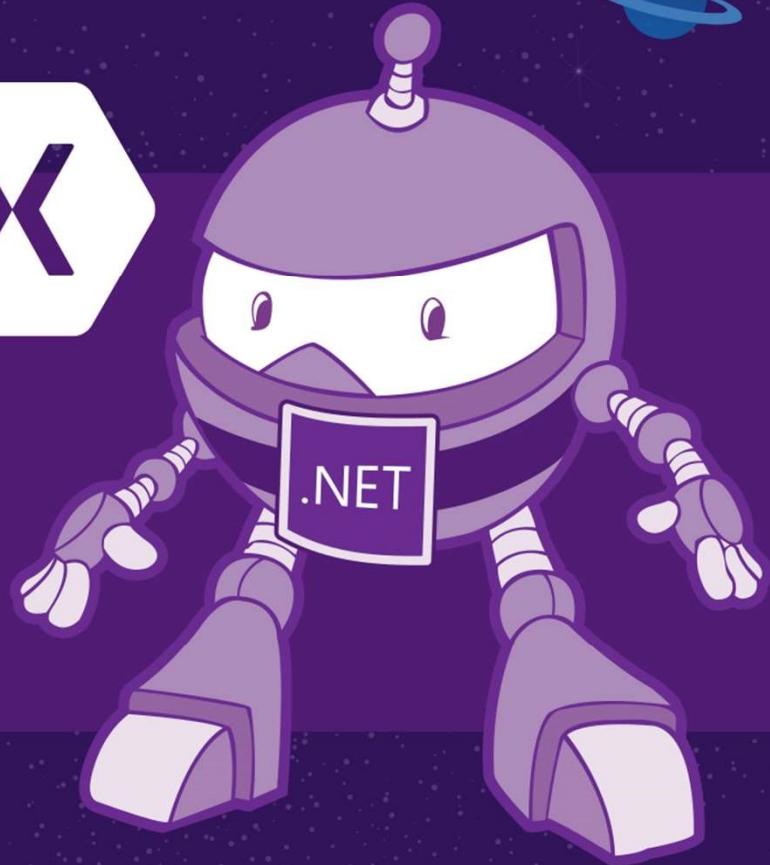


# .NET Conf

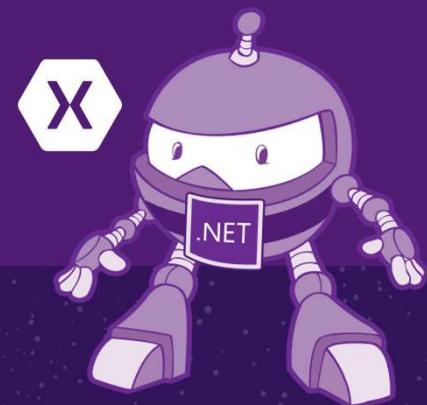
"Focus on Xamarin"



[focus.dotnetconf.net](http://focus.dotnetconf.net)

# Xamarin All the Things

Amanda Silver, CVP Program Management, DevDiv  
David Ortinau, Principal Program Manager  
Maddy Leger, Program Manager



# .NET

Your platform for building anything



Desktop



Web



Cloud



Mobile



Gaming



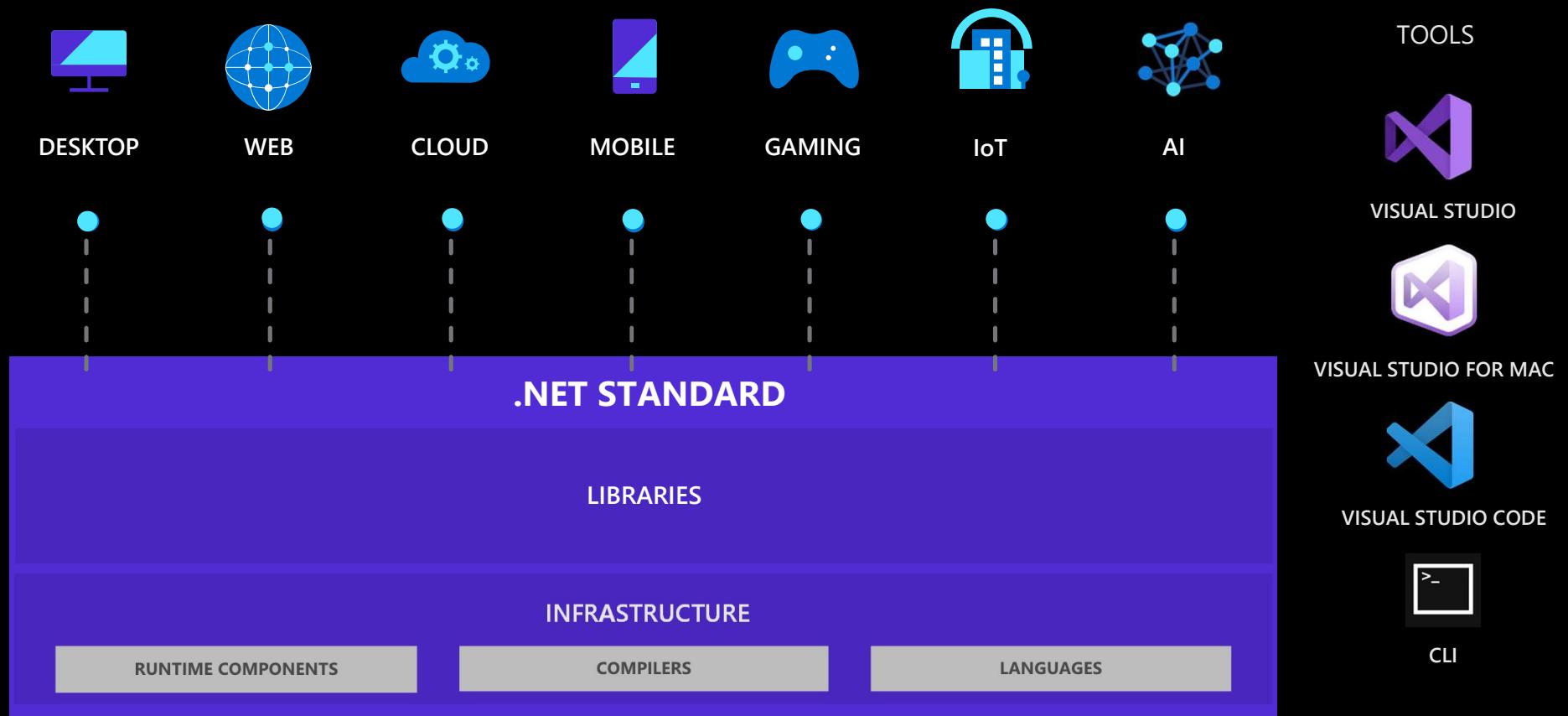
IoT



AI



# .NET – A unified platform



# .NET ecosystem momentum

+1M  
New .NET devs in last year  
in Visual Studio

Top 5  
Language on GitHub  
C#

#1 Most Loved  
Framework

.NET Core



7x  
Faster than Node.js

ASP.NET Core



Top 30  
Highest velocity OSS projects

[github.com/dotnet](https://github.com/dotnet)  
[github.com/aspnet](https://github.com/aspnet)



40%  
New to .NET are students

[dot.net download survey](https://dot.net/download/survey)

