

State of .NET

Windows 11 for Developers

Markus Egger

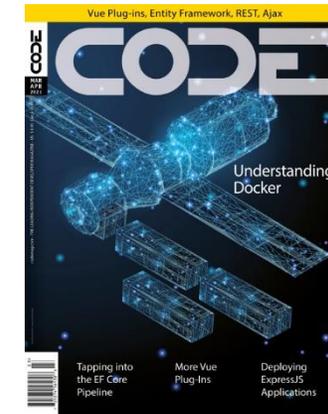
President and Chief Software Architect

CODE Magazine & Consulting

Kicking Things Off

Jim Duffy

- Director of Business Development
CODE Magazine & Consulting
- Former Developer – Drawn to the Dark Side: Now Responsible for
Marketing & Business Development
- jduffy@codemag.com / [My Bio](#)
- International Author and Speaker
- Former Microsoft RD (Regional Director) 9 years
- Former 11 time Microsoft Most Valuable Professional (MVP)
- Twitter: @jmduffy



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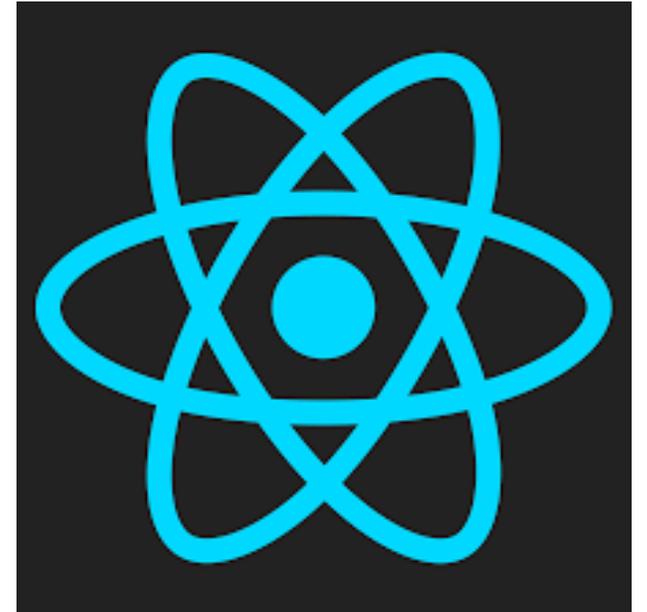


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- Want to write for us?

<https://www.codemag.com/Write>

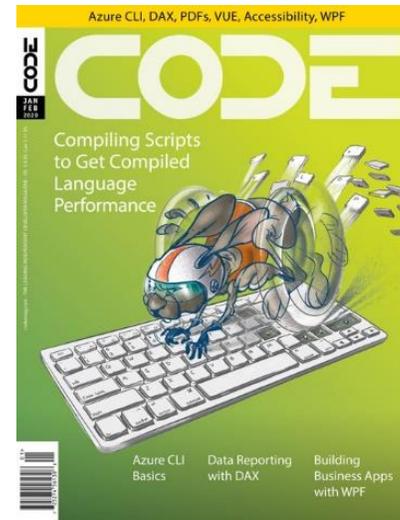
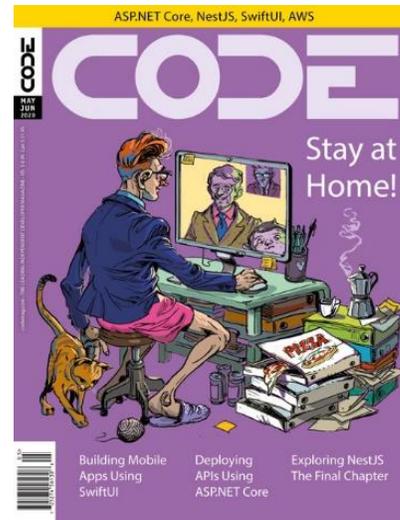
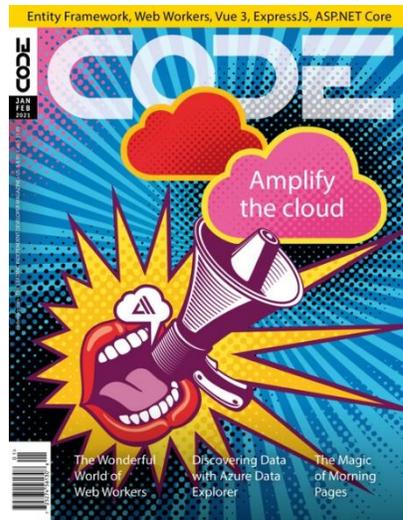
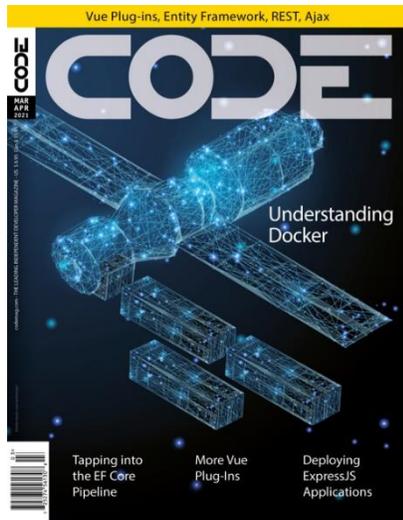
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* Required

1. Full Name *

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THIS SLIDE WILL BE REPEATED AT THE END AND SURVEY LINK REPEATED IN THE CHAT WINDOW!

