

Tipologie

Ogni app è un mix di tecnologie differenti



Tipologie

Nativa

Si basa su ambienti di sviluppo e SDK proprietari della piattaforma ed il codice non risulta portabile.

Ibrida

Si basa su ambienti di sviluppo e SDK scelti dallo sviluppatore ed il codice risulta facilmente portabile.

Web (PWA)

Si basa su ambienti di sviluppo e SDK web ed il codice è unico.

Tipologie

Nativa

Pro:

- Performante
- Accesso all'hardware
- GUI specifica
- Presente negli store
- API subito disponibili

Contro:

- Onerosa (per ogni piattaforma ho un SDK)
- Codice non portabile

Ibrida

Pro:

- Sviluppo veloce
- Abbastanza Performante
- GUI specifica in alcuni casi
- Codice quasi portabile
- Presente negli store

Contro:

- Accesso all'hardware limitato
- API non sempre disponibile

Web (PWA)

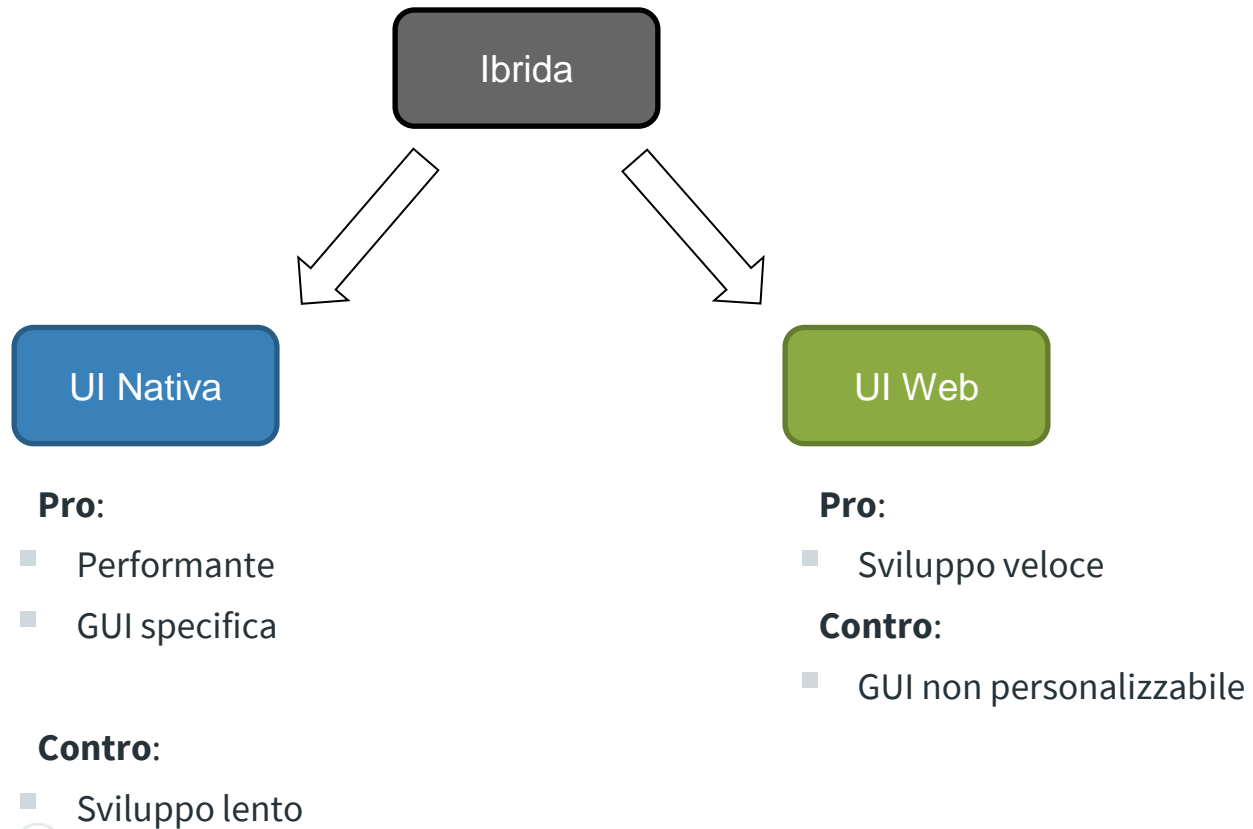
Pro:

- Sviluppo velocissimo
- Un solo codice

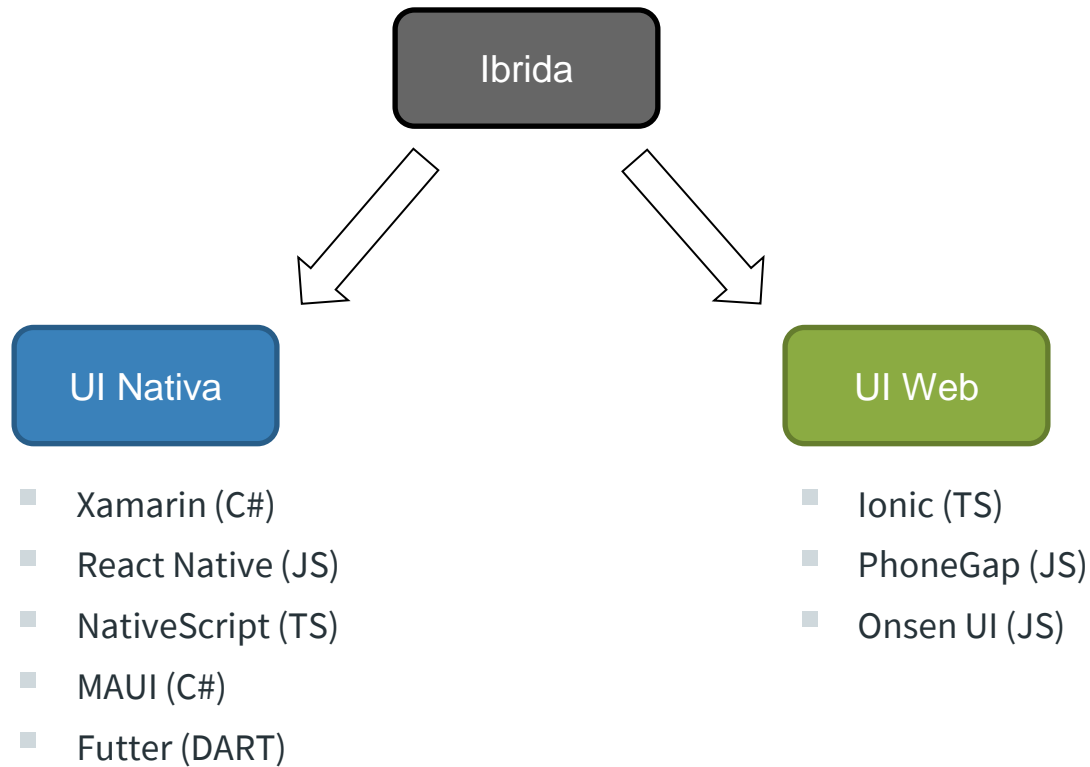
Contro:

- Poco performante
- GUI generica
- Accesso all'hardware limitato
- Non presente negli store

Tipologie ibride



Framework per sviluppo ibrido



Under the hood

AOT/JIT/Marshaling



Compilatore

AOT

ahead-of-time

La compilazione avviene una sola volta



Nativa

AOT

Ibrida

AOT/JIT

Web (PWA)

JIT

JIT

just-in-time

La compilazione avviene ad ogni avvio

- Android permette il JIT
- iOS non permette la compilazione JIT al di fuori della WKWebView

Javascript



Machine code

```
// x86_64 machine code  
movl rbx,[rax+0x1b]  
REX.W movq r10,0x100000000  
REX.W cmpq r10,rbx  
jnc 0x30d119104275 <+0x55>  
REX.W movq rdx,0x100000000  
call 0x30d118e843e0 (Abort)  
int3laddl rbx,0x1  
...
```

Bytecode

```
// V8 bytecode  
LdaSmi [1]  
Star r0  
LdaNamedProperty a0, [0], [4]  
Add r0, [6]
```

High Level Language

```
// JavaScript  
let result = 1 + obj.x;
```



Best for humans

Best for machines



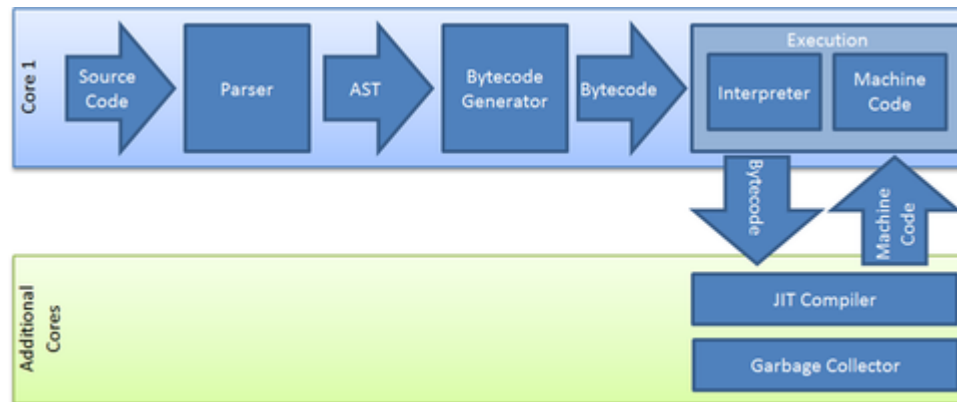
@finkel



Compilatore



V8 Engine – Compilazione JIT di un JS





“

Ma come possiamo superare la mancanza di JIT in iOS?