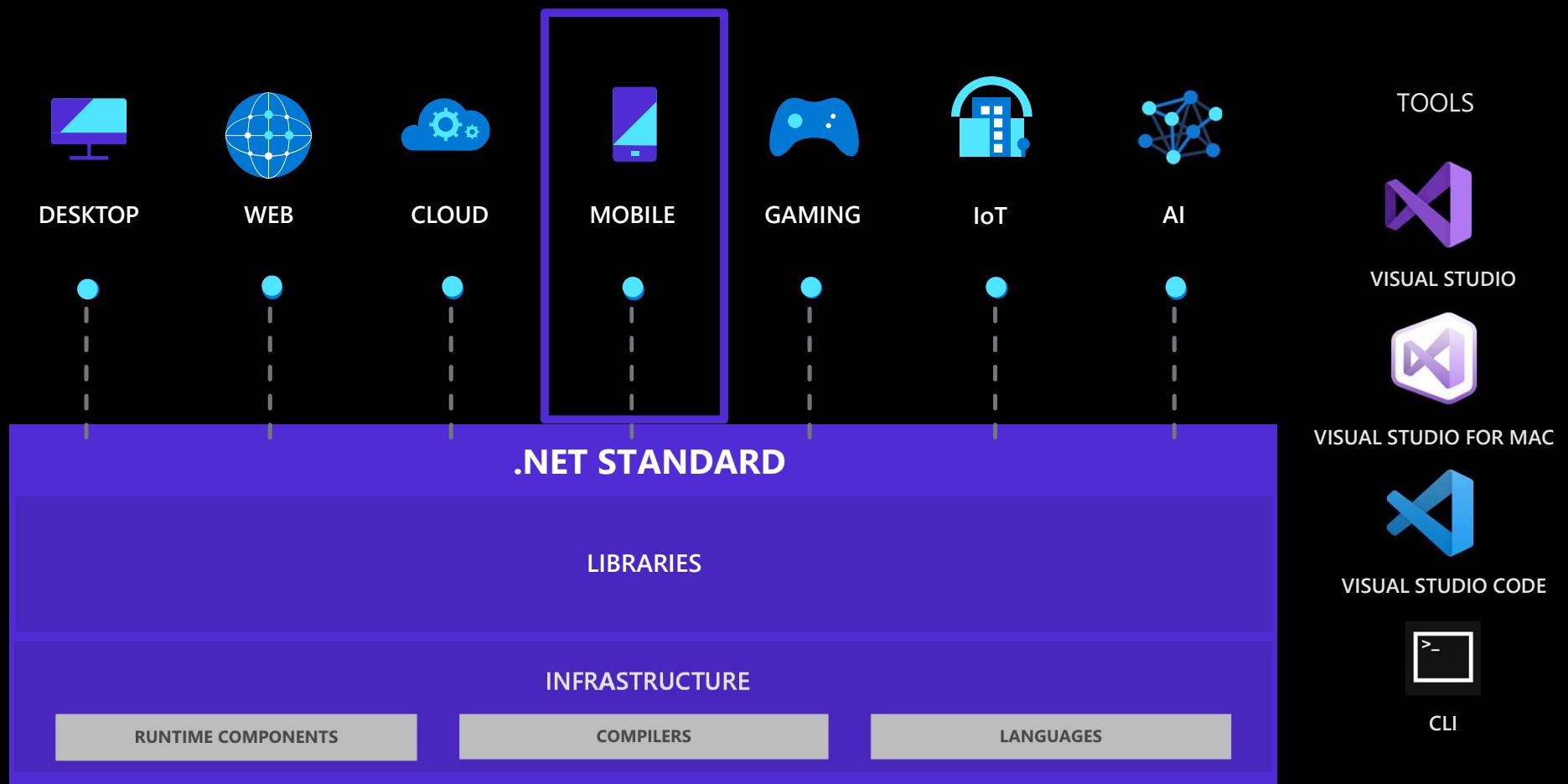
## .NET open source momentum



87%  
contributors outside Microsoft

110,000+  
accepted PRs from community

# .NET – A unified platform



With Xamarin, you can build fast,  
beautiful, native apps in less time, with  
less code, within a thriving ecosystem

# .NET mobile apps with Xamarin



## iOS & Android with C#

Native performance, native APIs,  
native UI

Build native mobile apps with  
Visual Studio



## Cross-Platform

Build cross-platform UI with  
Xamarin.Forms

Access native APIs from shared  
code with Xamarin.Essentials

Share code with .NET Standard



## Free & Open Source

Xamarin is part of .NET and  
open source on GitHub

# .NET <3 Visual Studio



# Visual Studio 2019 key focus areas

## Personal and Team Productivity

Focus on what's important

**Faster startup & install time**

New search experience

Improve your productivity

Improved debugging

CodeLens for all

Refactoring and code cleanup

Collaborate across teams

**Visual Studio Live Share**

Azure Repos pull requests in IDE

## Modern Development Support

Support modern app types

**.NET mobile with Xamarin, including Hot Reload and Hot Restart**

.NET Core development

Cloud native, serverless, containers

Be cloud-ready with Azure

Local/offline development

Secure by default (Key Vault)

Develop and publish without leaving the IDE

## Constant Innovation

Get started faster and easier

New start window

Git-first workflow

Improved new project dialog

Seamlessly upgrade

Smart assistance while you code

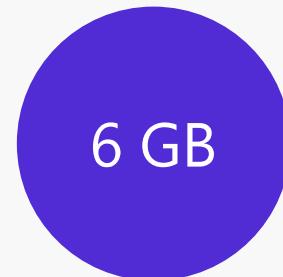
**Visual Studio IntelliCode, including Android XML and Xamarin.Forms XAML**