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 - <https://www.codemag.com/StateOfDotNet>
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Recent Event Recordings

State of .NET - State of DevOps

3/31/2021



State of .NET - Windows Desktop Development in .NET 5

2/24/2021



State of .NET - Blazor Web Development with .NET 5 - with Markus Egger

1/27/2021



State of .NET - .NET 5 In-Depth (.NET Conf Recap)

11/18/2020



About the Presenter

- **Markus Egger**
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EPS Software Corp. (dba CODE Consulting)
- Publisher – CODE Magazine
- International Author and Speaker
- Microsoft RD (Regional Director)
- Microsoft MVP 1995-2019
- [Email: markus@codemag.com](mailto:markus@codemag.com)
- Twitter: @markusegger



Agenda

- What's New in Windows 11?
- What's New for Developers in Windows 11?

Windows 11

Windows 11

- Windows 11 is the next version of Windows
 - Originally thought of as Windows 10 – H2 2021
- Now available as a preview
 - Expected to release October 20th
- The most obvious difference is a refresh of the UI
- However, there are also substantial improvements and new additions under the hood

A Lap Around Windows 11



A Lap Around Windows 11

- New, rounded, soft UI
- New Task Bar and Start Menu
- Standard features, like Settings received a facelift
- New Windows Explorer
- New UI Snapping
- Widgets
- ...

A More Polished UI (*IMO)

Settings

Home

Find a setting

Apps

- Apps & features
- Default apps
- Offline maps
- Apps for websites
- Video playback
- Startup

Apps & features

App Name	Size	Installation Date
JetBrains ReSharper Ultimate in Visual Studio Ent...	230 MB	12/12/2020
Kindle AMZN Mobile LLC	42.7 MB	12/27/2016
Mail and Calendar Microsoft Corporation	35.2 MB	5/5/2021
Maps Microsoft Corporation	3.82 MB	5/24/2021
Microsoft .NET Core 1.0.1 - SDK 1.0.0 Preview 2-0...	170 MB	12/12/2020
Microsoft .NET Core 1.0.1 - SDK Preview 4 (x64)	239 MB	12/12/2020
Microsoft .NET Core 1.0.1 - VS 2015 Tooling Previ...	38.2 MB	12/12/2020
Microsoft .NET Core 1.0.3 - SDK RC 4 (x64)	381 MB	12/12/2020
Microsoft .NET Core SDK - 2.1.101 (x64)	464 MB	12/12/2020
Microsoft .NET Core SDK - 2.1.104 (x64)	464 MB	12/12/2020
Microsoft .NET Framework 4.5 Multi-Targeting Pack	83.7 MB	6/9/2015
Microsoft .NET Framework 4.5.1 Multi-Targeting Pa...	98.8 MB	6/9/2015
Microsoft .NET Framework 4.5.1 Multi-Targeting Pa...	101 MB	6/9/2015

Settings

Markus Egger
megger@eps-software.com

Find a setting

System

Bluetooth & devices

Network & internet

Personalization

Apps

Accounts

Time & language

Gaming

Accessibility

Privacy & security

Windows Update

Apps > Apps & features

Choose where to get apps: Anywhere

Share across devices: Continue app experiences on other devices connected to your account

