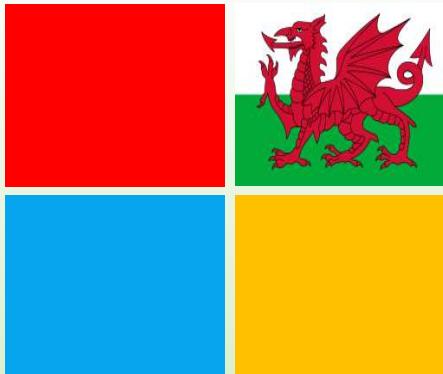




# Welsh Azure User Group

## -Virtual Meet Up-

21<sup>st</sup> January 2021



Follow and tweet along using #waug

**THE MEETING WILL BEGIN SHORTLY**



<https://cutt.ly/welshazure>

@welshazure



# Welsh Azure User Group

## - Virtual Meet Up -

21<sup>st</sup> January 2021

### AGENDA

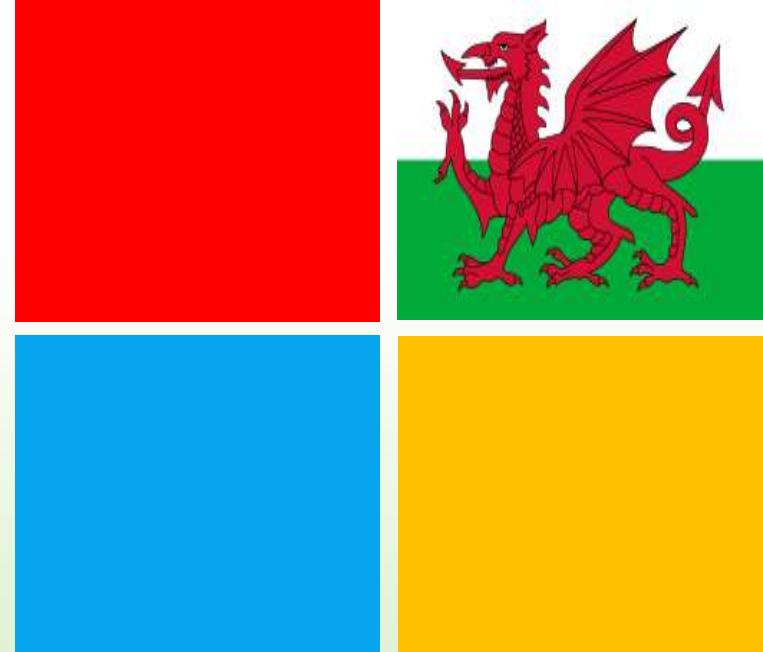
6.30pm - Welcome!

6.45pm – Introduction to Identity for developers  
Christos Matskas – Senior PM Identity (Microsoft)

7.30pm - Update on Azure Synapse and Purview  
Graham Martin – Cloud Solutions Architect (Microsoft)

8.15pm - Kahoot Quiz/Feedback  
(2 x £50 Amazon voucher Prizes!)  
(2 x Microsoft Exam Vouchers)

8.30pm – Close (Please don't forget the feedback!)



<https://cutt.ly/welshazure>



@welshazure

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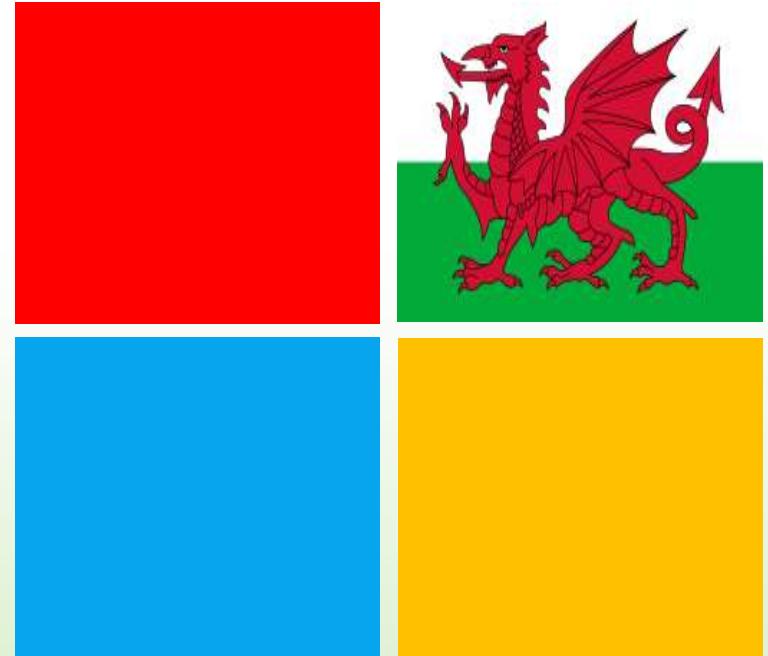
# Welsh Azure User Group

## - Virtual Meet Up-

21<sup>st</sup> January 2021

### HOUSE KEEPING

- Be Courteous to each other.
- No question is a silly question.
- Please stay on mute unless invited to speak.
- Feel free to ask questions in the chat window or when a presenter specifically asks.
- Enjoy (Don't forget - Install Kahoot App!)



<https://cutt.ly/welshazure>



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# Welsh Azure User Group

## - Virtual Meet Up -

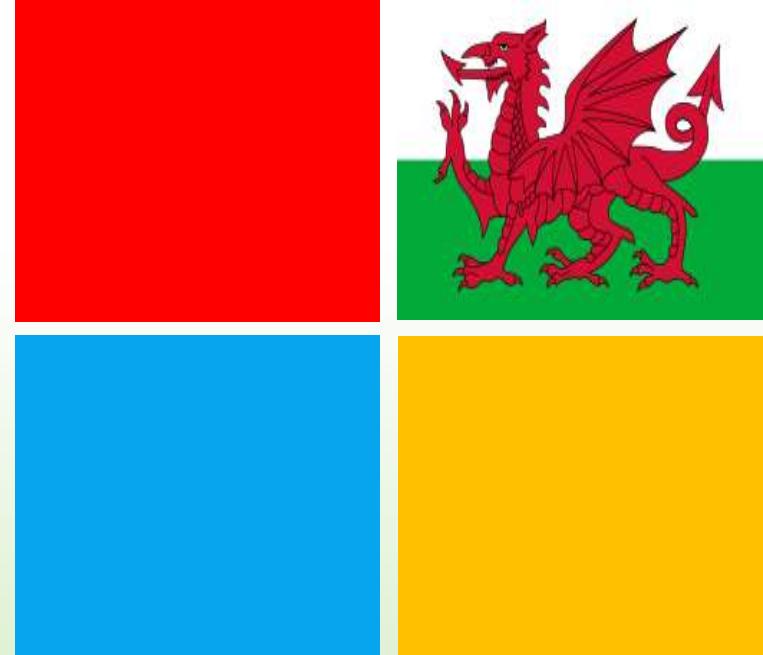
21<sup>st</sup> January 2021

### YOUR WAUG HOSTS

- Confused.com - Richard Griffiths
- BT Enterprise – John Lunn
- Clear Bank – Abul Khair
- IPO - George Wachira

### Supported by:

- Microsoft – Anna McNally
- Microsoft – Matt Fortunka
- Microsoft – Ahmed Laajam



<https://cutt.ly/welshazure>



@welshazure

Follow and tweet along using #waug

A message from our sponsors:



[servent.co.uk](http://servent.co.uk)

**servent** 

Modern Enterprise Acceleration



**Microsoft  
Partner**



Gold Cloud Platform  
Gold Application Development  
Silver Security  
Silver DevOps  
Silver Data Analytics