Production-environment debugging

Xamarin is now over 2x faster to install



Visual Studio 2017



Visual Studio 2019

23 GB

6 GB

**RELEASED**

# Xamarin Developer Productivity

## **XAML Hot Reload**

Iterate quickly on your Xamarin.Forms UIs while debugging

## **Hot Restart**

Quickly redeploy your Xamarin.Forms app without a full compile

Visual Studio version 16.5

# Some of our millions of users...



# Xamarin

Loved by developers,  
trusted by enterprise





**UPS paves the way for better  
service with faster mobile  
development using Xamarin**

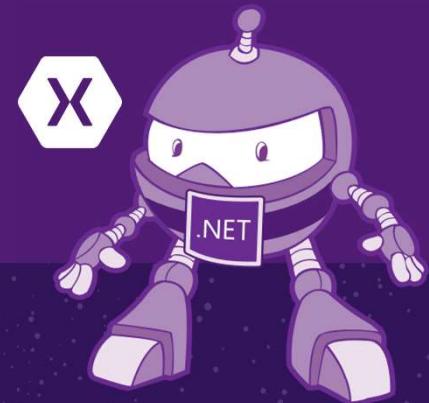


David Ortinau  
Maddy Leger

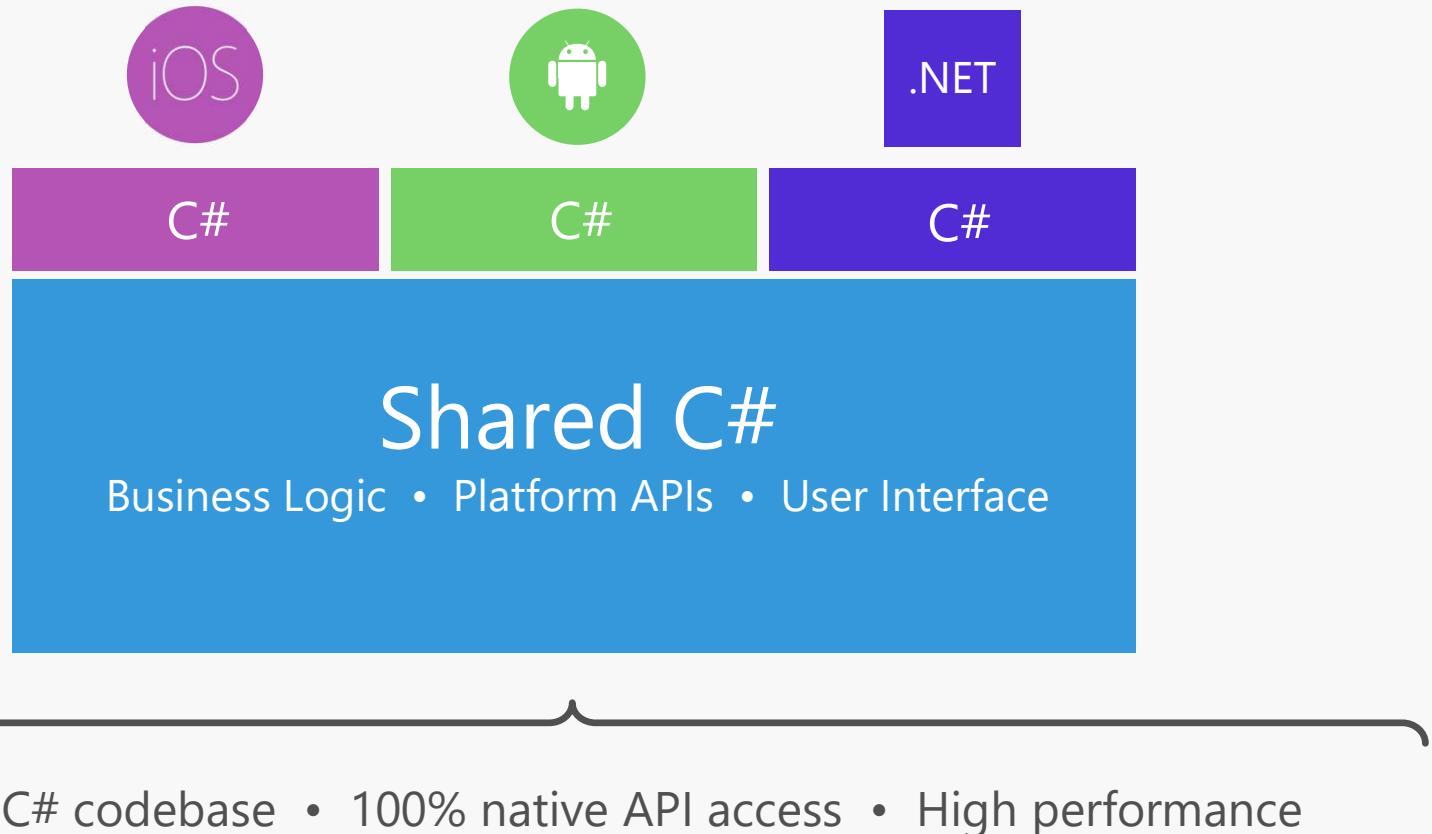
.NET



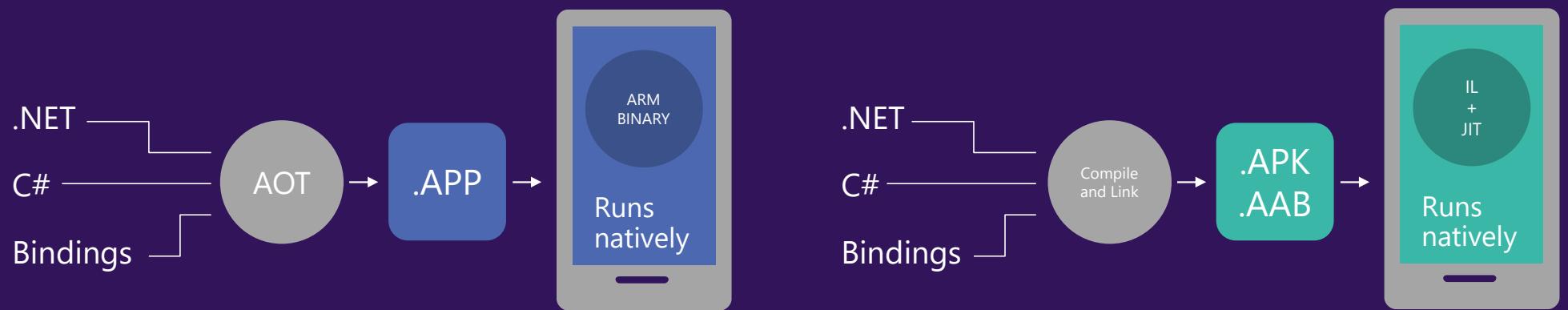
Fast, beautiful, and native



# Xamarin App Architecture



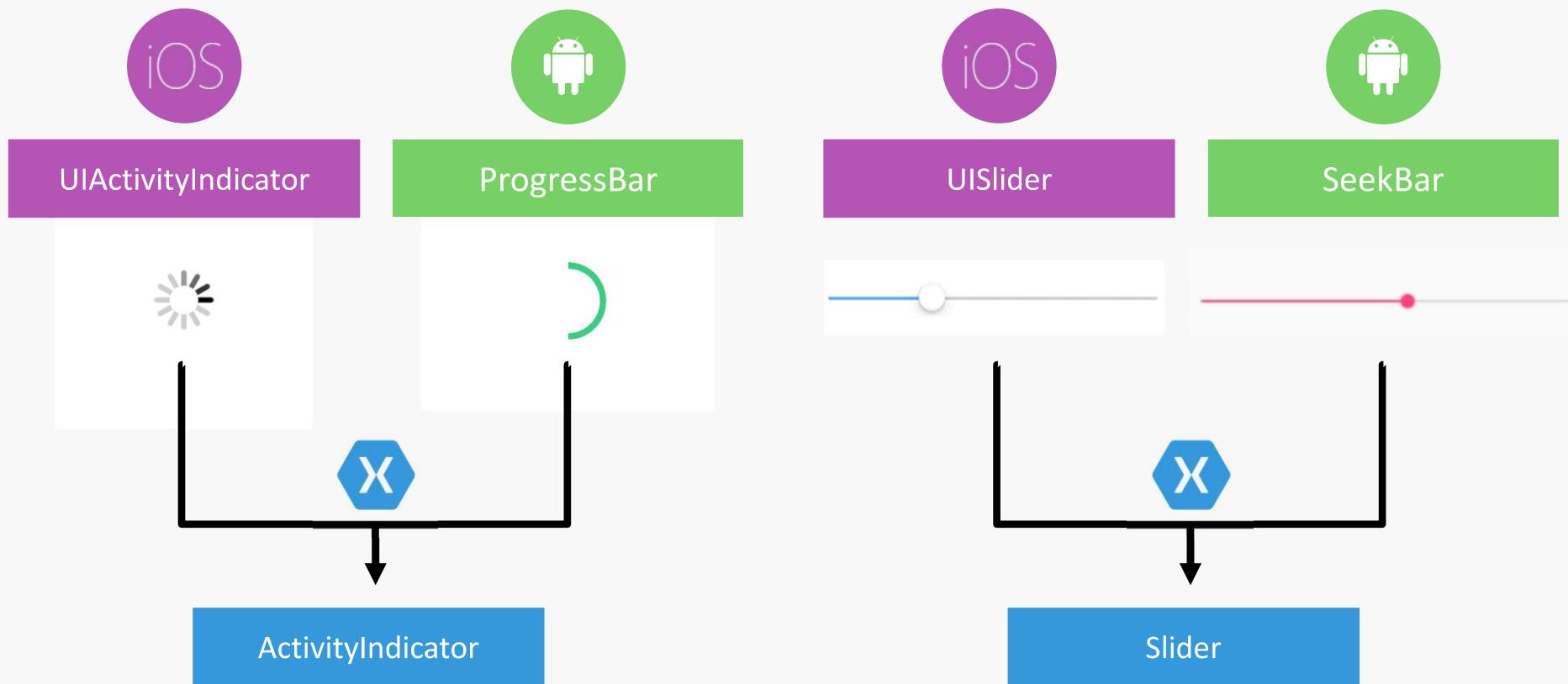
# Native execution, native performance



**Xamarin.iOS** does full Ahead Of Time (AOT) compilation to produce an ARM binary for Apple's App Store.

**Xamarin.Android** takes advantage of Just In Time (JIT) compilation on the Android device.

# Native UI, even when shared



# Native Forms: Shared UI in Native Apps

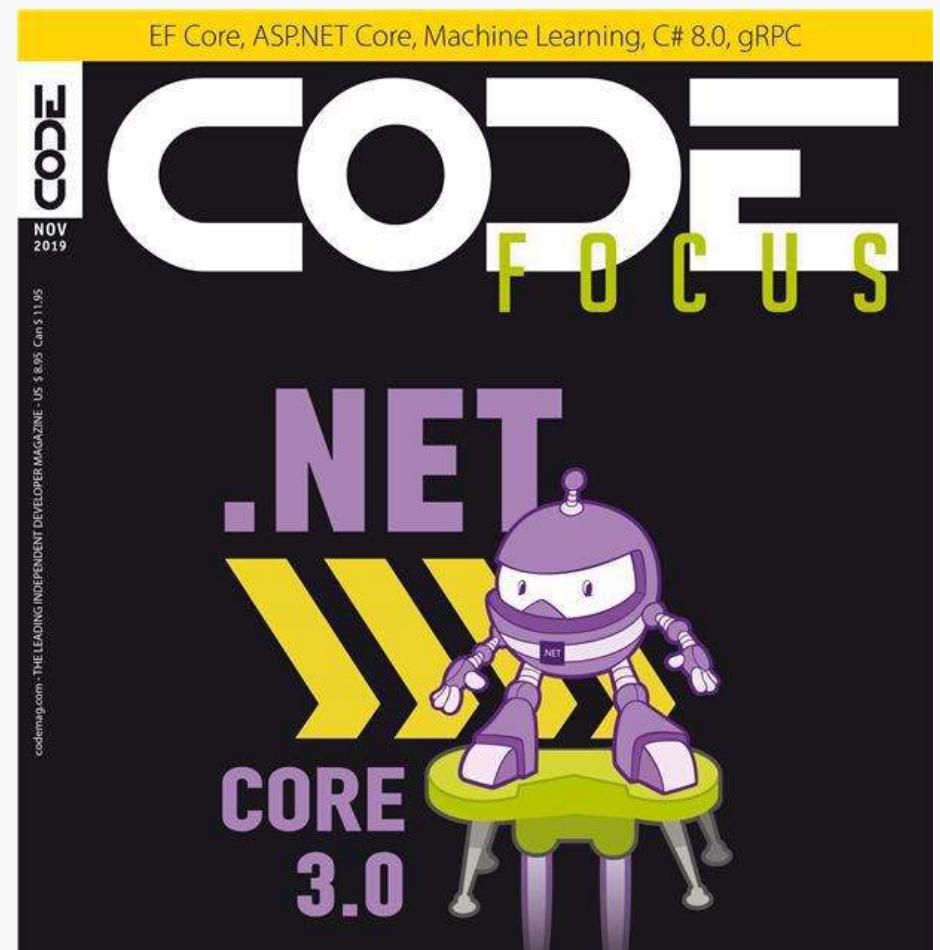
 **David Ortinau**  
@davidortinau

look what I found @rdavis\_au !!! #XamarinForms

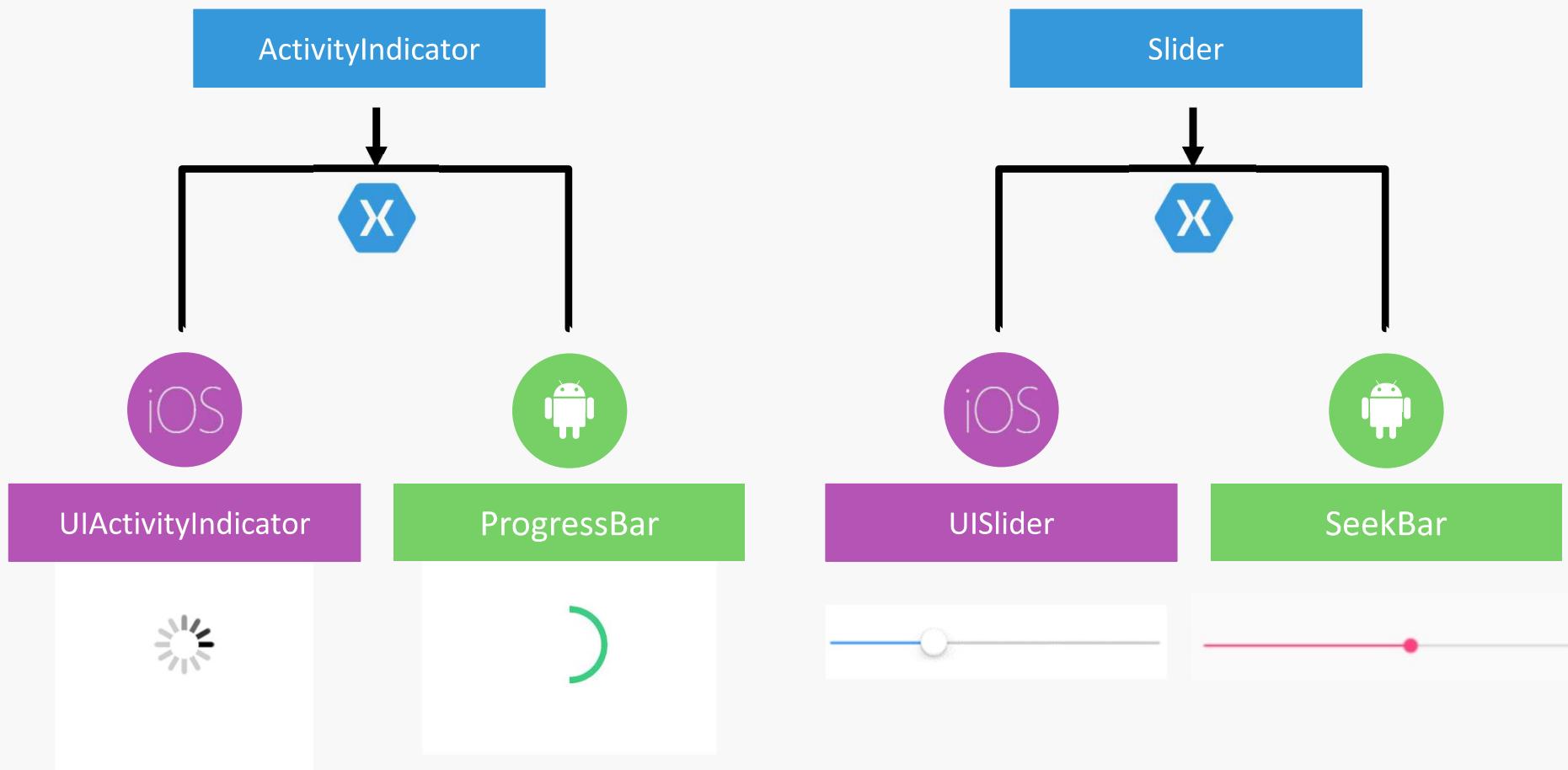


34 5:57 PM - Nov 5, 2019

[See David Ortinau's other Tweets](#)



