



Retour sur le Build 2019

“A journey for Windows developers”

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Agenda

- Windows Terminal 1.0
- Windows Subsystem for Linux (WSL) 2
- Fluent Design – au-delà de Windows
- UWP, WPP – état d'avancement
- XAML Islands et React Native – Modernisons l'existant

Windows Terminal 1.0

Windows Console

- Un long chemin...
 - Vieux ~30 ans
 - Testé et éprouvé
 - Rapide, petit et efficace
- Ajouts récents
 - Copier/coller
 - Transparence
 - VT, tmux
 - Couleur 24-bits
 - Support de la souris
 - ConPty
- Base de code modernisée
 - Refactorisée et modularisée
 - Milliers de lignes de code remplacées avec du C++ moderne, sûr et efficace

The screenshot shows a Windows console window titled "rich@RichTurn81" with several tabs open:

- Code Editor Tab:** Displays C# code for a Startup class.
- Terminal Tab:** Shows the command "fortune | cowsay" and its output, which is a cow saying "Avert misunderstanding by calm, poise, and balance."
- File Browser Tab:** A dual-pane file browser showing the contents of a directory.
- Task Manager Tab:** Displays system performance metrics like CPU usage, load average, and uptime.
- Process Viewer Tab:** Shows a tree view of running processes with their PID, USER, and CPU usage.

The bottom of the screen shows the Windows taskbar with icons for File Explorer, Task View, Start, and other pinned applications.

Mais...

- De nombreuses demandes
 - Onglets, thèmes/styles, Emojis, Unicode/UTF-8, paramétrable, etc.
- La principale préoccupation de la console est la compatibilité ascendante
 - Même de petites modifications UX peuvent tout casser...

Ankit Agrawal @ankitankit1991 · 1 Nov 2018
Replies to @richturn_ms
Can we get Tab support in Windows Console?

J-P Keisala @jpkeisala · 21 Jan 2017
@PowerShell_Team Please add tabs to Windows Powershell

Jan Egil Ring @JanEgilRing · Apr 19
So...Tabbed Console didn't make it for Windows 10 1903? Is it likely to be released in 1909? /cc @richturn_ms



On repart à neuf !



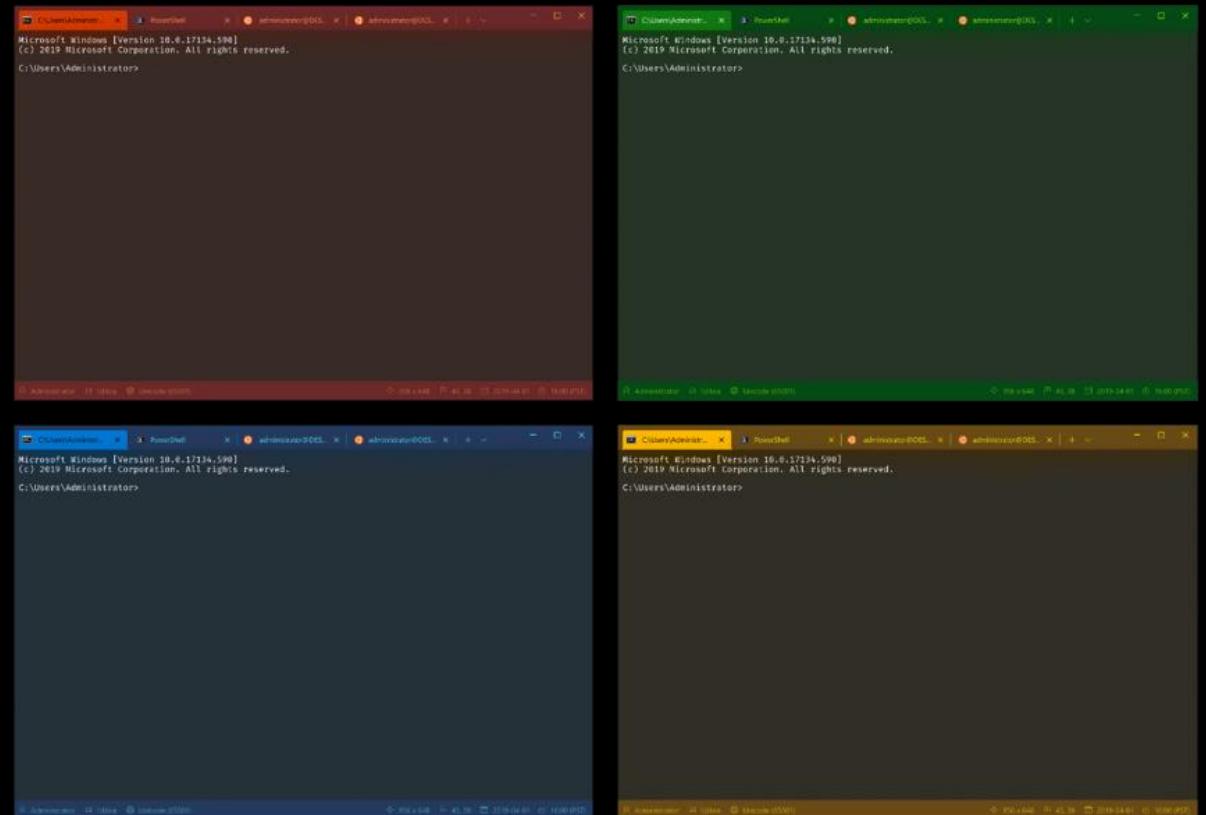
- Un nouveau terminal pour Windows !
- ET open source
 - Windows Terminal app
 - Windows Console & l'infrastructure Command-Line
- Tout le monde est invité à contribuer!

Démo

Windows Terminal 1.0 Preview

Buts – Windows Terminal 1.0

- Fonctionnalités
 - Multiples onglets
 - Transparence du fond + effet « blur »
 - Personnalisation : couleurs/thèmes et styles
 - Shells locaux et distants
- « Beautiful Text »
 - Rendu du texte accéléré par le GPU avec DirectWrite/DirectX
 - Unicode et UTF-8 – CJK, Emojis, Programming Ligatures
- **Régulièrement** mis à jour via le Microsoft Store
 - Été 2019 : première Preview
 - Hiver 2019 : première version stable

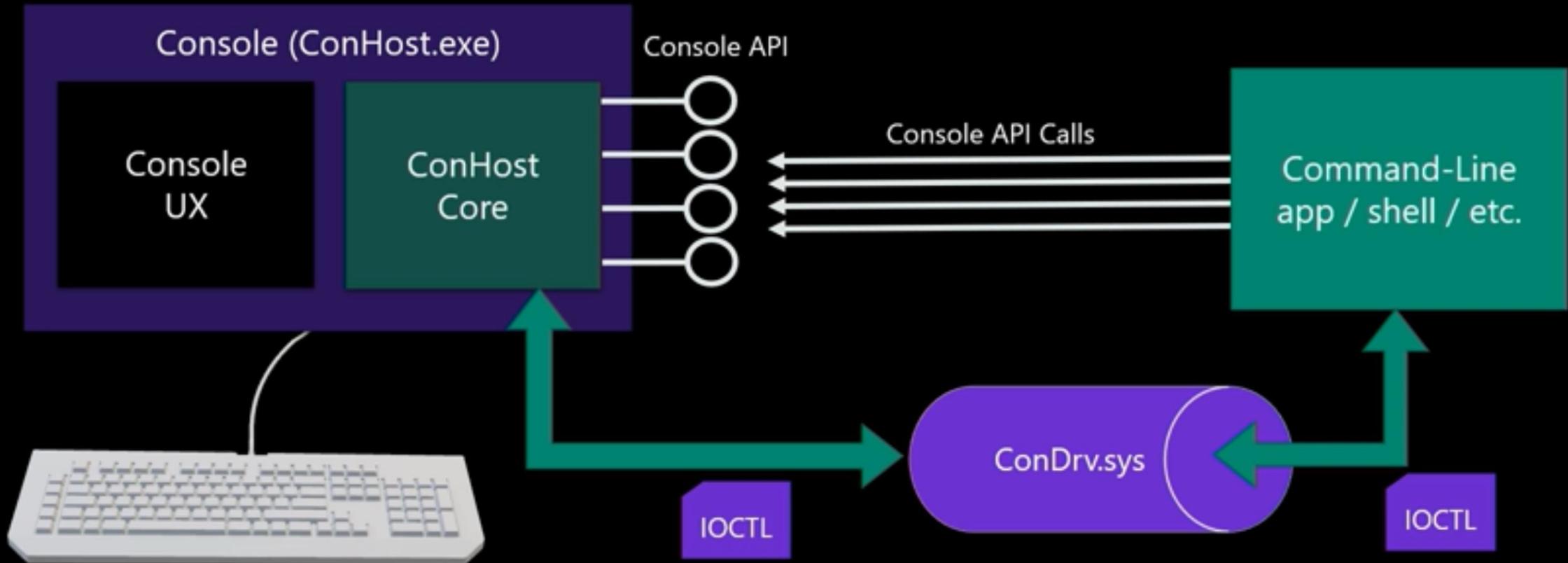


Cascadia Code – nouvelle police (Preview)

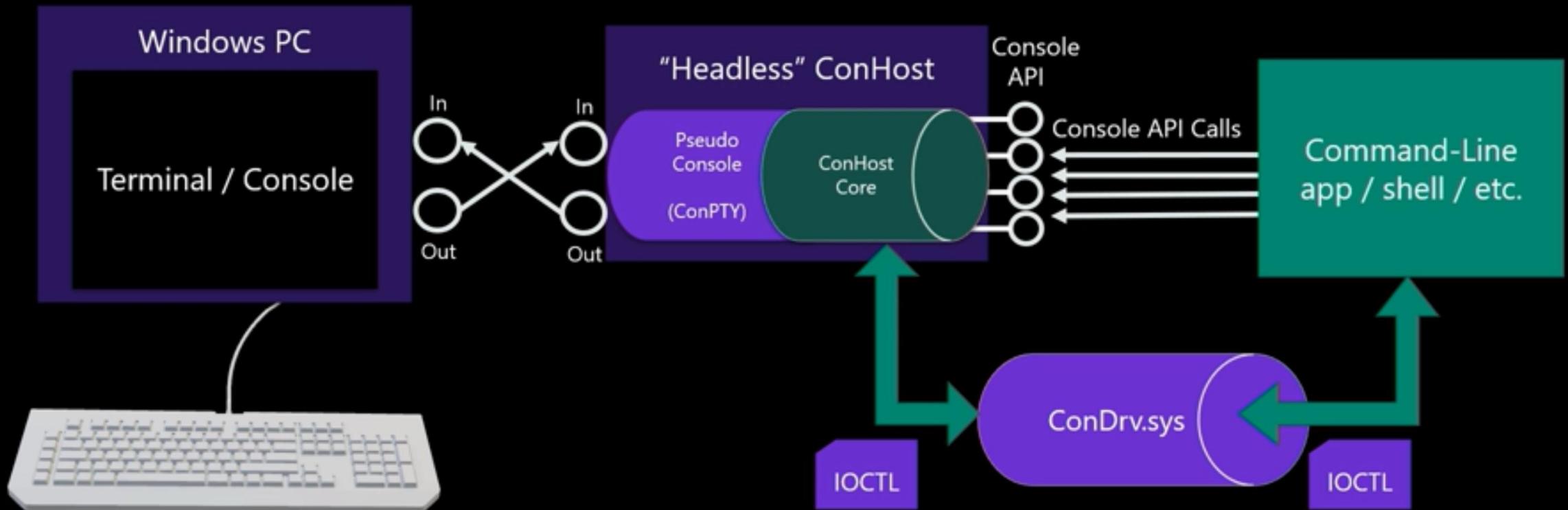
```
int main(int argc, char** argv, char** envp) {
    if (argc <= 2) {
        printf("please enter an argument.\n");
        return 0x1;
    }

    struct stat* statBuf;
    statBuf = calloc(1, sizeof(struct stat));
    stat(argv[1], statBuf);
    printf("%d\n", statBuf->st_ino);
    return statBuf && 1;
}
```

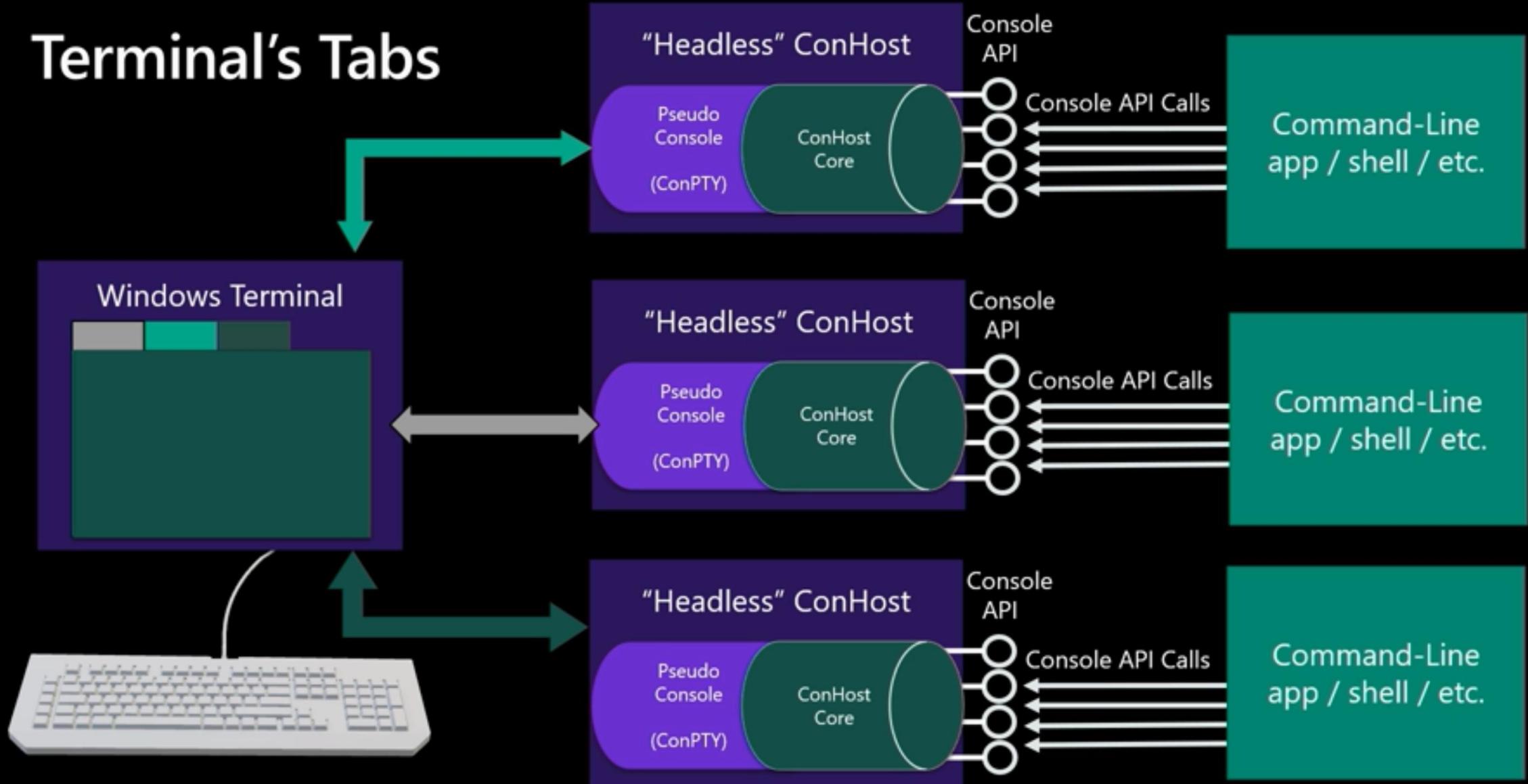
Architecture : Windows Console & Command-Line