- ▲ No. JavaScriptCore on iOS 7+ won't be able to JIT compile for you, because iOS disallows mapping writable/executable pages of memory as a hard rule, and that's a requirement for JIT. Only
4 MobileSafari.app, Web.app and a handful of other system apps carry an entitlement that allows them to JIT compile. The new WKWebView in iOS 8 is rendered in a separate process that is
▼ allowed to JIT compile, so JavaScript in a WKWebView is faster than a UIWebView or plain
JSCContext.



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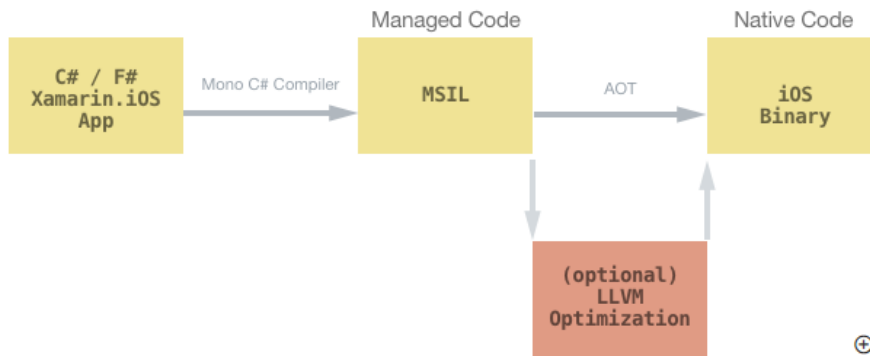
answered Jan 4 '15 at 20:52

Xamarin approach (C#)

AOT

When you compile any Xamarin platform application, the Mono C# (or F#) compiler will run and will compile your C# and F# code into Microsoft Intermediate Language (MSIL). If you are running a Xamarin.Android, a Xamarin.Mac application, or even a Xamarin.iOS application on the simulator, the [.NET Common Language Runtime \(CLR\)](#) compiles the MSIL using a Just in Time (JIT) compiler. At runtime this is compiled into a native code, which can run on the correct architecture for your application.

However, there is a security restriction on iOS, set by Apple, which disallows the execution of dynamically generated code on a device. To ensure that we adhere to these safety protocols, [Xamarin.iOS instead uses an Ahead of Time \(AOT\) compiler](#) to compile the managed code. This produces a native iOS binary, optionally optimized with LLVM for devices, that can be deployed on Apple's ARM-based processor. A rough diagram of how this fits together is illustrated below:



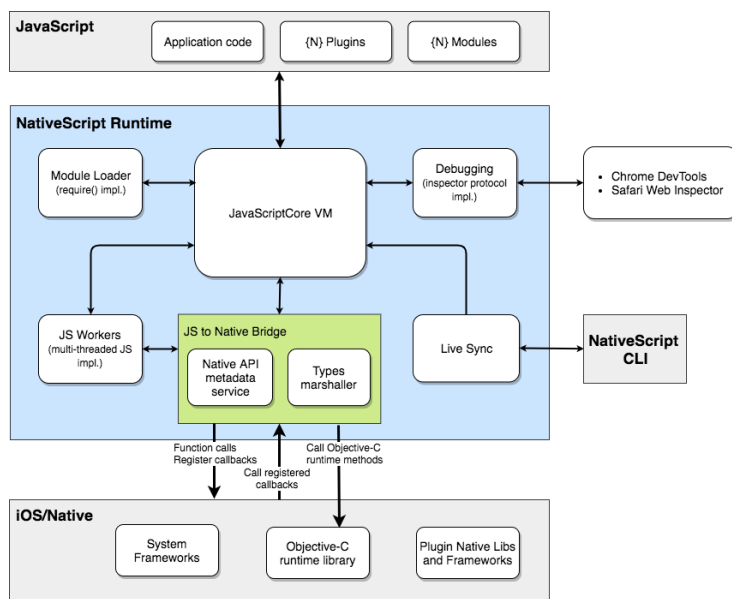
<https://docs.microsoft.com/en-us/xamarin/ios/internals/architecture>

<https://docs.microsoft.com/it-it/xamarin/ios/internals/limitations>

Come superare il limite di iOS ed usare JS?

