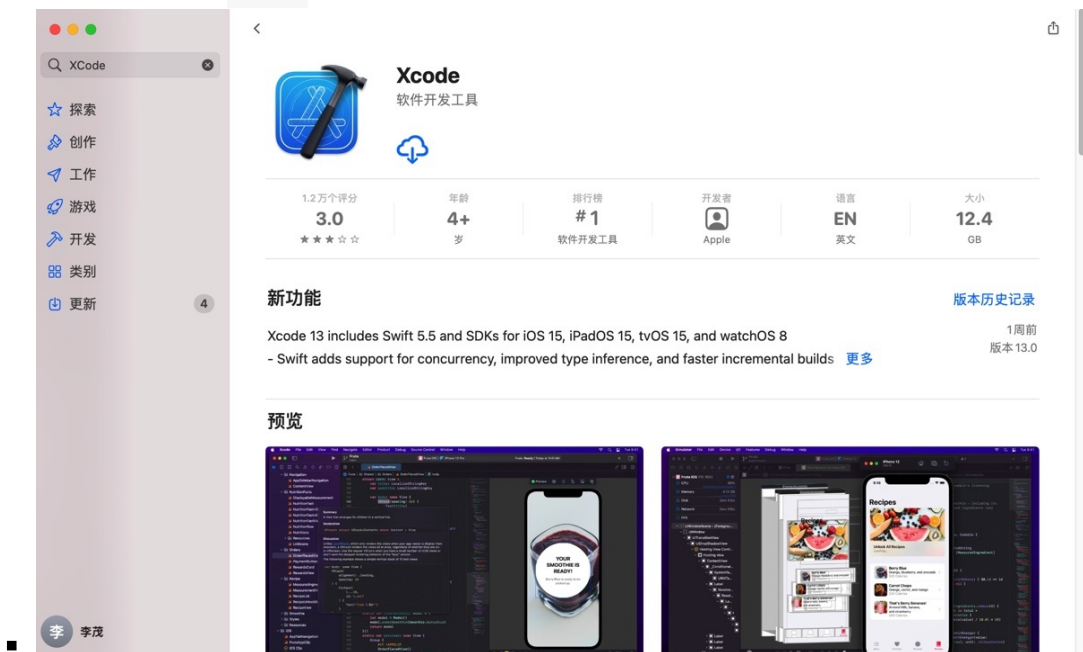
安装Xcode

TODO:

- 【已解决】Mac提示：Error Xcode alone is not sufficient on Catalina
- 【已解决】下载直接可以安装的XCode安装文件而非AppStore中下载和安装
- 【已解决】Mac中安装最新版XCode
- 【已解决】Mac中通过AppStore下载和安装XCode

下载=安装来源

- 安装来源
 - AppStore中搜并安装XCode
 - 此处安装的是最新的 13.0



- 也可以单独从网站中下载特定版本再安装
 - Xcode Releases | xcodereleases.com
 - 举例
 - 12.5.1

<https://codereleases.com>

Xcode 13.0	Beta 1	13A5154h	7 Jun 2021	macOS 11.3+	12.0 (21A5268d)	15.0 (19A5281d)	8.0 (19R5286d)	15.0 (19J5288d)	Download	Release Notes
Xcode 13.0	Beta 1	13A5154h	7 Jun 2021	macOS 11.3+	12.0 (21A5248c)	15.0 (19A5261u)	8.0 (19R5266p)	15.0 (19J5268q)	Download	Release Notes
Xcode 12.5.1	Release	12E507	21 Jun 2021	macOS 11.0+	11.3 (20E214)	14.5 (18E182)	7.4 (18T187)	14.5 (18L191)	Download	Release Notes
Xcode 12.5	Release	12E262	26 Apr 2021	macOS 11.0+	11.3 (20E214)	14.5 (18E182)	7.4 (18T187)	14.5 (18L191)	Download	Release Notes
Xcode 12.5	RC 1	12E262	20 Apr 2021	macOS 11.0+	11.3 (20E214)	14.5 (18E182)	7.4 (18T187)	14.5 (18L191)	Download	Release Notes
Xcode 12.5	Beta 3	12E5244e	2 Mar 2021	macOS 11.0+	11.3 (20E5196d)	14.5 (18E5164d)	7.4 (18T5169d)	14.5 (18L5173d)	Download	Release Notes
Xcode 12.5	Beta 2	12E5234g	16 Feb 2021	macOS 11.0+	11.3 (20E5186d)	14.5 (18E5154g)	7.4 (18T5159g)	14.5 (18L5163e)	Download	Release Notes
Xcode 12.5	Beta 1	12E5220o	1 Feb 2021	macOS 11.0+	11.3 (20E5172i)	14.5 (18E5140i)	7.4 (18T5144k)	14.5 (18L5149j)	Download	Release Notes
Xcode 12.4	Release	12D4e	26 Jan 2021	macOS 10.15.4+	11.1 (20C63)	14.4 (18D46)	7.2 (18S561)	14.3 (18K559)	Download	Release Notes

■ 地址

- https://developer.apple.com/services-account/download?path=/Developer_Tools/Xcode_12.5.1/Xcode_12.5.1.xip
- ->
- https://download.developer.apple.com/Developer_Tools/Xcode_12.5.1/Xcode_12.5.1.xip

❗ 安装Xcode前要确认自己的macOS版本是否满足要求

要安装XCode 13.0, 发现当前MacOS版本 `macOS Catalina 10.15.7` 不支持, 无法安装。

导致了必须去升级macOS到最新版: `macOS 11.6 Big Sur` 才能正常继续安装XCode的。

安装过程

此处macOS中安装指定版本的11.3.1的XCode:

1. 浏览器打开

[More Software Downloads - Apple Developer](#)

然后用自己的AppleID账号登录

登录后可以看到, 历史上各个版本的XCode

1. 找到自己要的11.3.1的XCode

https://download.developer.apple.com/Developer_Tools/Xcode_11.3.1/Xcode_11.3.1.xip

下载。

1. 下载后, 双击 `Xcode_11.3.1.xip` 会自动解压出 Xcode
2. 把XCode拖动到 `应用程序` 文件夹。

再双击启动, 首次会弹框点击同意和输入系统账号和密码。

等待安装成功后, 即可。

此处会默认安装：XCode的命令行工具 `xcodebuild`，所以无需额外下载安装。

注：

如果需要，可以单独下载XCode的命令行工具：

https://download.developer.apple.com/Developer_Tools/Command_Line_Tools_for_Xcode_11.3.1/Command_Line_Tools_for_Xcode_11.3.1.dmg

然后去安装。

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升级Xcode

TODO:

- 【已解决】Mac的macOS Catalina 10.15.7去升级XCode
- 【记录】升级后继续使用Xcode
- [记录] Xcode更新升级

小心得:

每次 xcode 的升级，都是伴随着相关的其他系统的版本一起升级的：

- Swift
- iOS
- watchOS
- tvOS
- macOS

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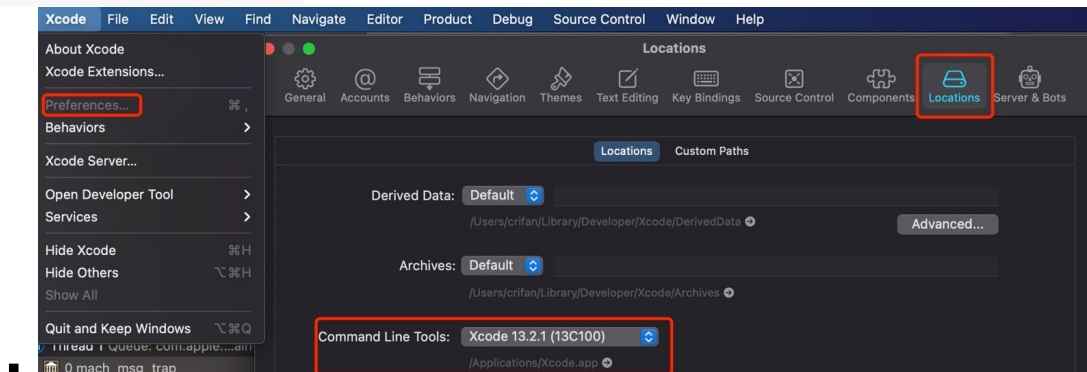
Command Line Tools

TODO:

- 【已解决】Mac中已登录苹果开发者账号点击下载Command Line Tool提示Unauthorized没权限

Xcode，除了有图形界面的UI外，还额外提供了一些，基于命令行的各种工具= Command Line Tools

- Command Line Tools
 - 是什么：xcode 的基于命令行的各种命令行工具。
 - 安装位置：/Library/Developer/CommandLineTools/
 - 包含哪些
 - 命令行工具
 - xcodebuild
 - xcrun
 - 各种子命令
 - clang = Apple LLVM compiler
 - linker
 - Make
 - 等
 - macOS SDK和头文件header
 - Xcode界面中会提到
 - Xcode -> Preferences -> Locations -> Locations -> Command Line Tools : 此处是 Xcode 13.2.1 (13C100)



