What's New in Xcode Signing.

* <https://developer.apple.com/videos/play/wwdc2016/401/?time=31>
* [[ Music ]](https://developer.apple.com/videos/play/wwdc2016-401/?time=7)[Hi, good morning.](https://developer.apple.com/videos/play/wwdc2016-401/?time=23) [Thanks.](https://developer.apple.com/videos/play/wwdc2016-401/?time=26)
* [Welcome to What's New in Xcode Signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=31) [Signing your apps can be complicated.](https://developer.apple.com/videos/play/wwdc2016-401/?time=34)  [We understand this.](https://developer.apple.com/videos/play/wwdc2016-401/?time=36) [And what you need to know is,](https://developer.apple.com/videos/play/wwdc2016-401/?time=38)[in Xcode 8 we've made it really easy and fast to manage signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=40)  [In fact, it's automatic.](https://developer.apple.com/videos/play/wwdc2016-401/?time=45) [And on the other hand, if you want 100% control](https://developer.apple.com/videos/play/wwdc2016-401/?time=47)[over what Xcode does and when it signs your apps,](https://developer.apple.com/videos/play/wwdc2016-401/?time=50)[you now have that as an option.](https://developer.apple.com/videos/play/wwdc2016-401/?time=53) [And Xcode won't modify or create profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=55)[Signing identifies you to users.](https://developer.apple.com/videos/play/wwdc2016-401/?time=67) [And they know that when they get your app, it came from you](https://developer.apple.com/videos/play/wwdc2016-401/?time=70)[and it hasn't been tampered with.](https://developer.apple.com/videos/play/wwdc2016-401/?time=73)  [Signing also prevents spoofing your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=77) [When you register your bundle ID with the developer website,](https://developer.apple.com/videos/play/wwdc2016-401/?time=80)[another developer team can't come along and use that one.](https://developer.apple.com/videos/play/wwdc2016-401/?time=83)  [Signing also allows access to system services](https://developer.apple.com/videos/play/wwdc2016-401/?time=88)[like iCloud internet payments.](https://developer.apple.com/videos/play/wwdc2016-401/?time=92) [We're going to go over four things today.](https://developer.apple.com/videos/play/wwdc2016-401/?time=94)  [We're going to start out by talking](https://developer.apple.com/videos/play/wwdc2016-401/?time=99)[about the fundamentals of signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=101) [What do you need in order to sign your apps?](https://developer.apple.com/videos/play/wwdc2016-401/?time=104)[After that, we'll talk about some exciting changes](https://developer.apple.com/videos/play/wwdc2016-401/?time=108)[that we've made involving setting up new machines](https://developer.apple.com/videos/play/wwdc2016-401/?time=111)[with signing certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=115)  [Today, you have to do things like sync private keys.](https://developer.apple.com/videos/play/wwdc2016-401/?time=117) [Or revoke and recreate certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=120) [And that's a thing of the past.](https://developer.apple.com/videos/play/wwdc2016-401/?time=123)  [Yeah [applause] you're going to love that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=126) [And after that, we're going to introduce you](https://developer.apple.com/videos/play/wwdc2016-401/?time=131)[to some new workflows that makes managing signing really easy.](https://developer.apple.com/videos/play/wwdc2016-401/?time=133)  [And we'll finish by talking about some best practices](https://developer.apple.com/videos/play/wwdc2016-401/?time=138)[with setting up your projects.](https://developer.apple.com/videos/play/wwdc2016-401/?time=142) [Let's talk about the fundamentals.](https://developer.apple.com/videos/play/wwdc2016-401/?time=144)  [Now when Xcode builds and signs your app,](https://developer.apple.com/videos/play/wwdc2016-401/?time=148)[behind the scenes it uses a tool called codesign.](https://developer.apple.com/videos/play/wwdc2016-401/?time=151) [Now if you're new, you don't need to think about this.](https://developer.apple.com/videos/play/wwdc2016-401/?time=155)  [Xcode does this for you automatically.](https://developer.apple.com/videos/play/wwdc2016-401/?time=159) [And if you're experienced, you might be wondering, signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=161)[How does it work?](https://developer.apple.com/videos/play/wwdc2016-401/?time=164)[Well, we use this codesign tool.](https://developer.apple.com/videos/play/wwdc2016-401/?time=165) [And what codesign does is, it takes your app's bundle](https://developer.apple.com/videos/play/wwdc2016-401/?time=168)[and applies a code seal.](https://developer.apple.com/videos/play/wwdc2016-401/?time=171)  [And this allows the system to detect changes](https://developer.apple.com/videos/play/wwdc2016-401/?time=174)[that have been made after the app has been signed.](https://developer.apple.com/videos/play/wwdc2016-401/?time=177) [So if someone messes with your app, it won't install or launch.](https://developer.apple.com/videos/play/wwdc2016-401/?time=181)  [Codesign also applies a code signature to the application.](https://developer.apple.com/videos/play/wwdc2016-401/?time=187) [So it can be identified.](https://developer.apple.com/videos/play/wwdc2016-401/?time=192) [And people know where the app came from.](https://developer.apple.com/videos/play/wwdc2016-401/?time=194)  [There are three things that you need in order to sign your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=200) [The first thing is a signing certificate.](https://developer.apple.com/videos/play/wwdc2016-401/?time=204)[Signing certificates establish your identity as a developer.](https://developer.apple.com/videos/play/wwdc2016-401/?time=207)  [Provisioning profiles are all about your apps,](https://developer.apple.com/videos/play/wwdc2016-401/?time=213)[and they grant permissions.](https://developer.apple.com/videos/play/wwdc2016-401/?time=216) [And entitlements declare support for capabilities.](https://developer.apple.com/videos/play/wwdc2016-401/?time=218)  [Like iCloud or Wallet.](https://developer.apple.com/videos/play/wwdc2016-401/?time=223) [So certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=226) [These are issued by Apple.](https://developer.apple.com/videos/play/wwdc2016-401/?time=228)  [And this is important because the device needs a trust chain](https://developer.apple.com/videos/play/wwdc2016-401/?time=230)[back to Apple so it can install the app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=233) [And certificates come in two forms.](https://developer.apple.com/videos/play/wwdc2016-401/?time=238)  [You have development certificates,](https://developer.apple.com/videos/play/wwdc2016-401/?time=240)[which are for build and run.](https://developer.apple.com/videos/play/wwdc2016-401/?time=243) [And you have distribution certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=245)  [Which are used](https://developer.apple.com/videos/play/wwdc2016-401/?time=247)[for authentication with iTunes Connect.](https://developer.apple.com/videos/play/wwdc2016-401/?time=248) [Or, if these are enterprise certificates,](https://developer.apple.com/videos/play/wwdc2016-401/?time=251)[it's for distribution to users.](https://developer.apple.com/videos/play/wwdc2016-401/?time=254) [And all signing certificates require a private key.](https://developer.apple.com/videos/play/wwdc2016-401/?time=258) [This private key has to be in the keychain](https://developer.apple.com/videos/play/wwdc2016-401/?time=262)[if you want to sign your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=265) [And the private key for a certificate is created](https://developer.apple.com/videos/play/wwdc2016-401/?time=268)[when the certificate gets generated.](https://developer.apple.com/videos/play/wwdc2016-401/?time=271)  [And so it's very important to have this private key.](https://developer.apple.com/videos/play/wwdc2016-401/?time=273) [And it's worth noting here](https://developer.apple.com/videos/play/wwdc2016-401/?time=277)[that