# WHO WE ARE

## ABOUT SERVENT



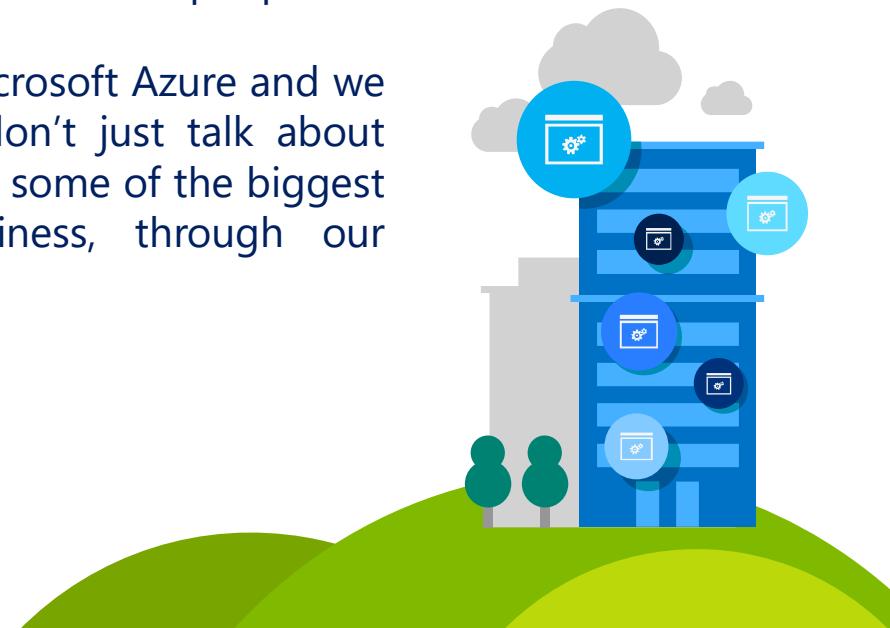
**22 Montrose Street  
Glasgow  
G1 1RE**

**[www.servent.co.uk](http://www.servent.co.uk)**

Servent are one of the top UK Microsoft Azure partners and sit within the top Microsoft partners in the UK, based on the amount of Azure revenue we drive for Microsoft, and our customer references.

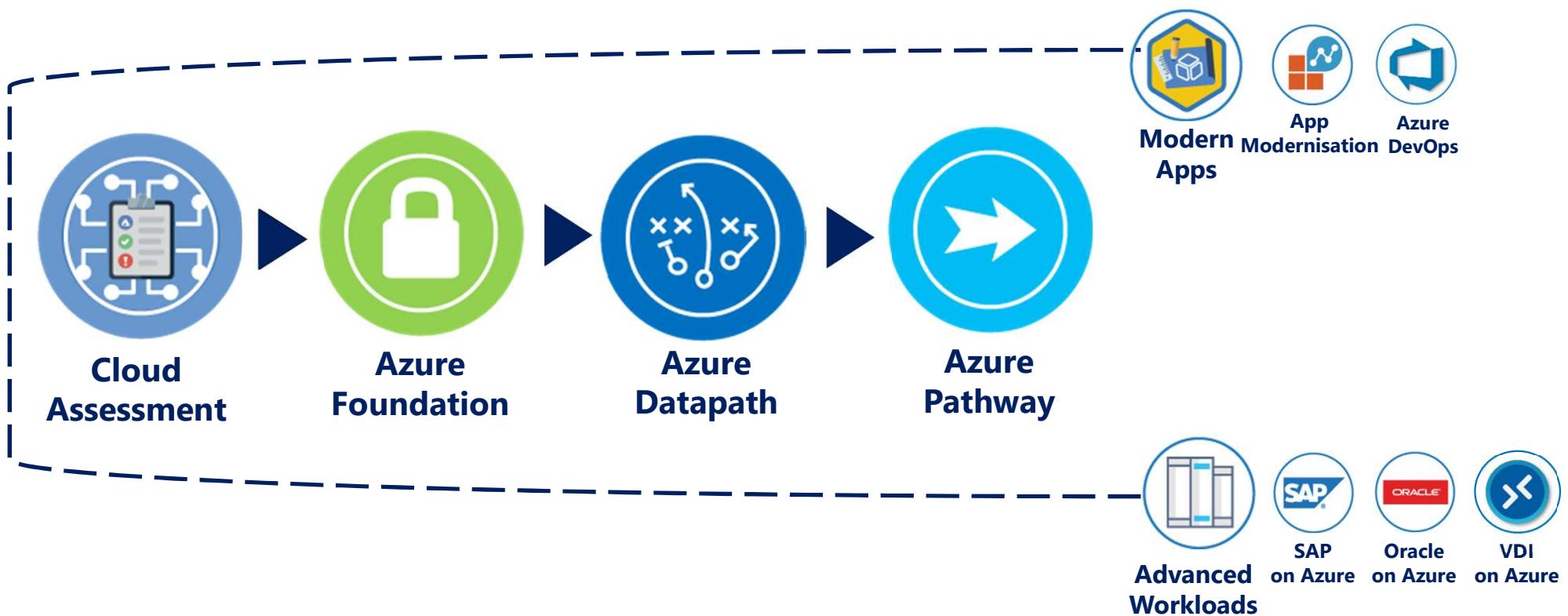
We have been working with the Microsoft Azure platform since 2010, so we understand it more than most people.

That's why our business is built on Microsoft Azure and we live and breathe it every day. We don't just talk about Microsoft Cloud, we deliver it, helping some of the biggest enterprises cloud-power their business, through our Journey to a Modern Enterprise.



# JOURNEY TO A MODERN ENTERPRISE

Our journey to a modern enterprise is our proven process driven approach to moving customers to Microsoft Azure. It is made up of the following individual offerings, built from many years of experience moving customers to the cloud.





# Fantastic February

- 18<sup>th</sup> February 2021 -

- Starting @ 6.00pm -

Proud to be sponsored by:

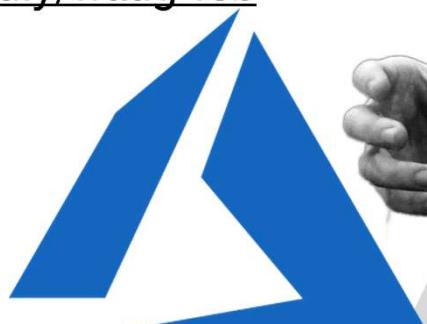


**Welsh Azure User Group**



@welshazure

RSVP: <https://cutt.ly/waug-feb>



John Savill

Azure Architect / Speaker  
@NTFAQGuy



Scott Hanselman

Programmer / Teacher / Speaker  
@shanselman



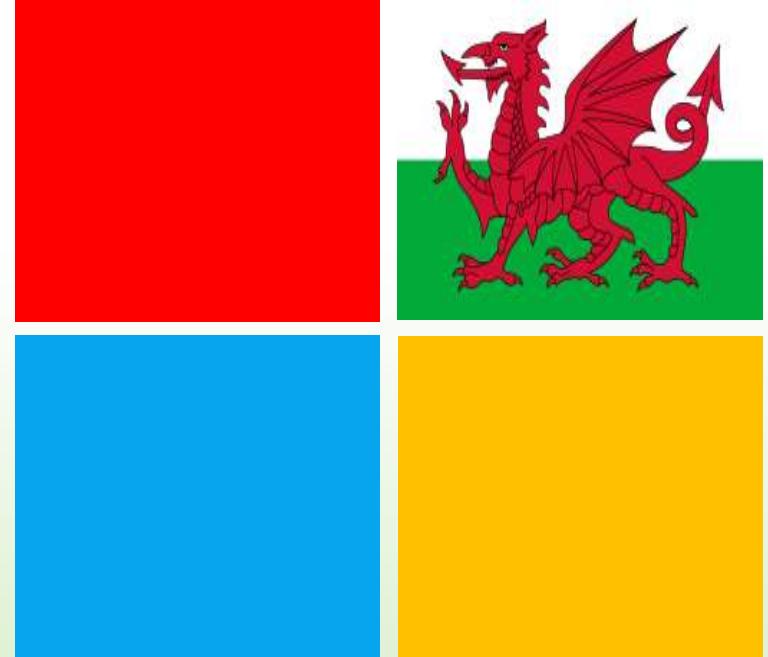
# Welsh Azure User Group - Virtual Meet Up-

21<sup>st</sup> January 2021

Call for Speakers – March/April Lightning Talks

The screenshot shows the 'CALL FOR SPEAKERS' section of the Sessionize platform. At the top, it says 'Proud to be sponsored by: serventL, Admiral'. Below that is a graphic with the Welsh flag colors (red, white, and green) and the text 'Welsh Azure User Group'. A Twitter handle '@welshazure' is also present. The main form area has fields for 'Session title\*' (set to 'John's Session'), 'Description\*', and a note about session length. To the right, event details are shown: 'Welsh Azure User Group - March Lightning Talks' (in 57 days), 'event date' (18 Mar 2021), 'location' (Online), and 'website' (www.meetup.com/MSFT-Stack/event...). A note at the bottom states: 'The Welsh Azure User Group is looking for 6 speakers to give a 15 minute Lightning Talk on a Microsoft Azure Topic of your choice. We are looking for anything fun and engaging that showcases the use of Azure Technologies in Business. If you think you have a topic you would like to discuss then we would.'