包含的全部命令

更多的命令，详见：

- /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin

举例：

```
ll /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin
```

```

total 800272
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-ar
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-as
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-dsymutil
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-libtool
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-link
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-lipo
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-lld
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-nm
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-objdump
lrwxr-xr-x 1 crifan staff 6B 6 28 20:26 air-ranlib -> air-ar
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-readobj
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 air-size
-rwxr-xr-x 1 crifan staff 168K 12 15 2021 ar
-rwxr-xr-x 1 crifan staff 150K 12 15 2021 as
-rwxr-xr-x 1 crifan staff 163K 12 15 2021 asa
-rwxr-xr-x 1 crifan staff 520K 12 15 2021 bison
-rwxr-xr-x 1 crifan staff 434K 12 15 2021 bitcode_strip
lrwxr-xr-x 1 crifan staff 5B 6 28 20:27 c++ -> clang
lrwxr-xr-x 1 crifan staff 12B 6 28 20:27 c++filt -> llvm-cxxfilt
-rwxr-xr-x 1 crifan staff 164K 12 15 2021 c89
-rwxr-xr-x 1 crifan staff 164K 12 15 2021 c99
lrwxr-xr-x 1 crifan staff 5B 6 28 20:27 cc -> clang
-rwxr-xr-x 1 crifan staff 181M 12 15 2021 clang
lrwxr-xr-x 1 crifan staff 5B 6 28 20:27 clang++ -> clang
-rwxr-xr-x 1 crifan staff 80M 12 15 2021 clangd
-rwxr-xr-x 1 crifan staff 350K 12 15 2021 cmpdylib
-rwxr-xr-x 1 crifan staff 382K 12 15 2021 codesign_allocate
lrwxr-xr-x 1 crifan staff 17B 6 28 20:27 codesign_allocate-p -> codesign_allocate
lrwxr-xr-x 1 crifan staff 14B 6 28 20:27 coremlc -> coremlcompiler
-rwxr-xr-x 1 crifan staff 20M 12 15 2021 coremlcompiler
-rwxr-xr-x 1 crifan staff 3.3K 10 26 2021 cpp
-rwxr-xr-x 1 crifan staff 164K 12 15 2021 ctags
-rwxr-xr-x 1 crifan staff 433K 12 15 2021 ctf_insert
-rwxr-xr-x 1 crifan staff 19M 12 15 2021 docc
-rwxr-xr-x 1 crifan staff 61M 12 15 2021 dsymutil
lrwxr-xr-x 1 crifan staff 14B 6 28 20:28 dwarfdump -> llvm-dwarfdump
-rwxr-xr-x 1 crifan staff 1.5M 12 15 2021 dwarfdump-classic
-rwxr-xr-x 1 crifan staff 497K 12 15 2021 dyldinfo
-rwxr-xr-x 1 crifan staff 681K 12 15 2021 flex
-rwxr-xr-x 2 crifan staff 681K 12 15 2021 flex++
lrwxr-xr-x 1 crifan staff 8B 6 28 20:29 gcov -> llvm-cov
-rwxr-xr-x 2 crifan staff 392K 12 15 2021 gm4
-rwxr-xr-x 1 crifan staff 294K 12 15 2021 gperf
-rwxr-xr-x 1 crifan staff 267K 12 15 2021 iig
-rwxr-xr-x 1 crifan staff 229K 12 15 2021 indent
-rwxr-xr-x 1 crifan staff 433K 12 15 2021 install_name_tool
-rwxr-xr-x 1 crifan staff 5.6M 12 15 2021 ld
-rwxr-xr-x 1 crifan staff 230B 10 26 2021 lex
-rwxr-xr-x 1 crifan staff 434K 12 15 2021 libtool
-rwxr-xr-x 1 crifan staff 253K 12 15 2021 lipo
-rwxr-xr-x 1 crifan staff 8.2M 12 15 2021 llvm-cov
-rwxr-xr-x 1 crifan staff 859K 12 15 2021 llvm-cxxfilt
-rwxr-xr-x 1 crifan staff 17M 12 15 2021 llvm-dwarfdump
-rwxr-xr-x 1 crifan staff 20M 12 15 2021 llvm-nm
-rwxr-xr-x 1 crifan staff 23M 12 15 2021 llvm-objdump

```

```

-rwxr-xr-x 1 crifan staff 184K 12 15 2021 llvm-otool
-rwxr-xr-x 1 crifan staff 3.6M 12 15 2021 llvm-profdata
-rwxr-xr-x 1 crifan staff 6.7M 12 15 2021 llvm-size
-rwxr-xr-x 1 crifan staff 3.5K 10 26 2021 lorder
-rwxr-xr-x 2 crifan staff 392K 12 15 2021 m4
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 metal
lrwxr-xr-x 1 crifan staff 6B 6 28 20:32 metal-ar -> air-ar
lrwxr-xr-x 1 crifan staff 6B 6 28 20:32 metal-as -> air-as
lrwxr-xr-x 1 crifan staff 12B 6 28 20:32 metal-dsymutil -> air-dsymutil
lrwxr-xr-x 1 crifan staff 11B 6 28 20:32 metal-libtool -> air-libtool
lrwxr-xr-x 1 crifan staff 8B 6 28 20:32 metal-link -> air-link
lrwxr-xr-x 1 crifan staff 8B 6 28 20:32 metal-lipo -> air-lipo
lrwxr-xr-x 1 crifan staff 7B 6 28 20:32 metal-lld -> air-lld
lrwxr-xr-x 1 crifan staff 6B 6 28 20:32 metal-nm -> air-nm
lrwxr-xr-x 1 crifan staff 11B 6 28 20:32 metal-objdump -> air-objdump
lrwxr-xr-x 1 crifan staff 10B 6 28 20:32 metal-ranlib -> air-ranlib
lrwxr-xr-x 1 crifan staff 11B 6 28 20:32 metal-readobj -> air-readobj
lrwxr-xr-x 1 crifan staff 8B 6 28 20:32 metal-size -> air-size
-rwxr-xr-x 1 crifan staff 265K 12 15 2021 metal-source
lrwxr-xr-x 1 crifan staff 7B 6 28 20:32 metallib -> air-lld
-rwxr-xr-x 1 crifan staff 7.7K 10 26 2021 mig
lrwxr-xr-x 1 crifan staff 7B 6 28 20:32 nm -> llvm-nm
-rwxr-xr-x 1 crifan staff 383K 12 15 2021 nm-classic
-rwxr-xr-x 1 crifan staff 467K 12 15 2021 nmedit
lrwxr-xr-x 1 crifan staff 12B 6 28 20:32 objdump -> llvm-objdump
lrwxr-xr-x 1 crifan staff 10B 6 28 20:32 otool -> llvm-otool
-rwxr-xr-x 1 crifan staff 1.4M 12 15 2021 otool-classic
-rwxr-xr-x 1 crifan staff 382K 12 15 2021 pagestuff
lrwxr-xr-x 1 crifan staff 7B 6 28 20:33 ranlib -> libtool
-rwxr-xr-x 1 crifan staff 261K 12 15 2021 rpcgen
-rwxr-xr-x 1 crifan staff 186K 12 15 2021 segedit
lrwxr-xr-x 1 crifan staff 12B 6 28 20:33 size -> size-classic
-rwxr-xr-x 1 crifan staff 349K 12 15 2021 size-classic
-rwxr-xr-x 1 crifan staff 30M 12 15 2021 sourcekit-lsp
-rwxr-xr-x 1 crifan staff 350K 12 15 2021 strings
-rwxr-xr-x 1 crifan staff 520K 12 15 2021 strip
lrwxr-xr-x 1 crifan staff 14B 6 28 20:33 swift -> swift-frontend
lrwxr-xr-x 1 crifan staff 14B 6 28 20:33 swift-api-digester -> swift-frontend
lrwxr-xr-x 1 crifan staff 14B 6 28 20:33 swift-api-extract -> swift-frontend
-rwxr-xr-x 1 crifan staff 59M 12 15 2021 swift-build
-rwxr-xr-x 1 crifan staff 1.4M 12 15 2021 swift-build-tool
-rwxr-xr-x 1 crifan staff 1.3M 12 15 2021 swift-demangle
-rwxr-xr-x 1 crifan staff 26M 12 15 2021 swift-driver
-rwxr-xr-x 1 crifan staff 214M 12 15 2021 swift-frontend
-rwxr-xr-x 1 crifan staff 11M 12 15 2021 swift-help
-rwxr-xr-x 1 crifan staff 59M 12 15 2021 swift-package
-rwxr-xr-x 1 crifan staff 59M 12 15 2021 swift-package-collection
-rwxr-xr-x 1 crifan staff 59M 12 15 2021 swift-run
-rwxr-xr-x 1 crifan staff 185K 12 15 2021 swift-stdlib-tool
lrwxr-xr-x 1 crifan staff 14B 6 28 20:34 swift-symbolgraph-extract -> swift-front
end
-rwxr-xr-x 1 crifan staff 59M 12 15 2021 swift-test
lrwxr-xr-x 1 crifan staff 14B 6 28 20:34 swiftc -> swift-frontend
-rwxr-xr-x 1 crifan staff 33M 12 15 2021 tapi
-rwxr-xr-x 1 crifan staff 3.1M 12 15 2021 tapi-analyze
-rwxr-xr-x 1 crifan staff 165K 12 15 2021 unifdef