Apple never has a copy of your private keys.](https://developer.apple.com/videos/play/wwdc2016-401/?time=278)  [You can't go to the developer website and download them.](https://developer.apple.com/videos/play/wwdc2016-401/?time=282) [Now the good news is, in Xcode 8,](https://developer.apple.com/videos/play/wwdc2016-401/?time=285)[for your development certificates, you don't need](https://developer.apple.com/videos/play/wwdc2016-401/?time=289)[to worry about this anymore.](https://developer.apple.com/videos/play/wwdc2016-401/?time=291) [And we'll talk more about that in a second.](https://developer.apple.com/videos/play/wwdc2016-401/?time=293) [Provisioning profiles are also issued by Apple.](https://developer.apple.com/videos/play/wwdc2016-401/?time=297)  [And in contrast to certificates which are all](https://developer.apple.com/videos/play/wwdc2016-401/?time=300)[about your identity as a developer,](https://developer.apple.com/videos/play/wwdc2016-401/?time=303)[the profiles are all about your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=306) [Profiles allow access to things like running on devices.](https://developer.apple.com/videos/play/wwdc2016-401/?time=310) [There's a list of identifiers in a profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=315) [And at install time, the device runs down those list](https://developer.apple.com/videos/play/wwdc2016-401/?time=318)[of identifiers to check if yours is included.](https://developer.apple.com/videos/play/wwdc2016-401/?time=322) [And if it is, you can install the app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=325) [Profiles also allow access to entitlements.](https://developer.apple.com/videos/play/wwdc2016-401/?time=328)  [There's a white list of entitlements in a profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=333) [And if you want to use an entitlement,](https://developer.apple.com/videos/play/wwdc2016-401/?time=336)[it has to be in that list.](https://developer.apple.com/videos/play/wwdc2016-401/?time=338)  [Now once again, if you're new,](https://developer.apple.com/videos/play/wwdc2016-401/?time=341)[you don't need to think about this.](https://developer.apple.com/videos/play/wwdc2016-401/?time=343) [Xcode handles this for you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=344)  [And if you're experienced,](https://developer.apple.com/videos/play/wwdc2016-401/?time=346)[you might be wondering why you need a new profile](https://developer.apple.com/videos/play/wwdc2016-401/?time=348)[when you add an entitlement to your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=351) [It's because of that white list.](https://developer.apple.com/videos/play/wwdc2016-401/?time=354) [Speaking of entitlements,](https://developer.apple.com/videos/play/wwdc2016-401/?time=357)[entitlements declare support for capabilities.](https://developer.apple.com/videos/play/wwdc2016-401/?time=359)  [And fundamentally an entitlement is just a string](https://developer.apple.com/videos/play/wwdc2016-401/?time=363)[with an associated value.](https://developer.apple.com/videos/play/wwdc2016-401/?time=367) [Like a string or a bowl.](https://developer.apple.com/videos/play/wwdc2016-401/?time=368)  [And these are defined per target.](https://developer.apple.com/videos/play/wwdc2016-401/?time=370) [So if your app uses one set of capabilities,](https://developer.apple.com/videos/play/wwdc2016-401/?time=374)[and your app extension uses another set, that's fine.](https://developer.apple.com/videos/play/wwdc2016-401/?time=377)  [And Xcode has a dedicated editor for working with capabilities,](https://developer.apple.com/videos/play/wwdc2016-401/?time=380)[called the Capabilities tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=386) [And the Capabilities tab will manage your entitlements PLIST](https://developer.apple.com/videos/play/wwdc2016-401/?time=388)[in the configuration details.](https://developer.apple.com/videos/play/wwdc2016-401/?time=392) [So you don't have to visit the developer website.](https://developer.apple.com/videos/play/wwdc2016-401/?time=394) [You can do it all from within Xcode.](https://developer.apple.com/videos/play/wwdc2016-401/?time=397)  [So those are the things you need in order to sign your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=399) [Now what happens when Xcode goes to sign your app?](https://developer.apple.com/videos/play/wwdc2016-401/?time=405)[It needs to know which certificate to use,](https://developer.apple.com/videos/play/wwdc2016-401/?time=408)[and which provision and profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=410) [The way that works is, Xcode will build your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=412) [And then it looks at the list of certificates on your machine.](https://developer.apple.com/videos/play/wwdc2016-401/?time=416)  [And it picks the newest one that matches your development team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=420) [Xcode then looks at the list of profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=425) [And it picks the newest one that matches your bundle ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=428)  [And these two things are brought together.](https://developer.apple.com/videos/play/wwdc2016-401/?time=431) [The profile is embedded in the app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=434) [And the certificate is used with Code Sign](https://developer.apple.com/videos/play/wwdc2016-401/?time=437)[to apply the code seal.](https://developer.apple.com/videos/play/wwdc2016-401/?time=440) [So that's a quick run through of some](https://developer.apple.com/videos/play/wwdc2016-401/?time=441)[of the fundamentals of signing your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=445)  [Let's talk now about the changes we've made for setting](https://developer.apple.com/videos/play/wwdc2016-401/?time=449)[up new machines with signing certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=452) [So who's seen this before?](https://developer.apple.com/videos/play/wwdc2016-401/?time=456)[Yeah. Your account already has a certificate,](https://developer.apple.com/videos/play/wwdc2016-401/?time=459)[and Xcode offers to reset it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=463) [So what happens when you click that button?](https://developer.apple.com/videos/play/wwdc2016-401/?time=465)[Yeah, so what happens is it gets rid](https://developer.apple.com/videos/play/wwdc2016-401/?time=469)[of your current cert and makes a new one.](https://developer.apple.com/videos/play/wwdc2016-401/?time=470) [And why is this?](https://developer.apple.com/videos/play/wwdc2016-401/?time=473)[Well, your development account has a limit](https://developer.apple.com/videos/play/wwdc2016-401/?time=475)[of one signing certificate.](https://developer.apple.com/videos/play/wwdc2016-401/?time=477) [And if you have a single machine, this works great.](https://developer.apple.com/videos/play/wwdc2016-401/?time=479)  [The cert is created.](https://developer.apple.com/videos/play/wwdc2016-401/?time=484) [You have a private key that's generated, and it stays](https://developer.apple.com/videos/play/wwdc2016-401/?time=485)[in your keychain and it just works.](https://developer.apple.com/videos/play/wwdc2016-401/?time=488)  [Now what happens if you have a second Mac?](https://developer.apple.com/videos/play/wwdc2016-401/?time=491)[Well, to build and sign on that second Mac,](https://developer.apple.com/videos/play/wwdc2016-401/?time=495)[you need a signing cert and a private key.](https://developer.apple.com/videos/play/wwdc2016-401/?time=498) [And you can either sync that over using keychain access](https://developer.apple.com/videos/play/wwdc2016-401/?time=501)[or Xcode and import the private key on the second Mac.](https://developer.apple.com/videos/play/wwdc2016-401/?time=506) [Or you can create a new signing certificate.](https://developer.apple.com/videos/play/wwdc2016-401/?time=510)  [But that first requires getting rid of the old one.](https://developer.apple.com/videos/play/wwdc2016-401/?time=513) [And now you can build on the second Mac, but you can't