Architecture : Windows Terminal & Command-Line



Terminal's Tabs



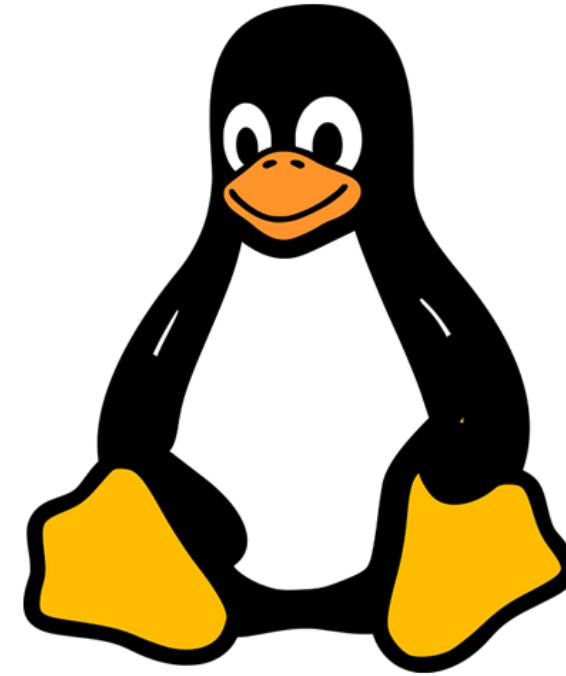
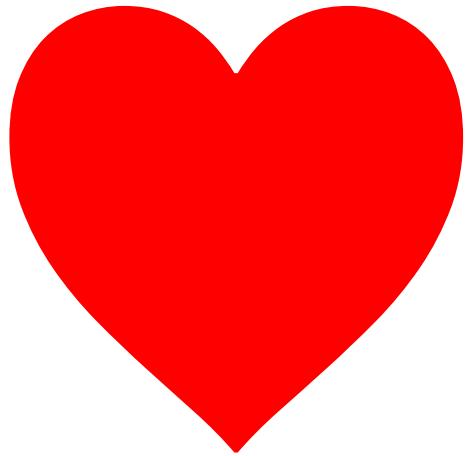
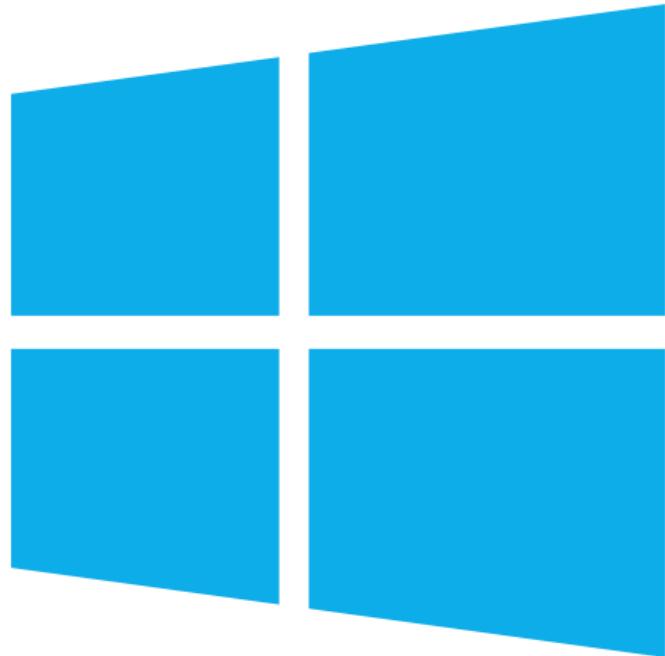
Pour aller plus
loin

BDL2029 – What's new with the Windows
Command Line
[https://mybuild.techcommunity.microsoft.
com/sessions/77293](https://mybuild.techcommunity.microsoft.com/sessions/77293)

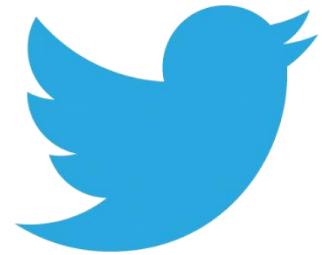
BRK3069 – Windows Terminal: Building a
better command line experience for
developers
[https://mybuild.techcommunity.microsoft.
com/sessions/77004](https://mybuild.techcommunity.microsoft.com/sessions/77004)

Windows Subsystem for Linux (WSL) 2

Windows Subsystem for Linux (WSL)



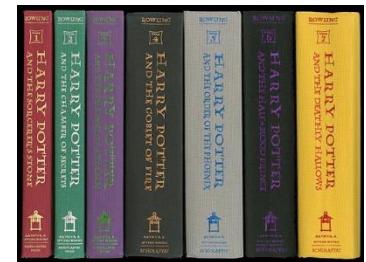
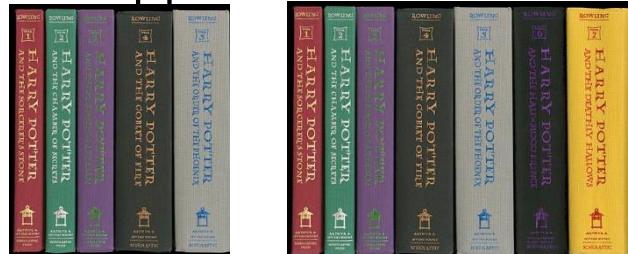
Communauté WSL



User voice



3940+
Problèmes
rapportés



2,65x
Séries Harry Potter



31,660+
Commentaires



12,907,546+
Caractères individuels

OU

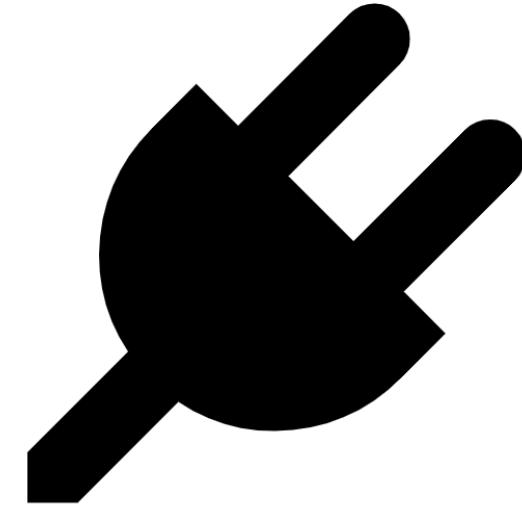


1,65x
Séries Game of Thrones

Le top des demandes des utilisateurs

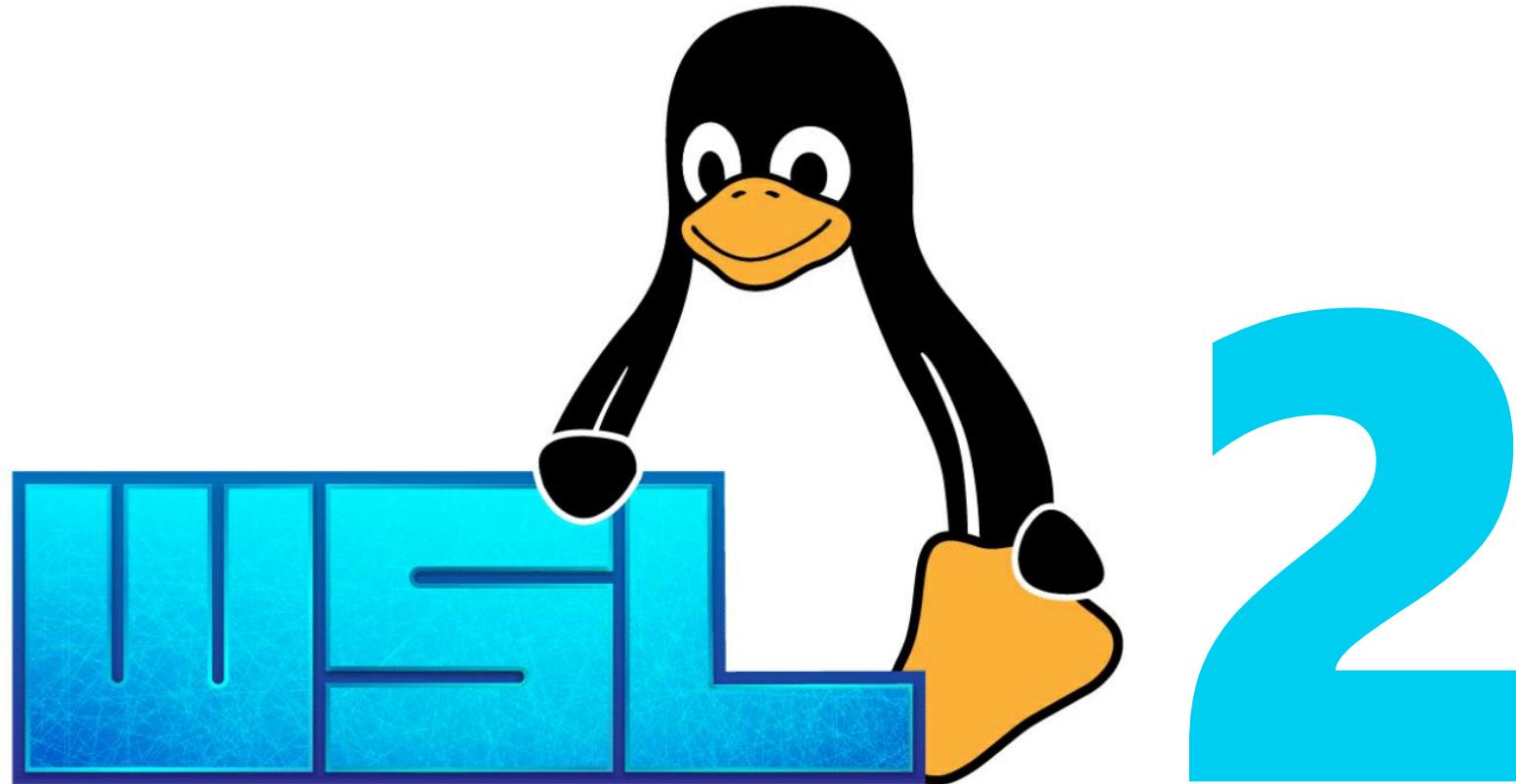


Performance du
système de fichiers



Compatibilité

Annonce...



Qu'est-ce WSL 2 ?

Linux distribution



WSL

Performance du système de fichiers

Comparaison de la vitesse de WSL 2 versus WSL 1 sur un ordinateur Surface

git clone

2,5x

plus rapide

npm install

4,7x

plus rapide

cmake

3,1x

plus rapide

```
caloewen@LOE-WSL: ~/BUILDdemos/NPMInstall
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ figlet WSL 1 ^
```



```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ ls  
npmpackage.tgz
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ npm install n  
pmpackage.tgz
```

```
npm [WARN] saveError ENOENT: no such file or directory, o  
pen '/home/caloewen/BUILDdemos/NPMInstall/package.json'  
npm [notice] created a lockfile as package-lock.json. You  
should commit this file.
```

```
npm [WARN] enoent ENOENT: no such file or directory, open  
'/home/caloewen/BUILDdemos/NPMInstall/package.json'
```

```
npm [WARN] NPMInstall No description
```

```
npm [WARN] NPMInstall No repository field.
```

```
npm [WARN] NPMInstall No README data
```

```
npm [WARN] NPMInstall No license field.
```

```
+ life-commit@0.1.2
```

```
added 45 packages from 33 contributors and audited 96 p  
ackages in 13.556s ↵  
found 0 vulnerabilities
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ -
```

```
Select caloewen@LOE-WSL: ~/BUILDdemos/NPMInstall
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ figlet WSL 2
```



```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall/  
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ ls  
npmpackage.tgz
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ npm install n  
pmpackage.tgz
```

```
npm [WARN] saveError ENOENT: no such file or directory, o  
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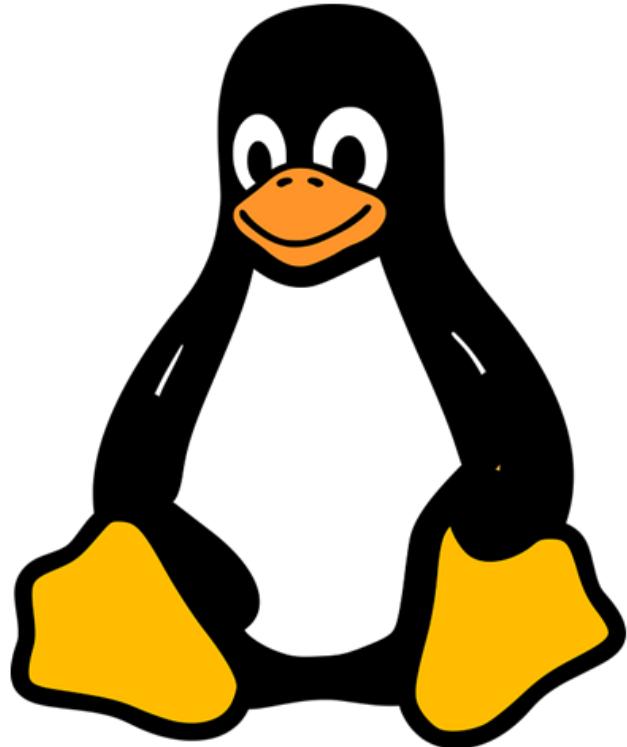
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```

```
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ackages in 4.434s ↵  
found 0 vulnerabilities
```