```



```
-rwxr-xr-x  1 crifan  staff   2.9K  10  26  2021  unifdefall
-rwxr-xr-x  1 crifan  staff  203K  12  15  2021  unwinddump
-rwxr-xr-x  1 crifan  staff  220K  12  15  2021  vtool
-rwxr-xr-x  1 crifan  staff   135B  10  26  2021  yacc
```

子命令举例

- clang

```
❯ clang -v
Apple clang version 13.0.0 (clang-1300.0.29.30)
Target: x86_64-apple-darwin20.6.0
Thread model: posix
InstalledDir: /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin
```

- gcc

```
❯ gcc -v
Configured with: --prefix=/Applications/Xcode.app/Contents/Developer/usr --with-gxx-include-dir=/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX.sdk/usr/include/c++/4.2.1
Apple clang version 13.0.0 (clang-1300.0.29.30)
Target: x86_64-apple-darwin20.6.0
Thread model: posix
InstalledDir: /Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin
```

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xcodebuild

- `xcodebuild`
 - 是什么：Xcode的命令行工具
 - 作用：用于命令行方式去编译项目
 - 好处：而无需打开Xcode图形界面去操作
 - 可用于自动化部署等方面

用法举例：

```
UDID ed94089f3e34d5538065a695bfdf03dfbb3c5579
xcodebuild -project WebDriverAgent.xcodeproj -scheme WebDriverAgentRunner -destination
"id=$UDID" test
```

语法和说明

help语法

```
crifan@licrifandeMacBook-Pro ~ % xcodebuild --help
Usage: xcodebuild [-project <projectname>] [[-target <targetname>]... [-alltargets] [-co
nfiguration <configurationname>] [-arch <architecture>]... [-sdk [<sdkname>|<sdkpath>]]
[-showBuildSettings [-json]] [<buildsetting>=<value>]... [-buildaction]...
    xcodebuild [-project <projectname>] -scheme <schemeName> [-destination <destinat
ionspecifier>]... [-configuration <configurationname>] [-arch <architecture>]... [-sd
k [<sdkname>|<sdkpath>]] [-showBuildSettings [-json]] [-showdestinations] [<buildsetting>=<
value>]... [-buildaction]...
    xcodebuild -workspace <workspacename> -scheme <schemeName> [-destination <destin
ationspecifier>]... [-configuration <configurationname>] [-arch <architecture>]... [-sd
k [<sdkname>|<sdkpath>]] [-showBuildSettings] [-showdestinations] [<buildsetting>=<value>
]>]... [-buildaction]...
    xcodebuild -version [-sdk [<sdkfullpath>|<sdkname>]] [-json] [<infoitem>]
    xcodebuild -list [[-project <projectname>] [-workspace <workspacename>]] [-json]
    xcodebuild -showsdk [ -json]
    xcodebuild -exportArchive -archivePath <xcarchivepath> [-exportPath <destination
path>] -exportOptionsPlist <plistpath>
    xcodebuild -exportNotarizedApp -archivePath <xcarchivepath> -exportPath <destina
tionpath>
    xcodebuild -exportLocalizations -localizationPath <path> -project <projectname> [
-exportLanguage <targetlanguage>... [-includeScreenshots]]
    xcodebuild -importLocalizations -localizationPath <path> -project <projectname> [
-mergeImport]
    xcodebuild -resolvePackageDependencies [-project <projectname> [-workspace <works
pacename>] -clonedSourcePackagesDirPath <path>
    xcodebuild -create-xcframework [-help] [-framework <path>] [-library <path> [-he
aders <path>]] -output <path>

Options:
    -usage                print brief usage
    -help                 print complete usage
```

<code>-verbose</code>	provide additional status
output	
<code>-license</code>	show the Xcode and SDK lic
ense agreements	
<code>-checkFirstLaunchStatus</code>	Check <code>if</code> any First Launch
tasks need to be performed	
<code>-runFirstLaunch</code>	<code>install</code> packages and agree
to the license	
<code>-project</code> NAME	build the project NAME
<code>-target</code> NAME	build the target NAME
<code>-alltargets</code>	build all targets
<code>-workspace</code> NAME	build the workspace NAME
<code>-scheme</code> NAME	build the scheme NAME
<code>-configuration</code> NAME	use the build configuratio
n NAME <code>for</code> building each target	
<code>-xcconfig</code> PATH	apply the build settings d
efined <code>in</code> the <code>file</code> at <code>PATH</code> as overrides	
<code>-arch</code> ARCH	build each target <code>for</code> the
architecture ARCH; this will override architectures defined <code>in</code> the project	
<code>-sdk</code> SDK	use SDK as the name or pat
h of the base SDK when building the project	
<code>-toolchain</code> NAME	use the toolchain with ide
ntifier or name NAME	
<code>-destination</code> DESTINATIONSPECIFIER	use the destination descri
bed by DESTINATIONSPECIFIER (a comma-separated <code>set</code> of <code>key</code> -value pairs describing the de	
stination to use)	
<code>-destination-timeout</code> TIMEOUT	<code>wait for</code> TIMEOUT seconds <code>w</code>
hile searching <code>for</code> the destination device	
<code>-parallelizeTargets</code>	build independent targets
<code>in parallel</code>	
<code>-jobs</code> NUMBER	specify the maximum number
of concurrent build operations	
<code>-maximum-concurrent-test-device-destinations</code> NUMBER	the maximum number of devi
ce destinations to <code>test</code> on concurrently	
<code>-maximum-concurrent-test-simulator-destinations</code> NUMBER	the maximum number of simu
lator destinations to <code>test</code> on concurrently	
<code>-parallel-testing-enabled</code> YES NO	overrides the per-target s
etting <code>in</code> the scheme	
<code>-parallel-testing-worker-count</code> NUMBER	the exact number of <code>test</code> r
unners that will be spawned during parallel testing	
<code>-maximum-parallel-testing-workers</code> NUMBER	the maximum number of <code>test</code>
runners that will be spawned during parallel testing	
<code>-dry-run</code>	<code>do</code> everything except actua
lly running the commands	
<code>-quiet</code>	<code>do</code> not print any output ex
cept <code>for</code> warnings and errors	
<code>-hideShellScriptEnvironment</code>	don't show shell script en
vironment variables in build log	
<code>-showsdk</code>	display a compact list of
the installed SDKs	
<code>-showdestinations</code>	display a list of destinat
ions	
<code>-showTestPlans</code>	display a list of test pla
ns	
<code>-showBuildSettings</code>	display a list of build se
ettings and values	

<code>-showBuildSettingsForIndex</code>	display build settings for the index service
<code>-list</code>	lists the targets and configurations in a project, or the schemes in a workspace
<code>-find-executable NAME</code>	display the full path to executable NAME in the provided SDK and toolchain
<code>-find-library NAME</code>	display the full path to library NAME in the provided SDK and toolchain
<code>-version</code>	display the version of Xcode; with <code>-sdk</code> will display info about one or all installed SDKs
<code>-enableAddressSanitizer YES NO</code>	turn the address sanitizer on or off
<code>-enableThreadSanitizer YES NO</code>	turn the thread sanitizer on or off
<code>-enableUndefinedBehaviorSanitizer YES NO</code>	turn the undefined behavior sanitizer on or off
<code>-resultBundlePath PATH</code>	specifies the directory where a result bundle describing what occurred will be placed
<code>-resultStreamPath PATH</code>	specifies the file where a result stream will be written to (the file must already exist)
<code>-resultBundleVersion 3 [default]</code>	specifies which result bundle version should be used
<code>-clonedSourcePackagesDirPath PATH</code>	specifies the directory to which remote source packages are fetch or expected to be found
<code>-derivedDataPath PATH</code>	specifies the directory where build products and other derived data will go
<code>-archivePath PATH</code>	specifies the directory where any created archives will be placed, or the archive that should be exported
<code>-exportArchive</code>	specifies that an archive should be exported
<code>-exportNotarizedApp</code>	export an archive that has been notarized by Apple
<code>-exportOptionsPlist PATH</code>	specifies a path to a plist file that configures archive exporting
<code>-enableCodeCoverage YES NO</code>	turn code coverage on or off when testing
<code>-exportPath PATH</code>	specifies the destination for the product exported from an archive
<code>-skipUnavailableActions</code>	specifies that scheme actions that cannot be performed should be skipped instead of causing a failure
<code>-exportLocalizations</code>	exports completed and outstanding project localizations
<code>-importLocalizations</code>	imports localizations for a project, assuming any necessary localized resources have been created in Xcode
<code>-localizationPath</code>	specifies a path to XLIFF localization files
<code>-exportLanguage</code>	specifies multiple optional ISO 639-1 languages included in a localization export
<code>-xctestrun</code>	specifies a path to a test run specification
<code>-enablePerformanceTestsDiagnostics YES NO</code>	enables performance trace and memgraph collection for performance XCTest
<code>-testPlan</code>	specifies the name of the test plan associated with the scheme to use for testing
<code>-only-testing</code>	constrains testing by specifying tests to include, and excluding other tests