build](https://developer.apple.com/videos/play/wwdc2016-401/?time=516)[on your first Mac anymore.](https://developer.apple.com/videos/play/wwdc2016-401/?time=519)  [And it's easy to repeat this process, and go back and forth](https://developer.apple.com/videos/play/wwdc2016-401/?time=521)[between being able to build on one machine, and not being able](https://developer.apple.com/videos/play/wwdc2016-401/?time=524)[to build on another one.](https://developer.apple.com/videos/play/wwdc2016-401/?time=527) [And this is really frustrating and cumbersome.](https://developer.apple.com/videos/play/wwdc2016-401/?time=529) [Well, the good news is in Xcode 8,](https://developer.apple.com/videos/play/wwdc2016-401/?time=532)[you can now have multiple development certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=535)  [So -- yeah [applause].](https://developer.apple.com/videos/play/wwdc2016-401/?time=539) [Each of your machines can have their own dedicated certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=543)[and private key.](https://developer.apple.com/videos/play/wwdc2016-401/?time=547)  [So you never have to sync private keys for development,](https://developer.apple.com/videos/play/wwdc2016-401/?time=548)[and you don't have to see this again.](https://developer.apple.com/videos/play/wwdc2016-401/?time=552) [These changes apply just for development certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=556)  [Your distribution certs still have a limit of one](https://developer.apple.com/videos/play/wwdc2016-401/?time=560)[that you need to manage.](https://developer.apple.com/videos/play/wwdc2016-401/?time=563) [These are created both through Xcode or the developer websites.](https://developer.apple.com/videos/play/wwdc2016-401/?time=566)  [And these are created in Xcode 8 and later.](https://developer.apple.com/videos/play/wwdc2016-401/?time=570) [And if you have an old copy of Xcode on your machine,](https://developer.apple.com/videos/play/wwdc2016-401/?time=576)[and you create one of these new signing certificates, it works.](https://developer.apple.com/videos/play/wwdc2016-401/?time=579)  [They're 100% backwards compatible.](https://developer.apple.com/videos/play/wwdc2016-401/?time=583) [So that's what we've changed](https://developer.apple.com/videos/play/wwdc2016-401/?time=586)[about signing certificates in Xcode 8.](https://developer.apple.com/videos/play/wwdc2016-401/?time=590)  [I'd like to turn the stage over to my colleague, Itai,](https://developer.apple.com/videos/play/wwdc2016-401/?time=594)[who's going to tell you about the new workflows](https://developer.apple.com/videos/play/wwdc2016-401/?time=596)[in Xcode 8 [applause].](https://developer.apple.com/videos/play/wwdc2016-401/?time=599) [Good morning everyone.](https://developer.apple.com/videos/play/wwdc2016-401/?time=604) [So Joshua's walked us through the fundamental pieces](https://developer.apple.com/videos/play/wwdc2016-401/?time=606)[that are involved in signing your applications.](https://developer.apple.com/videos/play/wwdc2016-401/?time=609)  [You need a signing certificate and a provisioning profile](https://developer.apple.com/videos/play/wwdc2016-401/?time=612)[that matches your device and your app's entitlements.](https://developer.apple.com/videos/play/wwdc2016-401/?time=616) [But many of you also have app extensions.](https://developer.apple.com/videos/play/wwdc2016-401/?time=619)  [Watch apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=621) [Or embedded frameworks in your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=622) [And each of those brings its own signing requirements.](https://developer.apple.com/videos/play/wwdc2016-401/?time=625)  [All this can add up to a complicated picture,](https://developer.apple.com/videos/play/wwdc2016-401/?time=628)[where signing becomes a bit of a puzzle.](https://developer.apple.com/videos/play/wwdc2016-401/?time=631) [And fitting all the pieces together can be pretty](https://developer.apple.com/videos/play/wwdc2016-401/?time=634)[difficult sometimes.](https://developer.apple.com/videos/play/wwdc2016-401/?time=637) [So Xcode for many releases has provided assistance](https://developer.apple.com/videos/play/wwdc2016-401/?time=639)[to help make this easier.](https://developer.apple.com/videos/play/wwdc2016-401/?time=642)  [In Xcode 7, the Fix Issue button would appear whenever Xcode](https://developer.apple.com/videos/play/wwdc2016-401/?time=645)[detected that something was wrong with your signing setup.](https://developer.apple.com/videos/play/wwdc2016-401/?time=649) [Now sometimes clicking on Fix Issue would fix the problem,](https://developer.apple.com/videos/play/wwdc2016-401/?time=653)[and you can return to developing your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=657) [But a lot of the times it wouldn't fix the problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=659) [Or you had to click it multiple times.](https://developer.apple.com/videos/play/wwdc2016-401/?time=661)  [And in all cases, Xcode wasn't very communicative](https://developer.apple.com/videos/play/wwdc2016-401/?time=664)[about what the issue was.](https://developer.apple.com/videos/play/wwdc2016-401/?time=668) [What it did when you clicked Fix Issue, and why.](https://developer.apple.com/videos/play/wwdc2016-401/?time=671)  [And really, if Xcode knew how to solve the problem,](https://developer.apple.com/videos/play/wwdc2016-401/?time=673)[why did it need to interrupt your development workflow](https://developer.apple.com/videos/play/wwdc2016-401/?time=676)[and make you click a button?](https://developer.apple.com/videos/play/wwdc2016-401/?time=678)[Interacting with signing in Xcode 7 often felt](https://developer.apple.com/videos/play/wwdc2016-401/?time=681)[like you were talking to a black box.](https://developer.apple.com/videos/play/wwdc2016-401/?time=684) [You couldn't see inside, but you could mash the red panic button](https://developer.apple.com/videos/play/wwdc2016-401/?time=685)[whenever you got frustrated.](https://developer.apple.com/videos/play/wwdc2016-401/?time=688) [So that didn't work out very well.](https://developer.apple.com/videos/play/wwdc2016-401/?time=690) [And in Xcode 8 we've gotten rid of the Fix Issue button.](https://developer.apple.com/videos/play/wwdc2016-401/?time=693)  [But we've also done a lot more.](https://developer.apple.com/videos/play/wwdc2016-401/?time=695) [We fully redesigned how signing works in Xcode 8.](https://developer.apple.com/videos/play/wwdc2016-401/?time=703)  [There's a brand new signing infrastructure](https://developer.apple.com/videos/play/wwdc2016-401/?time=706)[which is much faster and more reliable than before.](https://developer.apple.com/videos/play/wwdc2016-401/?time=709) [On top of that, we built new workflows,](https://developer.apple.com/videos/play/wwdc2016-401/?time=713)[and a new user interface in the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=715) [So you can see and manage your signing settings all](https://developer.apple.com/videos/play/wwdc2016-401/?time=718)[in one place.](https://developer.apple.com/videos/play/wwdc2016-401/?time=721)  [Then we took a look at how Xcode communicates](https://developer.apple.com/videos/play/wwdc2016-401/?time=723)[with you about signing issues.](https://developer.apple.com/videos/play/wwdc2016-401/?time=726) [A lot of the error messages were not very actionable](https://developer.apple.com/videos/play/wwdc2016-401/?time=729)[or communicative.](https://developer.apple.com/videos/play/wwdc2016-401/?time=732) [And so we've revised them all in Xcode8.](https://developer.apple.com/videos/play/wwdc2016-401/?time=733) [So that you see much more helpful](https://developer.apple.com/videos/play/wwdc2016-401/?time=735)[and actionable information when something goes wrong.](https://developer.apple.com/videos/play/wwdc2016-401/?time=737) [And for those of you who are very curious](https://developer.apple.com/videos/play/wwdc2016-401/?time=741)[about what Xcode does on your behalf](https://developer.apple.com/videos/play/wwdc2016-401/?time=743)[when it fixes a signing problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=745) [We've