# Native UI, even when shared



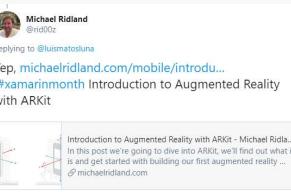
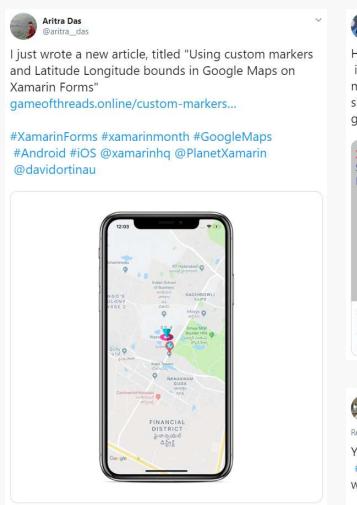
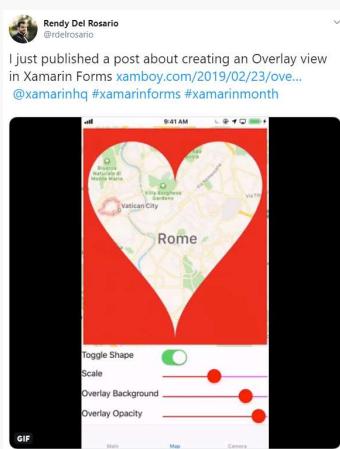
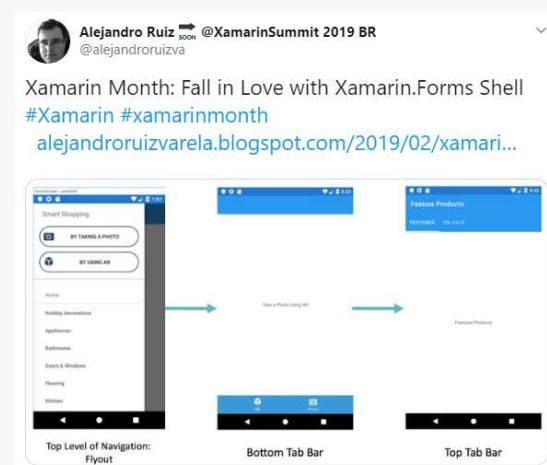
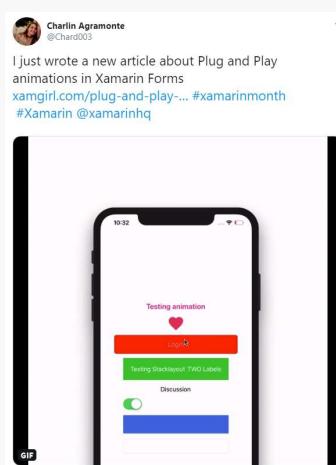
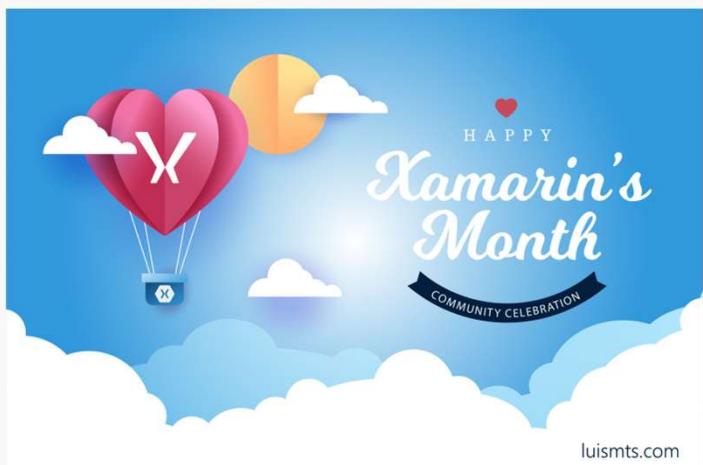
The image shows a Microsoft Edge browser window with three tabs open:

- The first tab is titled "Showcase of projects built with..." and contains a sidebar with "FILTER BY" and "RESE".
- The second tab is titled "Playing around with neumorphism..." and displays a blog post by Steven. The post title is "Playing around with neumorphism in Xamarin.Forms". It features a screenshot of a UI design with rounded corners and shadows. Below the title, it says "Posted on MARCH 3, 2020 15:09 in CODE".
- The third tab is titled "jsuarezruiz/awesome-xamarin-fc" and shows a GitHub repository page for "Awesome Xamarin Forms". The repository has 94 stars, 683 forks, and 145 issues. It includes sections for "Projects", "Wiki", "Security", and "Insights".

Below the browser, there are several screenshots of user interface designs:

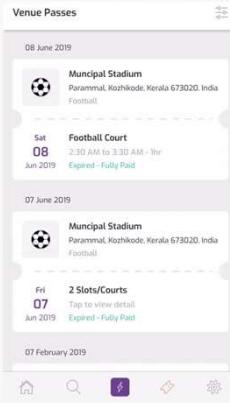
- A screenshot of a mobile application interface for "HRTBT" featuring a red button labeled "OFF" and a switch labeled "Notify about new services".
- A screenshot of a "Statistic" screen showing a pie chart and a progress bar with the text "Period: Last 30 days".
- A screenshot of a movie rating interface for "Zootopia" (2016) with a rating of 96% Audience and 96% Tomatometer.
- A screenshot of a "Cast" section for "The Good Dinosaur" (2016) featuring a photo of Ginnifer Goodwin as Judy Hopps.
- A screenshot of a "Reviews" section for "The Good Dinosaur" (2016) with a green "ADD YOUR RATING" button.
- A screenshot of a "News" section for "The Good Dinosaur" (2016).
- A screenshot of a "Media" section for "The Good Dinosaur" (2016).
- A screenshot of a "Bot Framework" section for "Azure App | Microsoft" with links to "Azure Cognitive Services" and "Azure DevOps".
- A screenshot of a "Azure DevOps" section for "Azure App | Microsoft".
- A screenshot of a "Bloomin' Brands Inc." section for "Azure App | Microsoft" with a note about finding nearby locations.

On the right side of the image, there is a dark sidebar with the heading "Kym's Blog" and the text "ms, Connected Apps and whatever else might be on my mind." It also features a "XAMARIN" section titled "Xamarin.Forms UI Challenges - RottenUI" with a description of the challenge and a link to "Design This is a". At the bottom right, there is a profile picture of Kym Phillipotts.

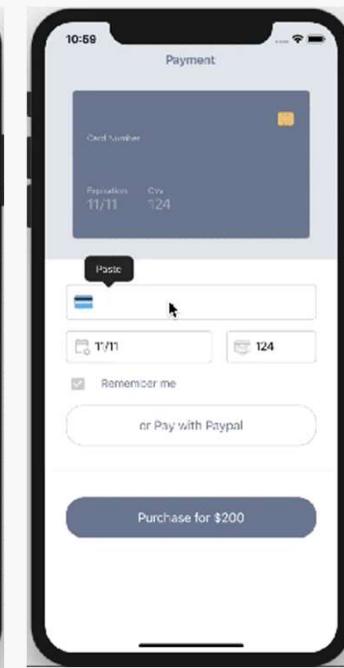
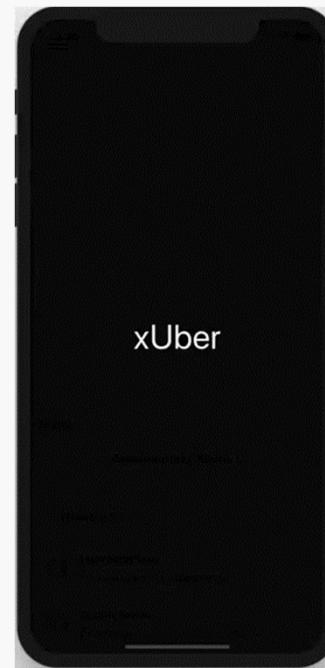
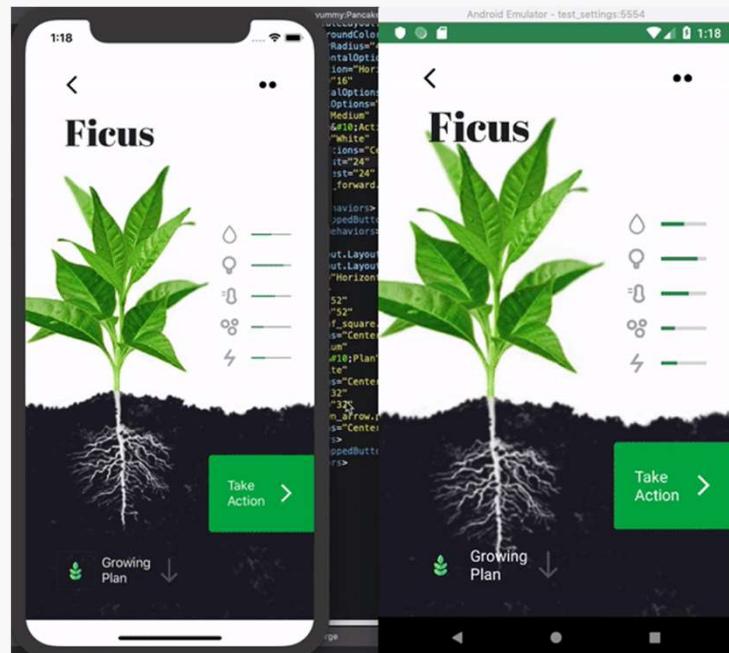