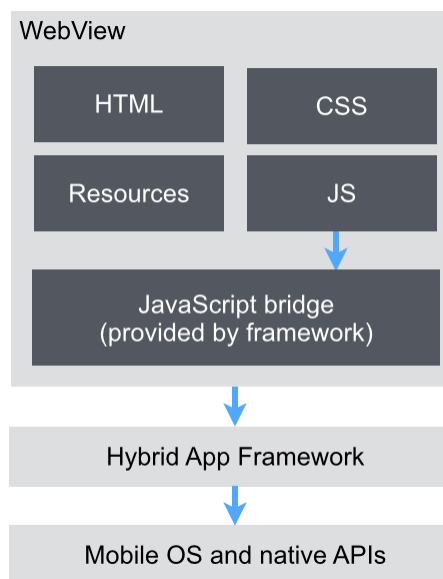
Interprete

L'applicazione viene interpretata a runtime o pre compilata



WebView

L'applicazione vive in un browser contenuto nell'app



<https://docs.nativescript.org/core-concepts/android-runtime/overview>

<https://docs.nativescript.org/core-concepts/ios-runtime/Overview>

<https://www.nativescript.org/blog/the-new-ios-runtime-powered-by-v8>

<https://v8.dev/blog/jitless>

Come superare il limite di iOS ed usare JS?

Interprete

L'applicazione viene interpretata o pre compilata

- Approccio complesso
- Performante
- UI Nativa
- Limiti nella compilazione
- Accesso hardware diretto
- Marshalling

WebView

L'applicazione vive in un browser embedded

- Approccio semplice
- Lenta
- UI Web
- Nessun limite (JIT presente)
- Limiti nell'accesso hardware

Marshalling

<https://docs.nativescript.org/runtimes/android/marshalling/overview>
<https://docs.nativescript.org/runtimes/ios/marshalling/Marshalling-Overview>

Cross-platform API

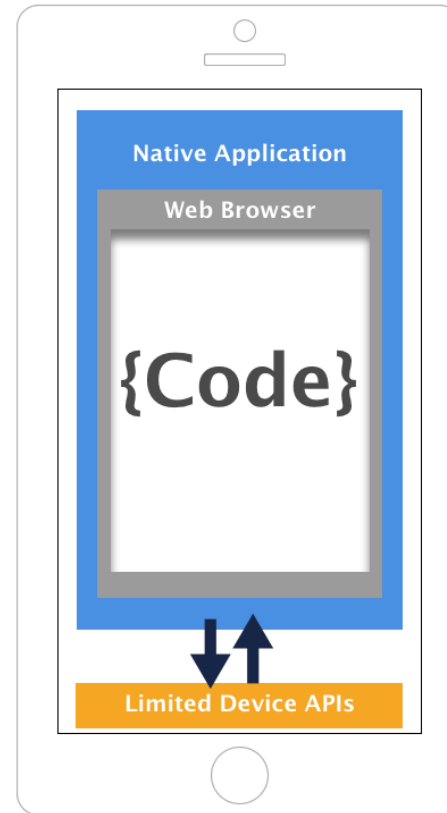
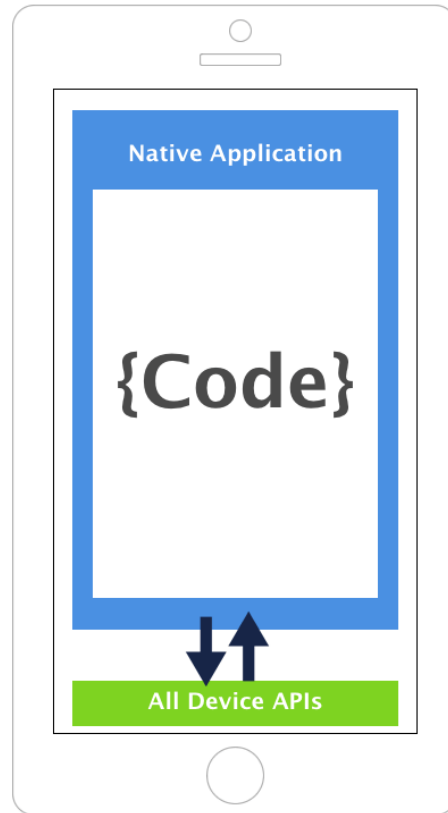


Differenze sostanziali

<https://www.nativescript.org/blog/nativescript-and-xamarin>

Truly Native (Xamarin, NativeScript)

Hybrid Apps (Cordova, PhoneGap)



Security

resources



<https://www.shodan.io/>

<https://hunter.how/>

<https://www.zoomeye.hk/>

<https://www.exploit-db.com/>

<https://www.cvedetails.com/>

<https://worldofvnc.net/>

<https://haveibeenpwned.com/>

<https://www.troyhunt.com/data-enrichment-people-data-labs-and-another-622m-email-addresses/>