More settings

App list

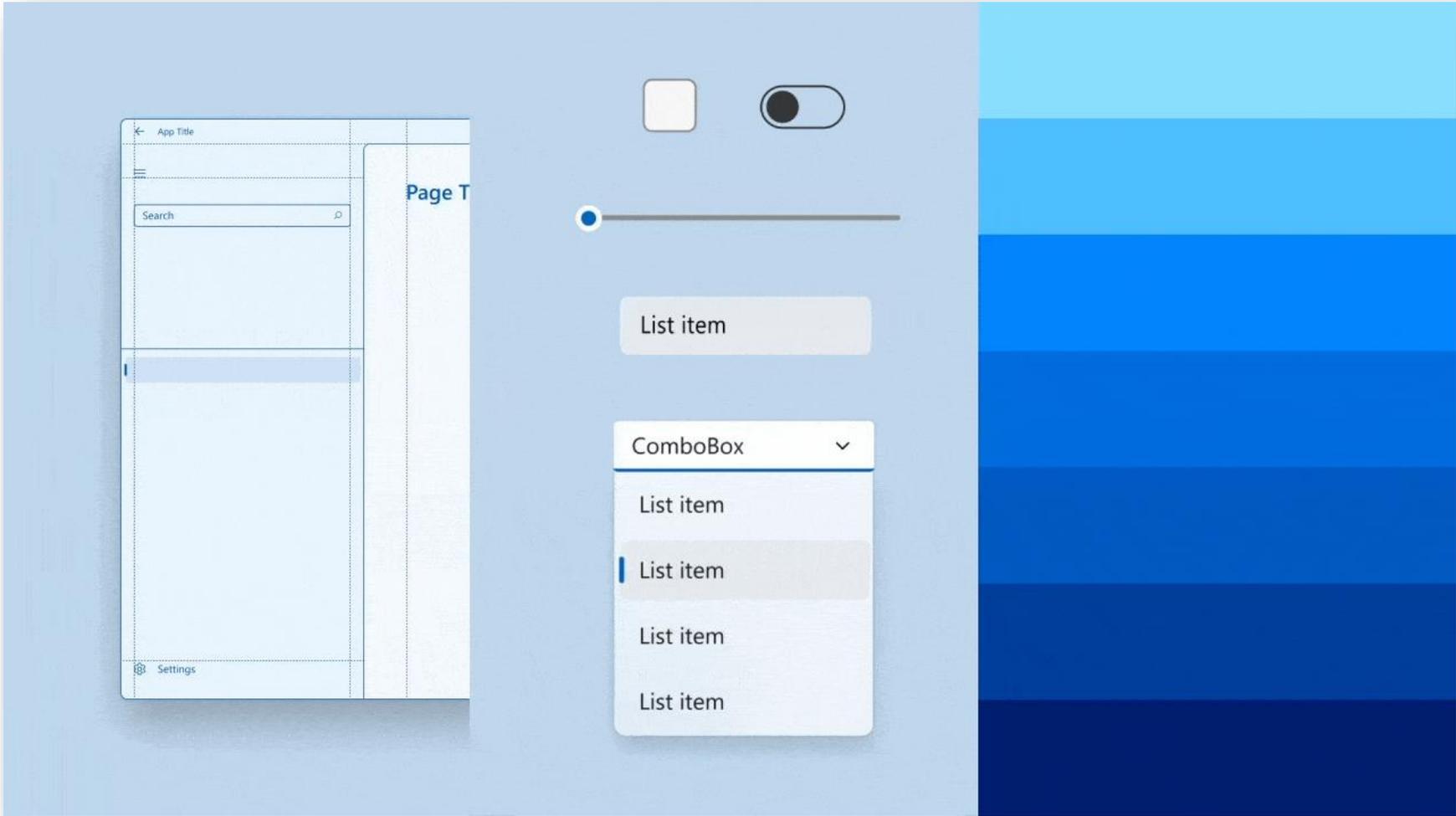
Search apps

Sort by: Name | Filter by: All drives

329 apps found

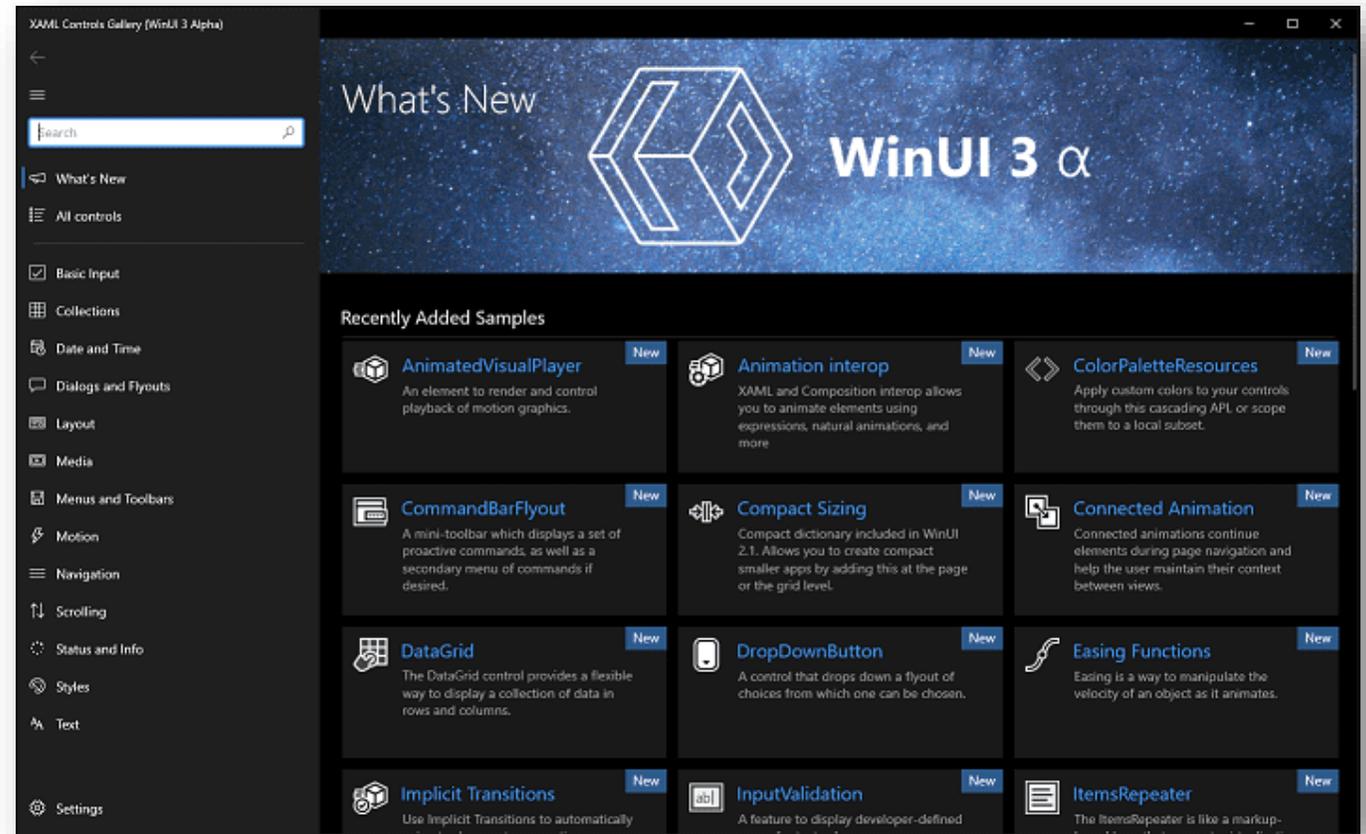
.NET Reflector Desktop 10 10.2.6.1916 Red Gate Software Ltd 9/18/2020	7.79 MB
.NET Reflector Visual Studio Extension 10.2 10.2.6.1916 Red Gate Software Ltd 9/18/2020	3.98 MB
3D Viewer Microsoft Corporation 5/7/2021	24.0 KB
Abstract Art PREMIUM Microsoft Corporation 1/4/2021	36.1 MB
ACCA - Edificius v.X(d) - EN - x64 - (11.0.4.16355) 11.0.4.16355 ACCA software S.p.A. 7/21/2021	
ACCA - PriMus-DCF v.POWER3(l) - EN - x64 - (49.0.2.15313) 49.0.2.15313 ACCA software S.p.A. 7/21/2021	
ACCA Common - ACCAPreviewHandler v.5.00c - x86 - (5.0.3.15366) 5.0.3.15366 ACCA software S.p.A. 7/21/2021	
ACCA Common - Fonts v.2.00d - x86 - (2.0.3.15260) 2.0.3.15260 ACCA software S.p.A. 7/21/2021	
ACCA Common - Microsoft Visual C++ 2005 Redistributable Package v.2005 - x86 - (2005.0.2.15346) 2005.0.2.15346 ACCA software S.p.A. 7/21/2021	

