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Xcode开发心得

- 最新版本: v0.7
- 更新时间: 20230713

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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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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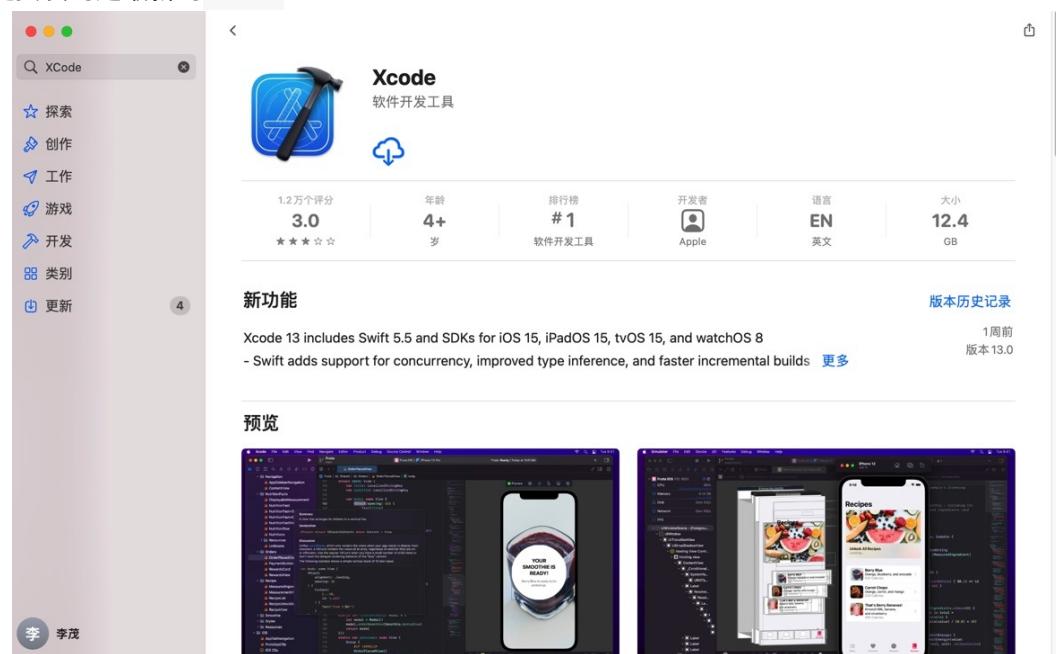
安装Xcode

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

Xcode 13.0	Beta 1	13A5154h	24 Jun 2021	macOS 11.3+	(21A5268d)	(19A5281d)	(19R5286d)	(19J5288d)								Notes
Xcode 12.5.1	Release	12E507	7 Jun 2021	macOS 11.3+	(21A5248o)	(19A5261u)	(19R5266p)	(19J5268q)	Download	Release Notes						
Xcode 12.5	Release	12E262	21 Jun 2021	macOS 11.0+	(12E214)	11.3 (20E182)	14.5	7.4 (18T187)	14.5 (18L191)	Download	Release Notes					
Xcode 12.5	RC 1	12E262	26 Apr 2021	macOS 11.0+	(12E214)	11.3 (20E182)	14.5	7.4 (18T187)	14.5 (18L191)	Download	Release Notes					
Xcode 12.5	Beta 3	12E5244e	2 Mar 2021	macOS 11.0+	(20E5196d)	11.3 (18E5164d)	14.5 (18T5169d)	7.4 (18L5173d)	Download	Release Notes						
Xcode 12.5	Beta 2	12E5234g	16 Feb 2021	macOS 11.0+	(20E5186d)	11.3 (18E5154g)	14.5 (18T5159g)	7.4 (18L5163e)	Download	Release Notes						
Xcode 12.5	Beta 1	12E5220o	1 Feb 2021	macOS 11.0+	(20E5172i)	11.3 (18E5140i)	14.5 (18T5144k)	7.4 (18L5149i)	Download	Release Notes						
Xcode 12.4	Release	12D4e	26 Jan 2021	macOS 10.15.4+	(12D4e)	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://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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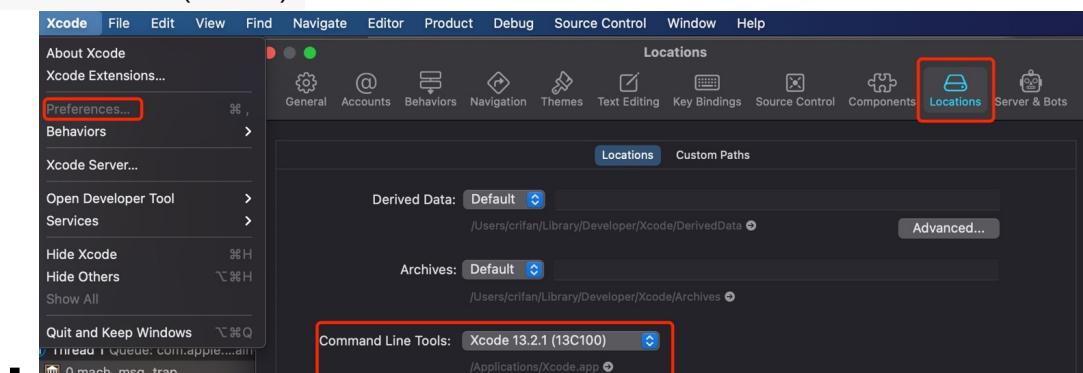
Command Line Tools