added new status reporting.](https://developer.apple.com/videos/play/wwdc2016-401/?time=747) [So you can always see exactly what Xcode did and why.](https://developer.apple.com/videos/play/wwdc2016-401/?time=748)  [So as Joshua mentioned at the beginning,](https://developer.apple.com/videos/play/wwdc2016-401/?time=752)[there are two new ways of working with signing in Xcode 8.](https://developer.apple.com/videos/play/wwdc2016-401/?time=756)[The first one is automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=760) [Now automatic signing has been fully redesigned,](https://developer.apple.com/videos/play/wwdc2016-401/?time=764)[and it takes care of all of your signing needs for you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=767)[You'll never need to create a profile, or update your app ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=771) [And Xcode will do it all in the background.](https://developer.apple.com/videos/play/wwdc2016-401/?time=775) [So while you're developing your application,](https://developer.apple.com/videos/play/wwdc2016-401/?time=777)[Xcode will keep your signing up to date.](https://developer.apple.com/videos/play/wwdc2016-401/?time=779)  [For those of you who want full control](https://developer.apple.com/videos/play/wwdc2016-401/?time=784)[over how your application is signed,](https://developer.apple.com/videos/play/wwdc2016-401/?time=786)[you can enable customized signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=788) [In this mode, Xcode will never create or modify one](https://developer.apple.com/videos/play/wwdc2016-401/?time=791)[of your provisioning profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=795) [And it will never change your signing settings.](https://developer.apple.com/videos/play/wwdc2016-401/?time=796)  [So let's take a look at how these work](https://developer.apple.com/videos/play/wwdc2016-401/?time=799)[in a little bit more detail.](https://developer.apple.com/videos/play/wwdc2016-401/?time=801) [Starting with automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=802)  [When you create a new project,](https://developer.apple.com/videos/play/wwdc2016-401/?time=805)[automatic signing will be on by default.](https://developer.apple.com/videos/play/wwdc2016-401/?time=808) [But if you're an experienced developer,](https://developer.apple.com/videos/play/wwdc2016-401/?time=811)[or you're opening an existing project, you can enable it](https://developer.apple.com/videos/play/wwdc2016-401/?time=812)[in the General tab in this new signing UI.](https://developer.apple.com/videos/play/wwdc2016-401/?time=816) [All you have to do is check the box.](https://developer.apple.com/videos/play/wwdc2016-401/?time=820)  [And then tell Xcode your development team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=823) [From that point on, Xcode will take care of creating profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=827)[and signing certificates for you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=830)  [And it will even show you the profile and certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=832)[that will be used when you build your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=834) [So what sorts of things will automatic signing do for you?](https://developer.apple.com/videos/play/wwdc2016-401/?time=838)[Well, it will create your signing certificates.](https://developer.apple.com/videos/play/wwdc2016-401/?time=841) [So if you're developing an iOS app,](https://developer.apple.com/videos/play/wwdc2016-401/?time=845)[it'll create an iOS development certificate for you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=847)  [It will also create and update your app ID's and profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=849) [And it does this](https://developer.apple.com/videos/play/wwdc2016-401/?time=854)[in the background while you're working on your application.](https://developer.apple.com/videos/play/wwdc2016-401/?time=855)  [So you can stay focused on developments.](https://developer.apple.com/videos/play/wwdc2016-401/?time=858) [But there are still some instances](https://developer.apple.com/videos/play/wwdc2016-401/?time=860)[where Xcode 8 will prompt you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=864)  [In particular, when you connect a new device to your Mac.](https://developer.apple.com/videos/play/wwdc2016-401/?time=866) [One that's not already registered](https://developer.apple.com/videos/play/wwdc2016-401/?time=870)[on your development team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=871)  [Xcode will ask you before it registers it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=873) [Because we know device limits are finite, and you want](https://developer.apple.com/videos/play/wwdc2016-401/?time=876)[to have full control over how those are allocated.](https://developer.apple.com/videos/play/wwdc2016-401/?time=878)  [And finally, if you're curious about what Xcode does](https://developer.apple.com/videos/play/wwdc2016-401/?time=881)[on your behalf in the background,](https://developer.apple.com/videos/play/wwdc2016-401/?time=886)[you can view the signing report](https://developer.apple.com/videos/play/wwdc2016-401/?time=888)[to see exactly what Xcode did, and why.](https://developer.apple.com/videos/play/wwdc2016-401/?time=890) [So let me show you how this all works on the demo machine.](https://developer.apple.com/videos/play/wwdc2016-401/?time=893) [So I'm going to show you automatic signing on Xcode 8,](https://developer.apple.com/videos/play/wwdc2016-401/?time=896)[using a brand new iOS app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=900) [I'll hit Next.](https://developer.apple.com/videos/play/wwdc2016-401/?time=905) [And I'll give this a name.](https://developer.apple.com/videos/play/wwdc2016-401/?time=907)  [I'm not a great cook, so I like easy recipes.](https://developer.apple.com/videos/play/wwdc2016-401/?time=910) [Now the first thing I'd like to call your attention](https://developer.apple.com/videos/play/wwdc2016-401/?time=913)[to in the new project assistant is the new popup labeled "Team".](https://developer.apple.com/videos/play/wwdc2016-401/?time=916)  [When you create your project,](https://developer.apple.com/videos/play/wwdc2016-401/?time=921)[you can immediately choose the development team that you'd](https://developer.apple.com/videos/play/wwdc2016-401/?time=923)[like to use for signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=926) [And from that point on,](https://developer.apple.com/videos/play/wwdc2016-401/?time=927)[your project will already be configured](https://developer.apple.com/videos/play/wwdc2016-401/?time=929)[for automatic signing with the right team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=931) [So I'll just hit Next.](https://developer.apple.com/videos/play/wwdc2016-401/?time=934) [And I'll create this on my desktop.](https://developer.apple.com/videos/play/wwdc2016-401/?time=937) [So what did Xcode just do?](https://developer.apple.com/videos/play/wwdc2016-401/?time=942)[It created a brand new project,](https://developer.apple.com/videos/play/wwdc2016-401/?time=944)[and automatic signing is turned on by default.](https://developer.apple.com/videos/play/wwdc2016-401/?time=946) [When I created the project,](https://developer.apple.com/videos/play/wwdc2016-401/?time=950)[it immediately generated the signing certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=951)[and a provisioning profile for me.](https://developer.apple.com/videos/play/wwdc2016-401/?time=954) [I can zoom in on here so it's easier to see.](https://developer.apple.com/videos/play/wwdc2016-401/?time=957)  [If I'd like to change my development team,](https://developer.apple.com/videos/play/wwdc2016-401/?time=964)[I can also do that there.](https://developer.apple.com/videos/play/wwdc2016-401/?time=966) [So that's how easy it is to set up a brand new project.](https://developer.apple.com/videos/play/wwdc2016-401/?time=971)  [I can immediately build and run on a device.](https://developer.apple.com/videos/play/wwdc2016-401/?time=975) [I never had to click "Fix Issue"](https://developer.apple.com/videos/play/wwdc2016-401/?time=977)[or configure any profiles myself.](https://developer.apple.com/videos/play/wwdc2016-401/?time=979)  [All I did was create a new project, and tell Xcode my team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=981) [But let's make this a little more interesting.](https://developer.apple.com/videos/play/wwdc2016-401/?time=985)[As Joshua mentioned earlier, you can use the Capabilities tab](https://developer.apple.com/videos/play/wwdc2016-401/?time=989)[to enable platform features that you'd](https://developer.apple.com/videos/play/wwdc2016-401/?time=993)[like to use, like Cloud Kit.](https://developer.apple.com/videos/play/wwdc2016-401/?time=995) [So let's do that in this application.](https://developer.apple.com/videos/play/wwdc2016-401/?time=997)  [We'll go to the Capabilities tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1000) [And here I see all the capabilities](https://developer.apple.com/videos/play/wwdc2016-401/?time=1003)[that my app can support.