Refreshed Control Look and Flow

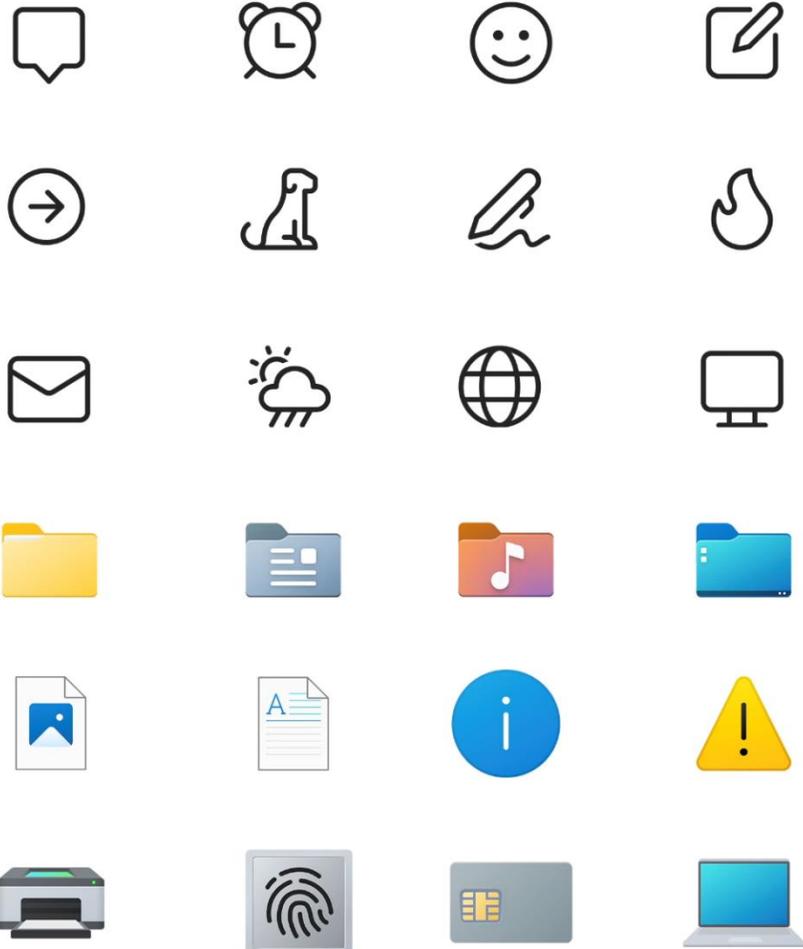


WinUI 3

- Continuation of WinRT, XAML Islands,...
- Windows 10/11 only
- Currently available as a preview

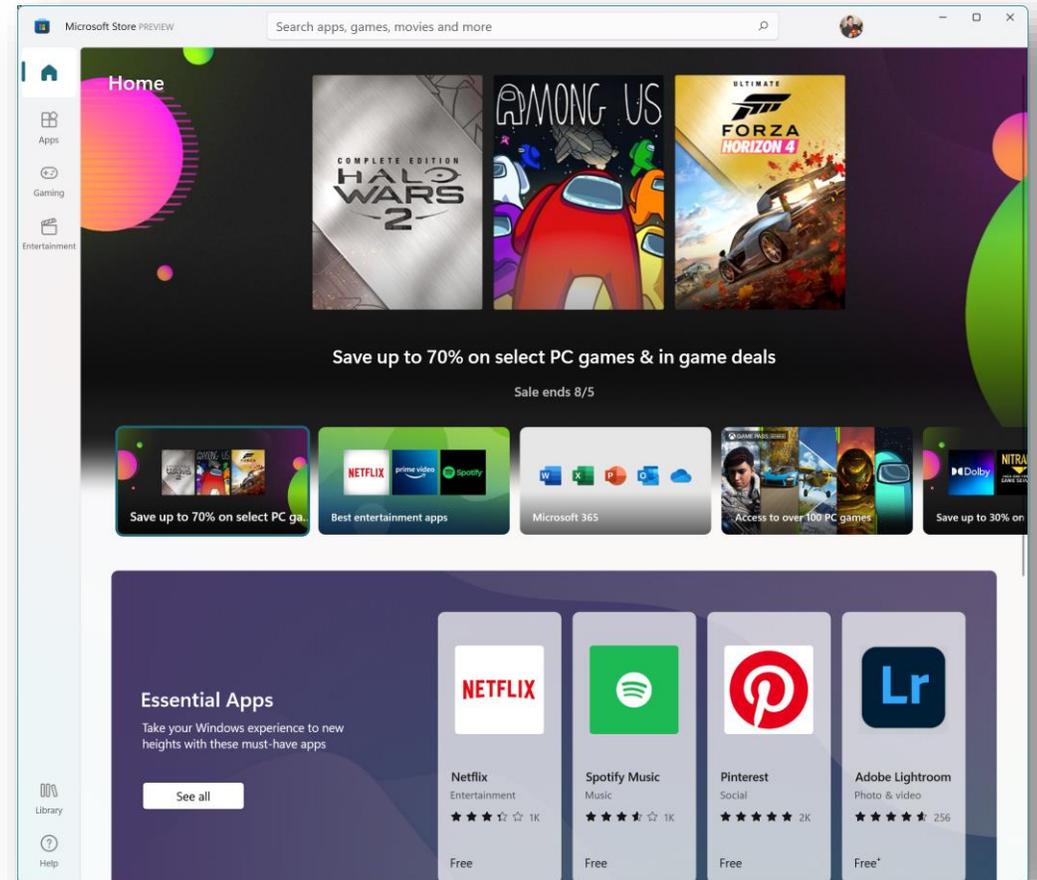


New Icons



Microsoft Store

- A great way to reach all Windows customers/users
- A store for all Windows apps...
- ...as well as other digital assets
- New commerce models
 - Including models where Microsoft does not take a cut!
- Also available on Win10
- Browser Integration ("Popup Store")
- <http://aka.ms/newstore>



What Can Be Published in the Store?