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
lrwrxr-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
lrwrxr-xr-x 1 crifan staff 5B 6 28 20:27 c++ -> clang
lrwrxr-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
lrwrxr-xr-x 1 crifan staff 5B 6 28 20:27 cc -> clang
-rwxr-xr-x 1 crifan staff 181M 12 15 2021 clang
lrwrxr-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
lrwrxr-xr-x 1 crifan staff 17B 6 28 20:27 codesign_allocate-p -> codesign_allocate
lrwrxr-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
lrwrxr-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 2 crifan staff 681K 12 15 2021 flex
-rwxr-xr-x 2 crifan staff 681K 12 15 2021 flex++
lrwrxr-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-propdata
-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 unwindddump  
-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.xctool  
chain/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.xctool  
chain/usr/bin
```

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 ed94089f3e34d5538065a695bfd03dfbb3c5579
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>]... [-sdk [
<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>]] [-j
son]
      xcodebuild -showsdds [-json]
      xcodebuild -exportArchive -archivePath <xarchivepath> [-exportPath <destina
tionpath>] -exportOptionsPlist <plistpath>
      xcodebuild -exportNotarizedApp -archivePath <xarchivepath> -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
```

```

    -verbose                                provide additional status
output
    -license                                 show the Xcode and SDK lic
ense agreements
    -checkFirstLaunchStatus                 Check if any First Launch
tasks need to be performed
    -runFirstLaunch                         install packages and agree
to the license
    -project NAME                           build the project NAME
    -target NAME                            build the target NAME
    -alltargets                             build all targets
    -workspace NAME                          build the workspace NAME
    -scheme NAME                            build the scheme NAME
    -configuration NAME                     use the build configuratio
n NAME for building each target
    -xcconfig PATH                          apply the build settings d
efined in the file at PATH as overrides
    -arch ARCH                             build each target for the
architecture ARCH; this will override architectures defined in the project
    -sdk SDK                               use SDK as the name or pat
h of the base SDK when building the project
    -toolchain NAME                         use the toolchain with ide
ntifier or name NAME
    -destination DESTINATIONSPECIFIER      use the destination descri
bed by DESTINATIONSPECIFIER (a comma-separated set of key=value pairs describing the de
stination to use)
    -destination-timeout TIMEOUT           wait for TIMEOUT seconds w
hile searching for the destination device
    -parallelizeTargets                   build independent targets
in parallel
    -jobs NUMBER                           specify the maximum number
of concurrent build operations
    -maximum-concurrent-test-device-destinations NUMBER
ce destinations to test on concurrently
    -maximum-concurrent-test-simulator-destinations NUMBER
lator destinations to test on concurrently
    -parallel-testing-enabled YES NO
etting in the scheme
    -parallel-testing-worker-count NUMBER
unners that will be spawned during parallel testing
    -maximum-parallel-testing-workers NUMBER
runners that will be spawned during parallel testing
    -dry-run
lly running the commands
    -quiet
cept for warnings and errors
    -hideShellScriptEnvironment
vironment variables in build log
    -showsdk
the installed SDKs
    -showdestinations
ions
    -showTestPlans
ns
    -showBuildSettings
ttings and values