<https://sessionize.com/WAUG-March2021-LightningTalks>



<https://cutt.ly/welshazure>



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# Welsh Azure User Group - Virtual Meet Up-

21<sup>st</sup> January 2021

UK DigiGirlz Day

Live Teams Event:  
28<sup>th</sup> January 2021  
10am-1pm

Sign Up: [microsoft.com/digigirlz](https://microsoft.com/digigirlz)



Microsoft DigiGirlz  
What will you make today?



A globe icon with a white outline and a blue and green design, with a small arrow pointing around it.

## UK DigiGirlz Day

Teams Live event  
28<sup>th</sup> January 2021  
10am – 1pm

A DigiGirlz Day is a great way to make something fun, see cool technology, and learn about the opportunities within the STEM industry. This day is structured around 2 hands-on sessions making games, Q&A with Early in Career, and an exploration of the hottest new tech out today.

This event is focused towards, but not exclusive to, 10–14-year-old girls

Sign up at [microsoft.com/digigirlz](https://microsoft.com/digigirlz)

 Microsoft

Register Now!



# Welsh Azure User Group

## - Virtual Meet Up-

21<sup>st</sup> January 2021

### Mission Earth

Adobe and Microsoft together aspire to cultivate the important future-ready skills

Our Mission Earth webinars **combine STEM with creativity and storytelling**: students will have the opportunity to learn how to code within Minecraft and create videos or webpages with Adobe Spark!

Important links for 'Mission Earth':

<https://aka.ms/MissionEarthWebinarDates>

<https://aka.ms/MissionEarthSessionRequirements>

<https://aka.ms/MissionEarthTeacherResourcePack>





# Welsh Azure User Group - Virtual Meet Up-

21<sup>st</sup> January 2021

## Looking for the winners!

1st Place, winning the Surface Go 2 plus keyboard:

Jude.X.Zhu

3rd Place, winning the Microsoft 'Bit' promotional swag box:

Vikram Verma

## Exam Voucher Winners:

- Alex Bevan
- Kuljeet Singh Kohli
- Matthew Boyd
- Luke Lloyd

Contact: [anna.mcnally@microsoft.com](mailto:anna.mcnally@microsoft.com)



## Prizes (UK residents)

- 1st Prize:  
Surface Go 2 w/Surface Go Keyboard  
+ "Bit" box
- 2nd Prize:  
Surface Headphones 2  
+ "Bit" box
- 3rd Prize:  
"Bit box"

Microsoft



<https://cutt.ly/welshazure>



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# Welsh Azure User Group

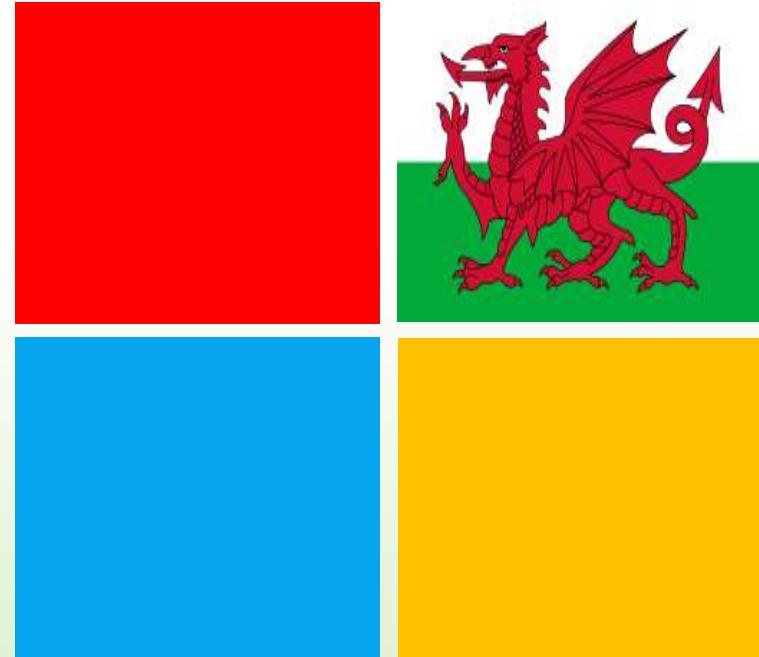
## -Virtual Meet Up-

21<sup>st</sup> January 2021

We will be back in:

# 10:00

Go grab a cuppa ☺



<https://cutt.ly/welshazure>



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# Welsh Azure User Group

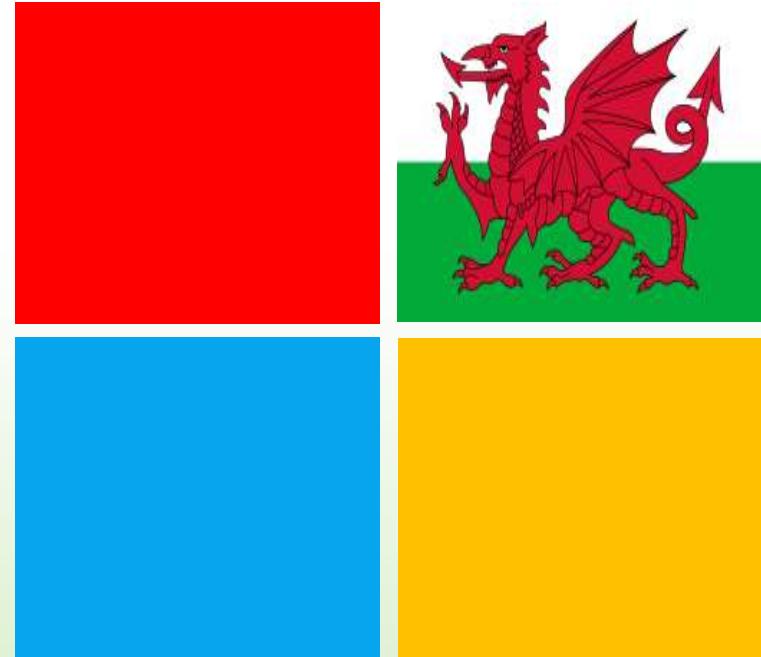
## -Virtual Meet Up-

21<sup>st</sup> January 2021

We will be back in:

5:00

Go grab a cuppa ☺



<https://cutt.ly/welshazure>



@welshazure

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# Fantastic February

- 18<sup>th</sup> February 2021 -

- Starting @ 6.00pm -

Proud to be sponsored by:



**Welsh Azure User Group**



@welshazure

RSVP: <https://cutt.ly/waug-feb>



John Savill

Azure Architect / Speaker  
@NTFAQGuy



Scott Hanselman

Programmer / Teacher / Speaker  
@shanselman



# Welsh Azure User Group

## - Virtual Meet Up -

21<sup>st</sup> January 2021

**THANK YOU FOR ATTENDING**

Please help us grow the community!