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1005)  [And all I have to do is flip this switch to turn one on.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1007) [I'd like to use Cloud Kit here, and Push Notifications.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1010) [So when I did that, Xcode made a few changes to my project.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1017)  [It linked frameworks.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1021) [It modified my Entitlement's file.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1022) [But it also communicated with the developer portal](https://developer.apple.com/videos/play/wwdc2016-401/?time=1024)[to download a new profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1028) [And now I can build and run my app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1030) [And I can immediately start using these features.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1032)  [Again, I never had to click a Fix Issue button,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1035)[or type in any entitlements myself.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1037) [Now, I happen to know that Xcode downloaded a new profile,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1041)[because I'm an Xcode engineer.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1043) [But most of you probably aren't.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1045)[So if you're curious about what Xcode did, you can always click](https://developer.apple.com/videos/play/wwdc2016-401/?time=1047)[over to the Reports Navigator.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1051) [Where you'll see a brand new report called Update Signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1054) [Whenever Xcode resolves a signing problem for you,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1057)[one of these reports will be created.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1061) [Let's take a look at the most recent one](https://developer.apple.com/videos/play/wwdc2016-401/?time=1064)[to see what it contains.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1066)  [And I'll zoom in to make that easier to see.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1069) [So here we can see Xcode diagnosed a problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1073) [And I can see more information about that problem by selecting](https://developer.apple.com/videos/play/wwdc2016-401/?time=1076)[that row and expanding it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1080) [So Xcode's telling me my existing profile doesn't](https://developer.apple.com/videos/play/wwdc2016-401/?time=1083)[support iCloud.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1086)  [And immediately below that,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1088)[I can see that it created a new profile for my app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1089) [So that's how easy it is to see exactly what Xcode does](https://developer.apple.com/videos/play/wwdc2016-401/?time=1093)[on my behalf whenever it fixes a problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1097) [Now there are a few more things you should know](https://developer.apple.com/videos/play/wwdc2016-401/?time=1110)[about automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1111) [The first one is that it does development signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1113)[Distribution is handled through a different workflow;](https://developer.apple.com/videos/play/wwdc2016-401/?time=1117)[which Joshua will describe a little bit later.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1119) [And it's limited to Xcode created provisioning profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1122) [These of course are profiles Xcode makes on your behalf,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1127)[and it keeps them up-to-date](https://developer.apple.com/videos/play/wwdc2016-401/?time=1130)[as you're working on your application.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1131) [And as a result of these, you can use automatic signing](https://developer.apple.com/videos/play/wwdc2016-401/?time=1133)[without ever having to worry](https://developer.apple.com/videos/play/wwdc2016-401/?time=1139)[about your distribution signing assets being touched by Xcode.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1140) [So your distribution certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=1145)[and provisioning profile will never be modified](https://developer.apple.com/videos/play/wwdc2016-401/?time=1146)[by automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1149) [So automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1152)  [It's been completely redesigned in Xcode 8.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1154) [It stays out of your way, and it manages signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1157) [So you can focus on what's really important,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1161)[which is developing your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1163) [Now let's take a look at the other side of the fence.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1167) [Customized signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1169)  [As you'll recall, this is a mode where you have full control](https://developer.apple.com/videos/play/wwdc2016-401/?time=1171)[over how your app is signed.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1174) [You can enable customized signing](https://developer.apple.com/videos/play/wwdc2016-401/?time=1176)[by unchecking the checkbox in the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1181) [And once you've done that,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1184)[Xcode will let you choose different provisioning profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=1186)[for each of your build configurations.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1189) [This is really handy if you have a continuous integration system.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1192) [Or you need different profiles for free](https://developer.apple.com/videos/play/wwdc2016-401/?time=1195)[and paid versions of your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1197) [Now you have the power to do that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1199) [And you can configure this all within the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1201)  [You don't have to visit the Build Settings Editor anymore.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1204) [So this is a really powerful new UI](https://developer.apple.com/videos/play/wwdc2016-401/?time=1209)[for configuring your signing settings.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1210)  [But we wanted to take this one step further.