```

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

```

    -only-testing:TEST-IDENTIFIER
        ifying tests to include, and excluding other tests
            -skip-testing
                ifying tests to exclude, but including other tests
                    -skip-testing:TEST-IDENTIFIER
                        ifying tests to exclude, but including other tests
                            -test-timeouts-enabled YES|NO
                                eout behavior
                                    -default-test-execution-time-allowance SECONDS
                                        an individual test is given to execute, if test timeouts are enabled
                                            -maximum-test-execution-time-allowance SECONDS
                                                an individual test is given to execute, regardless of the test's preferred allowance
                                                    -test-iterations <number>
                                                        un 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 try 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
                                                            ifying test configurations to include, and excluding other test configurations
                                                        -skip-test-configuration
                                                            ifying test configurations to exclude, but including other test configurations
                                                                -testLanguage
                                                                ifying ISO 639-1 language in which to run the tests
                                                                -testRegion
                                                                ifying ISO 3166-1 region in which to run the tests
                                                                -resolvePackageDependencies
                                                                    dependencies referenced by the project or workspace
                                                                    -disableAutomaticPackageResolution
                                                                        automatically being resolved to versions other than those recorded in the `Package.resolved` file
                                                                        -onlyUsePackageVersionsFromResolvedFile
                                                                            automatically being resolved to versions other than those recorded in the `Package.resolved` file
                                                                        -disablePackageRepositoryCache
                                                                            he of remote package repositories
                                                                        -packageCachePath
                                                                            ckage support
                                                                        -json
                                                                        implies -quiet)
                                                                        -allowProvisioningUpdates
                                icate 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

isioning 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 -showsdks

```

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** the 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`s, `-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 defau
lt is 30 seconds.

-configuration configurationname
    Use the build configuration specified by configurationname when building eac
h 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 t
ools appropriate for that SDK. The argument may be an
    absolute path to an SDK, or the canonical name of an SDK.

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

-showBuildSettings
    Lists the build settings in a project or workspace and scheme. Does not init
iate 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 works
pace. 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 cov-

erage 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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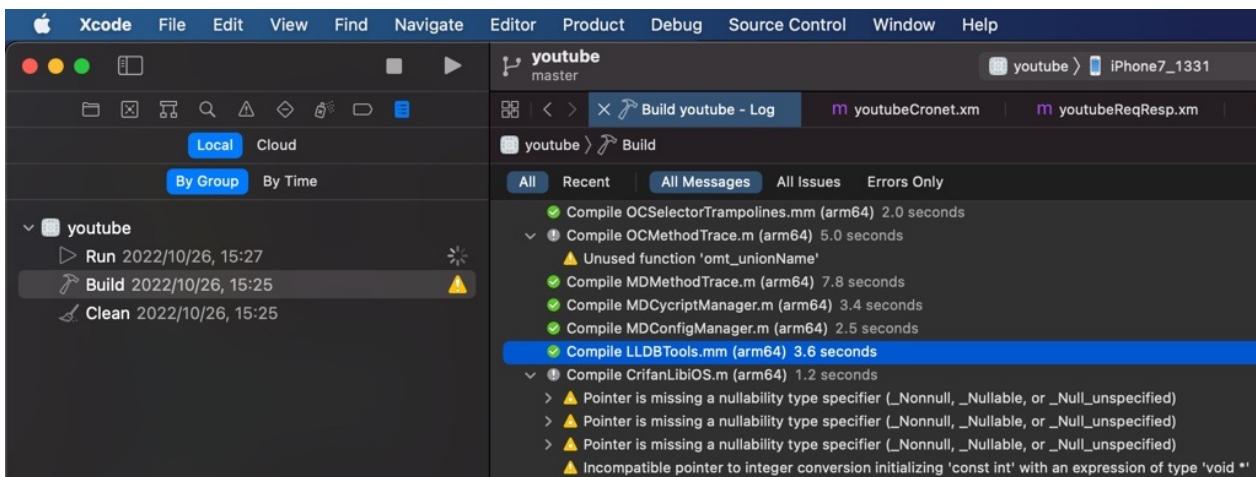
日志

