Building ARMv7 (iOS) & armeabi v7a (Android) with Xcode10
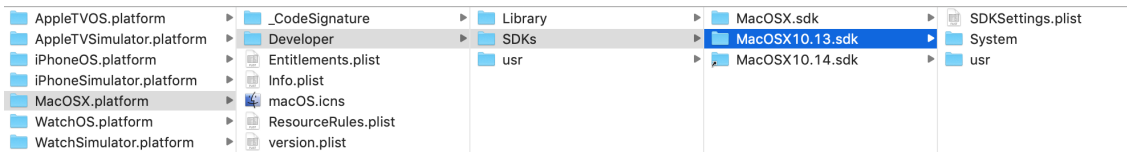
In Xcode10, the i386 architecture is deprecated for macOS, so building the Flutter engine for armv7/armeabi-v7a fails. Specifically, libraries like CoreFoundation contain only code for the x86_64 architecture.

```
KyleVongdeMacBook-Pro:src kylevong$ ninja -C out/ios_debug_arm/
ninja: Entering directory 'out/ios_debug_arm/'
[1/30] LINK clang_x86/gen_snapshot
FAILED: clang_x86/gen_snapshot
../../buildtools/mac-x64/clang/bin/clang++ -isysroot /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk -mmacosx-version-min=10.12 -m32 -flto -stdlib=libc++ -Wl,-dea
d_strip -Wl,-search_paths_first -L. -Wl,-rpath,@loader_path/ -Wl,-rpath,@loader_path/../../.. -Wl,-pie -Xlinker -rpath -Xlinker @executable_path/Frameworks -o clang_x86/gen_snapshot -Wl,-filelist,clang_x86/gen_sna
pshot.rsp -framework CoreFoundation -framework CoreServices -framework AppKit -framework ApplicationServices -framework Carbon -framework CoreVideo -framework Foundation -framework OpenGL -framework Security -fram
ework IOKit -ldl -lpthread
ld: warning: The i386 architecture is deprecated for macOS (remove from the Xcode build setting: ARCHS)
ld: warning: ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//ApplicationServices.framework/Appl
icationServices.tbd, missing required architecture i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//ApplicationServices.fra
mework/ApplicationServices.tbd
ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Carbon.framework/Carbon.tbd, missing required architecture i386 in file /
Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Carbon.framework/Carbon.tbd
ld: warning: ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreServices.framework/CoreServices.tbd, missin
g required architecture i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreServices.framework/CoreServices.tbd
ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//OpenGL.framework/OpenGL.tbd, missing required architecture i386 in file /
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ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreVideo.framework/CoreVideo.tbd, missing required architecture i386 in
file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreVideo.framework/CoreVideo.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libdl.tbd, missing required architecture i386 in file /Applications/Xcode.app/C
ontents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libdl.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libpthread.tbd, missing required architecture i386 in file /Applications/Xcode.
app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libpthread.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libSystem.tbd, missing required architecture i386 in file /Applications/Xcode.a
pp/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libSystem.tbd
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ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libc++.tbd, missing required architecture i386 in file /Applications/Xcode.app/
Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libc++.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreFoundation.framework/CoreFoundation.tbd, missing require
d architecture i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreFoundation.framework/CoreFoundation.tbd (2 slices)
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//AppKit.framework/AppKit.tbd, missing required architecture i
386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//AppKit.framework/AppKit.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//IOKit.framework/IOKit.tbd, missing required architecture i38
6 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//IOKit.framework/IOKit.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Security.framework/Security.tbd, missing required architectu