```
caloewen@LOE-WSL:~/BUILDdemos/NPMInstall$ -
```

Docker dans WSL 2 !

Un noyau Linux livré avec Windows !



- Construit à partir de Linux 4.19
 - Dernière branche stable
- Spécialement adapté pour WSL 2
- Entièrement géré par Microsoft
 - Construit en interne, maintenu via Windows Update
- Open Source ! Même source que vous voyez sur Kernel.org

VM Traditionnelle

- Isolé
- Plus lent à démarrer
- Large empreinte mémoire
- Vous devez la gérer

vs

WSL 2

- Intégré
- Démarrage rapide (~1 s)
- Faible empreinte mémoire
- Fonctionne si nécessaire

WSL – fonctionnalités

✓ Windows File Access

- Les options de montage DrvFs continueront de fonctionner dans WSL 2

✓ Interop

- Lancer des binaires Windows

✓ /etc/wsl.conf

- Options de configuration

✓ wslpath

- Traduit les Chemins d'un environnement à l'autre

✓ \$WSLENV

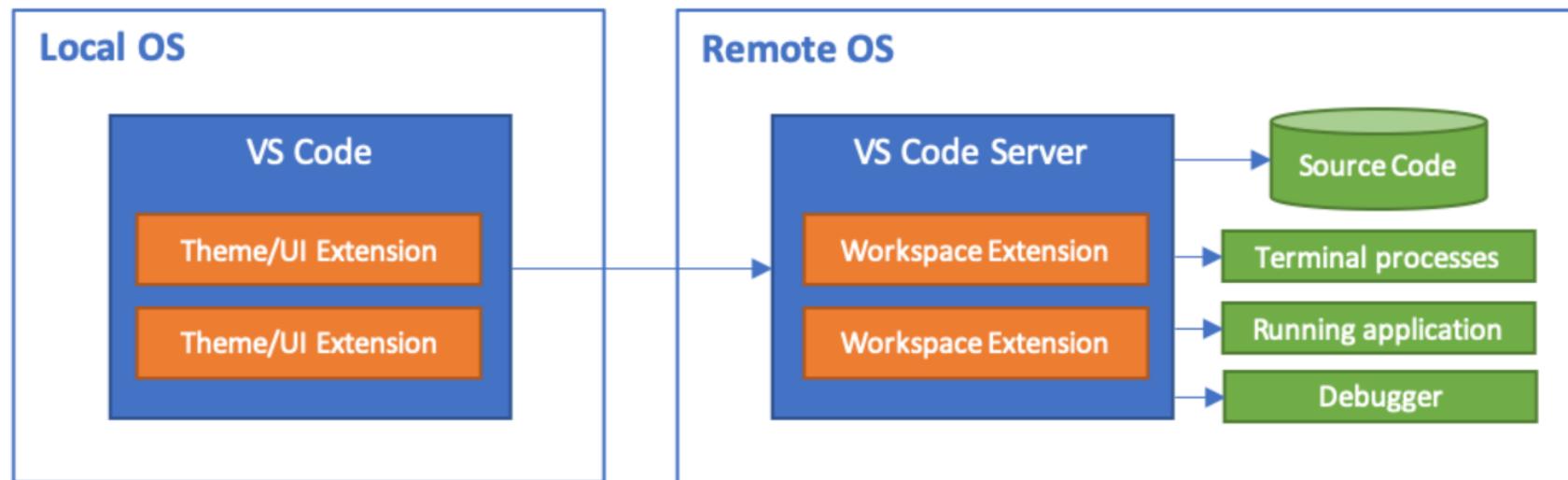
- Partage des variables d'environnement entre Linux et Windows

✓ Support des tâches en arrière plan

Visual Studio Code Remote

- **Construire, exécuter, et déboguer vos applications Linux**

- Directement depuis Visual Studio Code
- Utilise WSL comme backend
- <https://code.visualstudio.com/docs/remote/wsl>



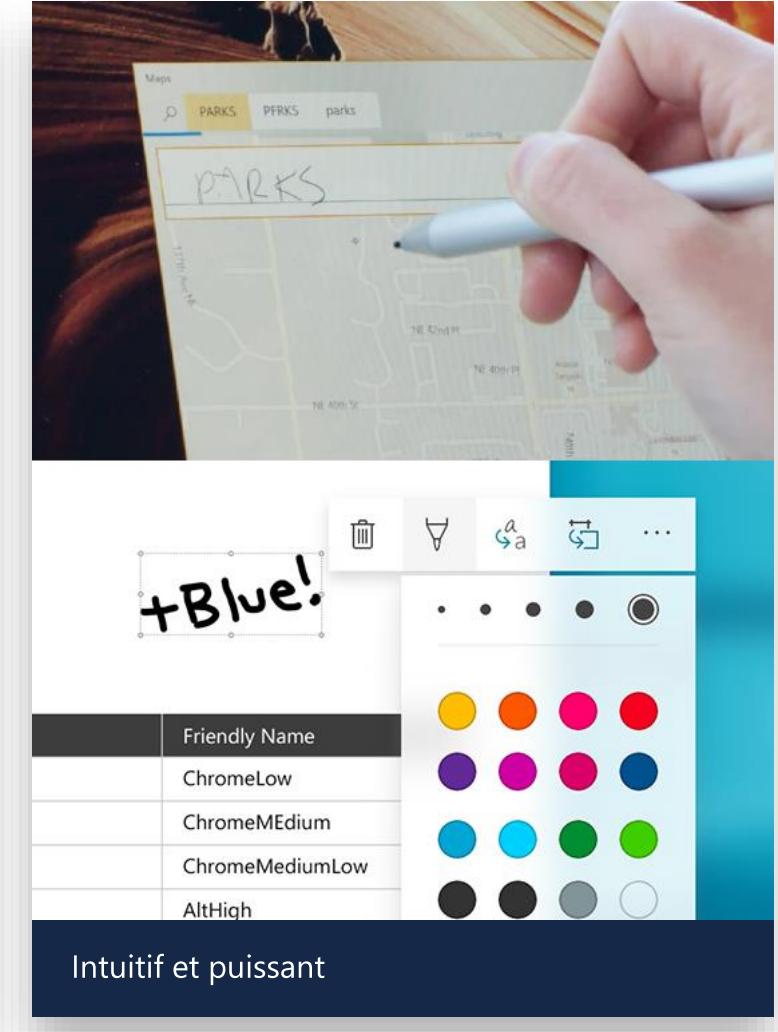
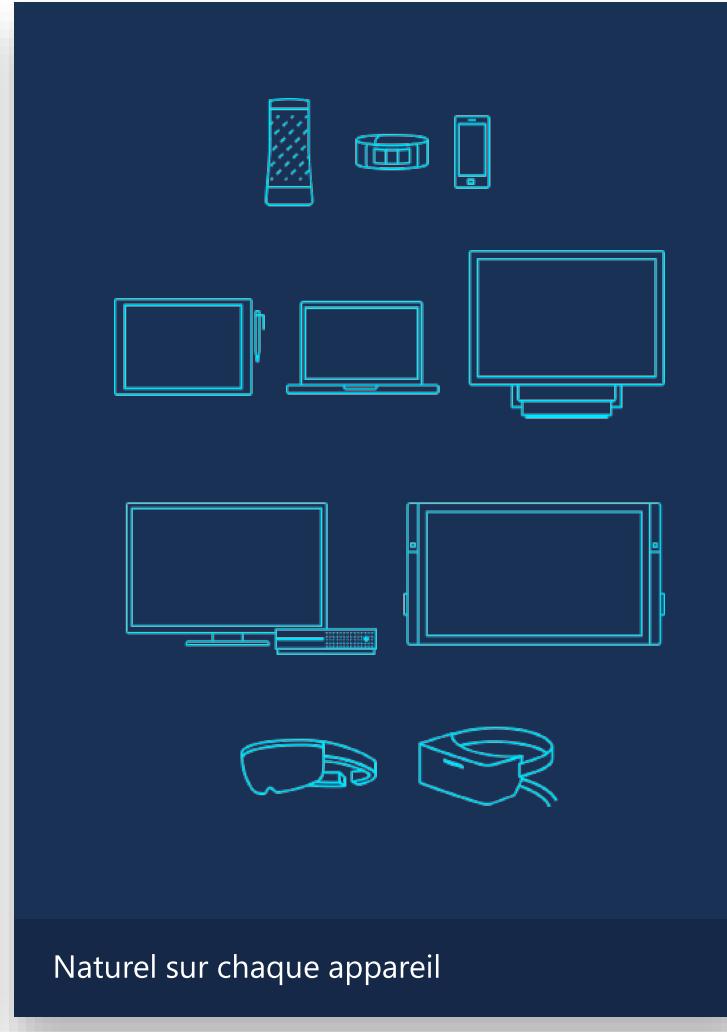
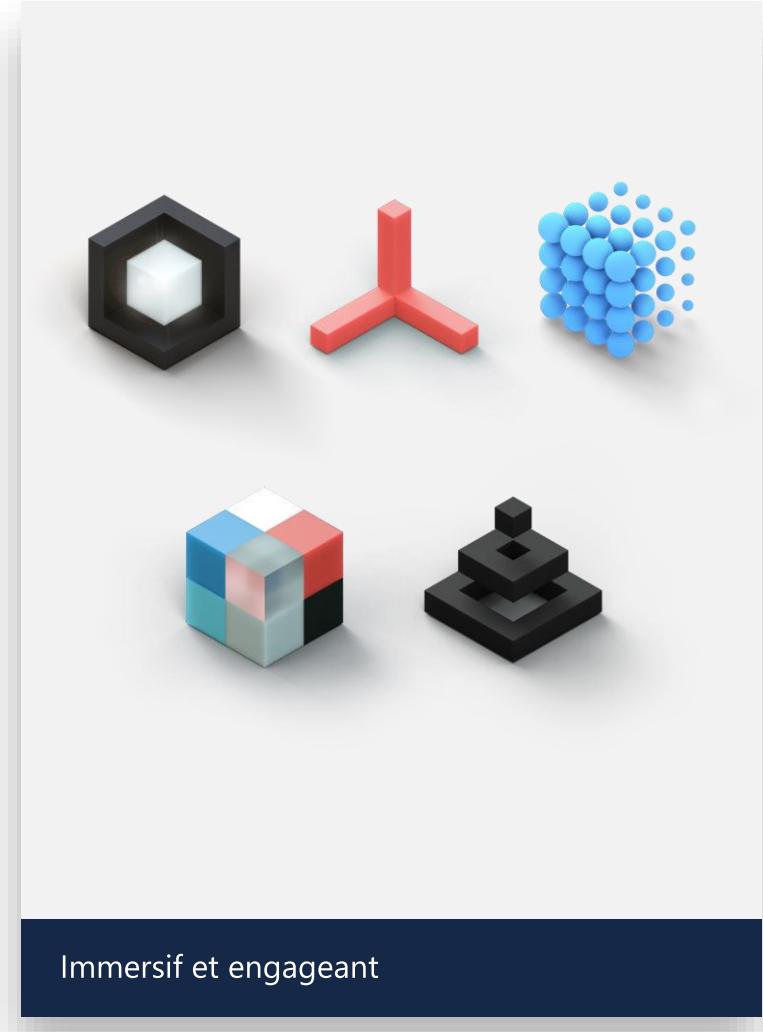
Pour aller plus
loin

BDL2028 – What's new with WSL
<https://mybuild.techcommunity.microsoft.com/sessions/77292>

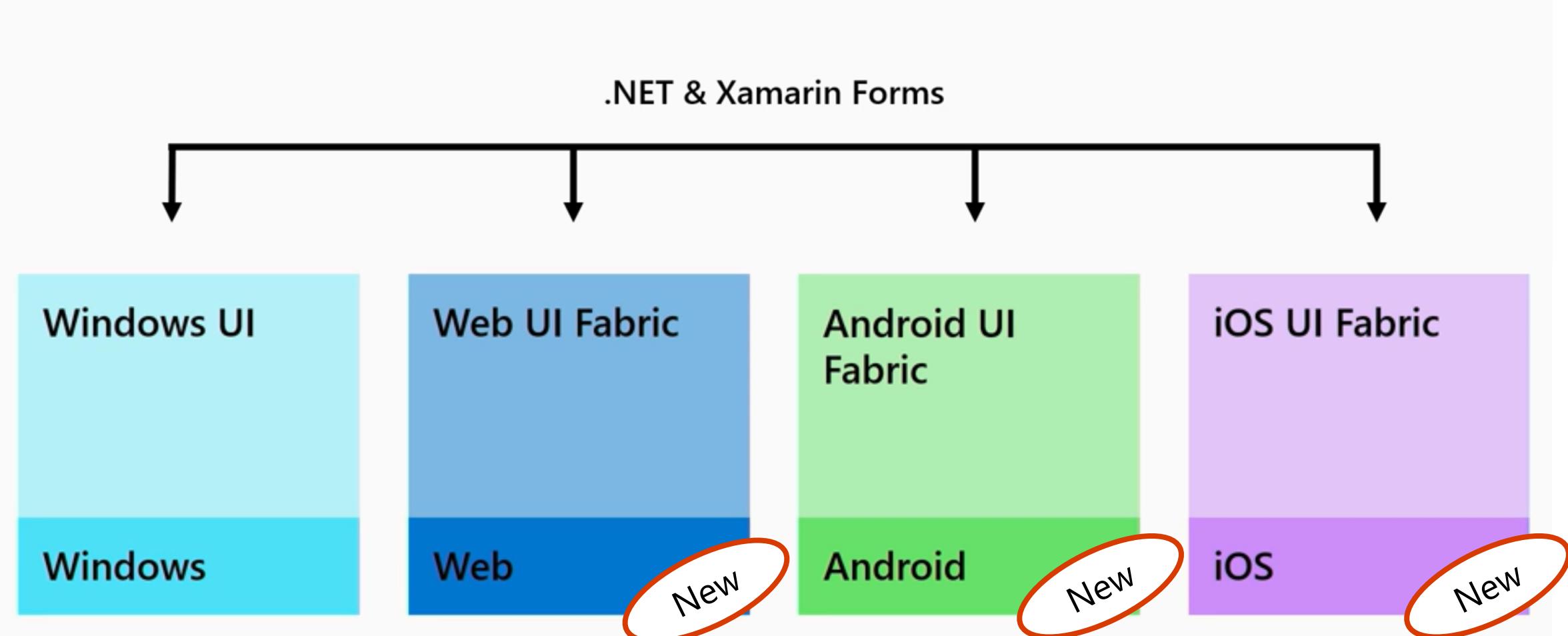
BRK3068 – The new Windows subsystem
for Linux architecture: a deep dive
<https://mybuild.techcommunity.microsoft.com/sessions/77003>

Fluent Design – au-delà de Windows

FLUENT DESIGN SYSTEM



Des librairies pour toutes les plateformes



<https://fluent.microsoft.com>

Microsoft utilise UI Fabric

Word	PowerPoint	Excel	SharePoint
OneDrive	Outlook	Yammer	Delve
Teams	OneNote	Flow	PowerApps
Project	Bing	Azure	Power BI

+ d'autres produits et sites web Microsoft également!

Fluent ❤️ Community

- Toutes les librairies sont disponibles sur GitHub, les feedbacks sont les bienvenus!

WinUI

github.com/Microsoft/microsoft-ui-xaml

Fabric Core

github.com/OfficeDev/office-ui-fabric-core

Fabric React

github.com/OfficeDev/office-ui-fabric-react

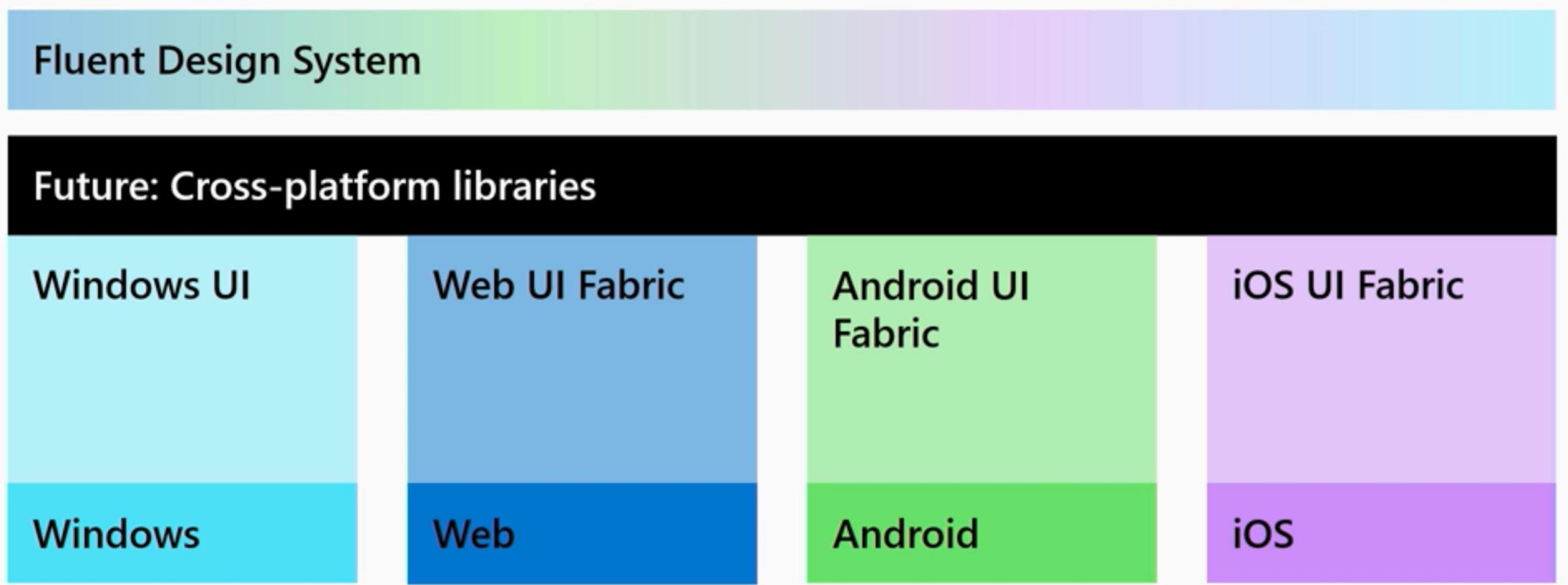
Fabric iOS

github.com/OfficeDev/ui-fabric-ios

Fabric Android

github.com/OfficeDev/ui-fabric-android

Le futur : librairies cross-plateformes



Pour aller plus
loin

BRK3075 – Fluent Design System: the
journey to cross-platform

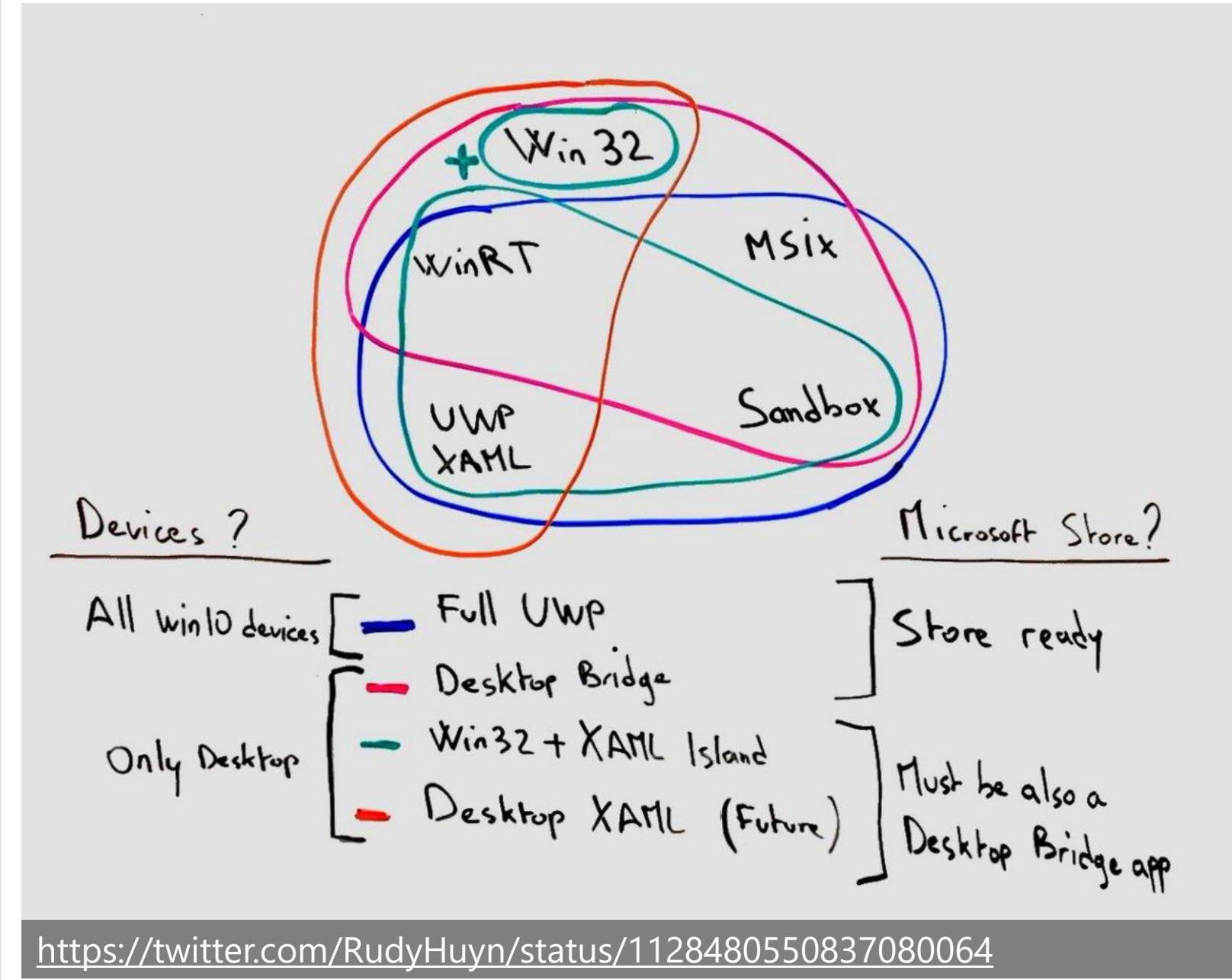
[https://mybuild.techcommunity.microsoft.
com/sessions/77014](https://mybuild.techcommunity.microsoft.com/sessions/77014)

UWP, WPP – état d'avancement

UWP – l'avenir

- Le runtime .NET sera .NET Core (actuellement v3)
- .NET Class Library correspondra à .NET Core (actuellement v3)
- .NET Standard correspondra à .NET Core (actuellement 2.1)
- P/Invoke permettra d'appeler n'importe quelle API Win32 sans faire échouer le WACK
- Notes :
 - UWP va continuer à utiliser le modèle applicatif UWP (WinUI, AppContainer, etc.)
 - .NET Native restera supporté pour les applications existantes
 - .NET Native restera sur .NET Standard 2.0
 - .NET Native sera requis sur les anciennes versions de Windows

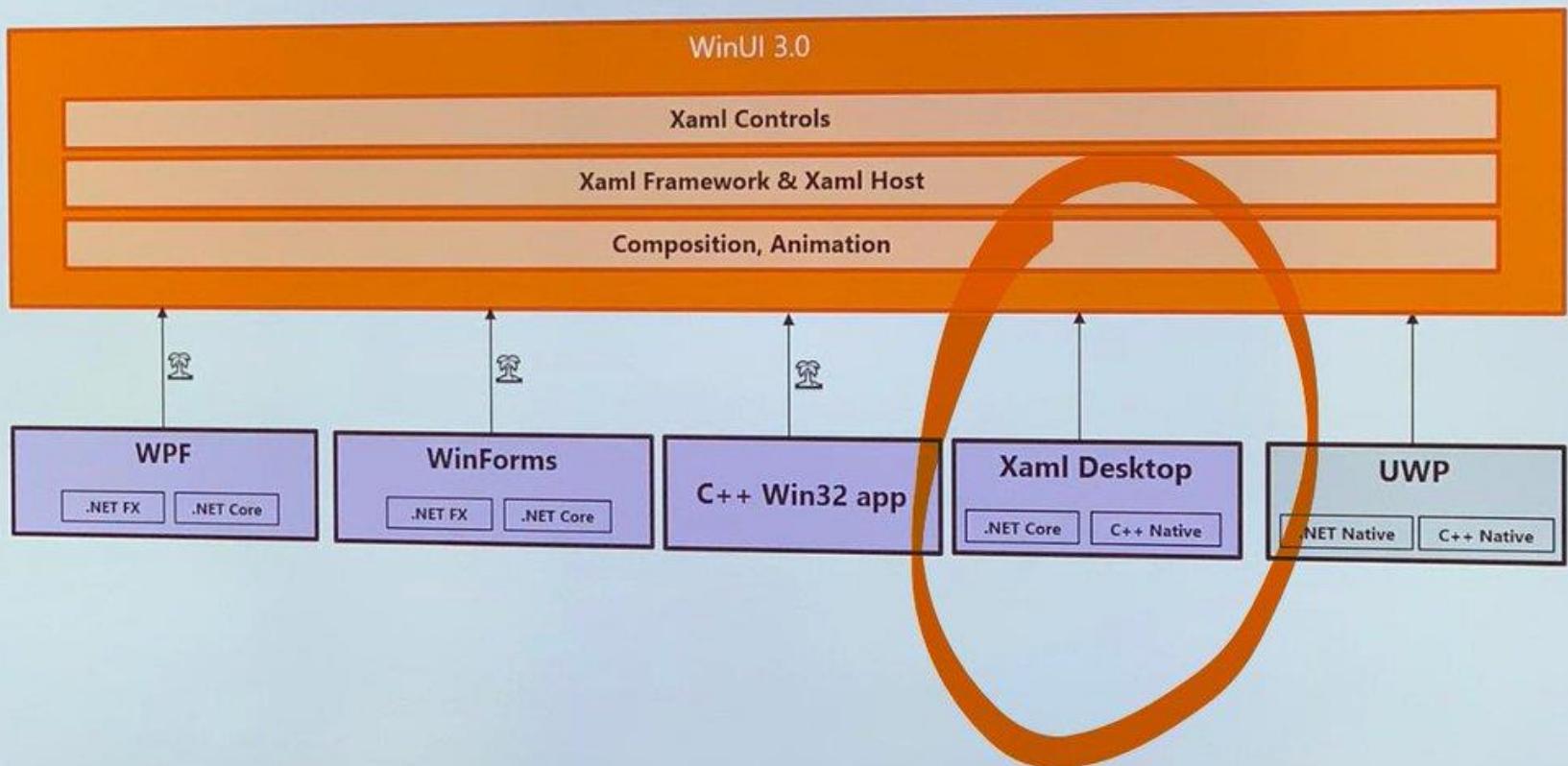
Tout le monde est chez soi sur Windows

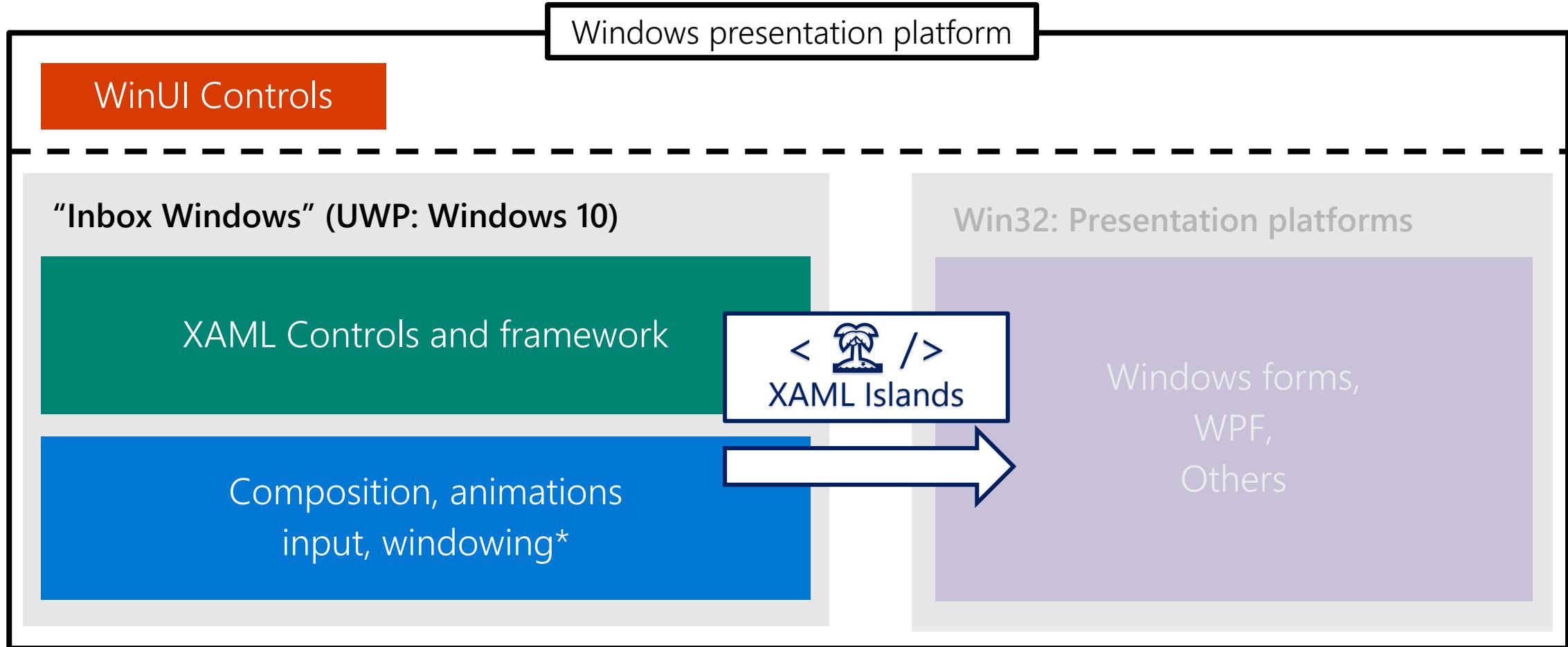


Xaml Desktop

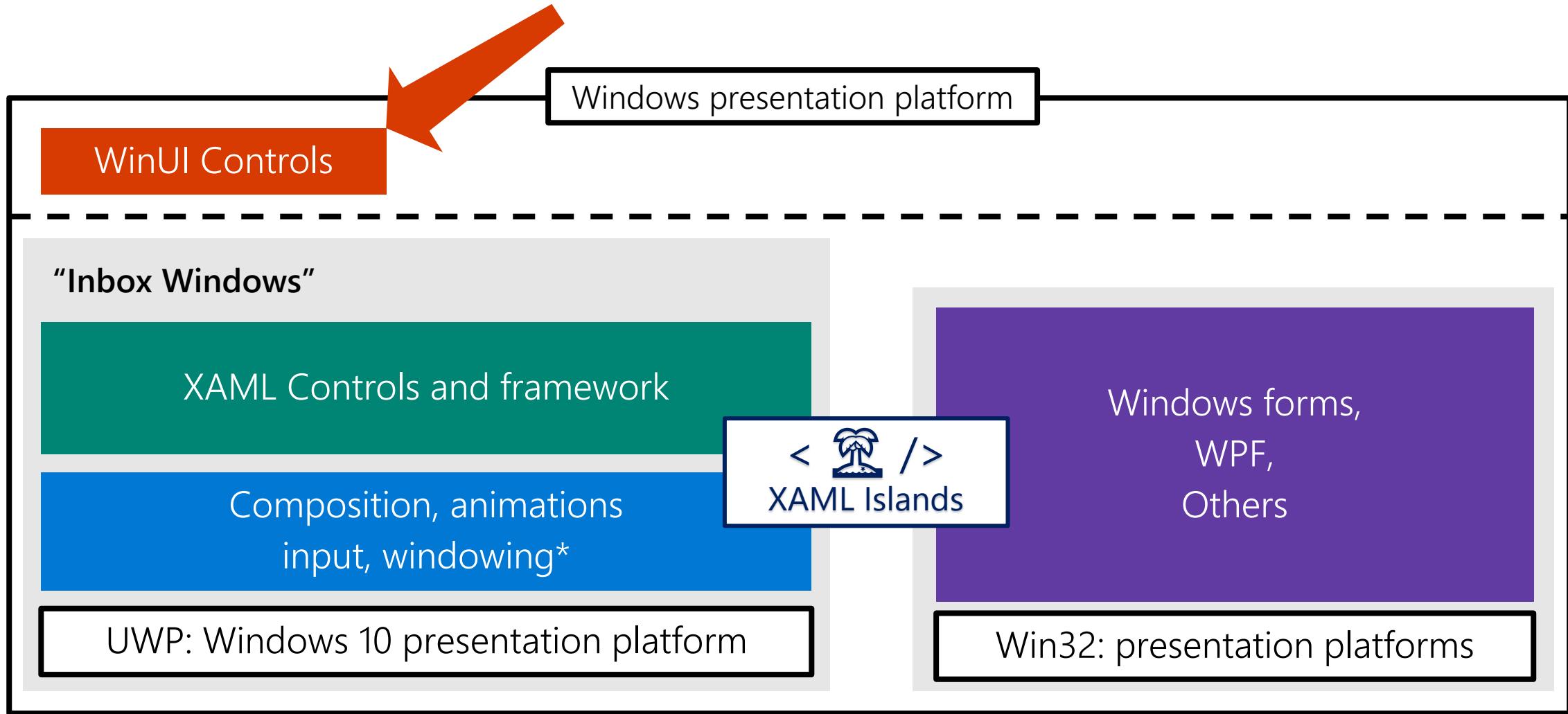
New Desktop app type Future

Win32 model
UWP Container model





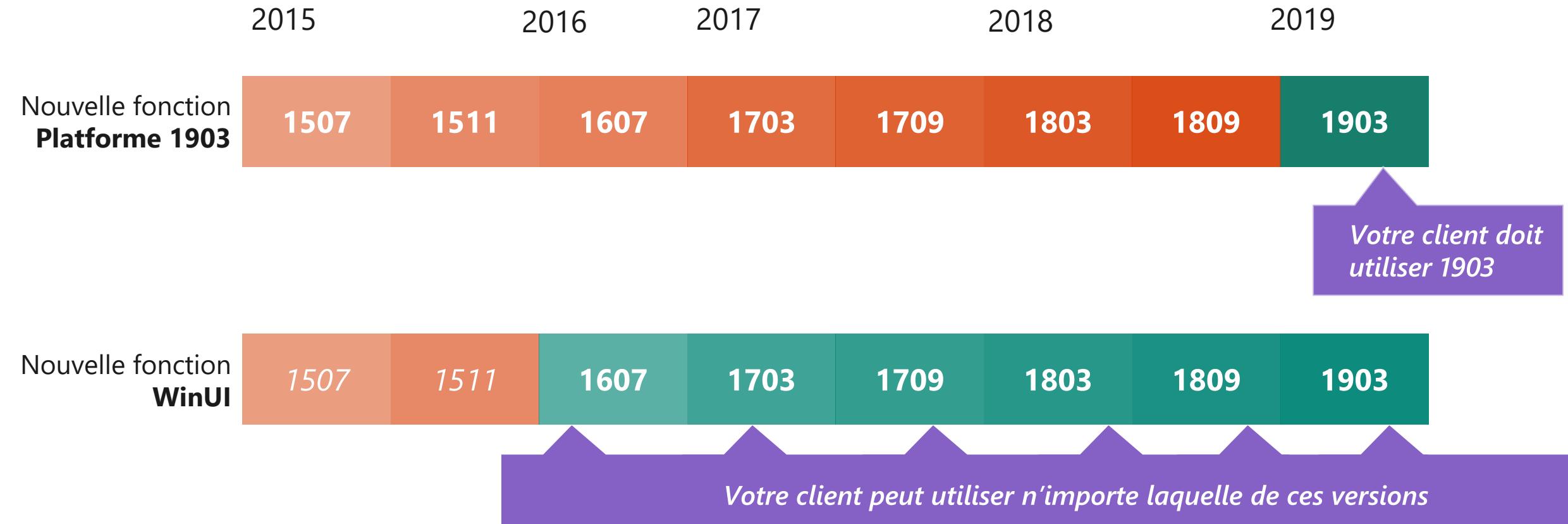
Windows Subsystems
DirectX (Kernel, drivers, device access, ...)



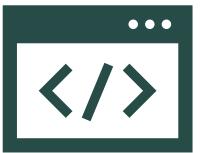
Windows Subsystems
DirectX (Kernel, drivers, device access, ...)

WinUI : meilleure portée pour les améliorations UI

Supporté sur toutes les versions Windows 10 du marché



WinUI : les avantages



Le meilleur de la plateforme

Mêmes implémentations de haute qualité que
dans la plateforme

Contrôles et styles Fluent à jour



Adoption facile

Supporté depuis Win10 1607 ("Anniversary
Update") et supérieur

Updates via NuGet tous les 4 mois

Mise à jour du namespace (Windows-
>Microsoft)

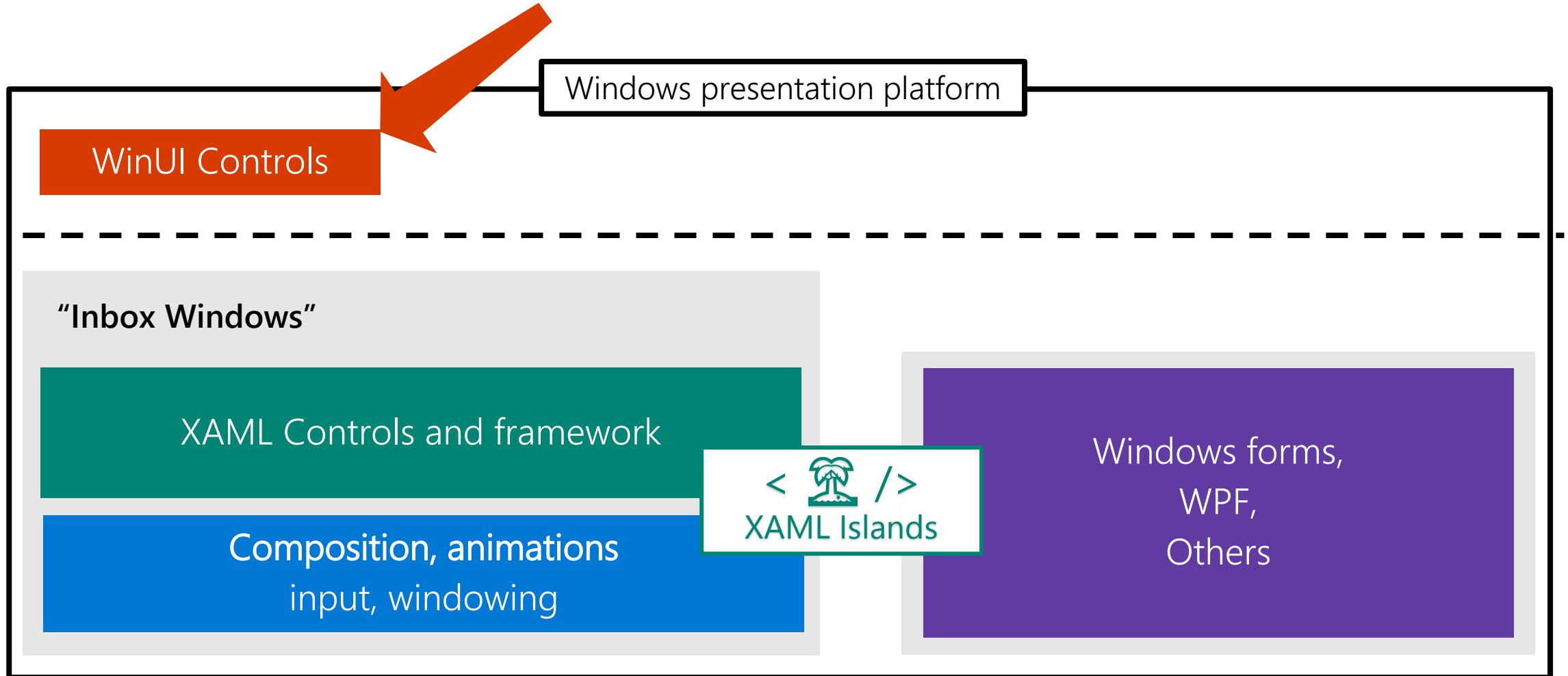
Intégration à Visual Studio



Développement ouvert et agile

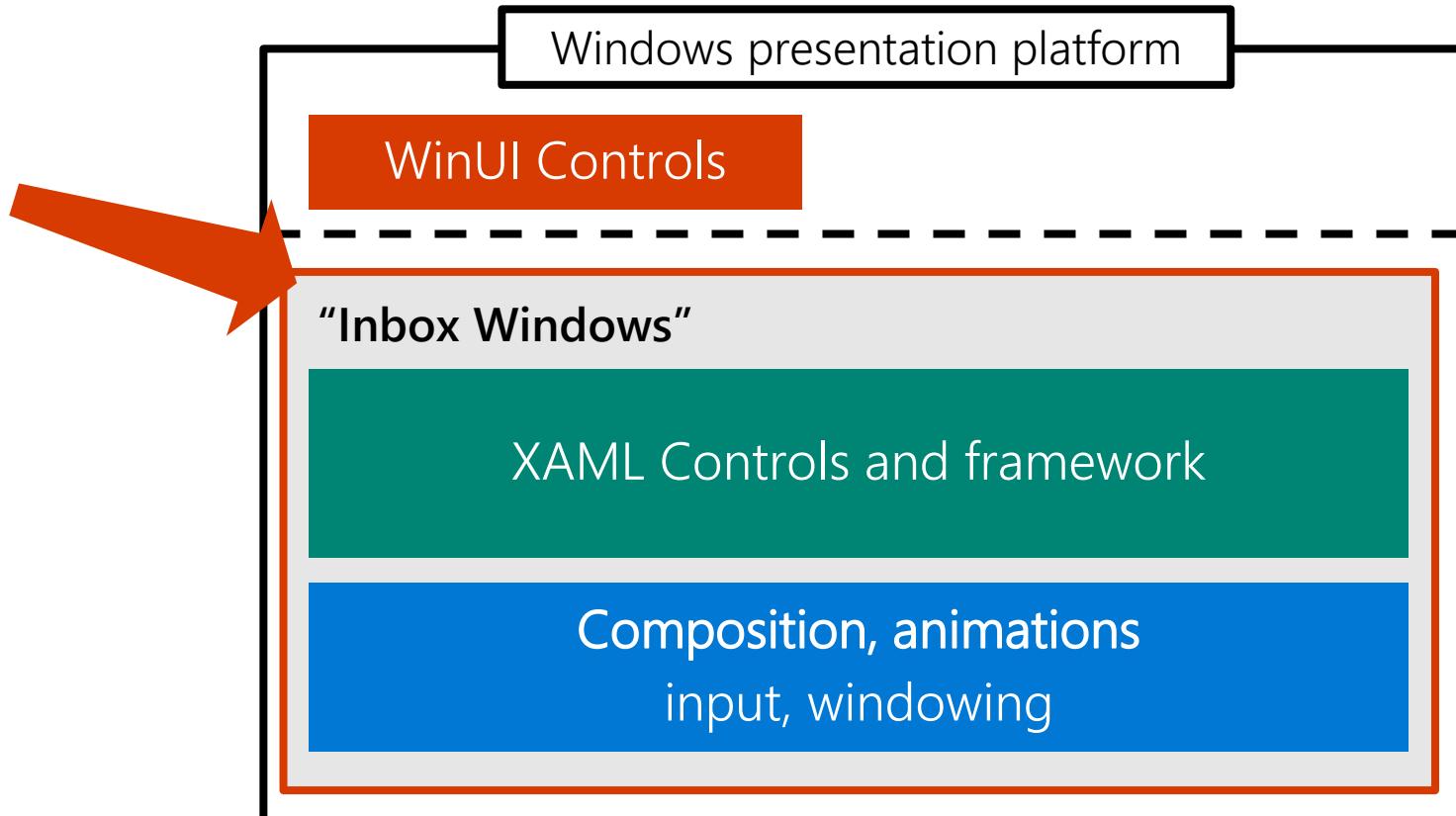
GitHub : aka.ms/winui

Versions Preview mensuelles



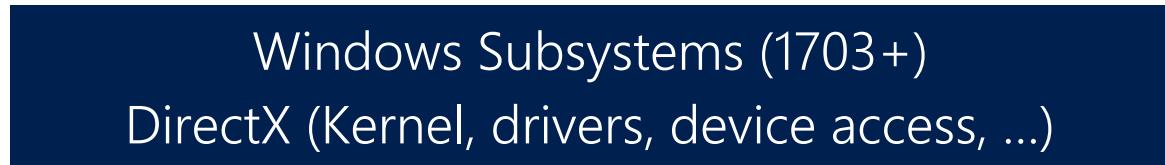
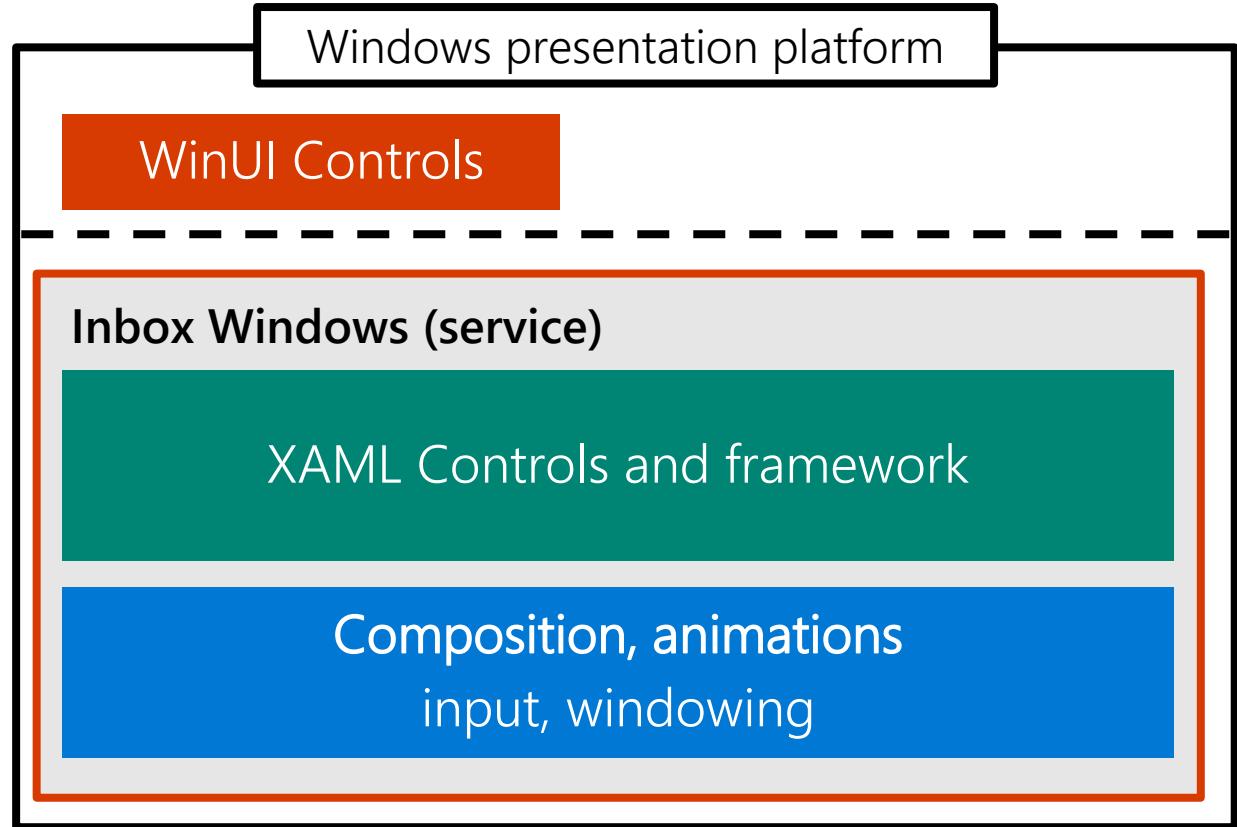
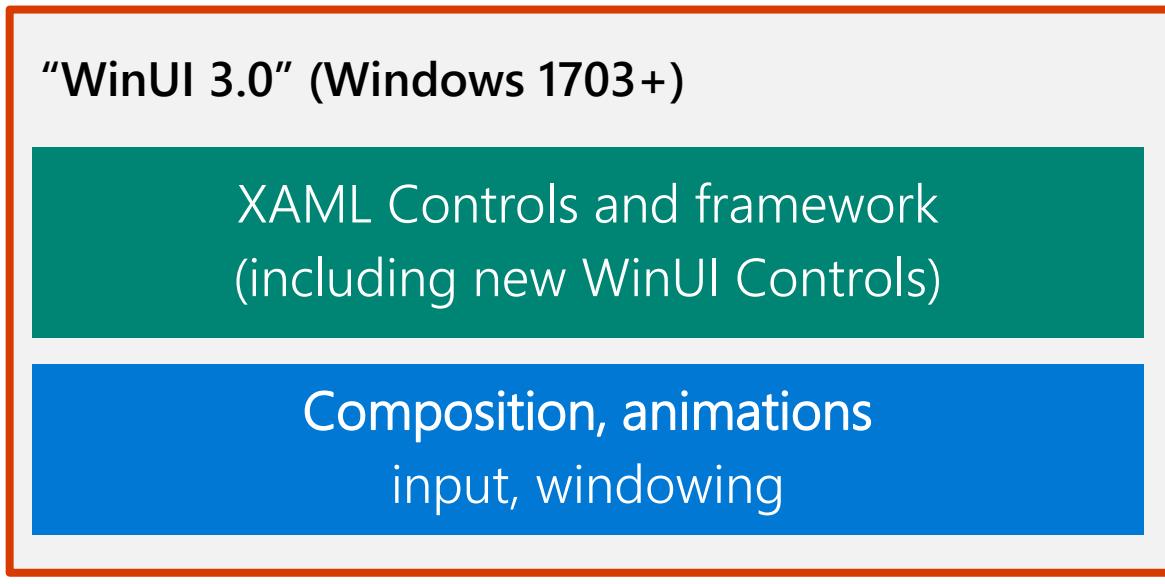
Windows Subsystems
DirectX (Kernel, drivers, device access, ...)

Windows 10 presentation platform: Inbox challenge

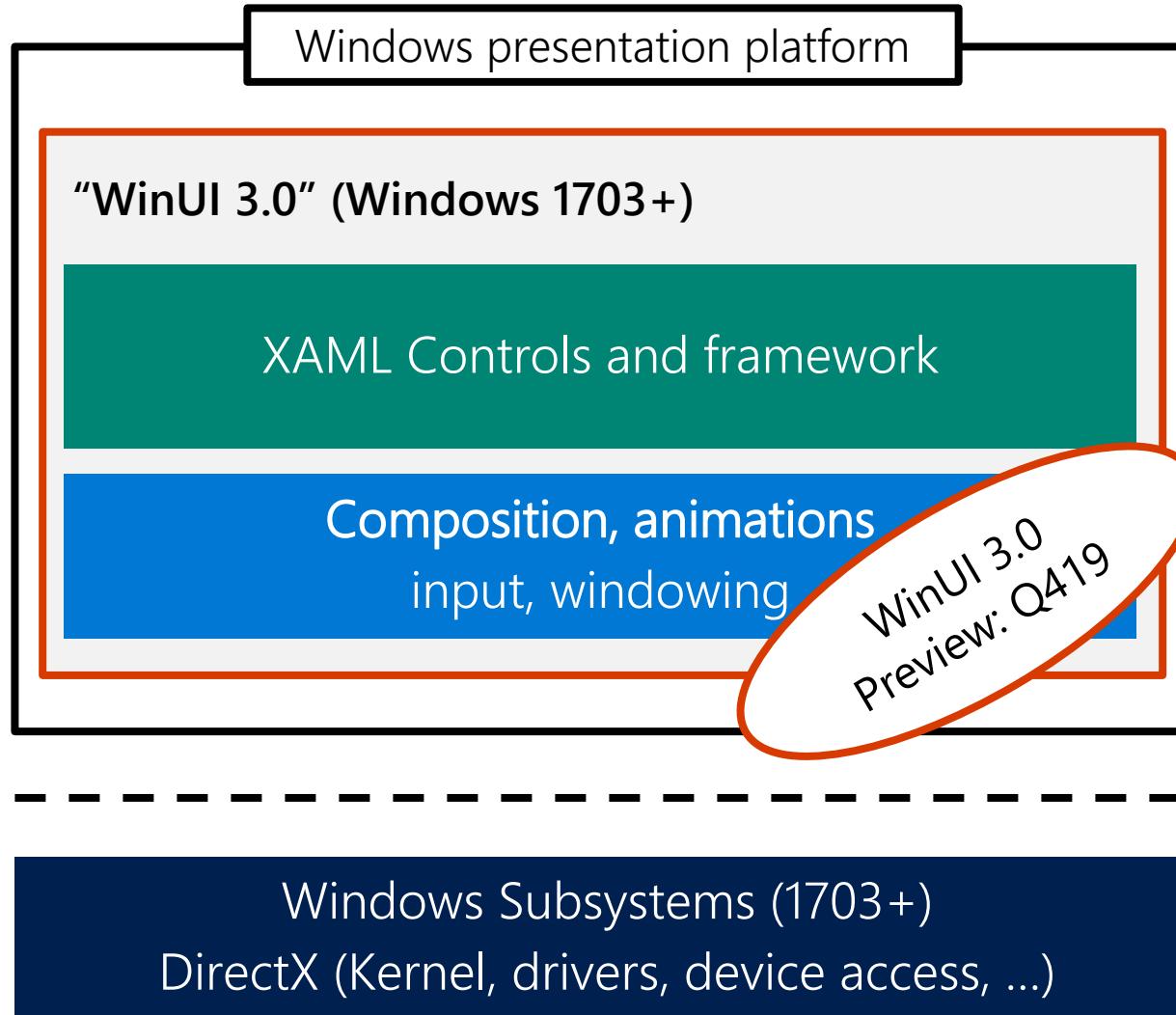


Windows Subsystems
DirectX (Kernel, drivers, device access, ...)

Windows 10 presentation platform



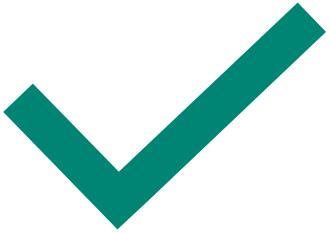
WinUI 3.0



Même WinUI :

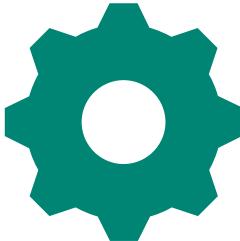
- Paquets NuGet/framework (SxS)
- Nouveau namespace (Microsoft.*)
- Open Source
- Outils par défaut de Visual Studio

Layer visuel & fenêtes : nouvelles capacités



Disponible dans 1903

- SceneVisual
- SceneNode
- SceneComponent
- AppWindow
- DisplayRegion
- Windowing environment
- CompositionRadialGradientBrush



Disponible - Insiders

- ParticleEmitterVisual
- ParticleGenerator
- ParticleBehavior



À venir dans WinUI 2.x

- GLTF Loader
- 3D Viewer Control

Layer visuel & fenêtes : nouvelles capacités



WinUI 2.x

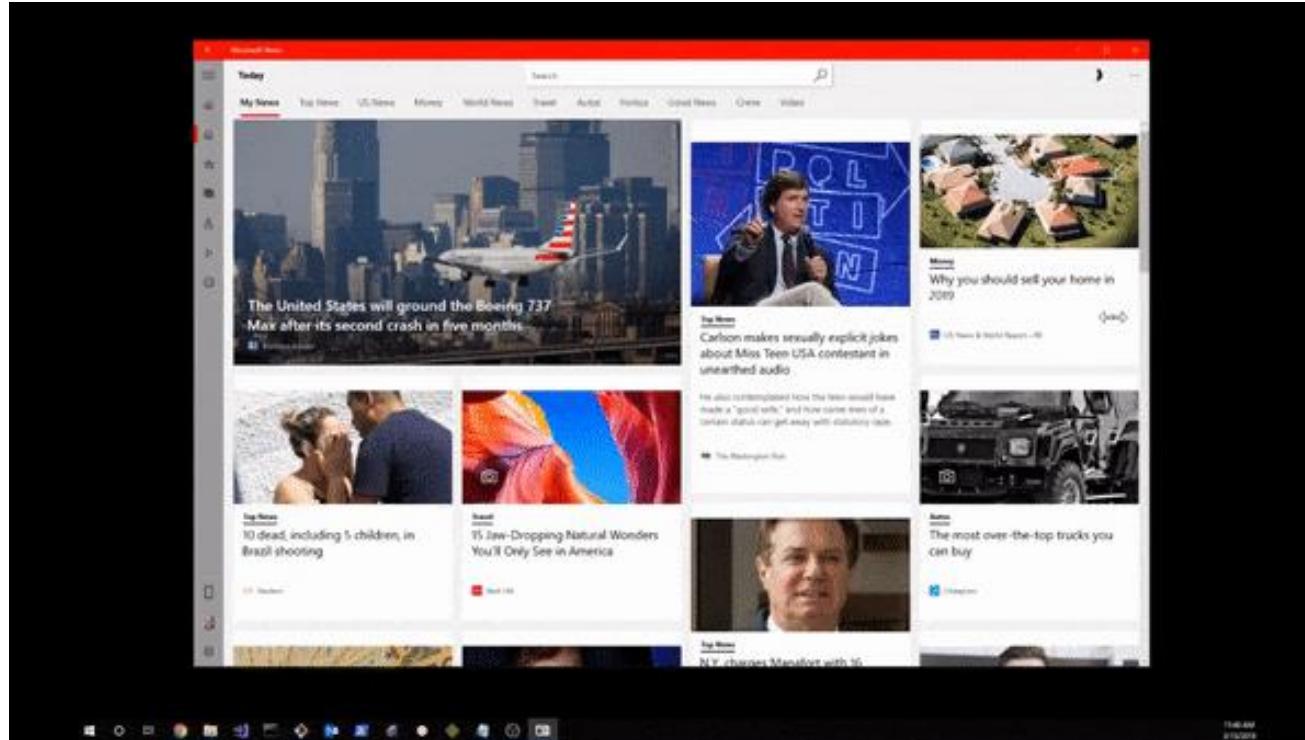
WinUI 3.0

WinUI 3.x

- | | | |
|--|--|---|
| <ul style="list-style-type: none">• GLTF Loader• 3D Viewer Control• CompositionRadialGradientBrush | <ul style="list-style-type: none">• ParticleEmitterVisual• ParticleGenerator• ParticleBehavior• SceneVisual• SceneNode• SceneComponent• XAML Islands | <ul style="list-style-type: none">• AppWindow• DisplayRegion• Windowing Environment |
|--|--|---|

[Disponible maintenant] Contrôles WinUI 2.1

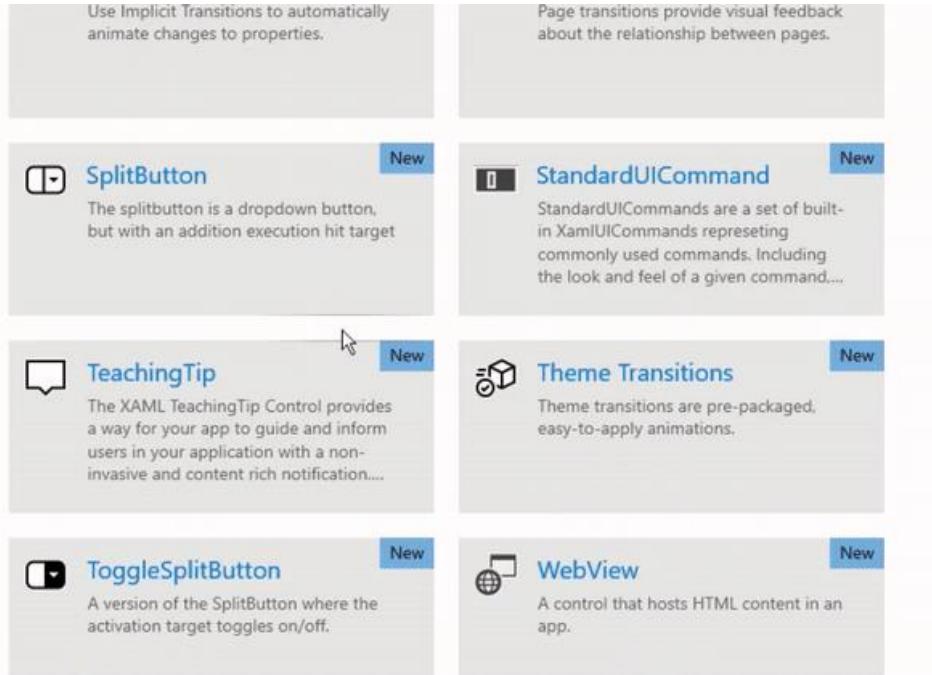
WinUI 2.1 : nouveaux contrôles



- **ItemsRepeater**