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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-akcbcgaavyfjcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/Objects-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-youtube-ads
export LANG=en_US.US-ASCII
/Applications/Xcode.app/Contents/Developer/Toolchains/XcodeDefault.xctoolchain/usr/bin/clang -x objective-c++ -target arm64-apple-ios12.0 -fmessage-length=0 -fdiagnostics-show-note-include-stack -fmacro-backtrace-limit=0 -std=gnu++1z -stdlib=libc++ -fobjc-arc -fobjc-weak -fmodules -gmodules -fmodules-cache-path=/Users/crifan/Library/Developer/Xcode/DerivedData/ModuleCache.noindex -fmodules-prune-interval=86400 -fmodules-prune-after=345600 -fbuild-session-file=/Users/crifan/Library/Developer/Xcode/DerivedData/ModuleCache.noindex/Session.modulevalidation -fmodules-validate-once-per-build-session -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-interface-ivars -Werror=objc-root-class -Wno-arc-repeated-use-of-weak -Wimplicit-retain-self -Wno-non-virtual-dtor -Wno-overloaded-virtual -Wno-exit-time-destructors -Wduplicate-method-match -Wno-missing-braces -Wparentheses -Wswitch -Wunused-function -Wno-unused-label -Wno-unused-parameter -Wunused-variable -Wunused-value -Wempty-body -Wuninitialized -Wconditional-uninitialized -Wno-unknown-pragmas -Wno-shadow -Wno-four-char-constants -Wno-conversion -Wconstant-conversion -Wint-conversion -Wbool-conversion -Wenum-conversion -Wno-float-conversion -Wnon-literal-null-conversion -Wobjc-literal-conversion -Wshorten-64-to-32 -Wno-newline-eof -Wno-selector -Wno-strict-selector-match -Wundeclared-selector -Wdeprecated-implementations -Wno-c++11-extensions -DDEBUG=1 -DOBJC_OLD_DISPATCH_METHODS=1
```