re i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Security.framework/Security.tbd
Undefined symbols for architecture i386:
  "_trunc", referenced from:
      __GLOBAL__sub_I_runtime_entry.cc in lto.o
      (maybe you meant: __ZN4dart12Intrinsifier19Integer_truncDivideEPNS_9AssemblerE, __ZN4dart26FLAG_truncating_left_shiftE , __ZN4dart16BootstrapNatives19DN_Double_trunc_divEP21_Dart_NativeArguments , __ZN4dart16B
ootstrapNatives30DN_Integer_truncDivFromIntegerEP21_Dart_NativeArguments , __ZN4dart16BootstrapNatives18DN_Double_truncateEP21_Dart_NativeArguments )
  "_timezone$UNIX2003", referenced from:
      dart::BootstrapNatives::DN_DateTime_localTimeZoneAdjustmentInSeconds(_Dart_NativeArguments*) in lto.o
  "_mach_task_self_", referenced from:
      dart::bin::Builtin_ProcessInfo_CurrentRSS(_Dart_NativeArguments*) in lto.o
  "_kCFRunLoopDefaultMode", referenced from:
      dart::bin::FSEventsWatcher::Node::StartCallback(__CFRunLoopTimer*, void*) in lto.o
  "_kCFCoreFoundationVersionNumber", referenced from:
      dart::bin::Builtin_FileSystemWatcher_IsSupported(_Dart_NativeArguments*) in lto.o
  "_ceil", referenced from:
      __GLOBAL__sub_I_runtime_entry.cc in lto.o
      (maybe you meant: __ZN4dart16BootstrapNatives14DN_Double_ceilEP21_Dart_NativeArguments)
  "___stdoutp", referenced from:
      dart::bin::Log::Print(char const*, ...) in lto.o
      dart::bin::Builtin_Builtin_PrintString(_Dart_NativeArguments*) in lto.o
      dart::OS::Print(char const*, ...) in lto.o
      dart::FlowGraphPrinter::PrintGraph(char const*, dart::FlowGraph*) in lto.o
  "___stderrp", referenced from:
      dart::bin::Log::PrintErr(char const*, ...) in lto.o
      dart::TransitionGeneratedToVM::~TransitionGeneratedToVM() in lto.o
      dart::TransitionVMToNative::~TransitionVMToNative() in lto.o
      dart::Api::Scope::~Scope() in lto.o
      dart::TransitionNativeToVM::~TransitionNativeToVM() in lto.o
      dart::LongJumpScope::~LongJumpScope() in lto.o
```

```
KyleVongdeMacBook-Pro:src kylevong$ ninja -C out/android_debug/
ninja: Entering directory 'out/android_debug/'
[1/1] Regenerating ninja files
[1/5] LINK clang_x86/gen_snapshot
FAILED: clang_x86/gen_snapshot
../../buildtools/mac-x64/clang/bin/clang++ -isysroot /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk -mmacosx-version-min=10.12 -m32 -flto -stdlib=libc++ -Wl,-dea
d_strip -Wl,-search_paths_first -L. -Wl,-rpath,@loader_path/ -Wl,-rpath,@loader_path/../../.. -Wl,-pie -Xlinker -rpath -Xlinker @executable_path/Frameworks -o clang_x86/gen_snapshot -Wl,-filelist,clang_x86/gen_sna
pshot.rsp -framework CoreFoundation -framework CoreServices -framework AppKit -framework ApplicationServices -framework Carbon -framework CoreVideo -framework Foundation -framework OpenGL -framework Security -fram
ework IOKit -ldl -lpthread
ld: warning: The i386 architecture is deprecated for macOS (remove from the Xcode build setting: ARCHS)
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreServices.framework/CoreServices.tbd, missing required ar
chitecture i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreServices.framework/CoreServices.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//ApplicationServices.framework/ApplicationServices.tbd, missi
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ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Carbon.framework/Carbon.tbd, missing required architecture i
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ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreVideo.framework/CoreVideo.tbd, missing required architec
ture i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//CoreVideo.framework/CoreVideo.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libdl.tbd, missing required architecture i386 in file /Applications/Xcode.app/C