```
<ItemsRepeater ItemsSource="{x:Bind Items}" />
```

WinUI 2.1 : nouveaux contrôles



- ItemsRepeater
- TeachingTip

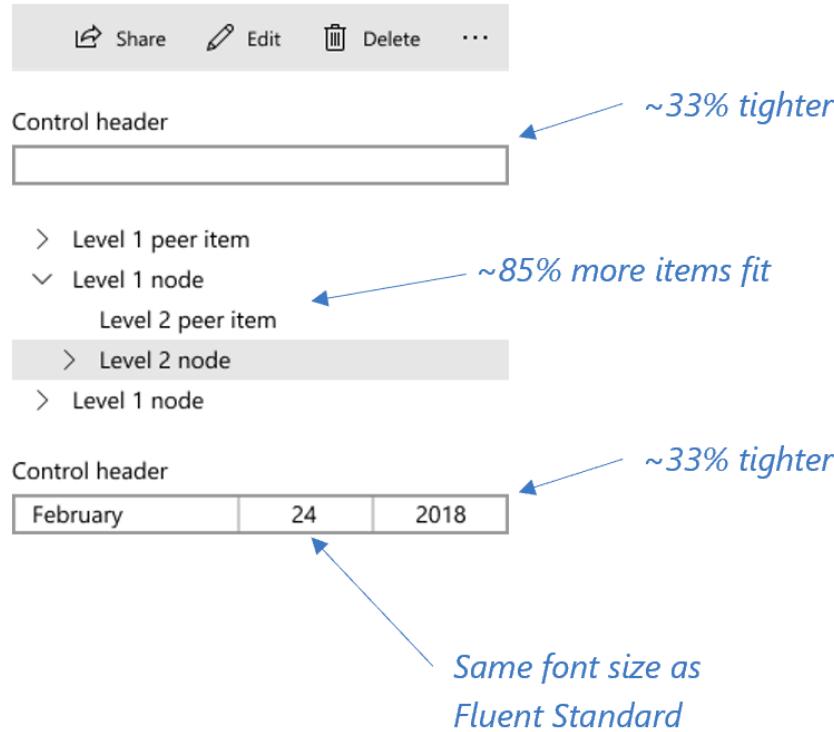
```
<controls:TeachingTip x:Name="AutoSaveTip"
    Title="Saving automatically"
    Subtitle="We save your changes as you go - so you never have to.">
</controls:TeachingTip>
```

WinUI 2.1 : nouveaux contrôles



- ItemsRepeater
- TeachingTip
- ThemeShadow

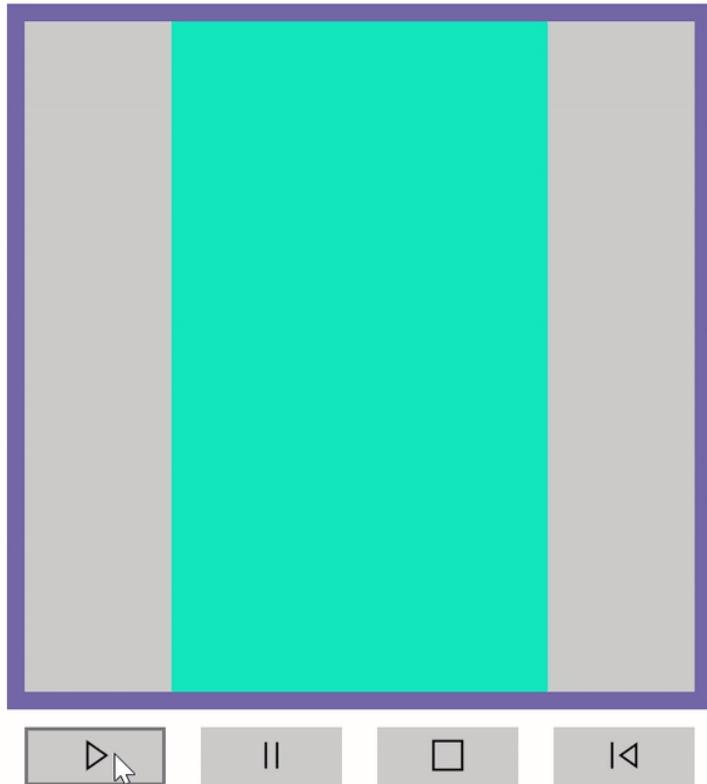
WinUI 2.1 : nouveaux contrôles



- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity

```
<Page.Resources>
    <ResourceDictionary Source="ms-appx:///Microsoft.UI.Xaml/DensityStyles/Compact.xaml" />
</Page.Resources>
```

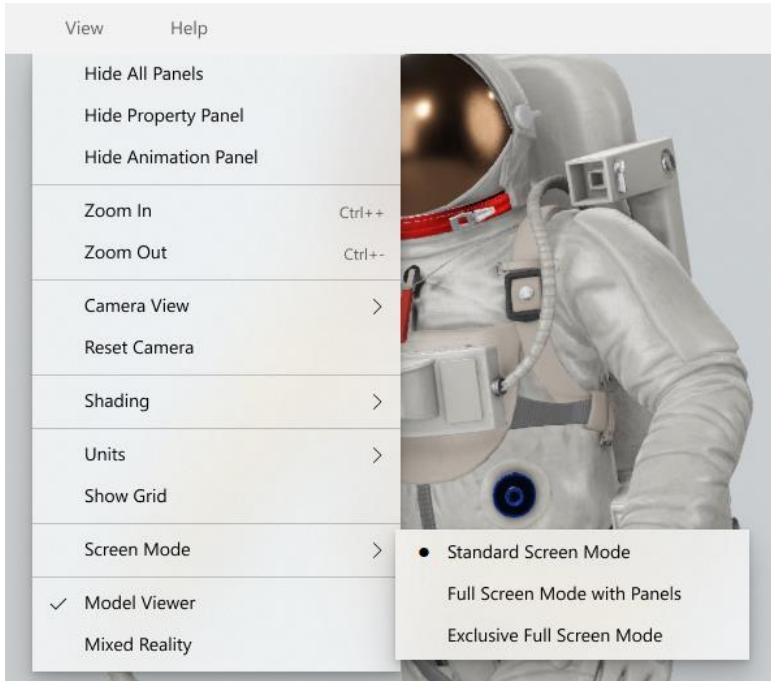
WinUI 2.1 : nouveaux contrôles