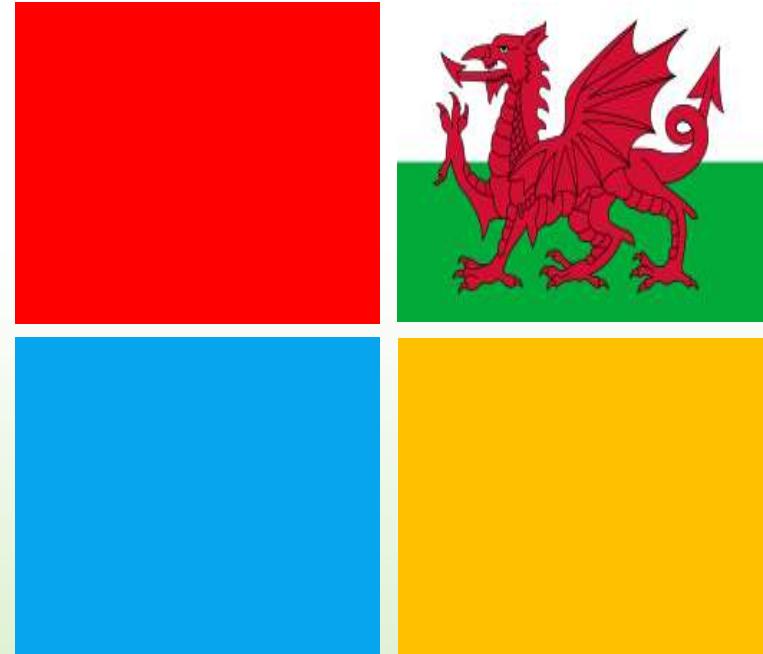
**Save the Date for the Next Meet Up**

18<sup>th</sup> February 2021 - 6.00pm-8.00pm

18<sup>th</sup> March 2021 - 6.30pm-8.30pm



Please complete our  
feedback form chance to win:  
<https://cutt.ly/waug-feedback>



<https://cutt.ly/welshazure>



@welshazure

Follow and tweet along using #waug



# Secure mobile apps with the Microsoft Identity Platform

Christos Matskas



# John Patrick Dandison

Program Manager @ Microsoft  
@azureandchill

Cons:

- Buys too many gadgets
- Squishy
- Struggles to describe himself

Pros:

- He knows about Identity



# Christos Matskas

Program Manager @ Microsoft  
@christosmatskas

*"Inspiring developers to build better,  
more secure software"*

Passionate about technology, loves  
TV too much and enjoys  
weightlifting



You're invited to learn from industry experts inside & outside of Microsoft.

Interactive, informal & engaging format.

<https://aka.ms/425show>

Tuesdays. Thursdays.