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1213) [Those of you who have manually chosen profiles in the past,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1216)[have probably run into some weird installation](https://developer.apple.com/videos/play/wwdc2016-401/?time=1219)[or runtime issues usually having to do with entitlements.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1222) [And we wanted Xcode to give you more helpful information](https://developer.apple.com/videos/play/wwdc2016-401/?time=1225)[about that before you run into those issues.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1228)  [So we've added new error reporting right](https://developer.apple.com/videos/play/wwdc2016-401/?time=1232)[within the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1235) [And you can see this right alongside your settings.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1236)  [So it's easier to choose the right profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1239) [Here I can see that my profile doesn't support the capabilities](https://developer.apple.com/videos/play/wwdc2016-401/?time=1242)[that my app is using.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1246)  [So I know exactly what I need to do in order](https://developer.apple.com/videos/play/wwdc2016-401/?time=1247)[to resolve the problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1249) [In addition, I can see more information](https://developer.apple.com/videos/play/wwdc2016-401/?time=1253)[about my provisioning profile](https://developer.apple.com/videos/play/wwdc2016-401/?time=1258)[by clicking the profile info button.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1259) [And here I can see a lot of details.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1263)  [Like when my profile was created.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1265) [Which capabilities it supports.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1268) [And again, it's easy to tell when there's a problem,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1269)[exactly what I need to do to resolve it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1272) [Now customized signing is limited](https://developer.apple.com/videos/play/wwdc2016-401/?time=1277)[to manually created profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1280)  [These are profiles that you or someone](https://developer.apple.com/videos/play/wwdc2016-401/?time=1282)[on your team has created using the developer website.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1284) [And Xcode will never modify these.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1288)  [And you can choose any type of profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1290) [So as I mentioned, if you want to use development profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=1294)[for some build configurations, and distribution profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=1297)[for others, you're free to do that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1300) [Now this is a really cool thing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1305) [Especially for those of you experienced developers](https://developer.apple.com/videos/play/wwdc2016-401/?time=1307)[who have manually chosen profiles in the past.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1309) [There's a new build setting](https://developer.apple.com/videos/play/wwdc2016-401/?time=1312)[in Xcode 8 called Provisioning Profile Specifier.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1313)  [And what this does is it references your profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=1317)[by name.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1320) [Now the reason this is a big deal is because prior](https://developer.apple.com/videos/play/wwdc2016-401/?time=1322)[to Xcode 8, Xcode would reference your profiles](https://developer.apple.com/videos/play/wwdc2016-401/?time=1325)[by their unique ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1328) [Whenever a new developer joined your team,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1330)[or you added a new device,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1332)[you'd need to generate a new version of your profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1334)[And when you did that, you'd get a new unique ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1336)  [So then you'd need to update your project.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1339) [Well, now in Xcode 8, since we reference profiles by name,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1342)[all you need to do is generate a new profile,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1346)[and Xcode will automatically pick it up.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1349) [You don't need to update your project [applause] thank you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1351) [So let's take a look](https://developer.apple.com/videos/play/wwdc2016-401/?time=1360)[at how customized signing works on the demo machine.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1361) [Okay. I'm going to show you another app I've been working](https://developer.apple.com/videos/play/wwdc2016-401/?time=1370)[on called, Scrapbook.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1374) [And let me zoom in on that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1376) [So Scrapbook is set up for customized signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1380)  [I've chosen different profiles for the free](https://developer.apple.com/videos/play/wwdc2016-401/?time=1383)[and paid versions of my app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1386) [And it's really easy to configure](https://developer.apple.com/videos/play/wwdc2016-401/?time=1388)[that in the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1390) [This is all I had to do.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1392) [Just select different profiles from those pop ups.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1393)  [And since I don't see any error messages here,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1396)[I already know I can build and run on a device,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1399)[and everything will work.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1401) [But as in the earlier demo,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1404)[let's make this a little more interesting.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1406) [I'd like to use the Capabilities tab so I can use iCloud](https://developer.apple.com/videos/play/wwdc2016-401/?time=1409)[and Push Notifications in this app as well.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1412) [Now if you've used the Capabilities tab in the past](https://developer.apple.com/videos/play/wwdc2016-401/?time=1415)[with a manually specified provisioning profile,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1418)[you might've noticed that it sometimes would change your](https://developer.apple.com/videos/play/wwdc2016-401/?time=1421)[signing settings.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1423) [Or make changes that you didn't really want.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1424)  [In Xcode 8, the Capabilities tab is now safe to use](https://developer.apple.com/videos/play/wwdc2016-401/?time=1427)[in customized signing mode.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1431) [It'll make the local changes that are safe to make,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1433)[such as updating your entitlements PLIST.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1436) [But it won't touch your profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1439) [It'll just tell you what steps you need to take manually](https://developer.apple.com/videos/play/wwdc2016-401/?time=1441)[in order to resolve those problems.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1444) [So let's take a look at that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1446) [I'll click on Capabilities, and then turn on iCloud](https://developer.apple.com/videos/play/wwdc2016-401/?time=1452)[and Push Notifications.