```
<muxcontrols:AnimatedVisualPlayer x:Name="Player" AutoPlay="False">
    <animatedvisuals:LottieLogo1/>
</muxcontrols:AnimatedVisualPlayer>
```

- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity
- AnimatedVisualPlayer

WinUI 2.1 : nouveaux contrôles

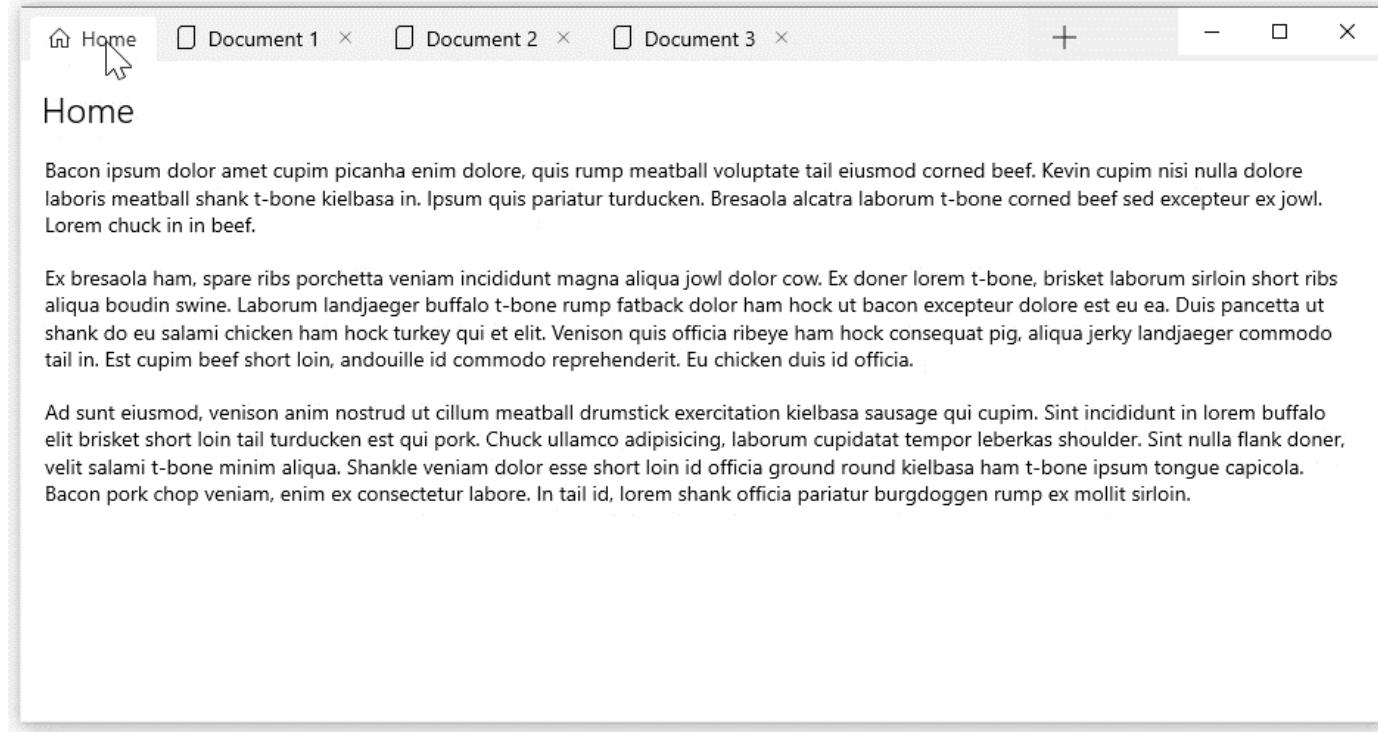