7AP<sub>T</sub> 10A<sub>ET</sub> 3P<sub>UK</sub> 4P<sub>CET</sub>

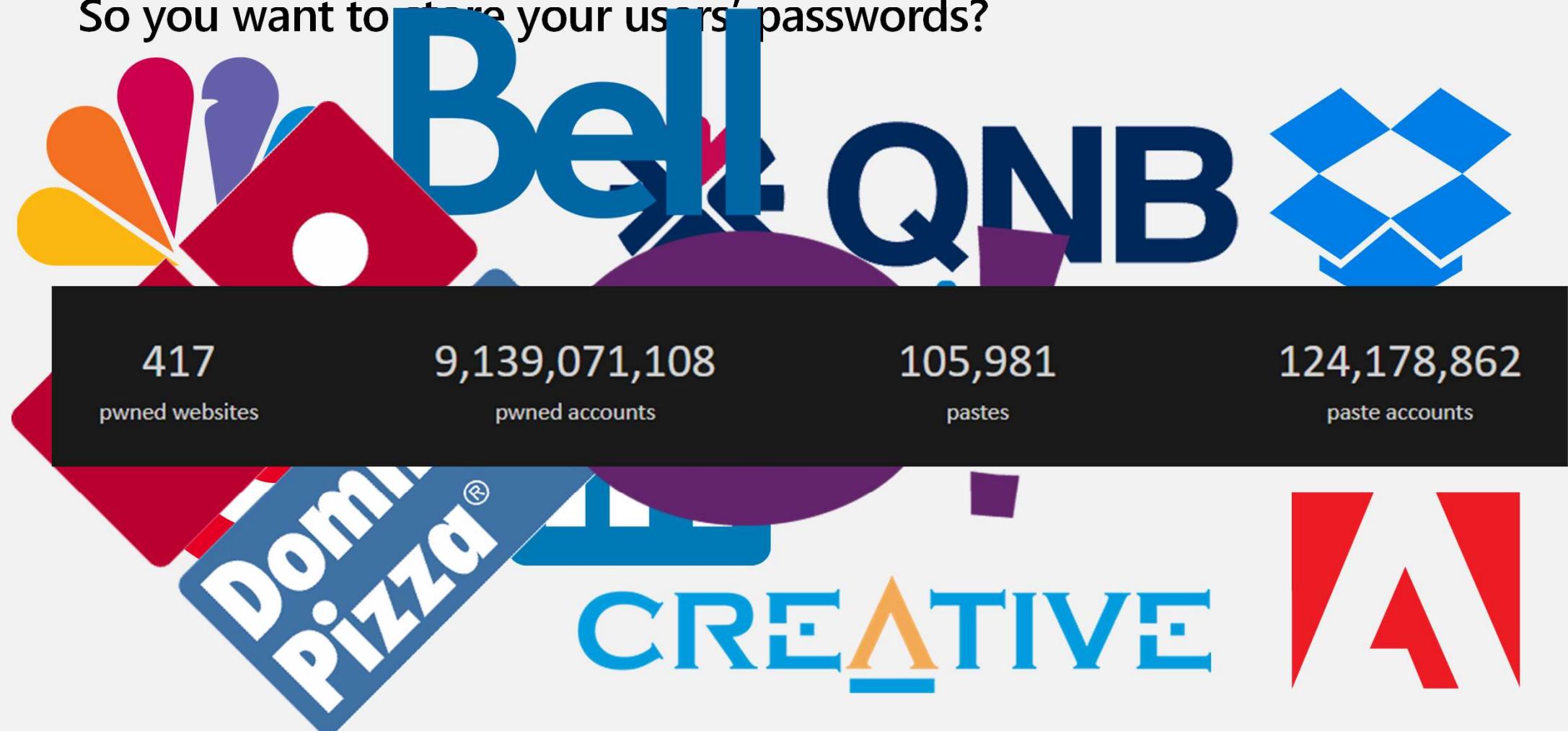


-THE—

# 425

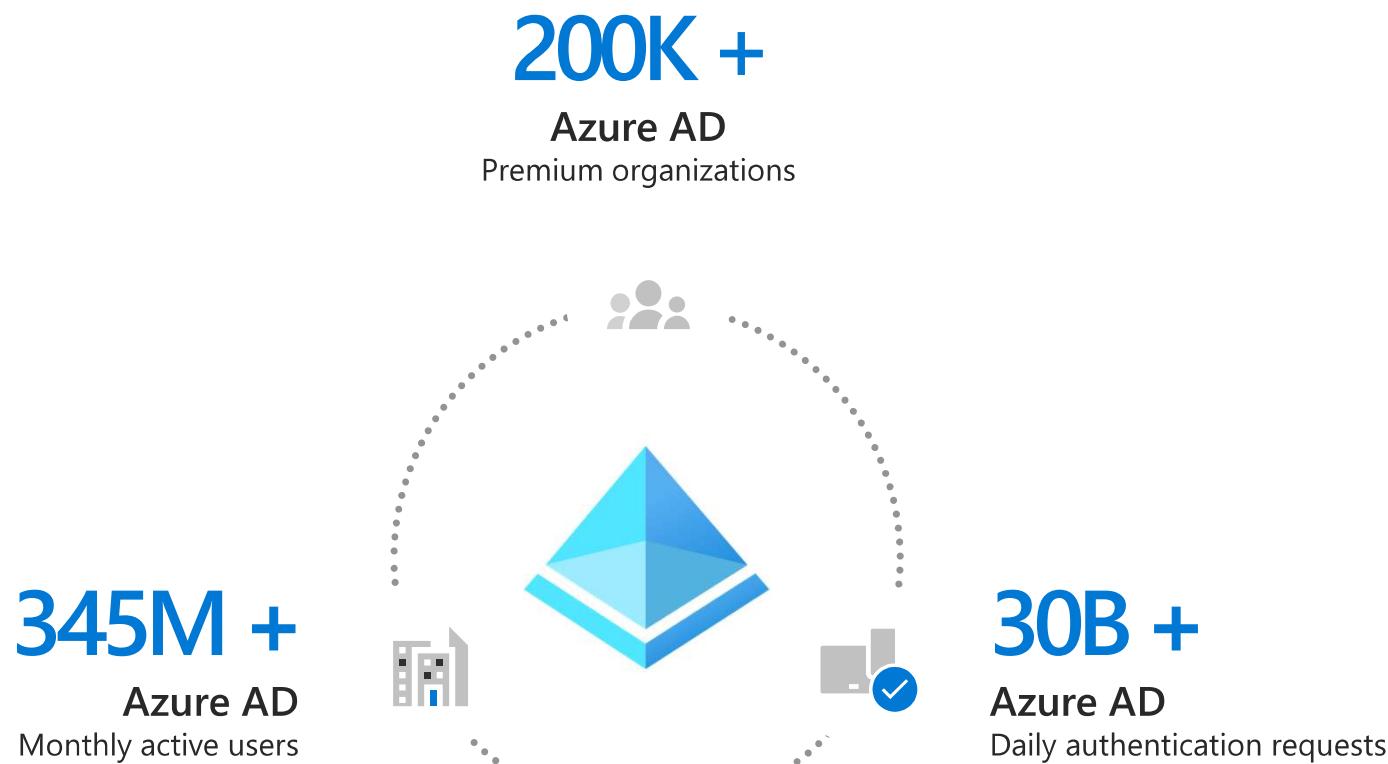
—SHOW—

So you want to store your users' passwords?



# Azure Active Directory - the world's largest cloud identity service

Thousands of organizations, millions of active users, billions of daily requests



# What developers ask for with identity and access management



Can I leverage my company's existing identity and access management solution to save costs?



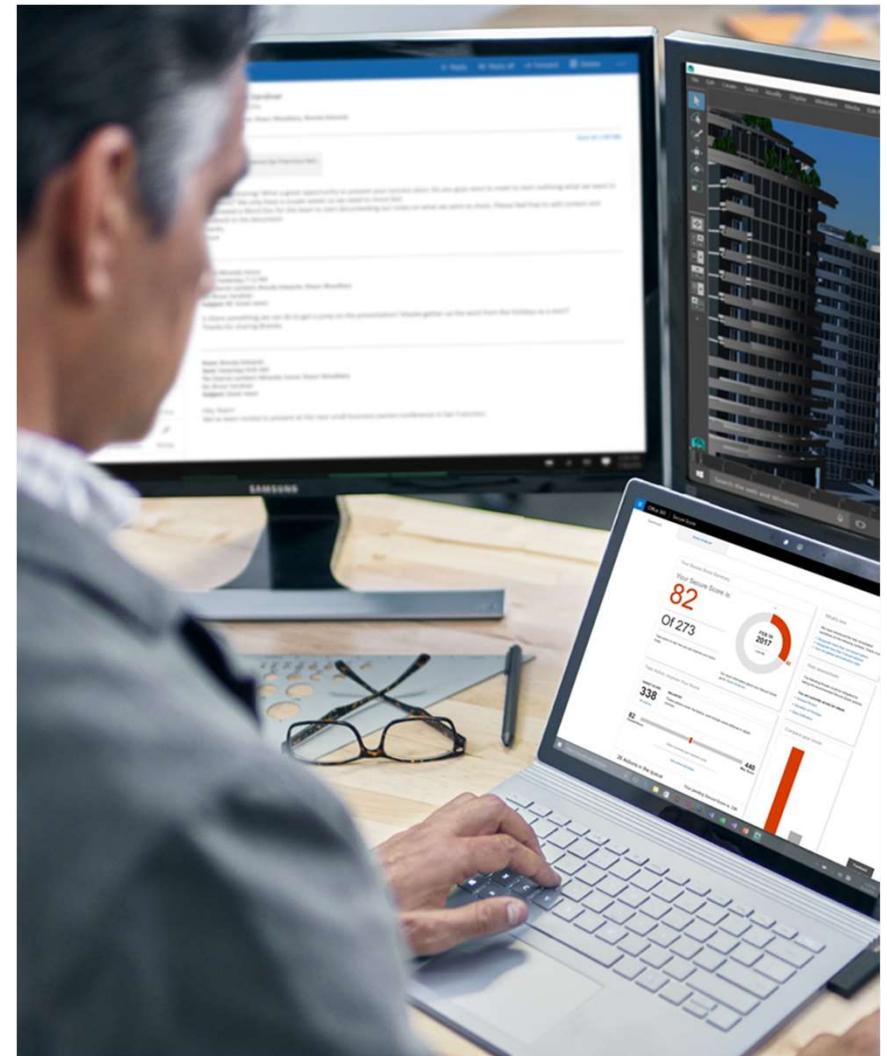
How easy is it to quickly get started and build authentication into my applications?



Does it support or integrate well with the platform, language and tools I use?



Does it support advanced security capabilities out-of-the-box, so I don't have to build it?



# Microsoft identity platform for developers

Simplifying authentication and authorization so you can focus on building innovative applications



## Reduce sign-in friction

Simplify sign-in to your app and reach millions of users



## Access organizational data

Customize, extend or connect your apps to APIs such as Microsoft Graph



## Comply with IT

Meet enterprise security and compliance requirements

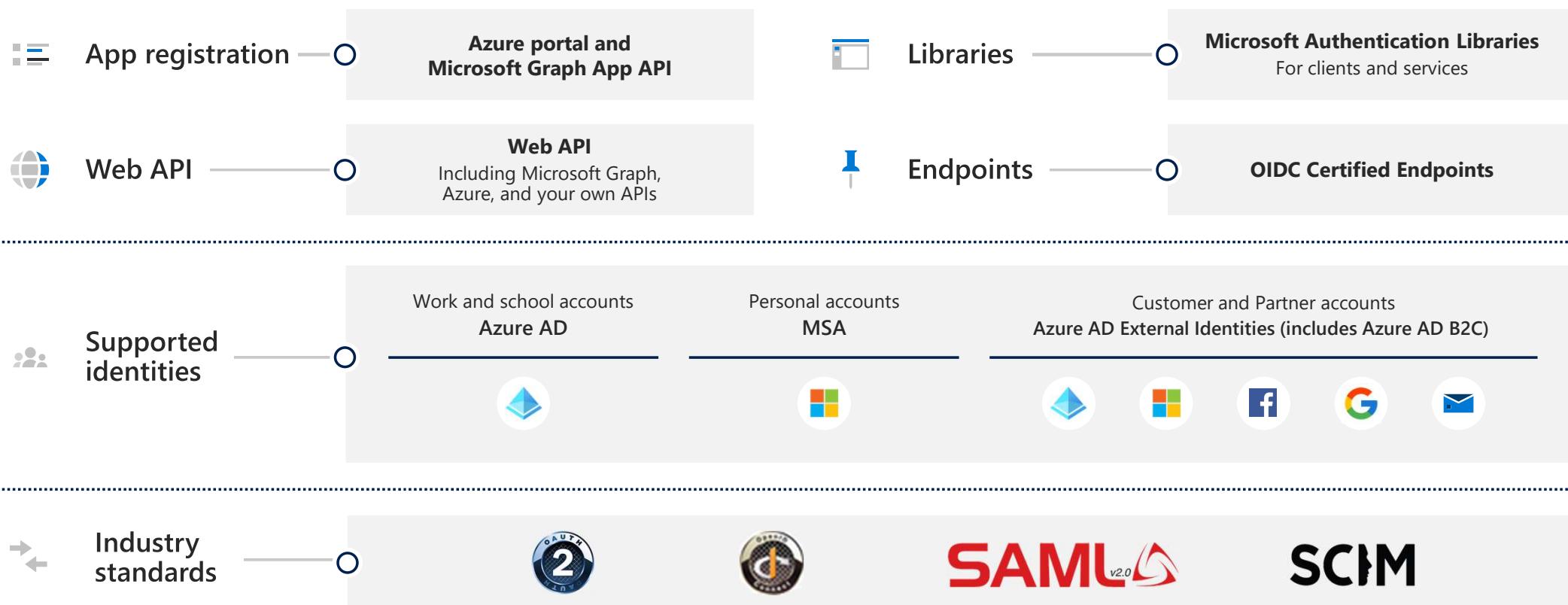


## Safeguard access

Protect access to your app to only authorized users

# Microsoft identity platform for developers

A toolkit to integrate identity and authentication into your apps



# Engage with your customers, consumers, and citizens

With Azure AD B2C, organizations can create better customer experiences by:

- **Eliminating friction from the customer experience**

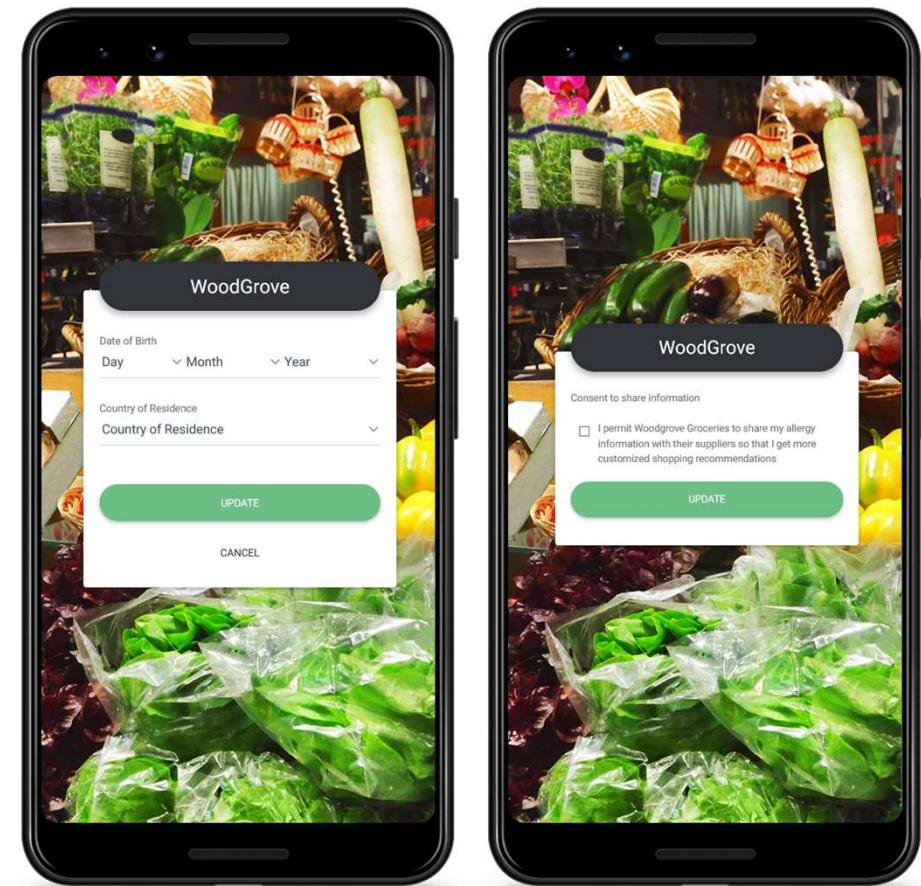
Enable seamless and secure sign-in and sign-up

- **Customizing the user experience**

Customize every pixel with Microsoft's identity experience framework

- **Scaling with your customer growth**

Support millions of active users as your business grows



# Eliminating friction from the customer experience

## Enable seamless and secure sign-in and sign-up

Connect users with corporate or personal Azure AD identities, or any OpenID Connect provider



Add external users with non-traditional IDs, including email one-time passcode



Azure AD B2C



Add external users with MSA, social IDs, or other SAML providers

Business



API



Web App



Mobile App

## Demo: Authenticating users with Azure AD B2C

## Some Constants to store important information

```
string TenantId = "cmatdevb2c.onmicrosoft.com";
string TenantName = "cmatdevb2c";
string ClientId = "4567430d-6a71-4818-baf5-43335ba95e36";
string SignInPolicy = "b2c_1_sisu";
string IosKeychainSecurityGroup = "com.microsoft.cmb2cauthorization";
string AuthorityBase = $"https://{{TenantName}}.b2clogin.com/tfp/{{TenantId}}/";
string AuthoritySignIn = $"{{AuthorityBase}}{{SignInPolicy}}";
string[] Scopes = new string[]{ "openid", "offline_access" };
```

# Login.xaml.cs

```
protected override async void OnAppearing()
{
    try
    {
        //Look for existing account
        IEnumerable<IAccount> accounts = await App.AuthenticationClient.GetAccountsAsync();

        if (accounts.Count() >= 1)
        {
            AuthenticationResult result = await App.AuthenticationClient
                .AcquireTokenSilent(Constants.Scopes, accounts.FirstOrDefault())
                .ExecuteAsync();

            await Navigation.PushAsync(new LoginResult(result));
        }
    }
    catch
    {
        // Do nothing - the user isn't logged in
    }
    base.OnAppearing();
}
```

# Login.xaml.cs

```
async void OnLoginButtonClicked(object sender, EventArgs e)
{
    AuthenticationResult result;

    try
    {
        result = await App.AuthenticationClient
            .AcquireTokenInteractive(Constants.Scopes)
            .WithUseEmbeddedWebView(true)
            .WithPrompt(Prompt.ForceLogin)
            .WithParentActivityOrWindow(App.UIParent)
            .ExecuteAsync();

        await Navigation.PushAsync(new LoginResult(result));
    }
    catch (MsalUiRequiredException ex)
    {
        if (ex.ErrorCode != "authentication_canceled")
        {
            await DisplayAlert("An error has occurred", "Exception message: "
                + ex.Message, "Dismiss");
        }
    }
}
```

# App.xaml.cs

```
public static IPublicClientApplication AuthenticationClient { get; private set; }

public static object UIParent { get; set; } = null;

public App()
{
    InitializeComponent();

    AuthenticationClient = PublicClientApplicationBuilder.Create(Constants.ClientId)
        .WithIosKeychainSecurityGroup(Constants.IosKeychainSecurityGroup)
        .WithB2CAuthority(Constants.AuthoritySignIn)
        .WithRedirectUri($"msal{Constants.ClientId}://auth")
        .Build();

    MainPage = new NavigationPage(new LoginPage());
}
```

# LoginResult.xaml.cs

```
protected override void OnAppearing()
{
    if (authenticationResult != null)
    {
        var handler = new JwtSecurityTokenHandler();
        var data = handler.ReadJwtToken(authenticationResult.IdToken);
        var claims = data.Claims.ToList();
        if (data != null)
        {
            welcome.Text = $"Welcome {data.Claims.FirstOrDefault(x => x.Type.Equals("name")).Value}";
            issuer.Text = $"Issuer: { data.Claims.FirstOrDefault(x => x.Type.Equals("iss")).Value}";
            subscription.Text = $"Subscription: {data.Claims.FirstOrDefault(x => x.Type.Equals("sub"))}";
            audience.Text = $"Audience: {data.Claims.FirstOrDefault(x => x.Type.Equals("aud")).Value}";
            email.Text = $"Email: {data.Claims.FirstOrDefault(x => x.Type.Equals("emails")).Value}";
        }
    }

    base.OnAppearing();
}
```

# Gotchas

For iOS you need to update the **AppDelegate.cs**

```
public override bool OpenUrl(UIApplication app, NSUrl url, NSDictionary options)
{
    AuthenticationContinuationHelper.SetAuthenticationContinuationEventArgs(url);
    return true;
}
```

For Android you need to update the **MainActivity.cs**

```
public override void OnRequestPermissionsResult(int requestCode, string[] permissions,
    [[GeneratedEnum]] Android.Content.PM.Permission[] grantResults)
{
    Xamarin.Essentials.Platform.OnRequestPermissionsResult(requestCode, permissions, grantResults);

    base.OnRequestPermissionsResult(requestCode, permissions, grantResults);
}

protected override void OnActivityResult(int requestCode, Result resultCode, Intent data)
{
    base.OnActivityResult(requestCode, resultCode, data);
    AuthenticationContinuationHelper.SetAuthenticationContinuationEventArgs(
        requestCode,
        resultCode,
        data);
}
```

## Come as you are

Bring your own developer tools, services & platforms



# Bring your own developer tools, services and platforms



# Integrated with Microsoft's developer ecosystem



Identity

Microsoft 365 platform

Azure services



GitHub



Teams



App Service



Power Automate



Visual Studio



SharePoint



Azure Kubernetes Service



Power Apps



Visual Studio Code



Exchange



Functions



Power Virtual Agents

...