- Universal Apps
- Windows Apps (existing desktop apps too!)
- Progressive Web Apps
- Electron Apps

- Microsoft is publishing more apps in their own store (like Visual Studio)

- Note: MSIX is a great way to package for the app store

Android Apps

- Served up by the Amazon App Store
 - This raises the importance of the Android store
- Windows Sub-System for Android
 - Similar to WSL (Linux)
- Intel Bridge Tech is used to run ARM binaries, completely transparent for users



Publishing to the new Store

- The easiest way to publish to the Microsoft Store is through MSIX packages
- However, this is not the only option
- We are waiting for more information from Microsoft on final deployment options

MS Teams Integration

- Teams is now part of Windows
- Adds significance to Teams being an extensible development platform

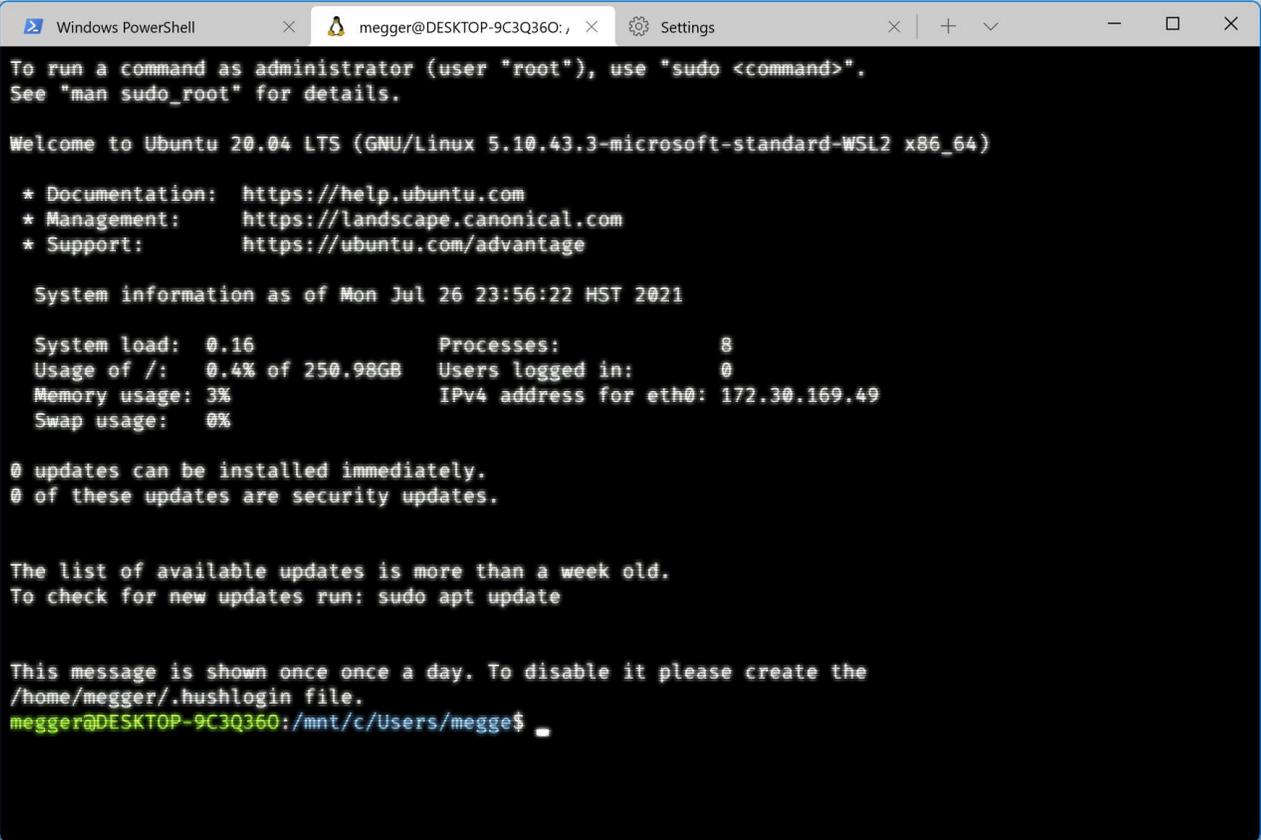


WSL (Windows Subsystem for Linux)

- Simplified install
`wsl -install`
- Now supports UI

Windows Terminal in the Box

- Windows Terminal is now a standard Windows component that's installed on every Windows 11 installation



```
Windows PowerShell
megger@DESKTOP-9C3Q360:
Settings

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.10.43.3-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Mon Jul 26 23:56:22 HST 2021

System load:  0.16          Processes:            8
Usage of /:   0.4% of 250.98GB  Users logged in:    0
Memory usage: 3%           IPv4 address for eth0: 172.30.169.49
Swap usage:   0%

0 updates can be installed immediately.
0 of these updates are security updates.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

This message is shown once once a day. To disable it please create the
/home/megger/.hushlogin file.
megger@DESKTOP-9C3Q360:/mnt/c/Users/megge$
```