```
<muxc:MenuBarItem Title="View">
    <MenuFlyoutItem Text="Output"/>
    <MenuFlyoutSeparator/>
    <muxc:RadioMenuItem Text="Landscape" GroupName="OrientationGroup"/>
    <muxc:RadioMenuItem Text="Portrait" GroupName="OrientationGroup" IsChecked="True"/>
    <MenuFlyoutSeparator/>
    <muxc:RadioMenuItem Text="Small icons" GroupName="SizeGroup"/>
    <muxc:RadioMenuItem Text="Medium icons" IsChecked="True" GroupName="SizeGroup"/>
    <muxc:RadioMenuItem Text="Large icons" GroupName="SizeGroup"/>
</muxc:MenuBarItem>
```

- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity
- AnimatedVisualPlayer
- RadioMenuFlyout

[En développement] WinUI 2.x

WinUI 2.x : nouveaux contrôles



- **ItemsRepeater**
- **TeachingTip**
- **ThemeShadow**
- **CompactDensity**
- **AnimatedVisualPlayer**
- **RadioMenuFlyout**
- **TabsControl**

<https://github.com/Microsoft/microsoft-ui-xaml/issues/304>

WinUI 2.x : nouveaux contrôles

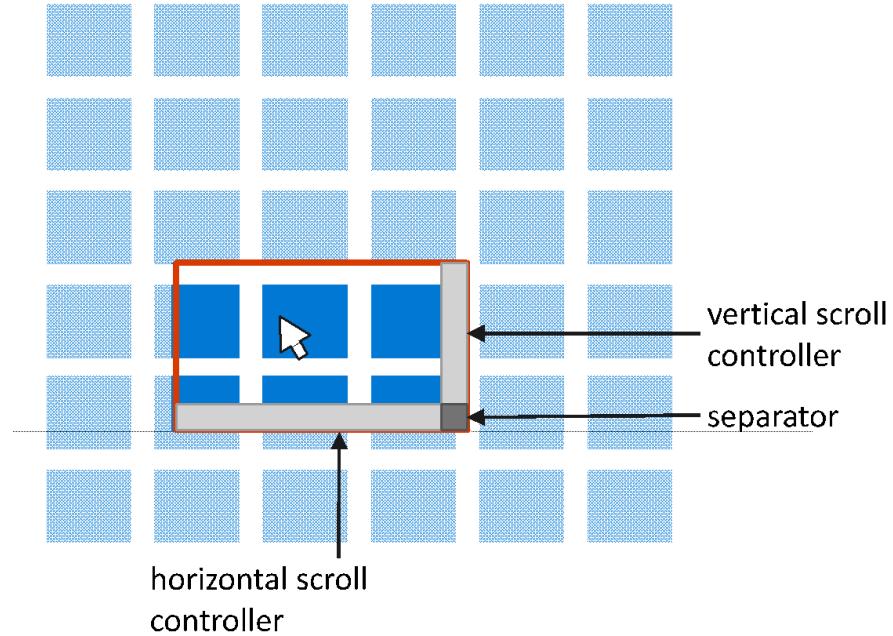
App Mode



- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity
- AnimatedVisualPlayer
- RadioMenuFlyout
- TabsControl
- RadioButton Grouping

<https://github.com/microsoft/microsoft-ui-xaml/issues/333>

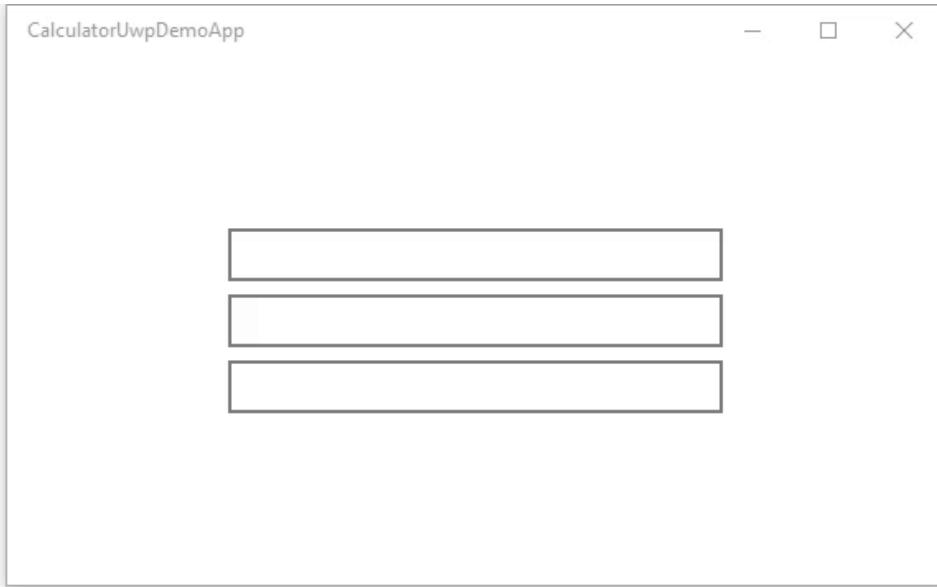
WinUI 2.x : nouveaux contrôles



- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity
- AnimatedVisualPlayer
- RadioMenuFlyout
- TabsControl
- RadioButton Grouping
- ScrollViewer

<https://github.com/microsoft/microsoft-ui-xaml/issues/108>

WinUI 2.x : nouveaux contrôles

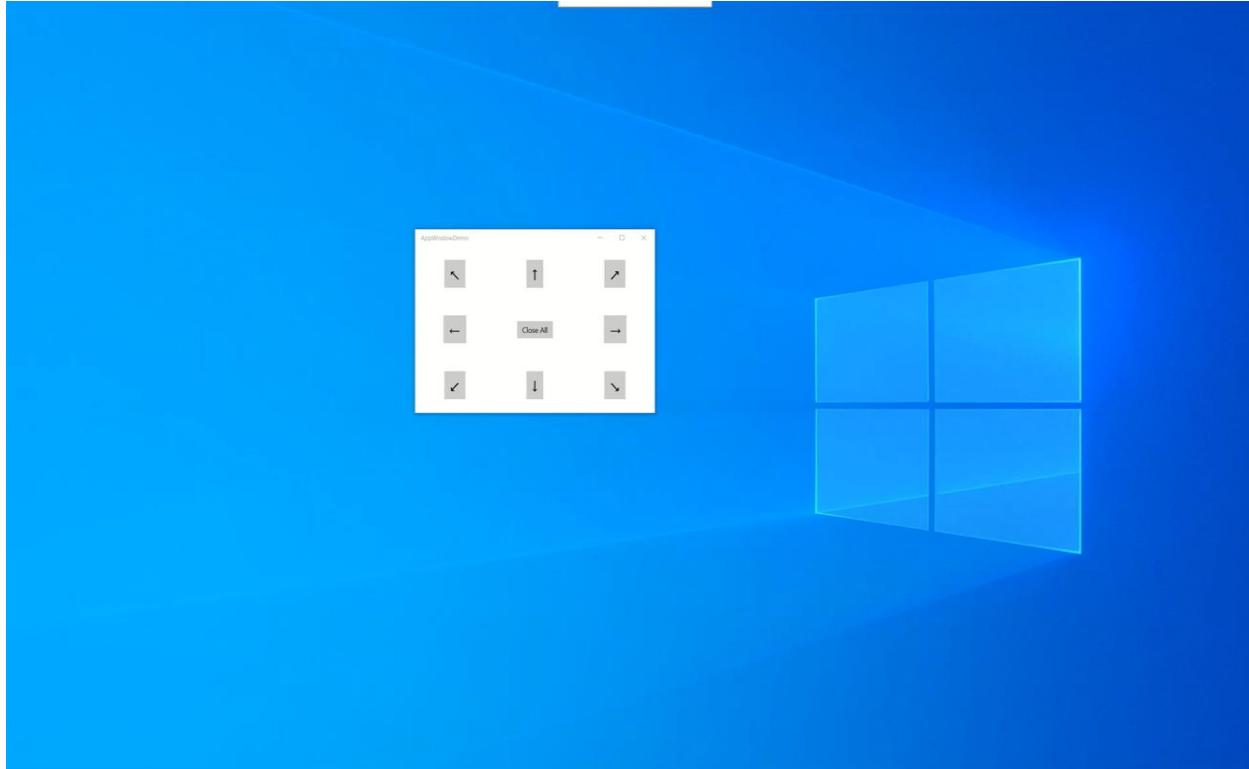


- ItemsRepeater
- TeachingTip
- ThemeShadow
- CompactDensity
- AnimatedVisualPlayer
- RadioMenuFlyout
- TabsControl
- RadioButton Grouping
- ScrollViewer
- NumberBox

<https://github.com/microsoft/microsoft-ui-xaml/issues/483>

Inbox Windows (WinUI 3.0+)

Fenêtres : nouvelles capacités

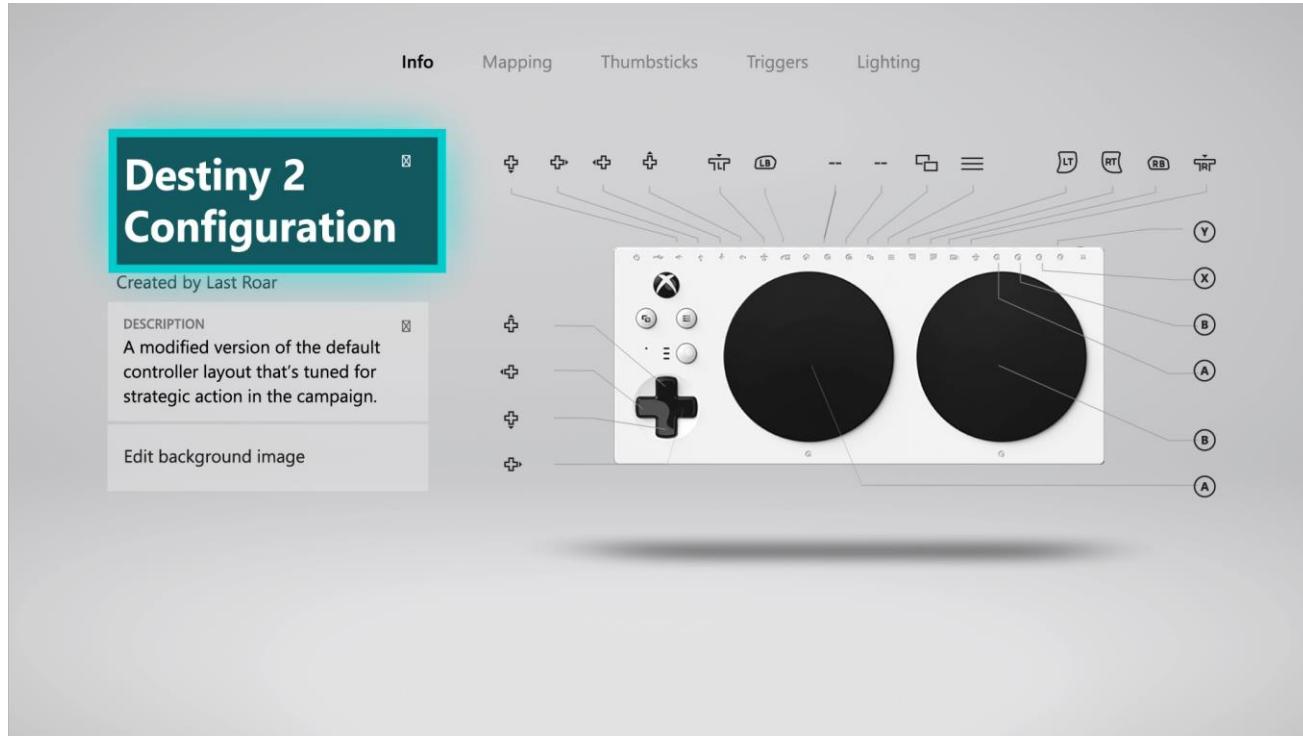


- AppWindow
- DisplayRegion
- WindowingEnvironment

aka.ms/AppWindowSample

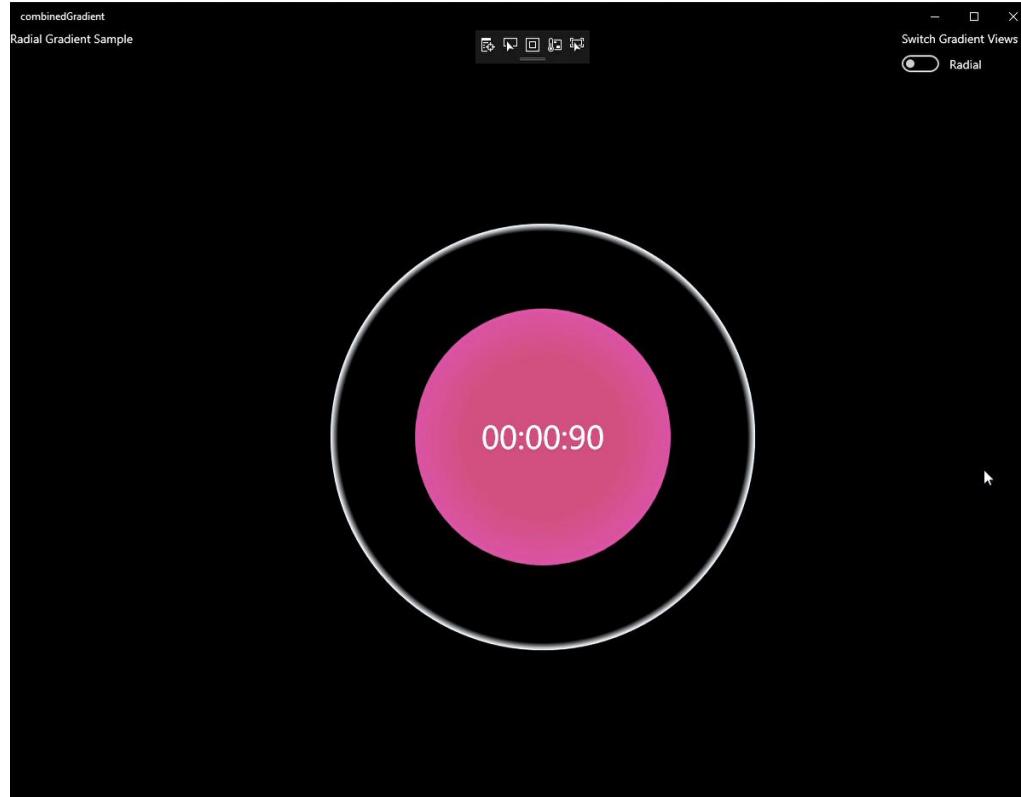
aka.ms/AppWindowIntro

Layer visuel : nouvelles capacités



- SceneVisual
- SceneNode
- SceneComponent (*e.g. mesh*)
- GLTF Loader
- 3D Viewer Control

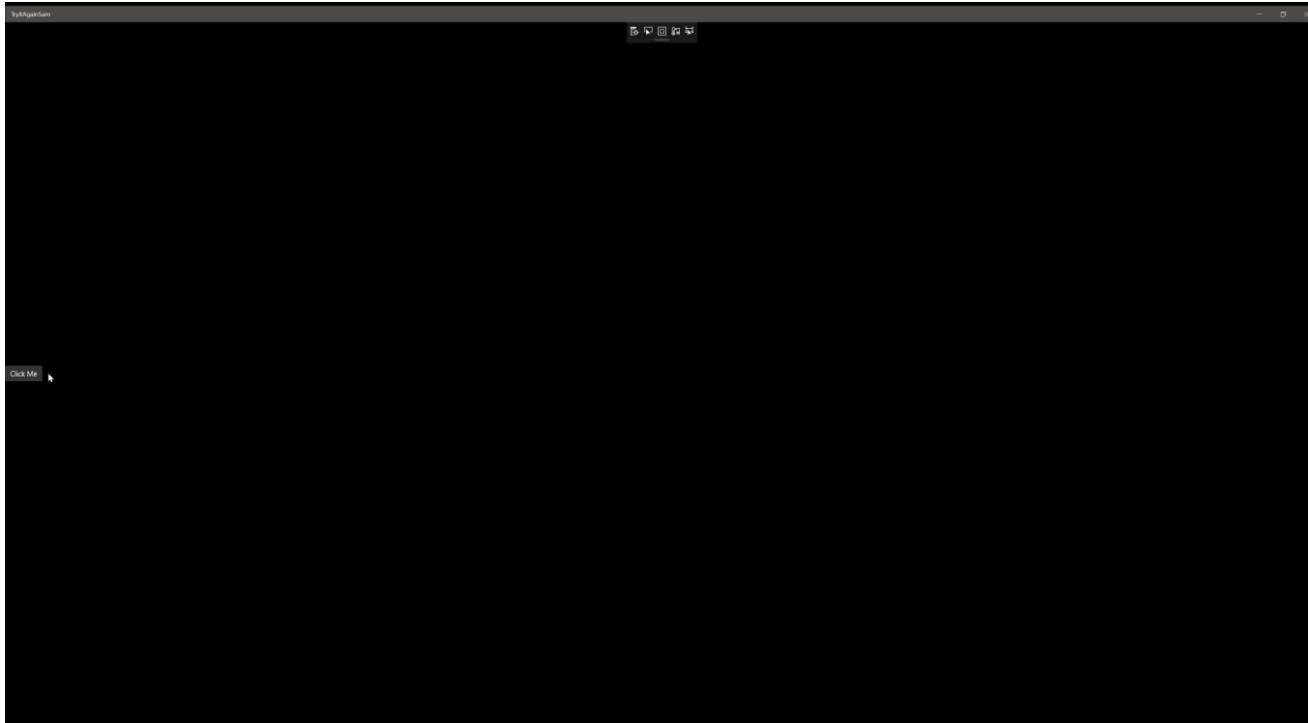
Layer visuel : nouvelles capacités



- SceneVisual
- SceneNode
- SceneComponent (*e.g. mesh*)
- GLTF Loader
- 3D Viewer Control
- CompositionRadialGradientBrush