...

# Ways to integrate single sign-on

## → OpenID Connect and OAuth

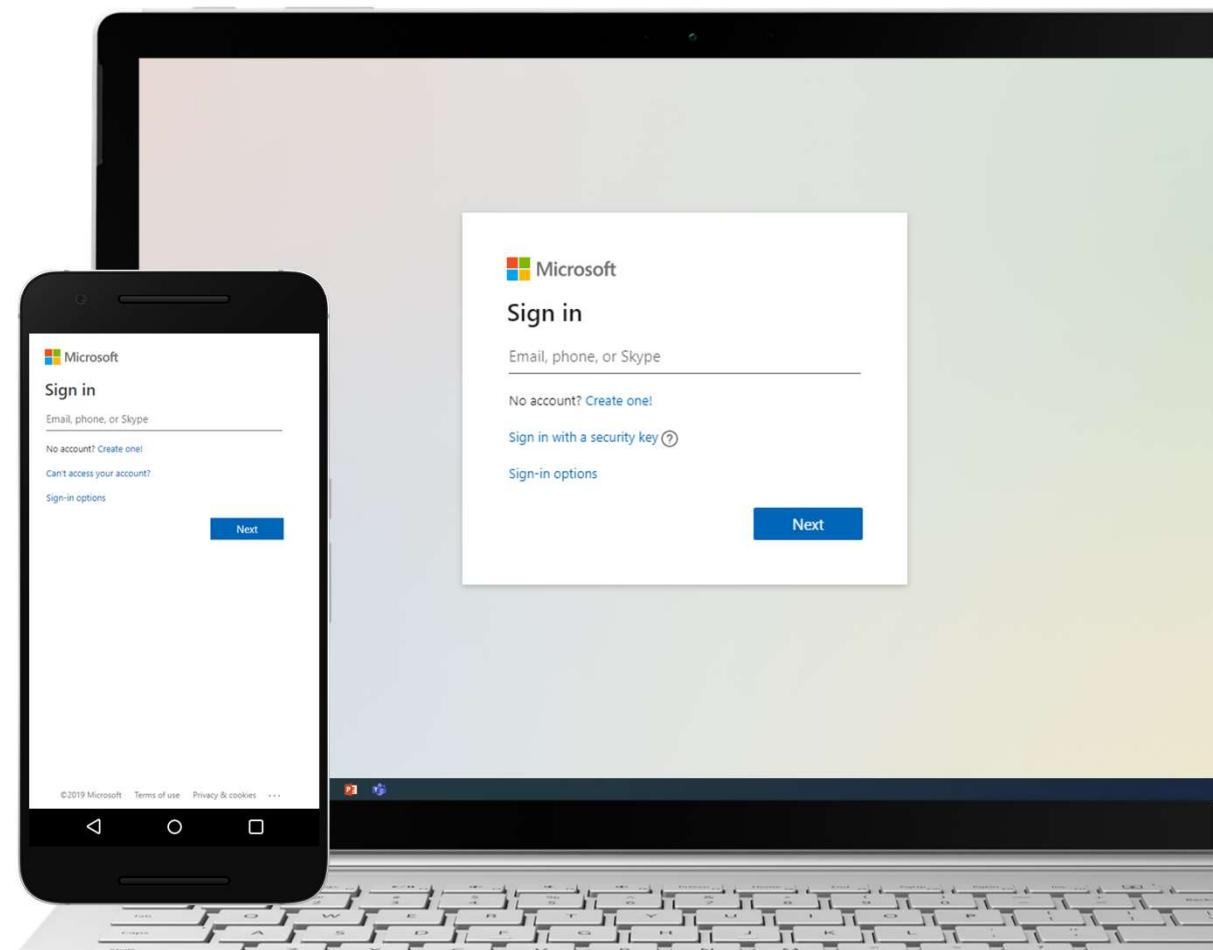
Best when developing new apps. Simplifies app configuration, has easy-to-use SDKs, and enables your application to use Microsoft Graph.

## → SAML integration

Best for existing applications that do not use OpenID Connect or OAuth.

## → Mobile SSO

Leverage System Browser for authentication in order to support single sign-on for your mobile app.



# Simplify sign-in with our authentication libraries

Fastest, simplest integration with the Microsoft identity platform



## Develop in your favorite language

Best in class authentication libraries that work with your platform or language of choice or use our OIDC certified endpoint.



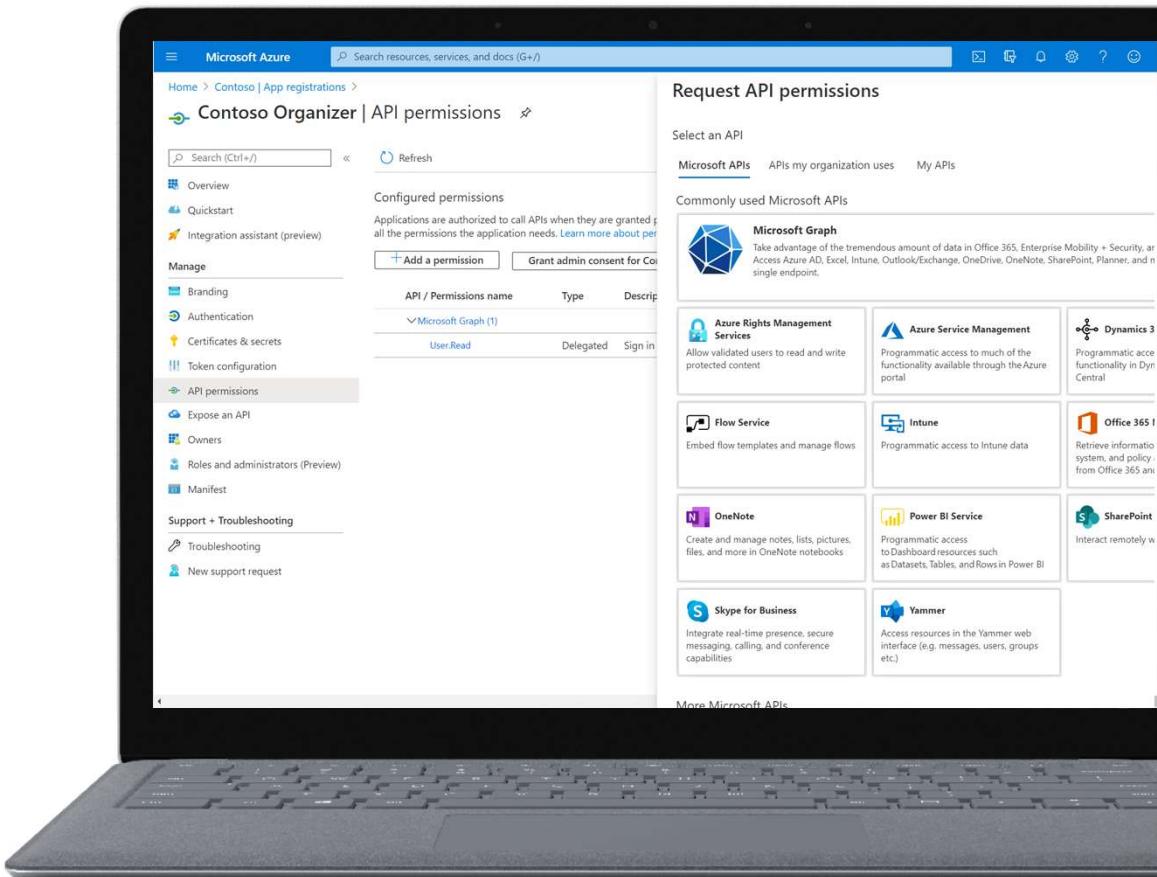
## Secure by default

Applications using MSAL are secure by default and can comply with security policies implemented by IT.