New Developer Features in Edge

- New evergreen version of WebView2 is deployed automatically with Windows 11
- Improved dev tools, with features such as Flexbox dev

Windows Development with .NET

Visual Studio 2022

- Preview 2 is now available
- More features implemented (like new icons)
- Fully localized in other languages
- Improved Live Preview
- Better Hot Reload support
- Version of choice to develop MAUI and Blazor apps

Windows Development

- WPF and Windows Forms supported as first-class citizens in .NET
- Improved Designer Support (both WinForms and XAML)
- Improved ClickOnce Support

Windows App SDK

- This is the former “Project Reunion”
- Re-unification of various Windows/Desktop UI technologies
- WinForms, WPF, UWP, WinUI, Xamarin

.NET Upgrade Assistant

- <https://aka.ms/dotnet-upgrade-assistant>
- Helps to analyze and upgrade older codebases
- Understands dependencies
- Provides guidance and assistance
- Multiple project types supported (and more coming)
- Currently in preview

Side-Note: CODE Framework WPF

- CODE Framework is our free and open-source development framework
- It contains different areas of functionality, one of them being Windows Desktop Apps (mainly WPF)
- A new version for .NET5/6 is now available on GitHub
- www.github.com/CODEFramework
- We are also working on new themes specific to Windows 11
 - And of course, the available themes already work well with Win11 too

Side-Note: Photino



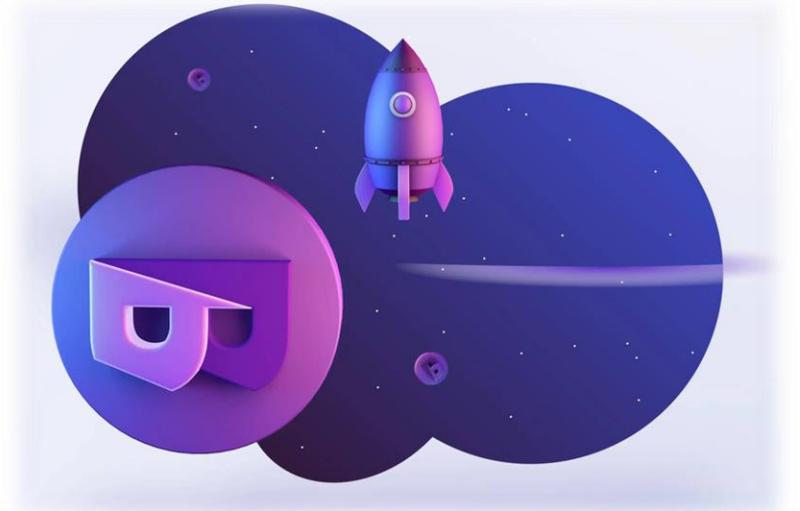
- Build native, cross-platform desktop apps that are lighter than light.
- Lightweight open-source framework for building native, cross-platform desktop applications with Web UI technology.
- Photino is maintained by the CODE Magazine team with the help of the open-source community.
- tryphotino.io
- [Github.com/tryphotino](https://github.com/tryphotino)

Developing Widgets

- Developers will be able to develop Widgets for Windows 11, but very little information is available about this at this point.

PWAs

- Better integration, with things like task bar jump lists
 - Defined in the “shortcuts” section of the app manifest
- Other examples are file handlers and protocol handlers
- PWAs can be in the Store
- PAW Builder – <http://www.pwabuilder.com>



WebView2

- New Edge-Chromium-based HTML control
- Available in Windows Forms, WPF
- .NET Framework, .NET Core 3.x, and .NET 5/6
- Windows 7 and later
- Evergreen (updated every 6 weeks)
- WebView2 Evergreen is now a Windows component

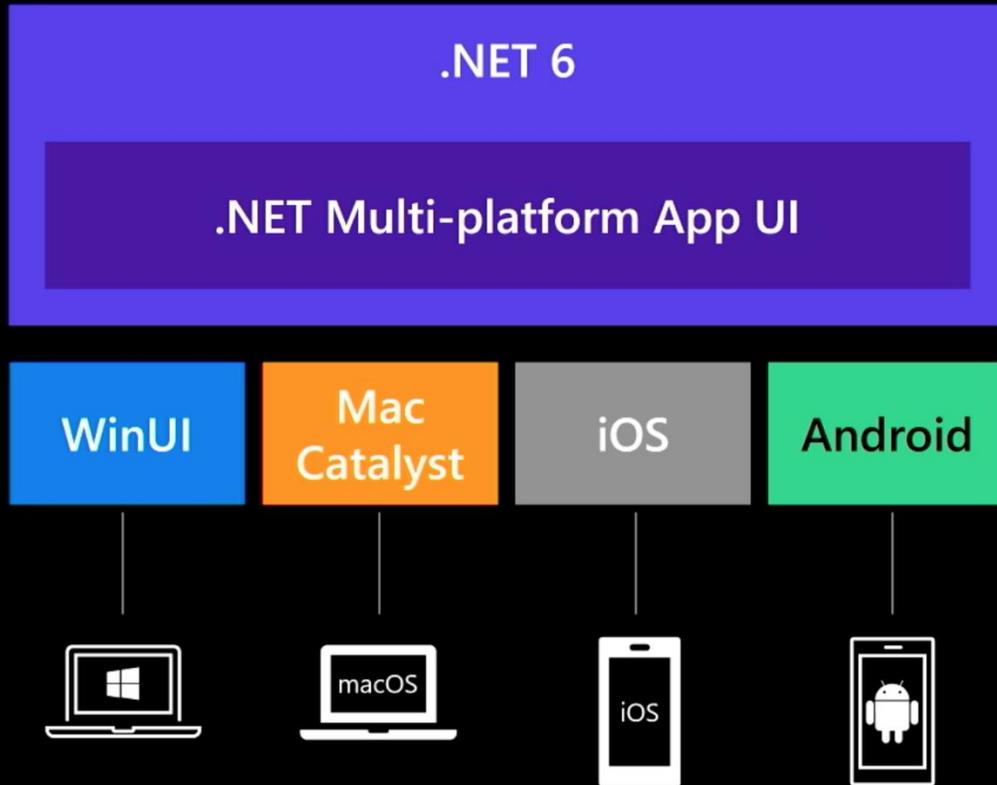
Single File Applications

- .NET aims to re-introduce the experience of publishing small, self-contained version of applications
 - Across all .NET application formats (Windows, Web,...)
 - Across all the platforms (Windows, Mac, Linux)
- Required Framework components are included in the deployment
- True xcopy-enabled, single-file executables
- Assembly Trimming
- .NET has come a long way for this