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1456) [Now Xcode is showing me checkmarks next to the steps](https://developer.apple.com/videos/play/wwdc2016-401/?time=1462)[that it was able to complete.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1465)  [And little error icons next to the steps that I still need](https://developer.apple.com/videos/play/wwdc2016-401/?time=1466)[to complete on the developer website.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1469) [I can see more information about this in the General tab.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1471)  [I'll zoom in on that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1477) [And if you look at that error message,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1482)[you can see Xcode's telling me my selected profile doesn't](https://developer.apple.com/videos/play/wwdc2016-401/?time=1484)[support iCloud and Push Notifications.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1487) [That's kind of obvious since I just enabled those.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1489)[But it's really clear.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1492)  [I can tell exactly what I need to do to fix this problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1493) [Whereas in the past, if I had tried to build and run,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1496)[my app either wouldn't install or wouldn't run correctly.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1499)  [And finally, if I want to see more information,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1504)[I can click the Profile Info button.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1506) [And Xcode will show me more detail about my profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1508)  [Like the capabilities that it supports and those it doesn't.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1512) [So again, it's easy to see exactly what I need](https://developer.apple.com/videos/play/wwdc2016-401/?time=1516)[to do to fix a problem.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1518)  [So let's go fix this one.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1521) [As I mentioned earlier, in customized signing mode,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1523)[Xcode won't modify profiles for me.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1526)  [I need to visit the developer website to do it myself.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1529) [So I'll open up the developer website and click](https://developer.apple.com/videos/play/wwdc2016-401/?time=1533)[on Certificates, Identifiers, and Profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1536)  [The first thing I need to do is update my app ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1539) [So I'll select App IDs.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1543) [And I'll choose the app ID I've already created for this app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1545)  [This shows me all the capabilities that are available.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1549) [I'll hit, Edit.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1552) [Scroll down and turn on iCloud.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1554)  [Now this alert message that I'm seeing is reminding me](https://developer.apple.com/videos/play/wwdc2016-401/?time=1558)[that after I update my app ID,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1561)[I also need to download a new version](https://developer.apple.com/videos/play/wwdc2016-401/?time=1563)[of my provisioning profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1565) [So I'll just hit, Okay.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1567) [And then I'd like to enable the newer version of iCloud.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1568)  [So I'll turn that on.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1573) [And again I'm reminded that I need a new profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1575) [So I'll click, Okay.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1578)  [Scroll down and turn on Push Notifications.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1581) [And now I'm done.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1585) [The next step is updating my profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1587)  [So I'm going to click on Development.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1589) [And you'll see the two scrapbook profiles are now marked](https://developer.apple.com/videos/play/wwdc2016-401/?time=1592)[as invalid.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1595)  [That's because I've made changes to my app ID.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1596) [But I haven't regenerated the profiles yet.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1598) [So they're out of date.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1601)  [Let's update the Scrapbook Free profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1603) [I'll select it and click, Edit.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1606) [And I can scroll down through all of this.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1609)  [I'm not making changes to certs or to devices.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1611) [And I'll click on Generate.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1615) [And then download the new profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1617)  [Now the very last step is I need to install this profile](https://developer.apple.com/videos/play/wwdc2016-401/?time=1620)[so that Xcode can use it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1623) [I can do that just by clicking it in the Downloads folder.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1625)  [So what just happened there?](https://developer.apple.com/videos/play/wwdc2016-401/?time=1629)[I'll zoom in on that.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1632) [When I clicked on the profile, Xcode installed it,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1634)[and immediately updated to start using it.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1638) [So we can see the errors in the free build configuration](https://developer.apple.com/videos/play/wwdc2016-401/?time=1640)[of my app have disappeared.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1643)  [You might also have noticed](https://developer.apple.com/videos/play/wwdc2016-401/?time=1646)[that I didn't make any project changes here.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1648) [This is provisioning profile specifier working behind](https://developer.apple.com/videos/play/wwdc2016-401/?time=1651)[the scenes.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1654) [Once I installed the new version of the profile,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1655)[Xcode just started using it automatically.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1657)  [Now I can build and run the free version of my app,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1660)[and everything will work.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1663) [I can use iCloud and Push.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1664)  [But it looks like I still need](https://developer.apple.com/videos/play/wwdc2016-401/?time=1667)[to update the premium version of my app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1668) [Does everybody want to see me do that on the developer website?](https://developer.apple.com/videos/play/wwdc2016-401/?time=1670)[Or we get the idea?](https://developer.apple.com/videos/play/wwdc2016-401/?time=1673)[Okay. It's a little bit tedious.