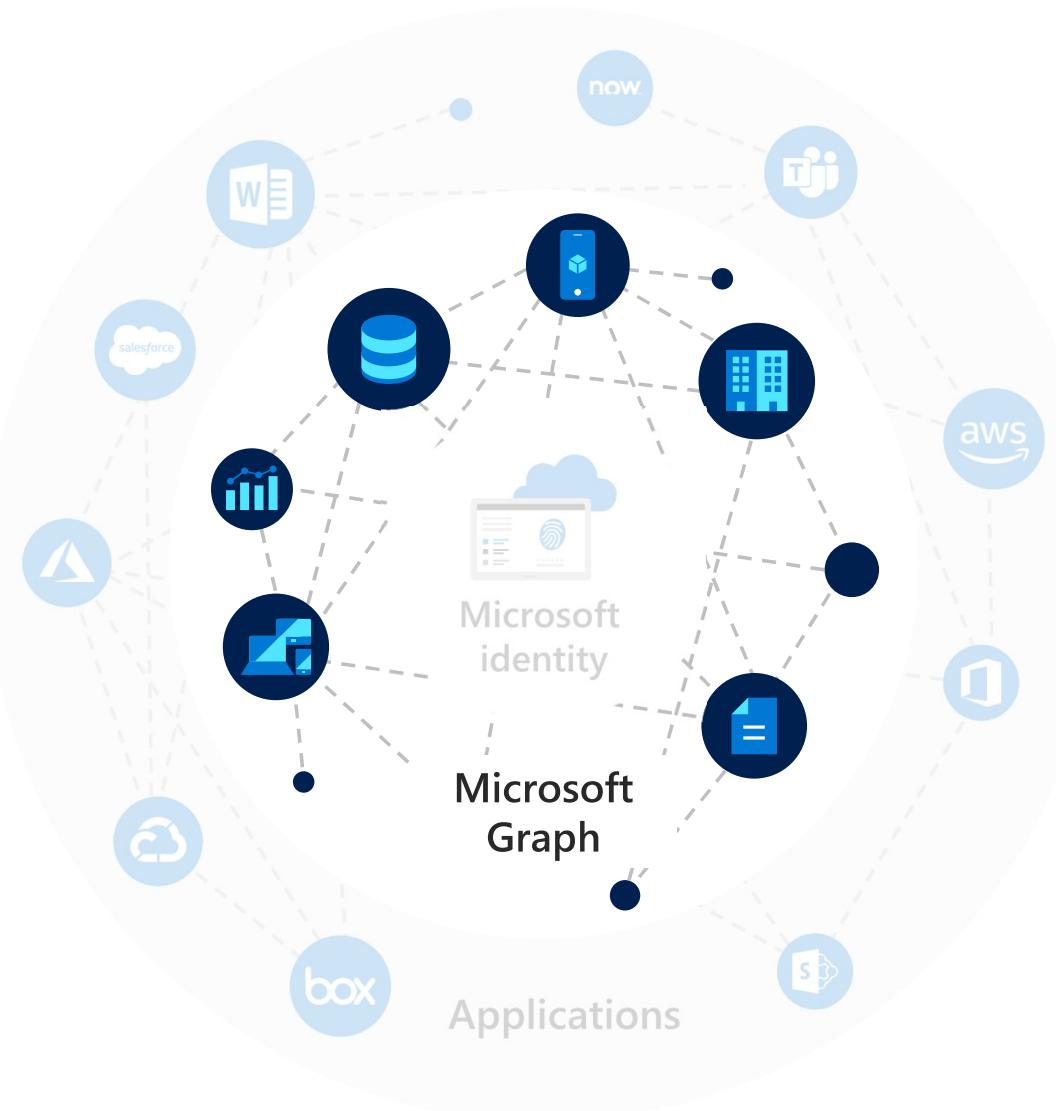
## Build richer experiences

Secure access to users and data from Microsoft Graph, Azure or your own protected APIs.



# Create seamless, connected experiences with Microsoft Graph

- Build custom solutions with the Microsoft Graph API
- Incorporate the richness of an organization's data
- Bring personal context into the flow of work



# Enrich your apps with Microsoft Graph

The gateway to data and intelligence in Microsoft 365

— Extend Microsoft 365 experiences —



Documents



Conversations



Portals



Timeline



Search



Web apps



Bots and agents



Device and native



Daemon apps



Workflow automation



Analytics apps

— Build your experience —



Microsoft Graph API

Your local data  
Connectors



Microsoft Identity



Azure platform  
Microsoft Graph data connect

To the batmobile Graph Explorer!

<https://aka.ms/ge>



I wish I was an identity pro like Marcia

Note the number of lines of code we were able to delete by using Microsoft.Identity.Web, especially in the midwest

Those Microsoft people said even you could figure it out, Bob





# Microsoft. Identity.Web

- .net core 3.1+
- Blazor WASM/Server
- Web Apps/APIs
- gRPC

## MSAL

- .net
- Java
- Javascript
- Python
- iOS/macOS/Android

## OIDC & oauth2 compliant

- Bring your own library
- e.g., openid\_connect rubygem
- pyoidc
- oidc-client.js
- mod\_auth\_openidc

# ID Identity for all developers

 **Tired:** multiple libraries & APIs to learn, protocols to understand

Sign in: ASP.NET Core openid middleware

- You configure OpenIdConnect middleware
- You build controllers & views to initiate challenges
- Uses Azure AD v1 endpoints
- Build-your-own audience validator

Getting tokens & calling APIs with MSAL

- Requires configuring MSAL yourself
- Requires a token cache
- Requires hooking into openid middleware events

API developers validating incoming tokens

- JwtBearer middleware
- OBO API developers also need MSAL

 **Wired:** single library for everyone, no protocol intimacy required

Sign in with Microsoft.Identity.Web

- OpenIdConnect middleware configured
- Controllers & views included
- Uses Azure AD v2 endpoints
- Includes audience validator for all Microsoft clouds

Getting tokens & calling APIs with MSAL

- MSAL configured by Identity.Web
- In memory by default, also uses IDistributedCache
- authorization\_code redemption already configured

API developers validating incoming tokens

- JwtBearer middleware configured
- MSAL for OBO configured by Identity.Web

## Where does this new library fit?

OpenIdConnect  
Authentication

Cookie  
Authentication

JwtBearer  
Authentication

AccountController

Account views

`Microsoft.AspNetCore.Authentication.*`

UI

MSAL

`Microsoft.AspNetCore.Authentication.AzureAD.UI`

`Microsoft.Identity.Web`

# Development experience

## Old hat

### Sign in: ASP.NET Core openid middleware

- .AddAuthentication().AddAzureAd();

### Getting tokens & calling APIs: MSAL

- new ConfidentialClientApplication().With...
- OpenIdConnectEvents.AuthorizationCodeReceived(MsalO  
bj.AcquireTokenByAuthorizationCodeAsync)
- Msal.TokenCache.BeforeAccess/.AfterAccess

### API developers validating incoming tokens

- .AddAuthentication().AddAzureAdBearer()
- (see above for getting tokens with MSAL)

## New hat

### Sign in:

- .AddMicrosoftIdentityWebAppAuthentication()

### Getting tokens & calling APIs

- .EnableTokenAcquisitionToCallDownstreamApi()

### API developers validating incoming tokens

- .AddMicrosoftIdentityWebApiAuthentication()
- .EnableTokenAcquisitionToCallDownstreamApi()

# Adding authentication to a new .NET 5 app

You're invited to learn from industry experts inside & outside of Microsoft.

Interactive, informal & engaging format.

<https://aka.ms/425show>

Tuesdays. Thursdays.

7APT 10AET 3P<sub>UK</sub> 4PCET



-THE—————  
**425**—————SHOW—————