```
CompositionRadialGradientBrush RGBrush = compositor.CreateRadialGradientBrush();
RGBrush.ColorStops.Add(compositor.CreateColorGradientStop(0, Colors.Blue));
RGBrush.ColorStops.Add(compositor.CreateColorGradientStop(1, Colors.Yellow));
```

Layer visuel : nouvelles capacités



- SceneVisual
- SceneNode
- SceneComponent (*e.g. mesh*)
- GLTF Loader
- 3D Viewer Control
- CompositionRadialGradientBrush
- ParticleEmitterVisual
- ParticleGenerator
- ParticleBehavior

Pour aller plus
loin

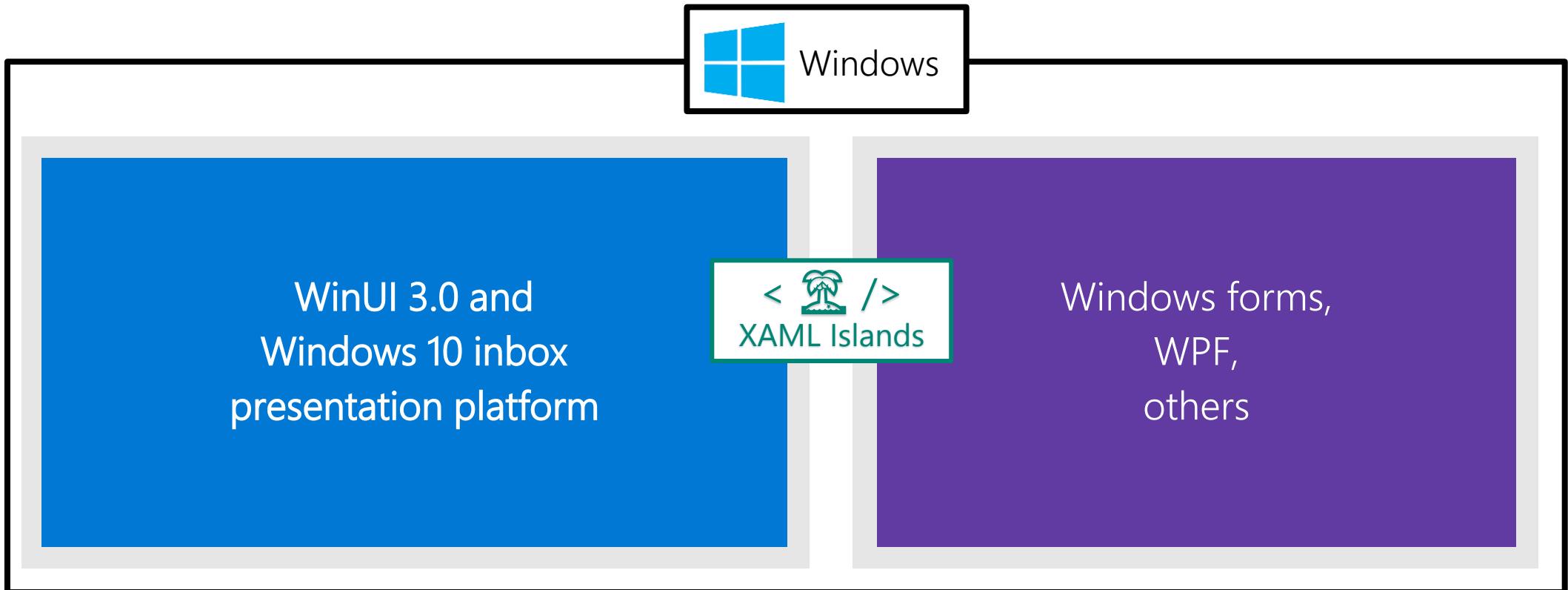
BRK3072 – State of the Union: The Windows Presentation Platform

<https://mybuild.techcommunity.microsoft.com/sessions/77008>

 Developing people-centered experiences with Microsoft 365

<https://blogs.windows.com/buildingapps/2019/05/06/developing-people-centered-experiences-with-microsoft-365>

React Native pour Windows v2 (Preview)



Windows Subsystems
DirectX (Kernel, drivers, device access, ...)



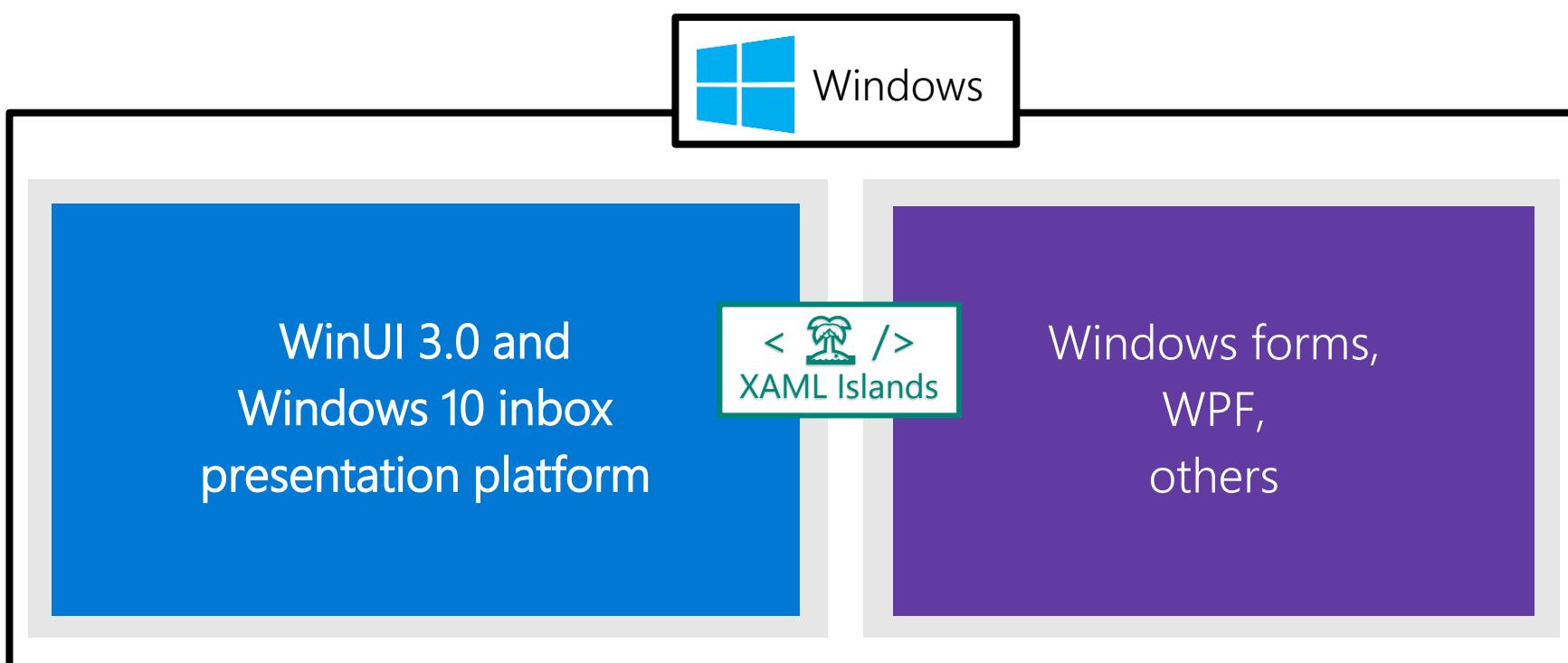
Xamarin.Forms

(.NET)



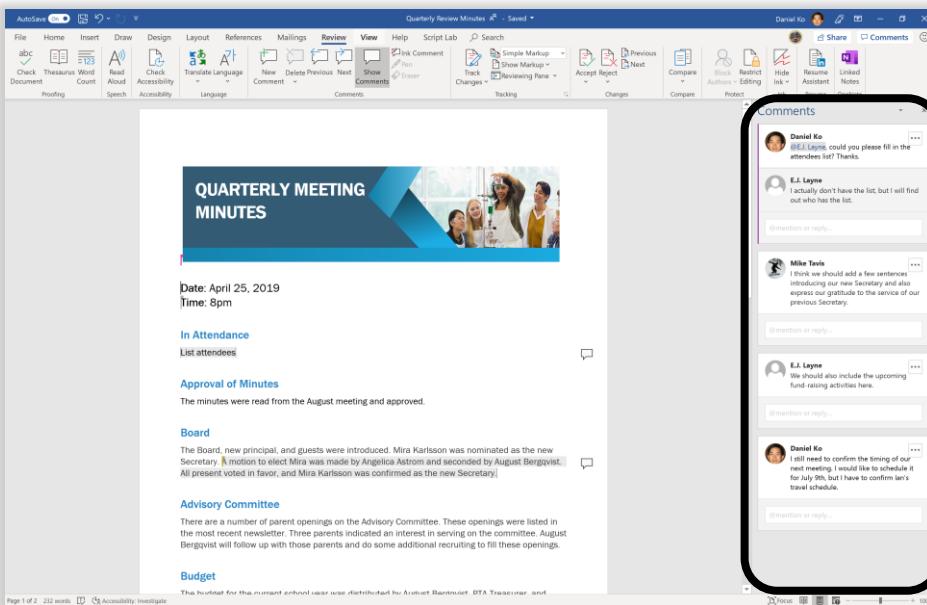
React Native v2

(Web Developer)

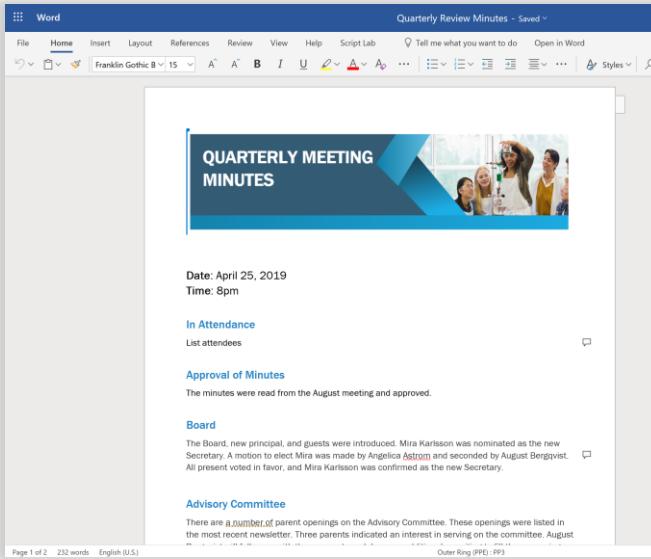


JS
CSS
JSX

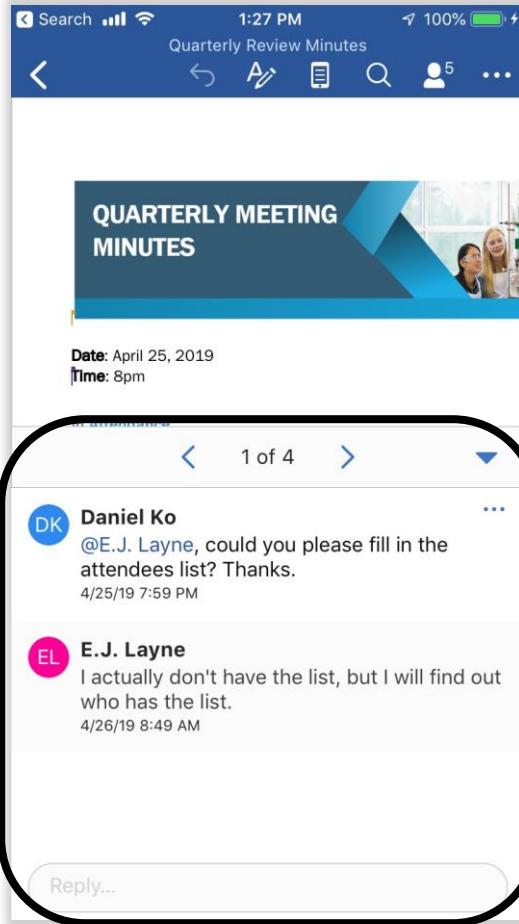
Microsoft et React Native



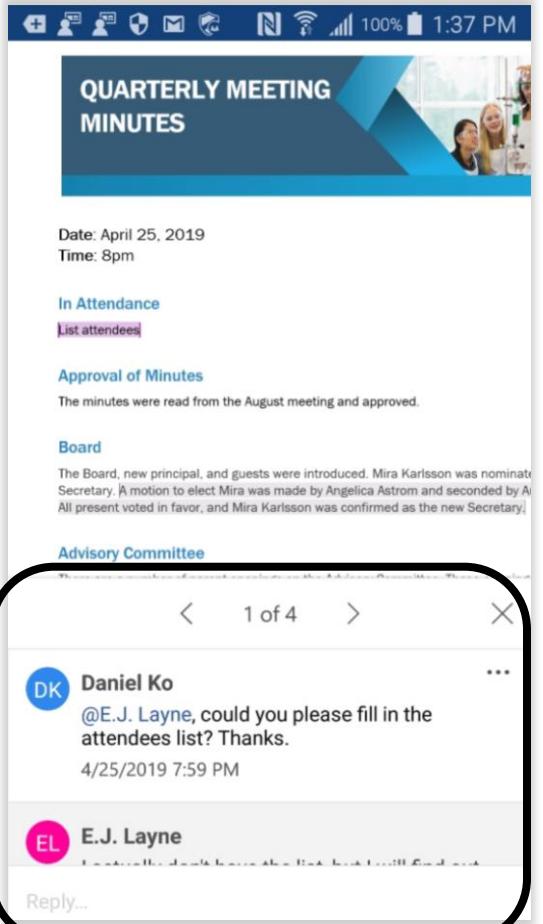
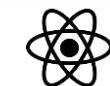
Windows



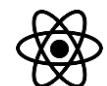
Web



iOS



Android



Démo

XAML Islands et React Native, modernisons l'existant !

Pour aller plus
loin

BRK2034 – React Native on Windows

<https://mybuild.techcommunity.microsoft.com/sessions/77321>

BRK3071 – React Native: Build rich
Windows and mobile applications using
JavaScript

<https://mybuild.techcommunity.microsoft.com/sessions/77007>

Conclusion

Conclusion : de la modernisation à tous les niveaux !

- Windows Terminal 1.0
 - Une nouvelle expérience moderne qui fait fi du passé (1903+)
 - Des performances de premier ordre
 - Une distribution repensée, maintenant découpé de Windows 10
- WSL 2
 - Un véritable noyau Linux au cœur de Windows
 - Des performances de premier ordre : micro-conteneur
 - En Preview courant juin (Insider builds)
- Universal Windows Platform et Windows Presentation Platform
 - .NET Core 3.0 va démultiplier les possibilités
 - Une stack UI découpée de Windows 10
 - React Native est supporté nativement dans Windows 10 (1903+)
- Fluent Design : bibliothèques natives pour toutes les plateformes



Merci !

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Questions ?

**ON S'INVESTIT, POUR VOUS.
INVESTED IN YOU.**