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1675) [If you were paying attention to the earlier demo,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1679)[you might have noticed this is actually --](https://developer.apple.com/videos/play/wwdc2016-401/?time=1681)[all those steps I just performed are the exact same steps](https://developer.apple.com/videos/play/wwdc2016-401/?time=1683)[that Xcode performed for me in automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1685)  [So that's customized signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1689) [A brand new mode in Xcode 8, where you have full control](https://developer.apple.com/videos/play/wwdc2016-401/?time=1692)[over how your app is signed.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1695)  [Xcode won't interfere with your settings,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1697)[or modify your profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1699) [But I'd like to encourage you all to try](https://developer.apple.com/videos/play/wwdc2016-401/?time=1701)[out automatic signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1704) [It's been completely redesigned in Xcode 8,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1706)[and it's provides a really seamless development workflow](https://developer.apple.com/videos/play/wwdc2016-401/?time=1708)[that I think you'll really enjoy.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1711) [Now I'd like to invite Joshua back](https://developer.apple.com/videos/play/wwdc2016-401/?time=1712)[up to show you some best practices [applause].](https://developer.apple.com/videos/play/wwdc2016-401/?time=1715)  [Thanks Itai [applause].](https://developer.apple.com/videos/play/wwdc2016-401/?time=1720) [So we just saw the new workflows in Xcode 8](https://developer.apple.com/videos/play/wwdc2016-401/?time=1724)[that makes it really easy and fast to manage signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1727)  [Now I'd like to talk about some best practices](https://developer.apple.com/videos/play/wwdc2016-401/?time=1731)[for managing signing in your projects.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1734) [The first thing is, use automatic.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1738)  [Automatic is designed to make your life as easy as possible.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1741) [And it works great](https://developer.apple.com/videos/play/wwdc2016-401/?time=1745)[with individual developers, or large teams.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1747)  [So you should add all of the developers that work on your app](https://developer.apple.com/videos/play/wwdc2016-401/?time=1751)[to your development team.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1754) [You should use the Capabilities tab to manage entitlements.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1757)  [So you can avoid visiting the developer website](https://developer.apple.com/videos/play/wwdc2016-401/?time=1761)[to configure things like iCloud containers.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1763) [If you use customized signing, don't set code sign identity.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1767)  [You have a specific signing certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=1773)[that is linked to your account.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1776) [So if you set this to your particular signing cert](https://developer.apple.com/videos/play/wwdc2016-401/?time=1778)[and someone else pulls your project,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1781)[they won't be able to build.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1783) [So you should leave that with the default value.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1785)  [Instead of visiting the Build Settings Editor,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1788)[you should use the new UI](https://developer.apple.com/videos/play/wwdc2016-401/?time=1791)[in the General tab of the Target Editor.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1793) [This allows you to see more information about the profile.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1796) [And it also correctly sets the profile specifier by name,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1799)[so you can avoid churn in your projects.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1805)  [You should also use the Capabilities tab](https://developer.apple.com/videos/play/wwdc2016-401/?time=1807)[in Customized Signing Mode to manage your entitlements PLIST.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1811) [And if you use development signing for all](https://developer.apple.com/videos/play/wwdc2016-401/?time=1815)[of your project's configuration, you should try out automatic.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1819) [When you get back to your Mac, go check that checkbox](https://developer.apple.com/videos/play/wwdc2016-401/?time=1823)[in the target editor and try it out.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1826)  [When it comes to distributing your app,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1831)[Xcode has a dedicated workflow for this.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1834) [And it's based around building an archive.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1837)  [Archives contain a copy of your app.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1842) [And it's important to note](https://developer.apple.com/videos/play/wwdc2016-401/?time=1845)[that you should use development signing.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1847)  [If you sign your app with a distribution certificate,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1850)[you won't be able to test the exact bits](https://developer.apple.com/videos/play/wwdc2016-401/?time=1853)[that you were trying to develop.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1856) [So this should be development signed.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1858) [And when it comes time to distribute that,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1861)[when you use the organizer,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1863)[Xcode will resign the app using your development certificate](https://developer.apple.com/videos/play/wwdc2016-401/?time=1865)[and provisioning profiles.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1869) [And if you clicked Upload it will go straight](https://developer.apple.com/videos/play/wwdc2016-401/?time=1872)[to iTunes connect.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1874) [Or if you clicked Export, you'll get an IPA file or an app](https://developer.apple.com/videos/play/wwdc2016-401/?time=1876)[that has been distribution signed.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1880)  [So that's the best practice for distributing your content.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1883) [We've covered a few things today.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1889) [We've talked about the new changes to signing certificates](https://developer.apple.com/videos/play/wwdc2016-401/?time=1890)[that makes it really easy to set up new machines.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1894) [We've talked about the new automatic workflow,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1897)[which takes a lot of the pain out of developing your apps.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1900)  [And we talked about the new customized signing mode.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1904) [So you can configure your projects as you see fit.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1907) [If that's what you desire.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1911)  [If you want to learn more, check out this link.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1912) [If you want to learn more about security or Xcode,](https://developer.apple.com/videos/play/wwdc2016-401/?time=1917)[check out these sessions.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1921)  [And with that, thank you.](https://developer.apple.com/videos/play/wwdc2016-401/?time=1922)