`-only-testing:TEST-IDENTIFIER` constrains testing by specifying tests to include, and excluding other tests
`-skip-testing` constrains testing by specifying tests to exclude, but including other tests
`-skip-testing:TEST-IDENTIFIER` constrains testing by specifying tests to exclude, but including other tests
`-test-timeouts-enabled YES|NO` enable or disable test timeout behavior
`-default-test-execution-time-allowance SECONDS` the default execution time an individual test is given to execute, if test timeouts are enabled
`-maximum-test-execution-time-allowance SECONDS` the maximum execution time an individual test is given to execute, regardless of the test's preferred allowance
`-test-iterations <number>` If specified, tests will run `<number>` times. May be used in conjunction with either `-retry-tests-on-failure` or `-run-tests-until-failure`, in which case this will become the maximum number of iterations
`-retry-tests-on-failure` If specified, tests will retry on failure. May be used in conjunction with `-test-iterations <number>`, in which case `<number>` will be the maximum number of iterations. Otherwise, a maximum of 3 is assumed. May not be used with `-run-tests-until-failure`.
`-run-tests-until-failure` If specified, tests will run until they fail. May be used in conjunction with `-test-iterations <number>`, in which case `<number>` will be the maximum number of iterations. Otherwise, a maximum of 100 is assumed. May not be used with `-retry-tests-on-failure`.
`-test-repetition-relaunch-enabled YES NO` Enable or disable, tests repeating in a new process for each repetition. Must be used in conjunction with `-test-iterations`, `-retry-tests-on-failure`, or `-run-tests-until-failure`. If not specified, tests will repeat in the same process.
`-only-test-configuration` constrains testing by specifying test configurations to include, and excluding other test configurations
`-skip-test-configuration` constrains testing by specifying test configurations to exclude, but including other test configurations
`-testLanguage` constrains testing by specifying ISO 639-1 language in which to run the tests
`-testRegion` constrains testing by specifying ISO 3166-1 region in which to run the tests
`-resolvePackageDependencies` resolves any Swift package dependencies referenced by the project or workspace
`-disableAutomaticPackageResolution` prevents packages from automatically being resolved to versions other than those recorded in the `Package.resolved` file
`-onlyUsePackageVersionsFromResolvedFile` prevents packages from automatically being resolved to versions other than those recorded in the `Package.resolved` file
`-disablePackageRepositoryCache` disable use of a local cache of remote package repositories
`-packageCachePath` path of caches used for package support
`-json` output as JSON (note: `-json` implies `-quiet`)
`-allowProvisioningUpdates` Allow xcodebuild to communicate with the Apple Developer website. For automatically signed targets, xcodebuild will create and update profiles, app IDs, and certificates. For manually signed targets, xcodebuild will download missing or updated provisioning profiles. Requires a developer account to have been added in Xcode's Accounts preference pane or an App Store Connect authentication key to be specified via the `-authenticationKeyPath`, `-authenticationKeyI`

D, and -authenticationKeyIssuerID parameters.

-allowProvisioningDeviceRegistration Allow xcodebuild to register your destination device on the developer portal if necessary. This flag only takes effect if -allowProvisioningUpdates is also passed.

-authenticationKeyPath specifies the path to an authentication key issued by App Store Connect. If specified, xcodebuild will authenticate with the Apple Developer website using this credential. The -authenticationKeyID and -authenticationKeyIssuerID parameters are required.

-authenticationKeyID specifies the key identifier associated with the App Store Connect authentication key at -authenticationKeyPath. This string can be located in the users and access details for your provider at "https://appstoreconnect.apple.com".

-authenticationKeyIssuerID specifies the App Store Connect issuer identifier associated with the authentication key at -authenticationKeyPath. This string can be located in the users and access details for your provider at "https://appstoreconnect.apple.com".

-scmProvider which implementation to use for Git operations (system/xcode)

-showBuildTimingSummary display a report of the timings of all the commands invoked during the build

-create-xcframework create an xcframework from prebuilt libraries; -help for more information.

Available keys for -exportOptionsPlist:

compileBitcode : Bool

For non-App Store exports, should Xcode re-compile the app from bitcode? Defaults to YES.

destination : String

Determines whether the app is exported locally or uploaded to Apple. Options are export or upload. The available options vary based on the selected distribution method. Defaults to export.

distributionBundleIdentifier : String

Reformat archive to focus on eligible target bundle identifier.

embedOnDemandResourcesAssetPacksInBundle : Bool

For non-App Store exports, if the app uses On Demand Resources and this is YES, asset packs are embedded in the app bundle so that the app can be tested without a server to host asset packs. Defaults to YES unless onDemandResourcesAssetPacksBaseURL is specified.

generateAppStoreInformation : Bool

For App Store exports, should Xcode generate App Store Information for uploading with ITMSTransporter? Defaults to NO.

iCloudContainerEnvironment : String

If the app is using CloudKit, this configures the "com.apple.developer.icloud-container-environment" entitlement. Available options vary depending on the type of prov

provisioning profile used, but may include: Development and Production.

`installerSigningCertificate` : String

For manual signing only. Provide a certificate name, SHA-1 hash, or automatic selector to use for signing. Automatic selectors allow Xcode to pick the newest installed certificate of a particular type. The available automatic selectors are "Developer ID Installer" and "Mac Installer Distribution". Defaults to an automatic certificate selector matching the current distribution method.

`manageAppVersionAndBuildNumber`

Should Xcode manage the app's build number when uploading to App Store Connect? Defaults to YES.

`manifest` : Dictionary

For non-App Store exports, `users` can download your app over the web by opening your distribution manifest `file` in a web browser. To generate a distribution manifest, the value of this key should be a dictionary with three sub-keys: `appURL`, `displayImageURL`, `fullSizeImageURL`. The additional sub-key `assetPackManifestURL` is required when using on-demand resources.

`method` : String

Describes how Xcode should `export` the archive. Available options: `app-store`, `validation`, `ad-hoc`, `package`, `enterprise`, `development`, `developer-id`, and `mac-application`. The list of options varies based on the `type` of archive. Defaults to `development`.

`onDemandResourcesAssetPacksBaseURL` : String

For non-App Store exports, `if` the app uses On Demand Resources and `embedOnDemandResourcesAssetPacksInBundle` isn't YES, this should be a base URL specifying where asset packs are going to be hosted. This configures the app to download asset packs from the specified URL.

`provisioningProfiles` : Dictionary

For manual signing only. Specify the provisioning profile to use `for` each executable in your app. Keys in this dictionary are the bundle identifiers of executables; values are the provisioning profile name or UUID to use.

`signingCertificate` : String

For manual signing only. Provide a certificate name, SHA-1 hash, or automatic selector to use `for` signing. Automatic selectors allow Xcode to pick the newest installed certificate of a particular type. The available automatic selectors are "Mac App Distribution", "iOS Distribution", "iOS Developer", "Developer ID Application", "Apple Distribution", "Mac Developer", and "Apple Development". Defaults to an automatic certificate selector matching the current distribution method.

`signingStyle` : String

The signing style to use when re-signing the app `for` distribution. Options are `manual` or `automatic`. Apps that were automatically signed when archived can be signed manually or automatically during distribution, and default to `automatic`. Apps that were m

anually signed when archived must be manually signed during distribution, so the value of `signingStyle` is ignored.

`stripSwiftSymbols` `Bool`

Should symbols be stripped from Swift libraries `in` your IPA? Defaults to YES.

`teamID` `String`

The Developer Portal team to use `for` this export. Defaults to the team used to build the archive.

`thinning` `String`

For non-App Store exports, should Xcode thin the package `for` one or `more` device variants? Available options: `<none>` (Xcode produces a non-thinned universal app), `<thin-for-all-variants>` (Xcode produces a universal app and all available thinned variants), or a model identifier `for` a specific device (e.g. `"iPhone7,1"`). Defaults to `none`.

`uploadBitcode` `Bool`

For App Store exports, should the package include bitcode? Defaults to YES.

`uploadSymbols` `Bool`

For App Store exports, should the package include symbols? Defaults to YES.

man xcodebuild

XCODEBUILD(1)

BSD General Commands Manual

XCODEBUILD(1)

NAME

`xcodebuild` -- build Xcode projects and workspaces

SYNOPSIS

`xcodebuild` `[-project name.xcodeproj]` `[[ -target targetname] ... | -alltargets]` `[-configuration configurationname]`

`[-sdk [sdkfullpath | sdkname]]` `[action ...]` `[buildsetting value ...]` `[-userdefault value ...]`

`xcodebuild` `[-project name.xcodeproj]` `-scheme schemename` `[[ -destination destination specifier] ...]` `[-destination-timeout value]`

`[-configuration configurationname]` `[-sdk [sdkfullpath | sdkname]]` `[action ...]` `[buildsetting value ...]` `[-userdefault value ...]`

`xcodebuild` `-workspace name.xcworkspace` `-scheme schemename` `[[ -destination destination specifier] ...]` `[-destination-timeout value]`

`[-configuration configurationname]` `[-sdk [sdkfullpath | sdkname]]` `[action ...]` `[buildsetting value ...]` `[-userdefault value ...]`

`xcodebuild` `-version` `[-sdk [sdkfullpath | sdkname]]` `[infoitem]`

`xcodebuild` `-showsdk`


```
xcodebuild -showBuildSettings [-project name.xcodeproj | [-workspace name.xcworkspace -scheme schemename]]
```

```
xcodebuild -showdestinations [-project name.xcodeproj | [-workspace name.xcworkspace -scheme schemename]]
```

```
xcodebuild -showTestPlans [-project name.xcodeproj | -workspace name.xcworkspace] -scheme schemename
```

```
xcodebuild -list [-project name.xcodeproj | -workspace name.xcworkspace]
```

```
xcodebuild -exportArchive -archivePath xcarchivepath -exportPath destinationpath -exportOptionsPlist path
```

```
xcodebuild -exportNotarizedApp -archivePath xcarchivepath -exportPath destinationpath
```

```
xcodebuild -exportLocalizations -project name.xcodeproj -localizationPath path [[-exportLanguage language] ...]
```

```
xcodebuild -importLocalizations -project name.xcodeproj -localizationPath path
```

DESCRIPTION

xcodebuild builds one or more targets contained in an Xcode project, or builds a scheme contained in an Xcode workspace or Xcode project.