#MVPBuzz





## FEATURED BLOG #XAMARINUIJULY



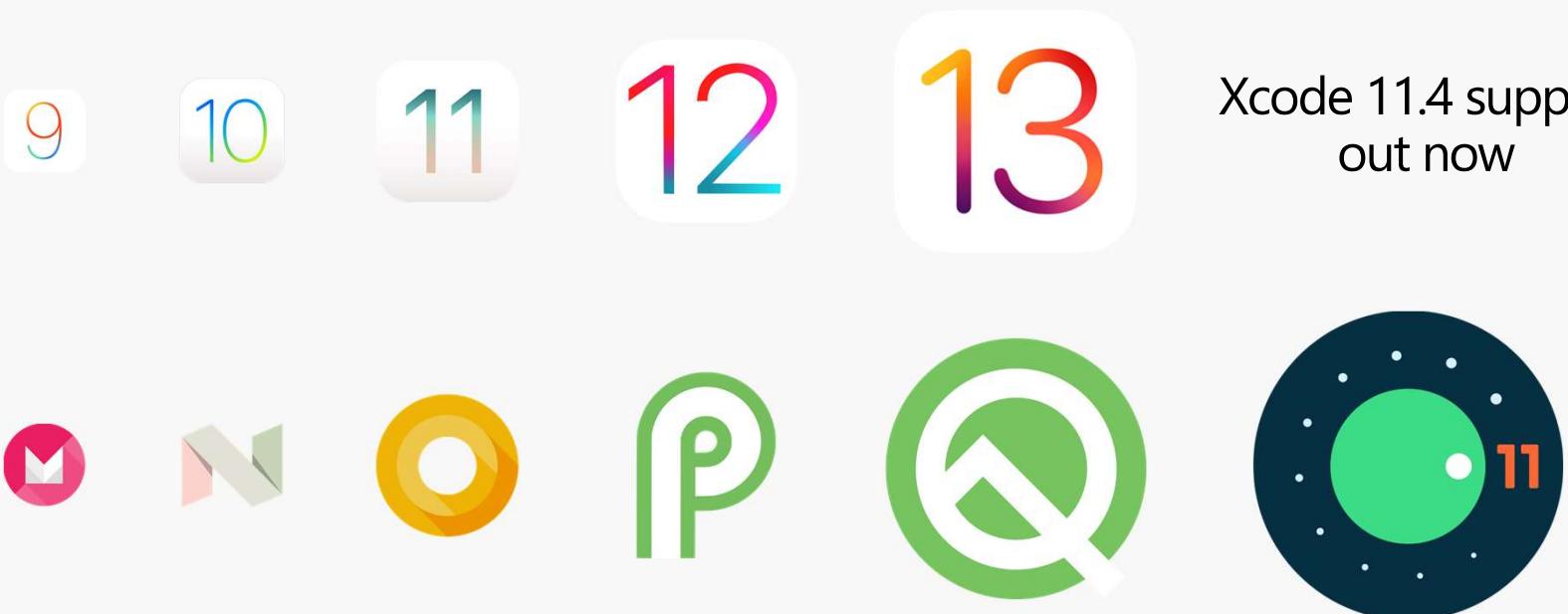
# Awesome Xamarin Component Vendors







# In Step and Up to Date

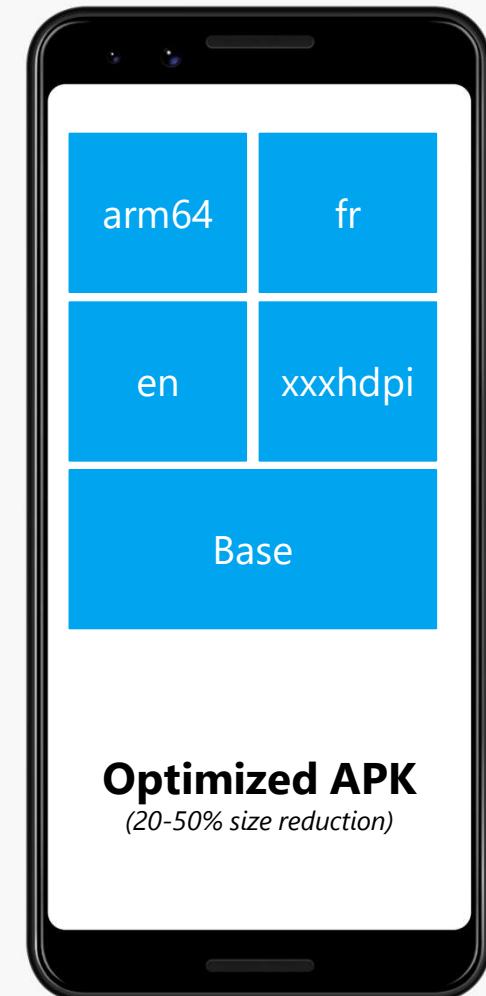


Xcode 11.4 support  
out now

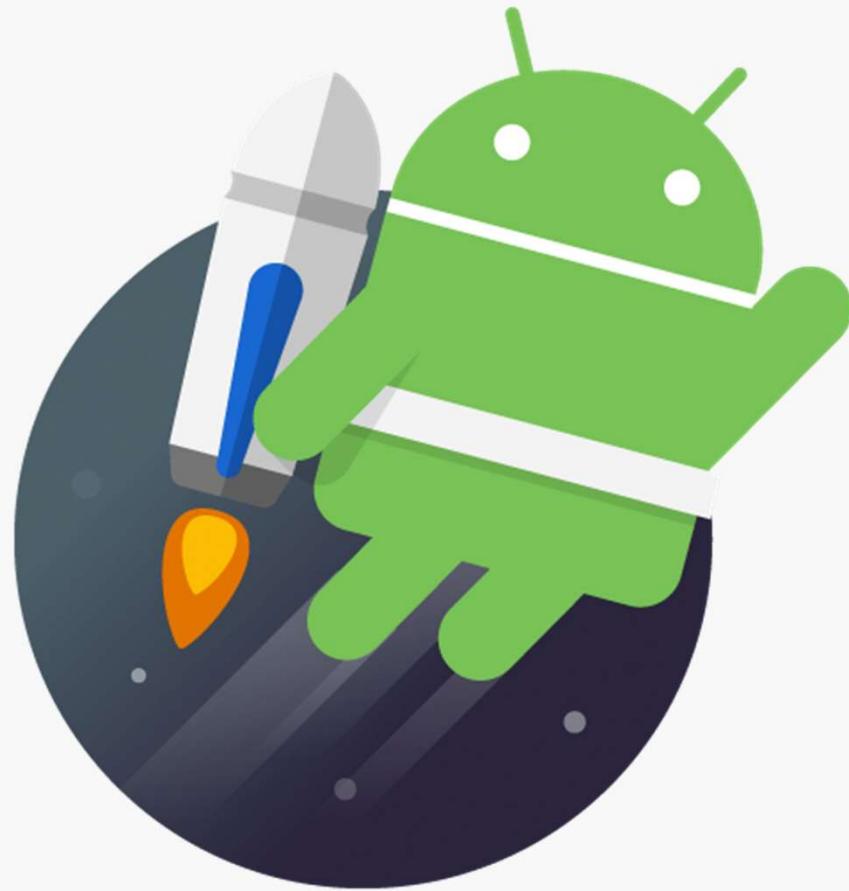
Android 11 support  
coming to Xamarin  
in 16.6 Preview 2