MAUI

- .NET Multi-Platform Application UI
- An evolution of the Xamarin.Forms Toolkit
- XAML-based development experience for rich applications
- Supported on Android, iOS, macOS, and Windows
- Access to each platform's native features

.NET Multi-platform App UI



Cross-platform, native UI

Single project system, single codebase

Deploy to multiple devices:
mobile and desktop

General availability in .NET 6

github.com/dotnet/maui

Blazor Overview

- Microsoft's latest web development framework
- An "application programming model"
- Based entirely on HTML and Web Standards
- Client-side Blazor using Web Assembly (web standard)
- Server-side Blazor
- Desktop Blazor built on top of MAUI

Blazor Updates in .NET 5

- Move to the new .NET runtime (away from Mono)
- Significant Performance Improvements
 - Computational performance up to 30% faster
 - Component rendering 2-4x faster
- Virtualization support
 - Virtualize component rather than foreach-loops
- Prerendering for performance and search optimization
- CSS Isolation
- Lazy Loading of assemblies

Blazor Updates in .NET 6

- Blazor Desktop on top of MAUI
- Error Boundaries
- Performance Improvements
 - Blazor WebAssembly ahead-of-time (AOT) compilation

Blazor vs MAUI

- Blazor is an HTML-based app development model/framework
 - Can be deployed in different ways (server, client, desktop)
 - Server and Client models work on any platform (Windows, Mac, Android, iOS, Linux, ...)
 - In exceptional cases, can bring in native elements on various platforms
- MAUI is a cross-platform native app development model
 - Windows, Mac, Android, iOS
 - In exceptional cases, can bring in hosted HTML
- Blazor Desktop sits on top

Blazor Popularity

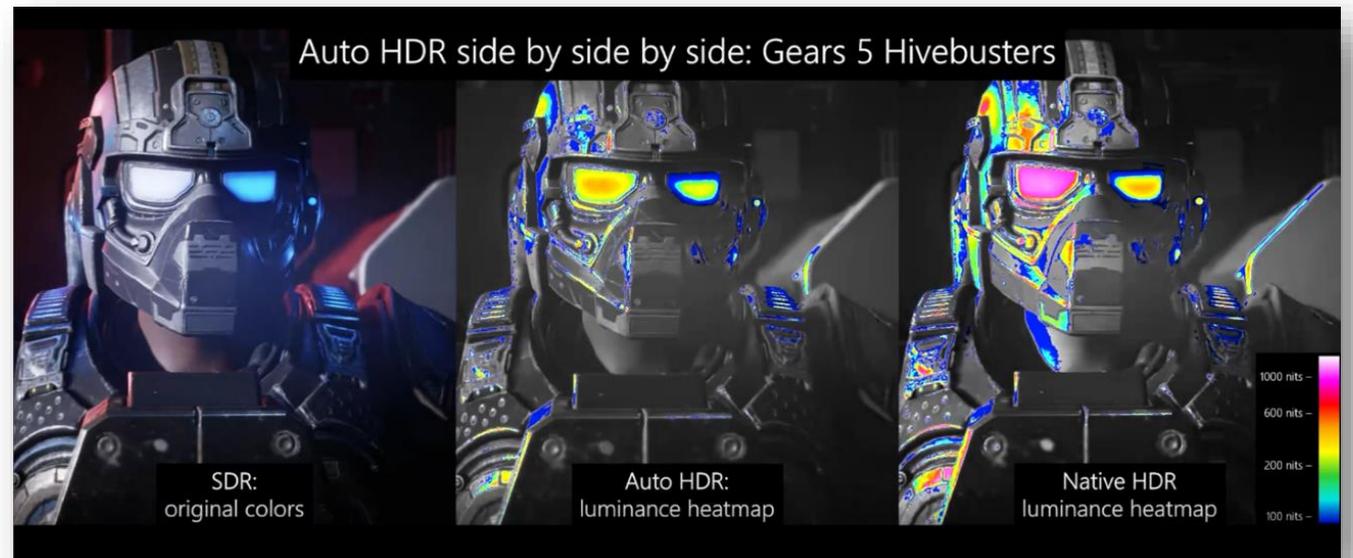
- The final verdict on Blazor popularity is still out, but...
- ...Blazor is the fastest growing .NET workload ever
- ...Blazor is generally described as “red hot”
- ...Blazor is engrained enough to feel comfortable about its future
- ...Blazor is the most popular topic we cover

ARM64

- .NET has many performance and size optimizations specifically driven by support for ARM chips
- ARM chips are very popular in phones, but they are also becoming more popular in laptops
- Surface Pro X is ARM-based
- Apple has announced that their future Apple Silicon-based Macs will be ARM based
- Microsoft announced ARM support for WPF
- IoT devices are often based on ARM chips
- Raspberry Pi 3 & 4 are ARM-based