Usage

To build an Xcode project, run xcodebuild from the directory containing your project (i.e. the directory containing the name.xcodeproj package). If you have multiple projects in this directory you will need to use -project to indicate which project should be built. By default, xcodebuild builds the first target listed in the project, with the default build configuration. The order of the targets is a property of the project and is the same for all users of the project.

To build an Xcode workspace, you must pass both the -workspace and -scheme options to define the build. The parameters of the scheme will control which targets are built and how they are built, although you may pass other options to xcodebuild to override some parameters of the scheme.

There are also several options that display info about the installed version of Xcode or about projects or workspaces in the local directory, but which do not initiate an action. These include -list, -showBuildSettings, -showdestinations, -showsdk, -showTestPlans, -usage, and -version.

Options

-project name.xcodeproj

Build the project name.xcodeproj. Required if there are multiple project files in the same directory.

-target targetname

Build the target specified by targetname.

-alltargets

Build all the targets in the specified project.

-workspace name.xcworkspace
Build the workspace name.xcworkspace.

-scheme schemename
Build the scheme specified by schemename. Required if building a workspace.

-destination destinationspecifier
Use the destination device described by destinationspecifier. Defaults to a destination that is compatible with the selected scheme.
See the Destinations section below for more details.

-destination-timeout timeout
Use the specified timeout when searching for a destination device. The default is 30 seconds.

-configuration configurationname
Use the build configuration specified by configurationname when building each target.

-arch architecture
Use the architecture specified by architecture when building each target.

-sdk [sdkfullpath | sdkname]
Build an Xcode project or workspace against the specified SDK, using build tools appropriate for that SDK. The argument may be an absolute path to an SDK, or the canonical name of an SDK.

-showsdk
Lists all available SDKs that Xcode knows about, including their canonical names suitable for use with -sdk. Does not initiate a build.

-showBuildSettings
Lists the build settings in a project or workspace and scheme. Does not initiate a build. Use with -project or -workspace and -scheme.

-showdestinations
Lists the valid destinations for a project or workspace and scheme. Does not initiate a build. Use with -project or -workspace and -scheme.

-showBuildTimingSummary
Display a report of the timings of all the commands invoked during the build.

-showTestPlans
Lists the test plans (if any) associated with the specified scheme. Does not initiate a build. Use with -scheme.

-list
Lists the targets and configurations in a project, or the schemes in a workspace. Does not initiate a build. Use with -project or -workspace.

```

    -enableAddressSanitizer [YES | NO]
        Turns the address sanitizer on or off. This overrides the setting for the launch action of a scheme in a workspace.

    -enableThreadSanitizer [YES | NO]
        Turns the thread sanitizer on or off. This overrides the setting for the launch action of a scheme in a workspace.

    -enableUndefinedBehaviorSanitizer [YES | NO]
        Turns the undefined behavior sanitizer on or off. This overrides the setting for the launch action of a scheme in a workspace.

    -enableCodeCoverage [YES | NO]
        Turns code coverage on or off during testing. This overrides the setting for the test action of a scheme in a workspace.

    -testLanguage language
        Specifies ISO 639-1 language during testing. This overrides the setting for the test action of a scheme in a workspace.

    -testRegion region
        Specifies ISO 3166-1 region during testing. This overrides the setting for the test action of a scheme in a workspace.

    -derivedDataPath path
        Overrides the folder that should be used for derived data when performing an action on a scheme in a workspace.

    -resultBundlePath path
        Writes a bundle to the specified path with results from performing an action on a scheme in a workspace. If the path already exists, xcodebuild will exit with an error. Intermediate directories will be created automatically. The bundle contains build logs, code coverage reports, XML property lists with test results, screenshots and other attachments collected during testing, and various diagnostic logs.

    -allowProvisioningUpdates
        Allow xcodebuild to communicate with the Apple Developer website. For automatically signed targets, xcodebuild will create and update profiles, app IDs, and certificates. For manually signed targets, xcodebuild will download missing or updated provisioning profiles. Requires a developer account to have been added in Xcode's Accounts preference pane.
    ...
    ...
    ...

```


xcrun

- `xcrun` = Xcode Command-line RUNner
 - 是什么：也是一个命令行工具
 - 是调用其他 `xcode` 命令行工具的入口
 - 底层逻辑：所有 `Xcode` 的 `Command Line` 都会先被导向 `xcrun_main`，也就是 `xcrun`

用法举例

xcrun simctl list devices

```

❯ xcrun simctl list devices
== Devices ==
-- iOS 13.3 --
  iPhone 8 (54589698-0C9F-407D-B21A-83432CABB681) (Shutdown)
  iPhone 8 Plus (509B7103-97DB-4AB9-B829-001190ED4B7E) (Shutdown)
  iPhone 11 (509BC7C7-9C0E-42FA-8AB2-F5220EBAA13B) (Shutdown)
  iPhone 11 Pro (3E8E7E92-66F2-4AF3-A405-23B5FB231DE7) (Shutdown)
  iPhone 11 Pro Max (50C15135-1532-44C5-B82C-B327F88F2712) (Shutdown)
  iPad Pro (9.7-inch) (B11D5D40-FEA2-4114-B053-E4CFD29D127C) (Shutdown)
  iPad (7th generation) (7F8EDE89-74E0-4BAB-B3CA-09E2DAE1F095) (Shutdown)
  iPad Pro (11-inch) (04DD3B8A-5B78-48E8-8B22-56796A9CFB73) (Shutdown)
  iPad Pro (12.9-inch) (3rd generation) (D811684E-2F3E-4FC6-92EA-39301451F7E5) (Shutdown)
  iPad Air (3rd generation) (BBC48526-3922-4C97-BA14-B1888385243A) (Shutdown)
-- tvOS 13.3 --
  Apple TV (6680F059-4DE1-430C-B696-228AC27CAA88) (Shutdown)
  Apple TV 4K (048E58E8-6A27-4D81-BDEB-8812C610B756) (Shutdown)
  Apple TV 4K (at 1080p) (384D5E60-B6B1-481E-BDC3-B7FF8F773412) (Shutdown)
-- watchOS 6.1 --
  Apple Watch Series 4 - 40mm (1B98415B-3FDE-401B-A80C-A3551DB207D7) (Shutdown)
  Apple Watch Series 4 - 44mm (661838E9-B0BE-42B4-B55E-9A34263B1AEA) (Shutdown)
  Apple Watch Series 5 - 40mm (F76D77EF-0932-4164-94BB-9FC757420911) (Shutdown)
  Apple Watch Series 5 - 44mm (D86F0BD5-4D38-4537-9C8C-2F5C74E404CA) (Shutdown)

```

xcrun simctl list

```

❯ xcrun simctl list
== Device Types ==
iPhone 4s (com.apple.CoreSimulator.SimDeviceType.iPhone-4s)
iPhone 5 (com.apple.CoreSimulator.SimDeviceType.iPhone-5)
iPhone 5s (com.apple.CoreSimulator.SimDeviceType.iPhone-5s)
iPhone 6 Plus (com.apple.CoreSimulator.SimDeviceType.iPhone-6-Plus)
iPhone 6 (com.apple.CoreSimulator.SimDeviceType.iPhone-6)
iPhone 6s (com.apple.CoreSimulator.SimDeviceType.iPhone-6s)
iPhone 6s Plus (com.apple.CoreSimulator.SimDeviceType.iPhone-6s-Plus)
iPhone SE (com.apple.CoreSimulator.SimDeviceType.iPhone-SE)
iPhone 7 (com.apple.CoreSimulator.SimDeviceType.iPhone-7)
iPhone 7 Plus (com.apple.CoreSimulator.SimDeviceType.iPhone-7-Plus)