```

ATCH_PROTOTYPES\ 0 -isysroot /Applications/Xcode.app/Contents/Developer/Platforms/iPhoneOS.platform/Developer/SDKs/iPhoneOS15.2.sdk -fstrict-aliasing -Wprotocol -Wdeprecated-declarations -Winvalid-offsetof -g -fvisibility-inlines-hidden -Wno-sign-conversion -W infinite-recursion -Wmove -Wcomma -Wblock-capture-autoreleasing -Wstrict-prototypes -Wrange-loop-analysis -Wno-semicolon-before-method-body -Wunguarded-availability -index-store-path /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga
vfyfcpkfbbowmtledboux/Index/DataStore -iquote /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga
vfyfcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/youtubeDylib-generated-files.hmap -I/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga
vfyfcpkfbbowmtledboux/Build/Intermediates.noindex/yo
utube.build/Debug-iphoneos/youtubeDylib.build/youtubeDylib-own-target-headers.hmap -I/U
ser
s/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga
vfyfcpkfbbowmtledboux/Bu
ild/Intermediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/youtubeDylib-
all-target-headers.hmap -iquote /Users/crifan/Library/Developer/Xcode/DerivedData/youtu
be-akcbcga
vfyfcpkfbbowmtledboux/Build/Intermediates.noindex/youtube.build/Debug-iphoneo
s/youtubeDylib.build/youtubeDylib-project-headers.hmap -I/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga
vfyfcpkfbbowmtledboux/Build/Products/Debug-iphoneos/include -I/opt/MonkeyDev/include -I/opt/theos/vendor/include -I/opt/theos/vendor/include/.github -I/opt/theos/vendor/include/AVFoundation -I/opt/theos/vendor/include/AddressBookUI -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/include/AppSupport -I/opt/theos/vendor/include/ApplePushService -I/opt/theos/vendor/include/AssertionServices -I/opt/theos/vendor/include/AssistantServices -I/opt/theos/vendor/include/BackBoardServices -I/opt/theos/vendor/include/BaseBoard -I/opt/theos/vendor/include/BaseBoardUI -I/opt/theos/vendor/include/BatteryCenter -I/opt/theos/vendor/include/BiometricKit -I/opt/theos/vendor/include/BiteSMS -I/opt/theos/vendor/include/BluetoothManager -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/theos/vendor/include/Celestial -I/opt/theos/vendor/include/ChatKit -I/opt/theos/vendor/include/Contacts -I/opt/theos/vendor/include/ControlCenterUIKit -I/opt/theos/vendor/include/CoreFoundation -I/opt/theos/vendor/include/Flipswitch -I/opt/theos/vendor/include/Foundation -I/opt/theos/vendor/include/FrontBoard -I/opt/theos/vendor/include/FrontBoardServices -I/opt/theos/vendor/include/GeoServices -I/opt/theos/vendor/include/GraphicsServices -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/opt/theos/vendor/include/MobileCoreServices -I/opt/theos/vendor/include/MobileGestalt -I/opt/theos/vendor/include/MobileIcons -I/opt/theos/vendor/include/MobilePhone -I/opt/theos/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/PersistentConnection -I/opt/theos/vendor/include/PersonaKit -I/opt/theos/vendor/include/PersonaUI -I/opt/theos/vendor/include/PhotoLibrary -I/opt/theos/vendor/include/PhotoLibraryServices -I/opt/theos/vendor/include/PhotosUI -I/opt/theos/vendor/include/Preferences -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/theos/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/StoreKitUI -I/opt/theos/vendor/include/TechSupport -I/opt/theos/vendor/include/TelephonyUI -I/opt/theos/vendor/include/TextInput -I/opt/theos/vendor/include/Tweetbot -I/opt/theos/vendor/include/TwitkaFly -I/opt/theos/vendor/include/UIFoundation -I/opt/theos/vendor/include/UIKit -I/opt/theos/vendor/include/UserNotificationsKit -I/opt/theos/vendor/include/U

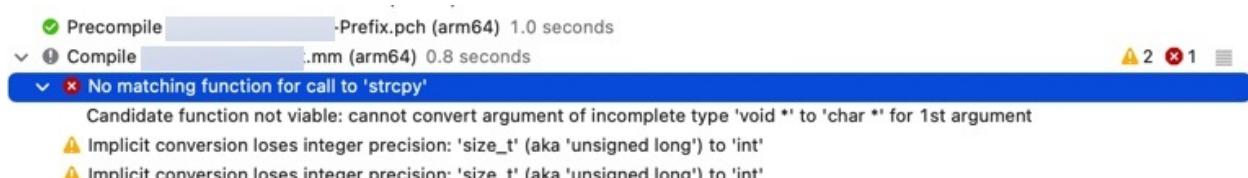
```

```
serNotificationsUIKit -I/opt/theos/vendor/include/Velox -I/opt/theos/vendor/include/auk
i -I/opt/theos/vendor/include/installd -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-akcbcga.../Build/Intermediates.noindex/y
outube.build/Debug-iphoneos/youtubeDylib.build/DerivedSources-normal/arm64 -I/Users/cr
ifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Inte
rmediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/DerivedSources/arm64
-I/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Intermediates.noindex/youtube.build/Debug-iphoneos/youtubeDylib.build/DerivedSo
urces -F/Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Inte
rmediates.noindex/youtubeDylib.build/Products/Debug-iphoneos -F/opt/MonkeyDev/Frameworks -F/opt/MonkeyDev/Fram
eworks/RevealServer.framework -F/opt/MonkeyDev/Frameworks/RevealServer.framework/Module
s -F/opt/MonkeyDev/Librarys -F/opt/theos/vendor/lib -DTHEOS_INSTANCE_NAME\\\"youtubeDy
lib\\\" -include /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Intermediates.noindex/PrecompiledHeaders/SharedPrecompiledHeaders/1
491367307218202437/youtubeDylib-Prefix.pch -MMD -MT dependencies -MF /Users/crifan/Lib
rary/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Intermediates.noindex/youtube.b
uild/Debug-iphoneos/youtubeDylib.build/Objects-normal/arm64/LLDBToo
ls.d --serialize-diagnostics /Users/crifan/Library/Developer/Xcode/DerivedData/youtube-akcbcga.../Build/Intermediates.noindex/youtube.b
uild/Debug-iphoneos/youtubeDylib.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-akcbcga.../Build/Intermediates.noindex/youtube.b
uild/Debug-iphoneos/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：