# Android App Bundles

- Specific Languages
- Proper Resource Screen Densities
- Best Match ABIs



# AndroidX

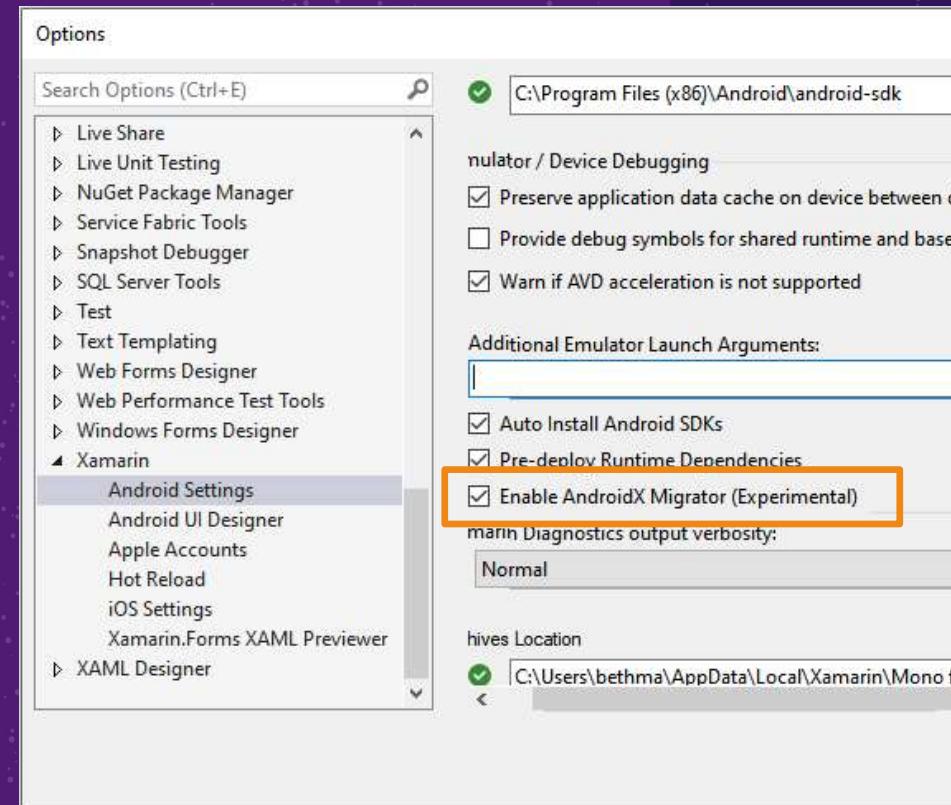


PREVIEW

# AndroidX Migrator

Migrate your Android projects seamlessly

Visual Studio version 16.5



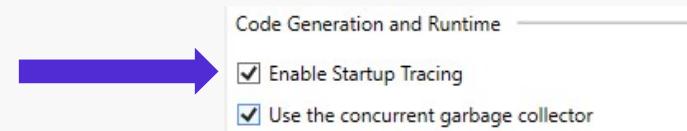
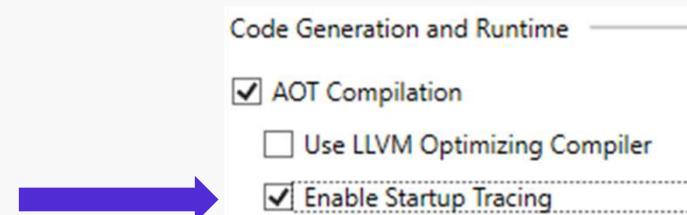
# Innovations beyond native

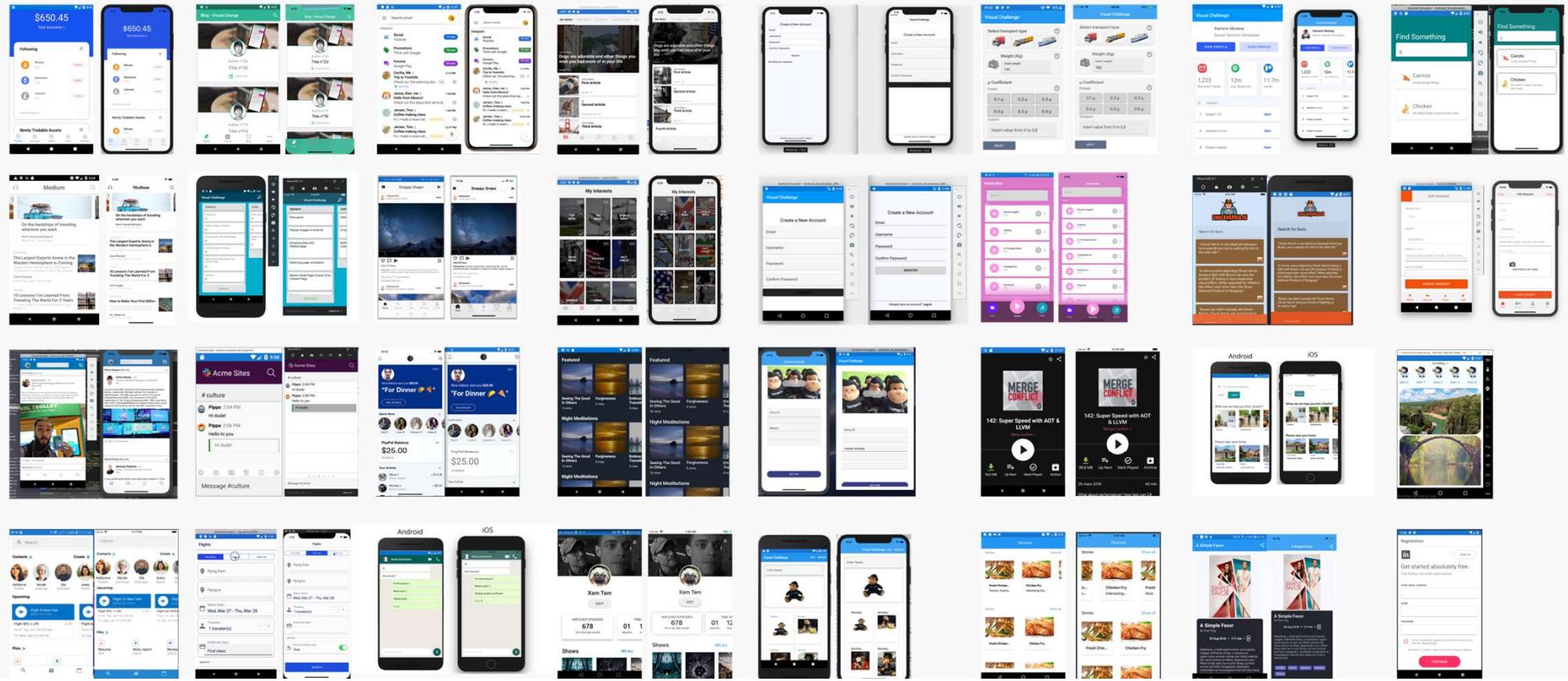
.NET



# Android Startup Tracing

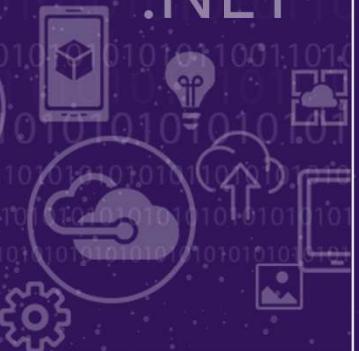
Type	Startup Speed	APK Size
Performance	Fast	Medium