```

```

iPhone 8 (com.apple.CoreSimulator.SimDeviceType.iPhone-8)
iPhone 8 Plus (com.apple.CoreSimulator.SimDeviceType.iPhone-8-Plus)
iPhone X (com.apple.CoreSimulator.SimDeviceType.iPhone-X)
iPhone Xs (com.apple.CoreSimulator.SimDeviceType.iPhone-XS)
iPhone Xs Max (com.apple.CoreSimulator.SimDeviceType.iPhone-XS-Max)
iPhone XR (com.apple.CoreSimulator.SimDeviceType.iPhone-XR)
iPhone 11 (com.apple.CoreSimulator.SimDeviceType.iPhone-11)
iPhone 11 Pro (com.apple.CoreSimulator.SimDeviceType.iPhone-11-Pro)
iPhone 11 Pro Max (com.apple.CoreSimulator.SimDeviceType.iPhone-11-Pro-Max)
iPad 2 (com.apple.CoreSimulator.SimDeviceType.iPad-2)
iPad Retina (com.apple.CoreSimulator.SimDeviceType.iPad-Retina)
iPad Air (com.apple.CoreSimulator.SimDeviceType.iPad-Air)
iPad mini 2 (com.apple.CoreSimulator.SimDeviceType.iPad-mini-2)
iPad mini 3 (com.apple.CoreSimulator.SimDeviceType.iPad-mini-3)
iPad mini 4 (com.apple.CoreSimulator.SimDeviceType.iPad-mini-4)
iPad Air 2 (com.apple.CoreSimulator.SimDeviceType.iPad-Air-2)
iPad Pro (9.7-inch) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro--9-7-inch-)
iPad Pro (12.9-inch) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro)
iPad (5th generation) (com.apple.CoreSimulator.SimDeviceType.iPad--5th-generation-)
iPad Pro (12.9-inch) (2nd generation) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro--12-9-inch---2nd-generation-)
iPad Pro (10.5-inch) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro--10-5-inch-)
iPad (6th generation) (com.apple.CoreSimulator.SimDeviceType.iPad--6th-generation-)
iPad (7th generation) (com.apple.CoreSimulator.SimDeviceType.iPad--7th-generation-)
iPad Pro (11-inch) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro--11-inch-)
iPad Pro (12.9-inch) (3rd generation) (com.apple.CoreSimulator.SimDeviceType.iPad-Pro--12-9-inch---3rd-generation-)
iPad mini (5th generation) (com.apple.CoreSimulator.SimDeviceType.iPad-mini--5th-generation-)
iPad Air (3rd generation) (com.apple.CoreSimulator.SimDeviceType.iPad-Air--3rd-generation-)
Apple TV (com.apple.CoreSimulator.SimDeviceType.Apple-TV-1080p)
Apple TV 4K (com.apple.CoreSimulator.SimDeviceType.Apple-TV-4K-4K)
Apple TV 4K (at 1080p) (com.apple.CoreSimulator.SimDeviceType.Apple-TV-4K-1080p)
Apple Watch - 38mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-38mm)
Apple Watch - 42mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-42mm)
Apple Watch Series 2 - 38mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-2-38mm)
Apple Watch Series 2 - 42mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-2-42mm)
Apple Watch Series 3 - 38mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-3-38mm)
Apple Watch Series 3 - 42mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-3-42mm)
Apple Watch Series 4 - 40mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-4-40mm)
Apple Watch Series 4 - 44mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-4-44mm)
Apple Watch Series 5 - 40mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-5-40mm)
Apple Watch Series 5 - 44mm (com.apple.CoreSimulator.SimDeviceType.Apple-Watch-Series-5-44mm)
== Runtimes ==
iOS 13.3 (13.3 - 17C45) - com.apple.CoreSimulator.SimRuntime.iOS-13-3
tvOS 13.3 (13.3 - 17K446) - com.apple.CoreSimulator.SimRuntime.tvOS-13-3
watchOS 6.1 (6.1.1 - 17S445) - com.apple.CoreSimulator.SimRuntime.watchOS-6-1

```

```

== Devices ==
-- iOS 13.3 --
  iPhone 8 (54589698-0C9F-407D-B21A-83432CABB681) (Shutdown)
  iPhone 8 Plus (509B7103-97DB-4AB9-B829-001190ED4B7E) (Shutdown)
  iPhone 11 (509BC7C7-9C0E-42FA-8AB2-F5220EBAA13B) (Shutdown)
  iPhone 11 Pro (3E8E7E92-66F2-4AF3-A405-23B5FB231DE7) (Shutdown)
  iPhone 11 Pro Max (50C15135-1532-44C5-B82C-B327F88F2712) (Shutdown)
  iPad Pro (9.7-inch) (B11D5D40-FEA2-4114-B053-E4CFD29D127C) (Shutdown)
  iPad (7th generation) (7F8EDE89-74E0-4BAB-B3CA-09E2DAE1F095) (Shutdown)
  iPad Pro (11-inch) (04DD3B8A-5B78-48E8-8B22-56796A9CFB73) (Shutdown)
  iPad Pro (12.9-inch) (3rd generation) (D811684E-2F3E-4FC6-92EA-39301451F7E5) (Shutdown)
  iPad Air (3rd generation) (BBC48526-3922-4C97-BA14-B1888385243A) (Shutdown)
-- tvOS 13.3 --
  Apple TV (6680F059-4DE1-430C-B696-228AC27CAA88) (Shutdown)
  Apple TV 4K (048E58E8-6A27-4D81-BDEB-8812C610B756) (Shutdown)
  Apple TV 4K (at 1080p) (384D5E60-B6B1-481E-BDC3-B7FF8F773412) (Shutdown)
-- watchOS 6.1 --
  Apple Watch Series 4 - 40mm (1B98415B-3FDE-401B-A80C-A3551DB207D7) (Shutdown)
  Apple Watch Series 4 - 44mm (661838E9-B0BE-42B4-B55E-9A34263B1AEA) (Shutdown)
  Apple Watch Series 5 - 40mm (F76D77EF-0932-4164-94BB-9FC757420911) (Shutdown)
  Apple Watch Series 5 - 44mm (D86F0BD5-4D38-4537-9C8C-2F5C74E404CA) (Shutdown)
== Device Pairs ==
56795D8F-84E0-4F5A-BA60-517EF25593FF (active, disconnected)
  Watch: Apple Watch Series 5 - 40mm (F76D77EF-0932-4164-94BB-9FC757420911) (Shutdown)

  Phone: iPhone 11 Pro (3E8E7E92-66F2-4AF3-A405-23B5FB231DE7) (Shutdown)
4DDF7790-928A-4D86-B2BC-213F785F5188 (active, disconnected)
  Watch: Apple Watch Series 5 - 44mm (D86F0BD5-4D38-4537-9C8C-2F5C74E404CA) (Shutdown)

  Phone: iPhone 11 Pro Max (50C15135-1532-44C5-B82C-B327F88F2712) (Shutdown)

```

help语法

```

crifan@licrifandeMacBook-Pro ~$ xcrun --help
Usage: xcrun [options] <tool name> ... arguments ...

```

Find and execute the named **command** line tool from the active developer directory.

The active developer directory can be **set** using ``xcode-select``, or via the DEVELOPER_DIR environment variable. See the xcrun and xcode-select manual pages **for more** information.

Options:

-h, --help	show this help message and exit
--version	show the xcrun version
-v, --verbose	show verbose logging output
--sdk <sdk name>	find the tool for the given SDK name
--toolchain <name>	find the tool for the given toolchain
-l, --log	show commands to be executed (with --run)
-f, --find	only find and print the tool path
-r, --run	find and execute the tool (the default behavior)

```
-n, --no-cache          do not use the lookup cache
-k, --kill-cache        invalidate all existing cache entries
--show-sdk-path         show selected SDK install path
--show-sdk-version      show selected SDK version
--show-sdk-build-version show selected SDK build version
--show-sdk-platform-path show selected SDK platform path
--show-sdk-platform-version show selected SDK platform version
```

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Signing

TODO:

- **【基本解决】** 搞懂XCode中Signing中Code Signing相关参数的逻辑

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iOS设备

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iPhone

TODO:

- 【已解决】XCode调试iOS的app到越狱iPhone报错：Could not launch failed to get the task for process
- 【未解决】XCode报错failed to get the task for process：换另外iPhone7试试
- 【未解决】尝试解决XCode报错failed to get the task for process：证书和签名方面
- 【未解决】尝试解决XCode报错failed to get the task for process：重置证书和签名
- 【未解决】尝试解决XCode报错failed to get the task for process：Provisioning Profile相关
- 【已解决】XCode编译安装iOS的app到iPhone报错：Unable to install
- 【已解决】尝试解决XCode报错failed to get the task for process：XCode版本重装或升级
- 【已解决】XCode调试iPhone报错：Failed to start remote service com.apple.debugserver on device
- 【已解决】XCode调试app再次报错：Unable to install
-

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iOS Simulator

TODO:

- [【整理】Xcode中的iOS模拟器\(iOS Simulator\)的介绍和使用心得 – 在路上](#)