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ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libpthread.tbd, missing required architecture i386 in file /Applications/Xcode.
app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libpthread.tbd
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pp/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libSystem.tbd
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386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//AppKit.framework/AppKit.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libc++.tbd, missing required architecture i386 in file /Applications/Xcode.app/
Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/usr/lib/libc++.tbd
ld: warning: ignoring file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Security.framework/Security.tbd, missing required architectu
re i386 in file /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.14.sdk/System/Library/Frameworks//Security.framework/Security.tbd
Undefined symbols for architecture i386:
  "_trunc", referenced from:
      __GLOBAL__sub_I_runtime_entry.cc in lto.o
      (maybe you meant: __ZN4dart12Intrinsifier19Integer_truncDivideEPNS_9AssemblerE, __ZN4dart26FLAG_truncating_left_shiftE , __ZN4dart16BootstrapNatives19DN_Double_trunc_divEP21_Dart_NativeArguments , __ZN4dart16B
ootstrapNatives30DN_Integer_truncDivFromIntegerEP21_Dart_NativeArguments , __ZN4dart16BootstrapNatives18DN_Double_truncateEP21_Dart_NativeArguments )
  "_timezone$UNIX2003", referenced from:
      dart::BootstrapNatives::DN_DateTime_localTimeZoneAdjustmentInSeconds(_Dart_NativeArguments*) in lto.o
  "_mach_task_self_", referenced from:
      dart::bin::Builtin_ProcessInfo_CurrentRSS(_Dart_NativeArguments*) in lto.o
  "_kCFRunLoopDefaultMode", referenced from:
      dart::bin::FSEventsWatcher::Node::StartCallback(__CFRunLoopTimer*, void*) in lto.o
  "_kCFCoreFoundationVersionNumber", referenced from:
      dart::bin::Builtin_FileSystemWatcher_IsSupported(_Dart_NativeArguments*) in lto.o
  "_ceil", referenced from:
      __GLOBAL__sub_I_runtime_entry.cc in lto.o
      (maybe you meant: __ZN4dart16BootstrapNatives14DN_Double_ceilEP21_Dart_NativeArguments)
  "___stdoutp", referenced from:
      dart::bin::Log::Print(char const*, ...) in lto.o
      dart::bin::Builtin_Builtin_PrintString(_Dart_NativeArguments*) in lto.o
      dart::OS::Print(char const*, ...) in lto.o
      dart::FlowGraphPrinter::PrintGraph(char const*, dart::FlowGraph*) in lto.o
  "___stdinp", referenced from:
      dart::SimulatorDebugger::Debug() in lto.o
  "___stderrp", referenced from:
      dart::bin::Log::PrintErr(char const*, ...) in lto.o
      dart::TransitionGeneratedToVM::~TransitionGeneratedToVM() in lto.o
      dart::TransitionVMToNative::~TransitionVMToNative() in lto.o
```

To address this, get the MacOS 10.13 SDK from Xcode 9.x from [Apple](), and extract the SDK components from the `.xip` file. Uncompress the SDK into

`/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs` and name the SDK `MacOSX10.13.sdk` :

To check if the logic is fine, run command below:

```
python your-flutter-engine-path/engine/src/build/mac/find_sdk.py 10.12
```

When `find_sdk.py` return 10.13, the ninja build will succeed for gen_snapshot (i386), Flutter.framework (ARMv7) and libflutter.so (armeabi-v7a).

Build Flutter engine for 32bit iOS simulator on modern Mac(x86_64)

To build the Flutter engine for iOS simulator on a modern Mac(x86_64), the gn command will generate a `target_cpu` value with x64. Henceforth, the Flutter.framework and gen_snapshot will be x86_64. However, sometimes you may want to develop Flutter on a 32bit simulator(like iPhone5), you will need both Flutter.framework and gen_snapshot to be i386.

Follow instruction below to change the default behavior in gn command:

1. Edit your-flutter-engine-path/engine/src/flutter/tools/gn