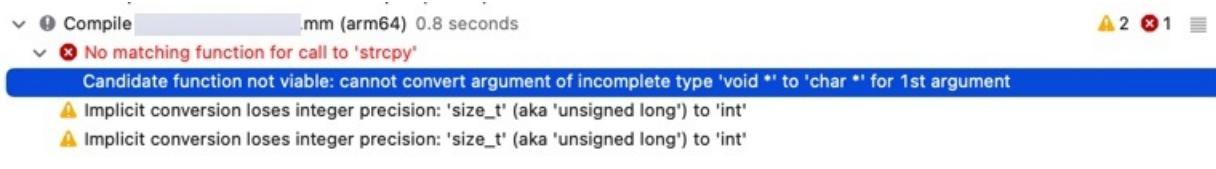
选中当前错误的行：



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：

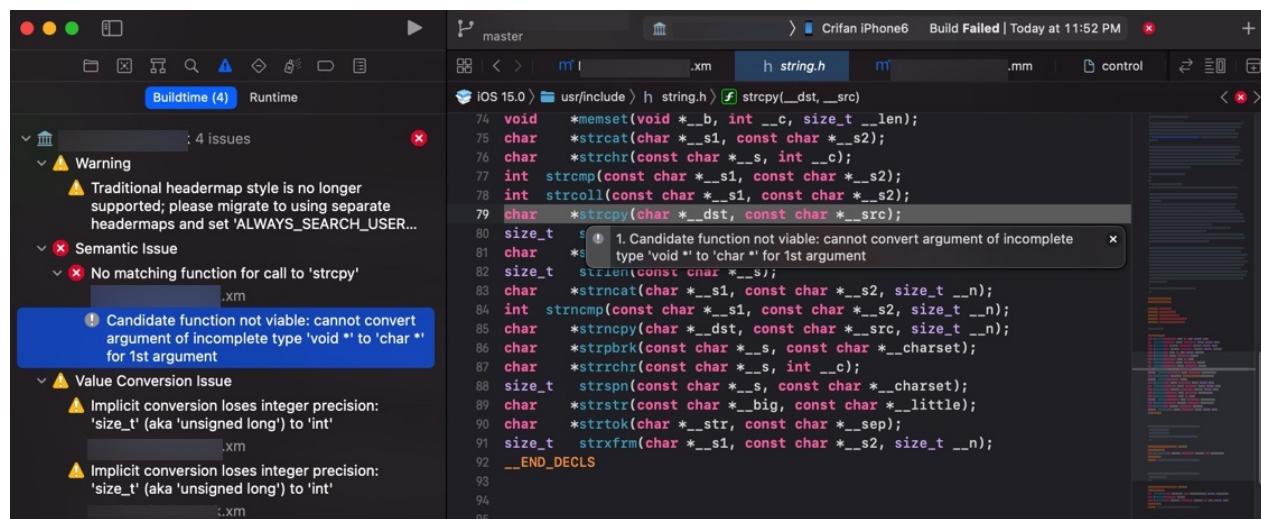


可以粘贴处具体错误详情日志：

```
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 命令行 - xcrun - 掘金](#)
- [man page xcodebuild section 1](#)
- [Technical Note TN2339: Building from the Command Line with Xcode FAQ](#)
-

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