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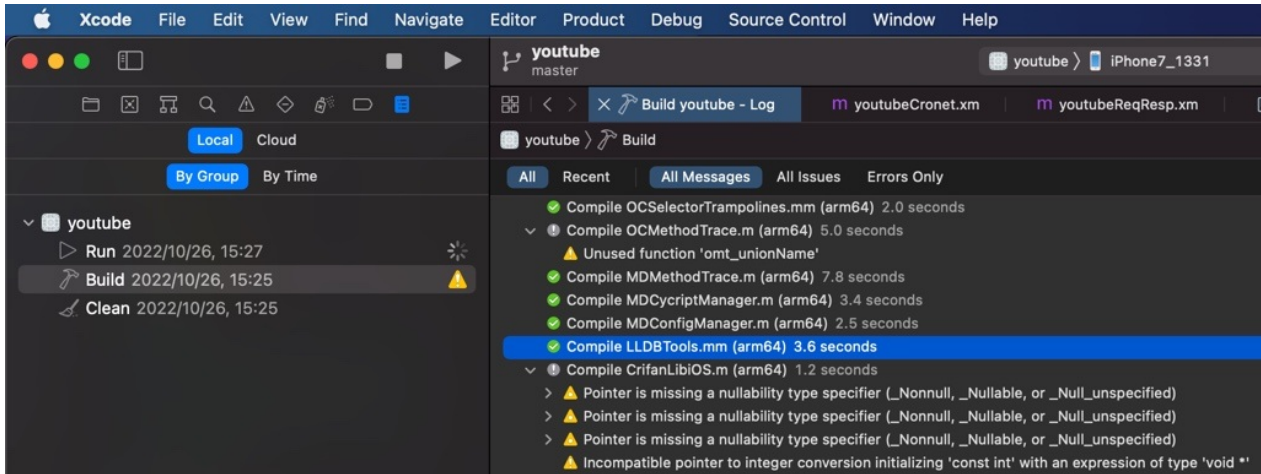
日志

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调试运行日志

XCode中可以拷贝出错误日志详情

XCode编译调试的log，看起来很少，很精简：



但是如果去 Command+C 拷贝粘贴出来，其实是完整的详细的内容：

Showing All Messages

```
CompileC /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowm
tledboux/Build/Intermediates.noindex/youtube.build/Debug-iphonios/youtubeDylib.build/Ob
jects-normal/arm64/LLDBTools.o /Users/crifan/dev/dev_root/company/deeper/youtube/Xcode/
YouTube_1708/block-youtube-ads/youtubeDylib/Tools/LLDBTools.mm normal arm64 objective-c
++ com.apple.compilers.llvm.clang.1_0.compiler (in target 'youtubeDylib' from project '
youtube')
```

```
cd /Users/crifan/dev/dev_root/company/deeper/youtube/Xcode/YouTube_1708/block-youtu
be-ads
```

```
export LANG=en_US.UTF-8
```

```
/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/
bin/clang -x objective-c++ -target arm64-apple-ios12.0 -fmessage-length 0 -fdiagnostic
s-show-note-include-stack -fmacro-backtrace-limit 0 -std gnu++1z -stdlib libc++ -fob
jc-arc -fobjc-weak -fmodules -gmodules -fmodules-cache-path /Users/crifan/Library/Deve
loper/Xcode/DerivedData/ModuleCache.noindex -fmodules-prune-interval 86400 -fmodules-p
rune-after 345600 -fbuild-session-file /Users/crifan/Library/Developer/Xcode/DerivedD
ata/ModuleCache.noindex/Session.modulevalidation -fmodules-validate-once-per-build-sess
ion -Wnon-modular-include-in-framework-module -Werror non-modular-include-in-framework
-module -Wno-trigraphs -fpascal-strings -O0 -fno-common -Wno-missing-field-initializers
-Wmissing-prototypes -Wdocumentation -Wunreachable-code -Wquoted-include-in-framework-
header -Wno-implicit-atomic-properties -Werror deprecated-objc-isa-usage -Wno-objc-int
erface-ivars -Werror objc-root-class -Wno-arc-repeated-use-of-weak -Wimplicit-retain-s
elf -Wno-non-virtual-dtor -Wno-overloaded-virtual -Wno-exit-time-destructors -Wduplicat
e-method-match -Wno-missing-braces -Wparentheses -Wswitch -Wunused-function -Wno-unused
-label -Wno-unused-parameter -Wunused-variable -Wunused-value -Wempty-body -Wuninitiali
zed -Wconditional-uninitialized -Wno-unknown-pragmas -Wno-shadow -Wno-four-char-constan
ts -Wno-conversion -Wconstant-conversion -Wint-conversion -Wbool-conversion -Wenum-conv
ersion -Wno-float-conversion -Wnon-literal-null-conversion -Wobjc-literal-conversion -W
shorten-64-to-32 -Wno-newline-eof -Wno-selector -Wno-strict-selector-match -Wundeclared
-selector -Wdeprecated-implementations -Wno-c++11-extensions -DDEBUG=1 -Dobjc_OLD_DISP
```

```

ATCH_PROTOTYPES\0 -isysroot /Applications/Xcode.app/Contents/Developer/Platforms/iPhone
eOS.platform/Developer/SDKs/iPhoneOS15.2.sdk -fstrict-aliasing -wprotocol -wdeprecated-
declarations -Winvalid-offsetof -g -fvisibility-inlines-hidden -Wno-sign-conversion -Wi
nfinite-recursion -Wmove -Wcomma -Wblock-capture-autoreleasing -Wstrict-prototypes -Wra
nge-loop-analysis -Wno-semicolon-before-method-body -Wunguarded-availability -index-sto
re-path /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmt
ledboux/Index/DataStore -iquote /Users/crifan/Library/Developer/Xcode/DerivedData/youtu
be-akcbcgavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphoneo
s/youtubeDylib.build/youtubeDylib-generated-files.hmap -I/Users/crifan/Library/Develope
r/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/yo
utube.build/Debug-iphoneos/youtubeDylib.build/youtubeDylib-own-target-headers.hmap -I/U
sers/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Bu
ild/Intermediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/youtubeDylib-
all-target-headers.hmap -iquote /Users/crifan/Library/Developer/Xcode/DerivedData/youtu
be-akcbcgavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphoneo
s/youtubeDylib.build/youtubeDylib-project-headers.hmap -I/Users/crifan/Library/Develope
r/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Build/Products/Debug-iphoneos/
include -I/opt/MonkeyDev/include -I/opt/theos/vendor/include -I/opt/theos/vendor/includ
e/.github -I/opt/theos/vendor/include/AVFoundation -I/opt/theos/vendor/include/AddressB
ookUI -I/opt/theos/vendor/include/AlienBlue -I/opt/theos/vendor/include/Anemone -I/opt/
theos/vendor/include/AppKit -I/opt/theos/vendor/include/AppList -I/opt/theos/vendor/inc
lude/AppSupport -I/opt/theos/vendor/include/ApplePushService -I/opt/theos/vendor/includ
e/AssertionServices -I/opt/theos/vendor/include/AssistantServices -I/opt/theos/vendor/i
nclude/BackBoardServices -I/opt/theos/vendor/include/BaseBoard -I/opt/theos/vendor/incl
ude/BaseBoardUI -I/opt/theos/vendor/include/BatteryCenter -I/opt/theos/vendor/include/B
iometricKit -I/opt/theos/vendor/include/BiteSMS -I/opt/theos/vendor/include/BluetoothMa
nager -I/opt/theos/vendor/include/BulletinBoard -I/opt/theos/vendor/include/CameraKit -
I/opt/theos/vendor/include/CameraUI -I/opt/theos/vendor/include/CaptainHook -I/opt/theo
s/vendor/include/Celestial -I/opt/theos/vendor/include/ChatKit -I/opt/theos/vendor/incl
ude/Contacts -I/opt/theos/vendor/include/ControlCenterUIKit -I/opt/theos/vendor/include
/CoreFoundation -I/opt/theos/vendor/include/Flipswitch -I/opt/theos/vendor/include/Foun
dation -I/opt/theos/vendor/include/FrontBoard -I/opt/theos/vendor/include/FrontBoardSer
vices -I/opt/theos/vendor/include/GeoServices -I/opt/theos/vendor/include/Graphics Servi
ces -I/opt/theos/vendor/include/IMCore -I/opt/theos/vendor/include/IMDaemonCore -I/opt/
theos/vendor/include/IMFoundation -I/opt/theos/vendor/include/IMSharedUtilities -I/opt/
theos/vendor/include/IOKit -I/opt/theos/vendor/include/IconSupport -I/opt/theos/vendor/
include/Jasmine -I/opt/theos/vendor/include/LightMessaging -I/opt/theos/vendor/include/
MapKit -I/opt/theos/vendor/include/MaterialKit -I/opt/theos/vendor/include/MediaPlayer
-I/opt/theos/vendor/include/MediaPlayerUI -I/opt/theos/vendor/include/MediaRemote -I/op
t/theos/vendor/include/MobileCoreServices -I/opt/theos/vendor/include/MobileGestalt -I/
opt/theos/vendor/include/MobileIcons -I/opt/theos/vendor/include/MobilePhone -I/opt/the
os/vendor/include/MobileSMS -I/opt/theos/vendor/include/MobileTimer -I/opt/theos/vendor
/include/OnBoardingKit -I/opt/theos/vendor/include/Pandora -I/opt/theos/vendor/include/
PassKitUI -I/opt/theos/vendor/include/PassKitUIFoundation -I/opt/theos/vendor/include/P
ersistentConnection -I/opt/theos/vendor/include/PersonaKit -I/opt/theos/vendor/include/
PersonaUI -I/opt/theos/vendor/include/PhotoLibrary -I/opt/theos/vendor/include/PhotoLib
raryServices -I/opt/theos/vendor/include/PhotosUI -I/opt/theos/vendor/include/Preferenc
es -I/opt/theos/vendor/include/PreferencesUI -I/opt/theos/vendor/include/QuartzCore -I/
opt/theos/vendor/include/SplashBoard -I/opt/theos/vendor/include/SpringBoard -I/opt/the
os/vendor/include/SpringBoardFoundation -I/opt/theos/vendor/include/SpringBoardHome -I/
opt/theos/vendor/include/SpringBoardServices -I/opt/theos/vendor/include/SpringBoardUI
-I/opt/theos/vendor/include/SpringBoardUIServices -I/opt/theos/vendor/include/StoreKitU
I -I/opt/theos/vendor/include/TechSupport -I/opt/theos/vendor/include/TelephonyUI -I/op
t/theos/vendor/include/TextInput -I/opt/theos/vendor/include/Tweetbot -I/opt/theos/vend
or/include/TwitkaFly -I/opt/theos/vendor/include/UIFontFoundation -I/opt/theos/vendor/incl
ude/UIKit -I/opt/theos/vendor/include/UserNotificationsKit -I/opt/theos/vendor/include/U

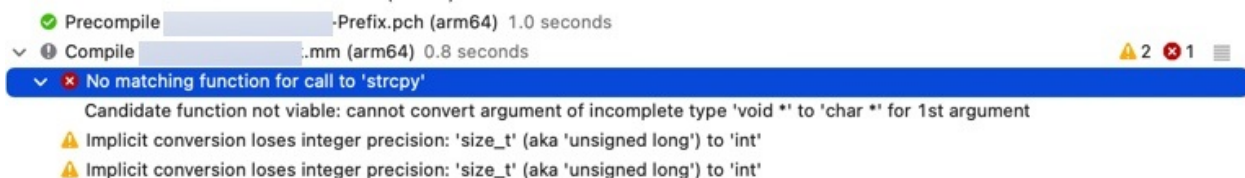
```

```
serNotificationsUIKit -I/opt/theos/vendor/include/Velox -I/opt/theos/vendor/include/auk
i -I/opt/theos/vendor/include/installld -I/opt/theos/vendor/include/libactivator -I/opt/
theos/vendor/include/libarchive -I/opt/theos/vendor/include/libpackageinfo -I/opt/theos
/vendor/include/libprefs -I/opt/theos/vendor/include/libstatusbar -I/opt/theos/vendor/i
nclude/libundirect -I/opt/theos/vendor/include/logos -I/opt/theos/vendor/include/objc -
I/opt/theos/vendor/include/openssl -I/opt/theos/vendor/include/rocketbootstrap -I/opt/t
heos/vendor/include/theos -I/opt/theos/vendor/include/IOKit/hid -I/opt/theos/vendor/inc
lude/IOKit/ps -I/opt/theos/vendor/include/IOKit/pwr_mgt -I/Users/crifan/Library/Develop
er/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/y
outube.build/Debug-iphones/youtubeDylib.build/DerivedSources-normal/arm64 -I/Users/cr
ifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Build/Inte
rmediates.noindex/youtube.build/Debug-iphones/youtubeDylib.build/DerivedSources/arm64
-I/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledbo
ux/Build/Intermediates.noindex/youtube.build/Debug-iphones/youtubeDylib.build/DerivedSo
urces -F/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmt
ledboux/Build/Products/Debug-iphones -F/opt/MonkeyDev/Frameworks -F/opt/MonkeyDev/Fram
eworks/RevealServer.framework -F/opt/MonkeyDev/Frameworks/RevealServer.framework/Module
s -F/opt/MonkeyDev/Library -F/opt/theos/vendor/lib -DTHEOS_INSTANCE_NAME=\"youtubeDyl
ib\" -include /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkf
bbowmtledboux/Build/Intermediates.noindex/PrecompiledHeaders/SharedPrecompiledHeaders/1
1491367307218202437/youtubeDylib-Prefix.pch -MMD -MT dependencies -MF /Users/crifan/Lib
rary/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledboux/Build/Intermediat
es.noindex/youtube.build/Debug-iphones/youtubeDylib.build/Objects-normal/arm64/LLDBToo
ls.d --serialize-diagnostics /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-
akcbcgavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphones/y
outubeDylib.build/Objects-normal/arm64/LLDBTools.dia -c /Users/crifan/dev/dev_root/comp
any/deeper/youtube/XCode/YouTube_1708/block-youtube-ads/youtubeDylib/Tools/LLDBTools.mm
-o /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcgavyfjcpkfbbowmtledbo
ux/Build/Intermediates.noindex/youtube.build/Debug-iphones/youtubeDylib.build/Objects-
normal/arm64/LLDBTools.o
```