Side-Note: Game Development

- Windows 11 introduces a lot of new things for game developers
- GDK (Game Development Kit) is now freely available
- Technologies like DirectStorage and Auto HDR are available in Windows 11



Microsoft Videos on Windows 11

- Watch the recording from Microsoft's recent live event:
<https://www.microsoft.com/en-us/windows/event>
- "What's next for Developers [in Windows 11]" video:
<https://www.youtube.com/watch?v=egZ82QGshX8&t=1557s>

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1. Full Name *

Enter your answer

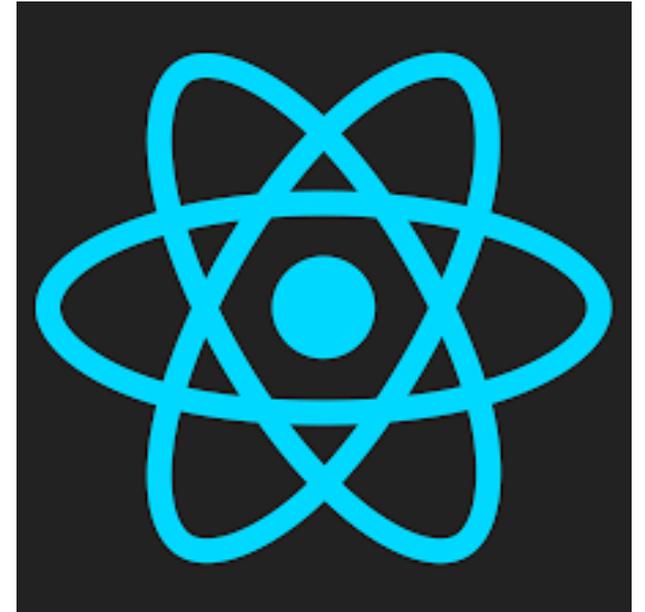
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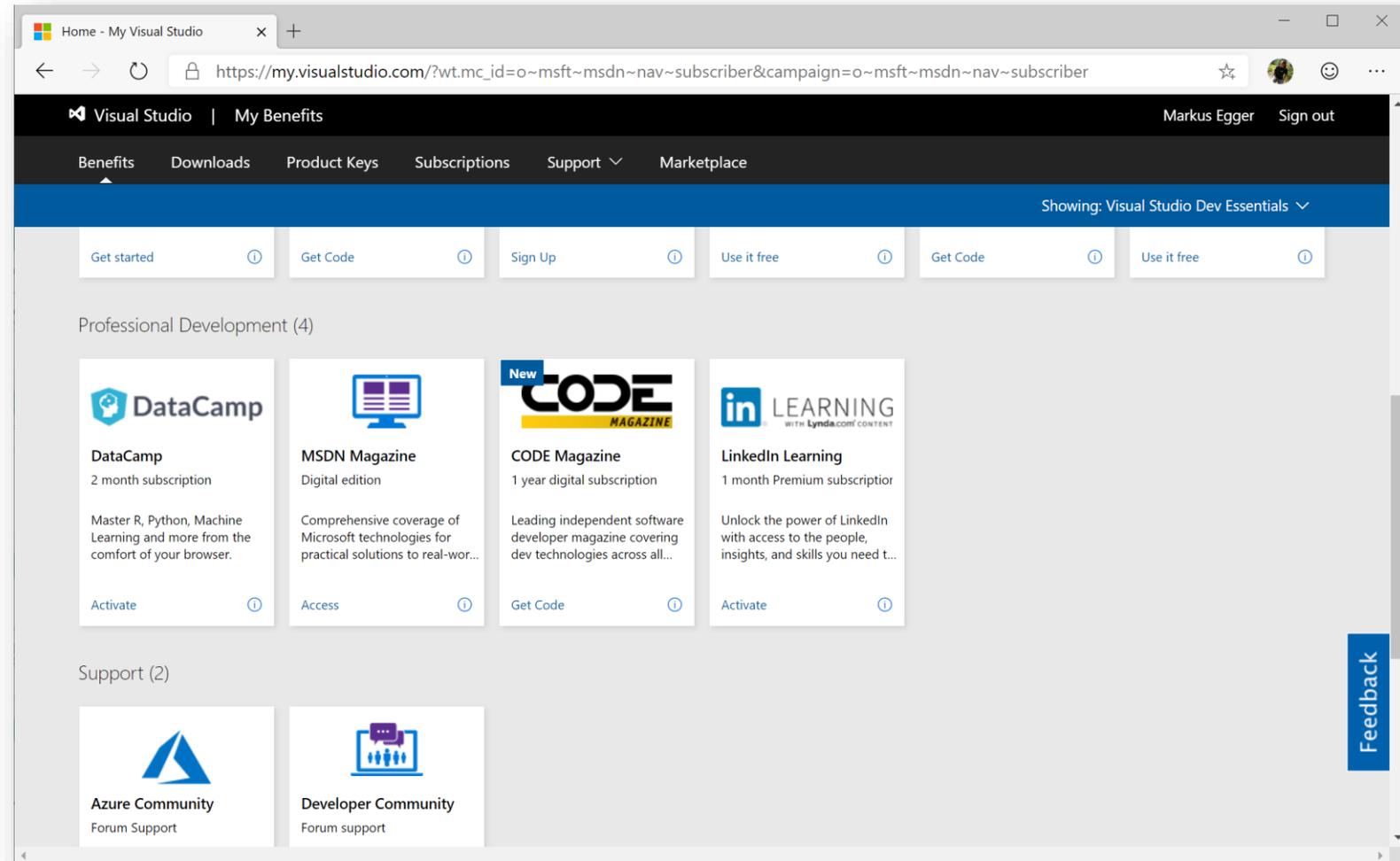
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August 25th, 2021

The topic is t.b.a

August 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Q&A

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