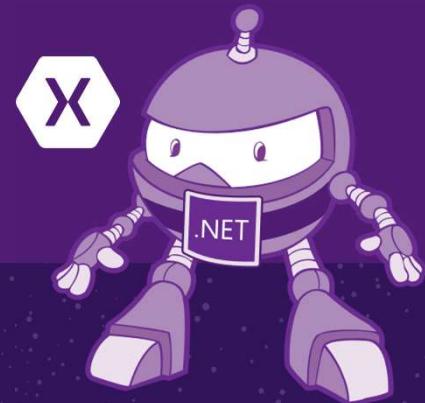


# Demo: Beautify Your Apps

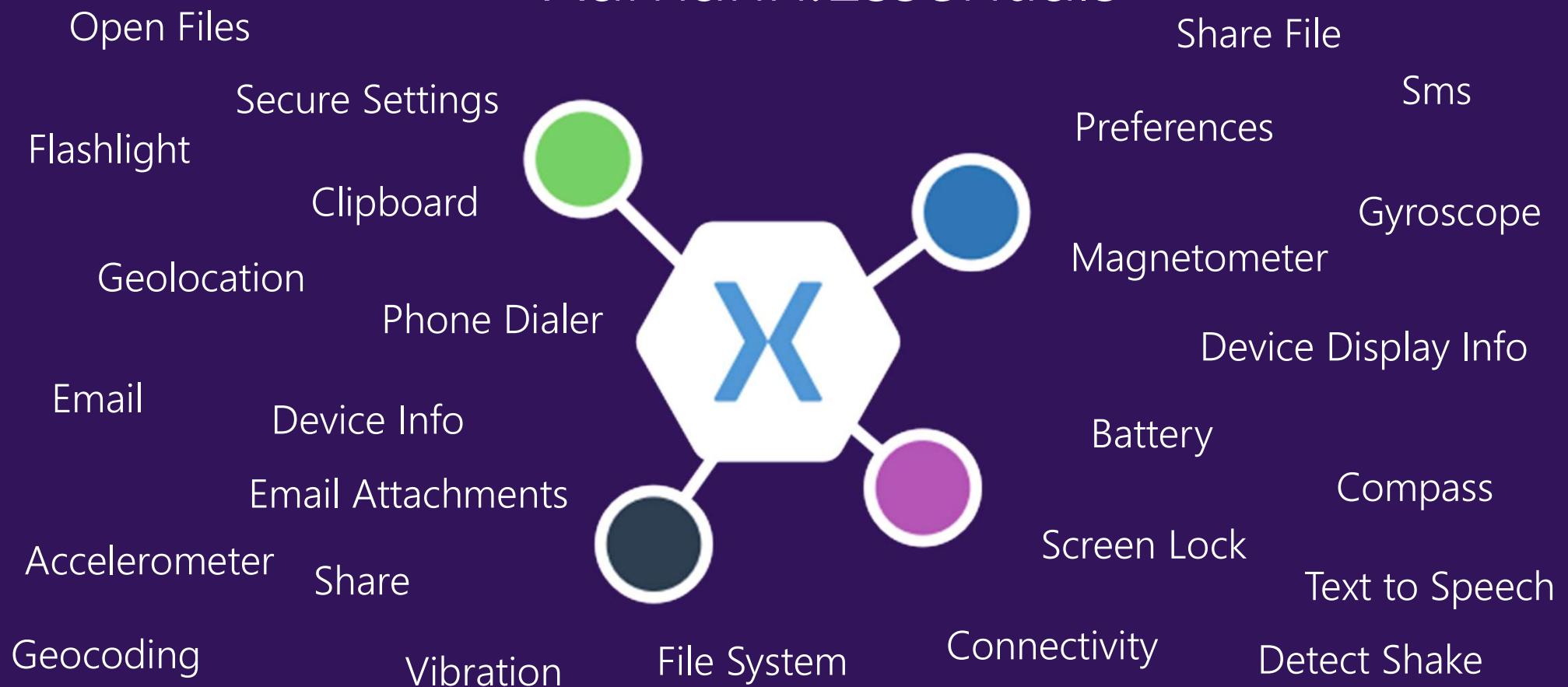
.NET



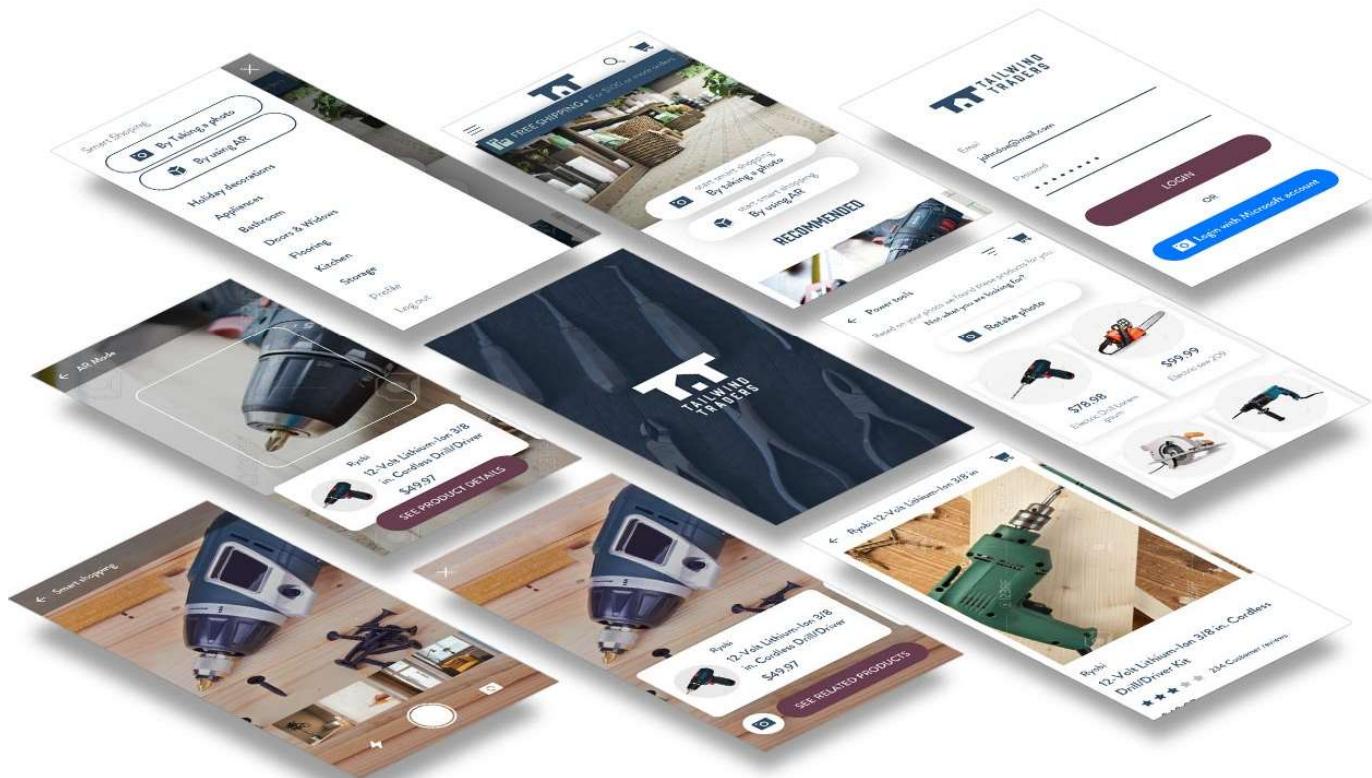
Less time, less code



# Xamarin.Essentials



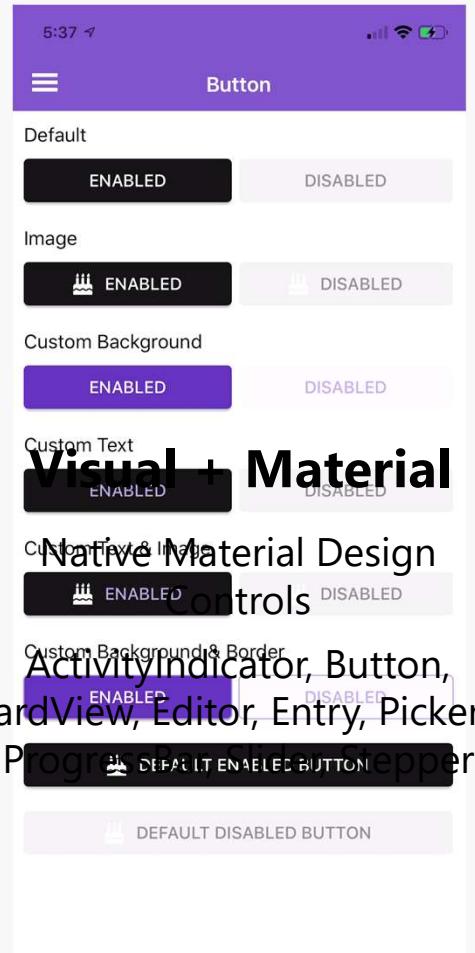
# Xamarin.Forms



# A Year in Xamarin.Forms



Simplified Tabs and Flyout Menu  
URI Navigation from Anywhere  
Performant Renderer Architecture



Native Material Design  
Controls  
ActivityIndicator, Button,  
CardView, Editor, Entry, Pickers,  
ProgressBar, Slider, Stepper



World Cities  
Mexico City 60° New York 73°  
Los Angeles 70° Toronto 75°  
Chicago 66° Houston 78°  
Havana 72° Manila 77°  
Ecatepec 60° Philadelphia 71°  
Sao Paulo 55° Rio de Janeiro 61°  
Bogota 54° Rio de Janeiro 65°  
Infinite Loading  
Optimized Caching

# A Year in Xamarin.Forms

Accessibility

BindableLayout EmptyView

C# Markup

Character Spacing

CheckBox

FontImageSource

GIF Animations

HTML Label

IndicatorView

Maps+

MediaElement

Modal Prompts

RadioButton

RefreshView

RelativeSource Binding

Shell Modals

SourceLink

VisualStateManager Target

WKWebView

+ Much More!

# Flyout made simple

```
<MasterDetailPage xmlns="http://xamarin.com/schemas/2014/
    xmlns:x="http://schemas.microsoft.com/winfx/2
    xmlns:d="http://
    xmlns:mc="http    menuItems = new List<Home
    mc:Ignorable="(
        xmlns:views="c
        x:Class="App6.
    <FlyoutItem
        <ShellContent
            <ShellContent
                <MasterDetailPage.Master
                    <MasterDetailPage.Master
                        <FlyoutItem
                            <FlyoutItem
                                <MasterDetailPage.Deta
                                    <MasterDetailPage.Deta
                                        <NavigationPage>
                                            <NavigationPage>
                                                <OnPlatform
                                                    <OnPlatfor
                                                        <On Platfor
                                                            </On Platfor
                                                        </On Platform
                                                    </OnPlatform
                                                </NavigationPage>
                                                <x:Arguments>
                                                    <views:Iter
                                                        </x:Arguments>
                                                    </NavigationPage>
                                                </MasterDetailPage.Deta
                                            </MasterDetailPage>
                                            </MasterDetailPage>
```

```
public partial class MainPage : MasterDetailPage
{
    Dictionary<int, NavigationPage> MenuPages = new Dictionary<int, NavigationPage>();
    public MainPage()
    {
        InitializeComponent();

        MasterBehavior = MasterBehavior.Popover;

        MenuPages.Add((int)MenuItemType.Browse, (NavigationPage)Detail);
    }

    public async Task NavigateFromMenu(int id)
    {
        if (!MenuPages.ContainsKey(id))
        {
            switch (id)
            {
                case (int)MenuItemType.Browse:
                    MenuPages.Add(id, new NavigationPage(new ItemsPage()));
                    break;
                case (int)MenuItemType.About:
                    MenuPages.Add(id, new NavigationPage(new AboutPage()));
                    break;
            }
        }

        var nextPage = MenuPages[id];

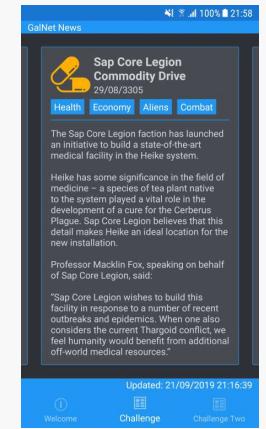
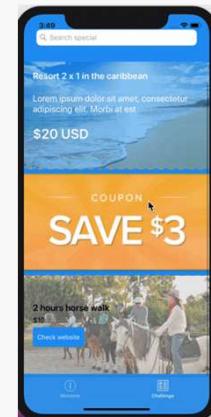
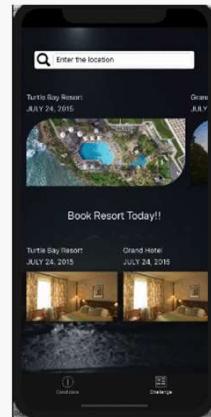
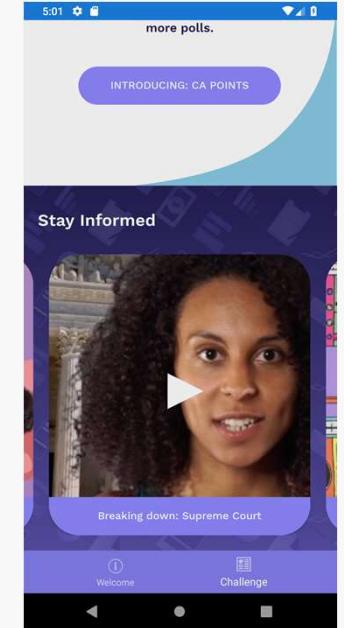
        if (newPage != null && Detail != nextPage)
        {
            Detail = nextPage;

            if (Device.RuntimePlatform == Device.Android)
                await Task.Delay(100);

            IsPresented = false;
        }
    }
}

</StackLayout>

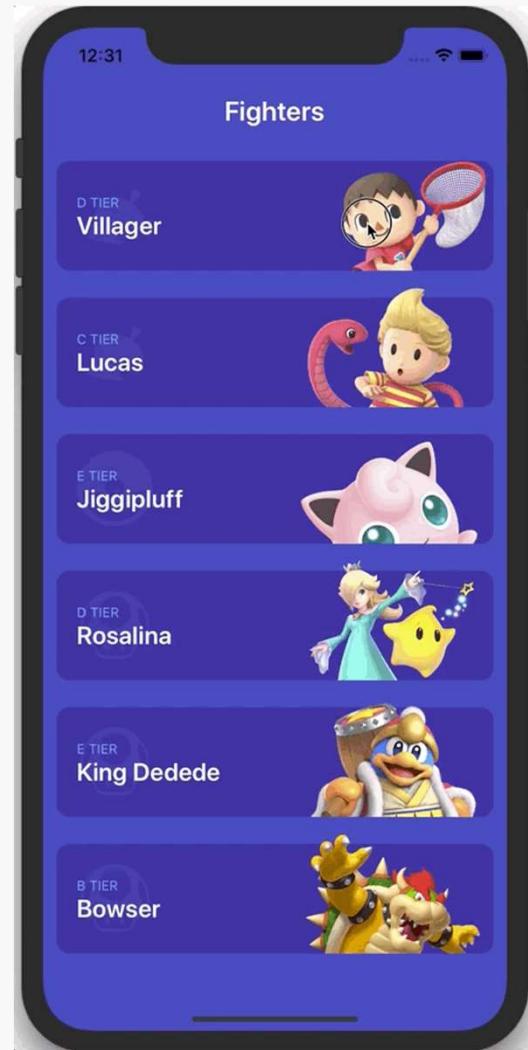
</ContentPage>
```