XCode可以展开错误看细节

其实点击报错，是可以展开看到具体错误信息的：

选中当前错误的行：

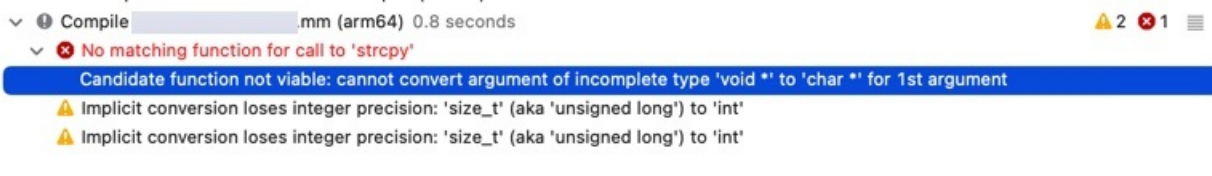


拷贝出错误的本身的日志：

Showing Recent Messages

```
/Users/crifan/dev/DevRoot/zry/iOS_tweak/iOSOpenDev/xxx/xxx/xxx.xm:66:18: No matching fu
nction for call to 'strcpy'
```

展开后，选中详情：



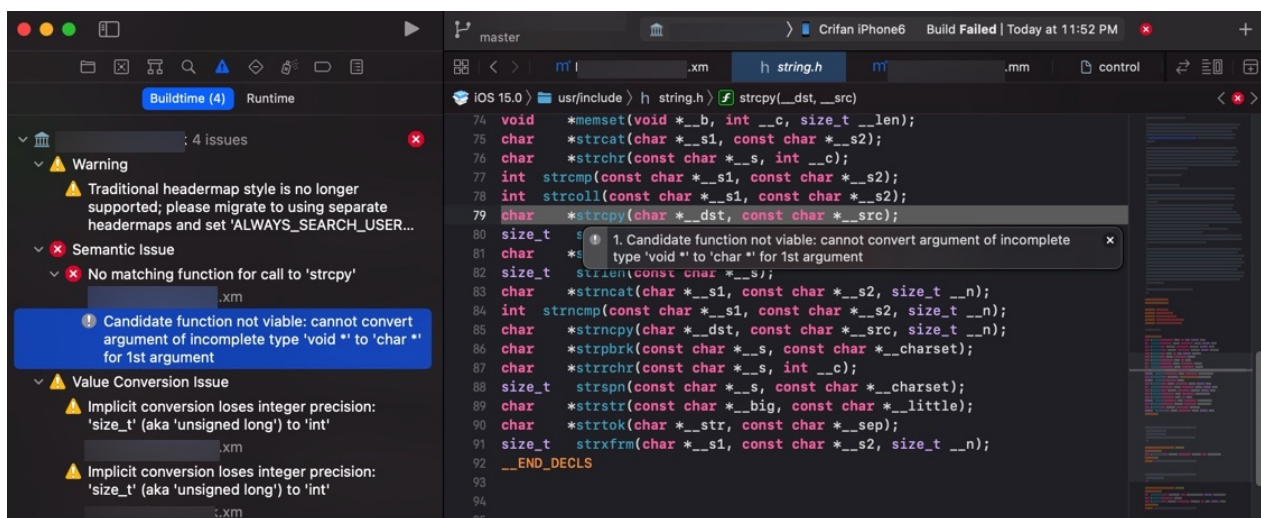
可以粘贴处具体错误详情日志：

Showing Recent Messages

/Applications/Xcode.app/Contents/Developer/Platforms/iPhoneOS.platform/Developer/SDKs/iPhoneOS15.0.sdk/usr/include/string.h:79:7: Candidate function not viable: cannot convert argument of incomplete type 'void *' to 'char *' for 1st argument

后记：

其实左边错误信息中，已列出此具体错误原因了：



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崩溃日志

TODO:

- 【已解决】如何把iOS的app的崩溃日志中的地址转换成符号即符号化
- 【已解决】XCode中解析出iPhone中崩溃日志的symbol符号函数信息

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其他

TODO:

- 项目版本兼容
 - 【已解决】自己Mac中打开Xcode项目报错：The project cannot be opened because it is in a future Xcode project file format

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子教程

Xcode开发中的部分子领域的内容，已整理到独立的子教程中：

- 调试相关：[Xcode开发：调试心得](#)
 - 用的调试器：[主流调试器：LLDB](#)

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附录

下面列出相关参考资料。

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参考资料

- [【记录】Mac中安装XCode](#)
- [【已解决】Win中VMWare中macOS中安装和使用XCode](#)
-
- [Xcodebuild命令使用 - 滴水微澜 - 博客园](#)
- [ios - What are the differences between xcodebuild, xcrun and swift command line tools? - Stack Overflow](#)
- [iOS 自动构建命令——xcodebuild - 简书](#)
- [深入浅出 Xcode 命令列 - xcrun - 掘金](#)
- [man page xcodebuild section 1](#)
- [Technical Note TN2339: Building from the Command Line with Xcode FAQ](#)
-

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