# CarouselView

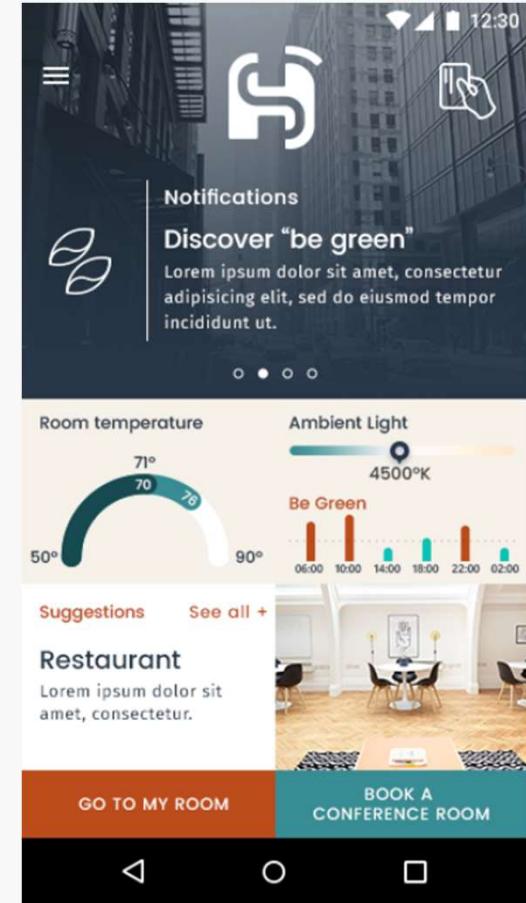
# Xamarin.Forms 4.5.0

- SwipeView
- VisualStateManager Target
- StateTriggers
- Media Element
- Custom Embedded Fonts
- Platform Specifics
  - Image location
  - Picker UpdateMode
  - Android Back Button Color



# Faster builds for faster development

Step	VS 2017 (15.8)	VS 2019 (16.0)	Delta
First Build	01:04.20	00:50.13	-21.95%
Incremental Build (XAML Change)	00:10.62	00:07.47	-29.66%
Deploy (XAML Change)	00:09.03	00:04.44	-50.83%



# XAML Hot Reload for Xamarin.Forms

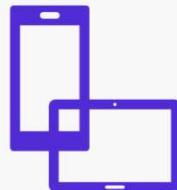
Debug your app, make a change, and hit save. See your changes instantly.



[aka.ms/XAMLHotReloadDocs](http://aka.ms/XAMLHotReloadDocs)



No setup or code changes



Android or iOS



Intelligent and resilient



Interact with your real data



Emulator, Simulator, or Device

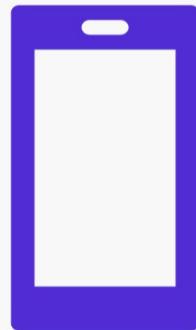


Works with custom controls, third party libraries and frameworks, Shell, resources, and more!

# Xamarin Hot Restart

Restart your app with your changes, and without waiting for packaging and deployment.

iOS Device



Debugger

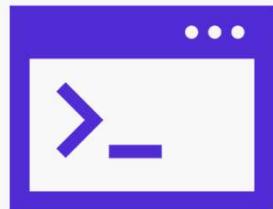
Visual Studio 2019



[aka.ms/HotRestartDocs](https://aka.ms/HotRestartDocs)

# Android Apply Changes

Restart your app using native Android development technology in Visual Studio.



XML Changes

Package diff



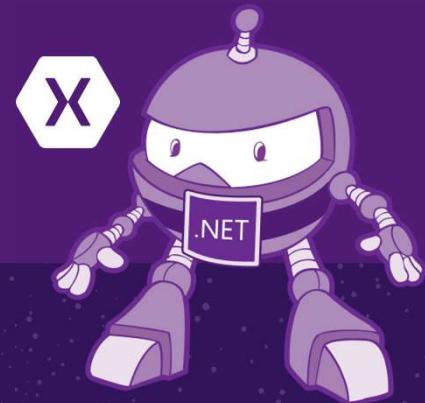
Running Android app  
(Activity restarts)

# Build less, do more

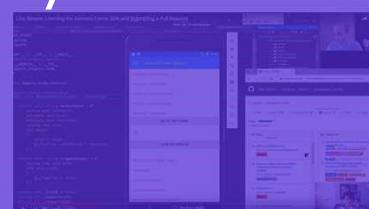
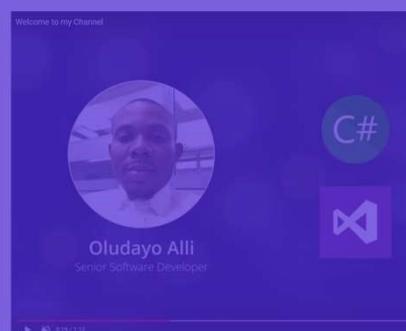
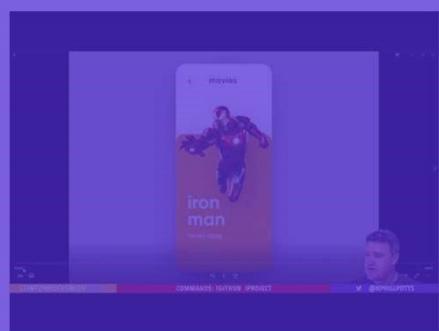
.NET



# Celebrating you!



# aka.ms/xamstreamers



Xamarin Guy  
3.1K subscribers

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Uploads PLAY ALL

SORT BY

Video Title	Views	Last Updated
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Xamarin Forms VLC Video Player Tutorial 40	758 views	4 weeks ago
Xamarin forms Expendable List View Highlighted Color...	738 views	1 month ago
Xamarin Forms Android List View Highlighted Color...	518 views	1 month ago
Xamarin forms TIMER from 0 Seconds #Tutorial 26	113 views	1 month ago
Xamarin Forms Android Start Up Time & Start UP...	429 views	1 month ago
Xamarin Forms Android Customizing the Navigation Bar	302 views	1 month ago
Xamarin Forms Shell Page Customization with Icons a...	448 views	1 week ago
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Xamarin forms Expendable List View Highlighted Color...	738 views	1 month ago
Xamarin Forms Android List View Highlighted Color...	518 views	1 month ago
Xamarin forms TIMER from 0 Seconds #Tutorial 26	113 views	1 month ago
Xamarin Forms Android Start Up Time & Start UP...	429 views	1 month ago
Xamarin Forms Android Customizing the Navigation Bar	302 views	1 month ago



Xamarin Developers  
43.3K subscribers

HOME VIDEOS PLAYLISTS COMMUNITY CHANNELS ABOUT

Introducing the New Xamarin Developers YouTube Channel

We are excited to launch our brand new Xamarin Developers YouTube channel! Here you will find fresh content on building cross-platform mobile apps directly from the Xamarin team here at Microsoft.



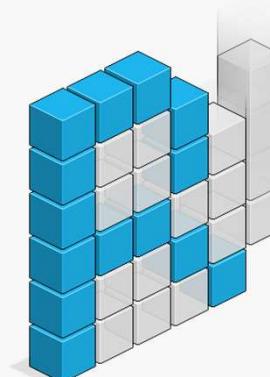
## Frameworks



MVVMCross



Uno



ReactiveUI



Reactive Extensions



Prism



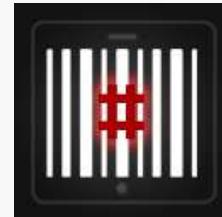
# Libraries & Tools



Cognitive Services



Azure Active  
Directory B2C



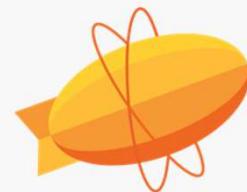
Zxing  
Barcode  
Scanning



Akavache



Gorilla  
Player



Zeplin



Thank you!



# .NET

Your platform for building anything



Desktop



Web



Cloud



Mobile



Gaming



IoT



AI



Ask your questions LIVE on Twitter

#dotNETConf



If we select your question, we'll send  
you a free Xamarin plush monkey!

