



2018 NORTH AMERICAN MCT SUMMIT

February 26 – 28, 2018
Bellevue, WA



Microsoft Graph

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Tiago Costa

MVP – Office Server and Services

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MCT Regional Lead

IT Consultant, Trainer, Author and Speaker

MCT since 2006

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CERTIFIED
Trainer



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"If having a coffee in the morning
doesn't wake you up, try to delete a
table in production instead"

*unknown
developer*

People say Portugal is a breathtaking country



Who would want to lie on beaches like this one?



Look at the color of the water — it's just gross!



Lisbon, bahhhhh



The whole city lives in the past...



Wine is terrible...



The architecture in the country is so boring



No class at all...



IT Conferences have no interest at all...



Just stay at home...



And never come to Portugal!!!



Agenda

Introduction to the Microsoft Graph

Getting started

SDKs and Code Samples

Resources



Slides and Demos

<https://github.com/tiagocostapt/Presentations>



Introduction to the Microsoft Graph



Developer Vision

Focus on User experience and their data.

We should bring user data and user experience into our applications.

Microsoft Office has over 1.2 billion users worldwide.

Office 365 numbers are huge with over 100 million monthly active subscribers.



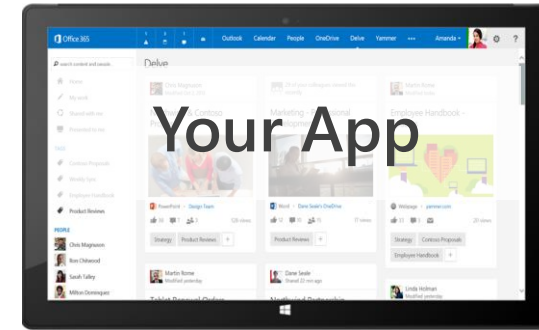
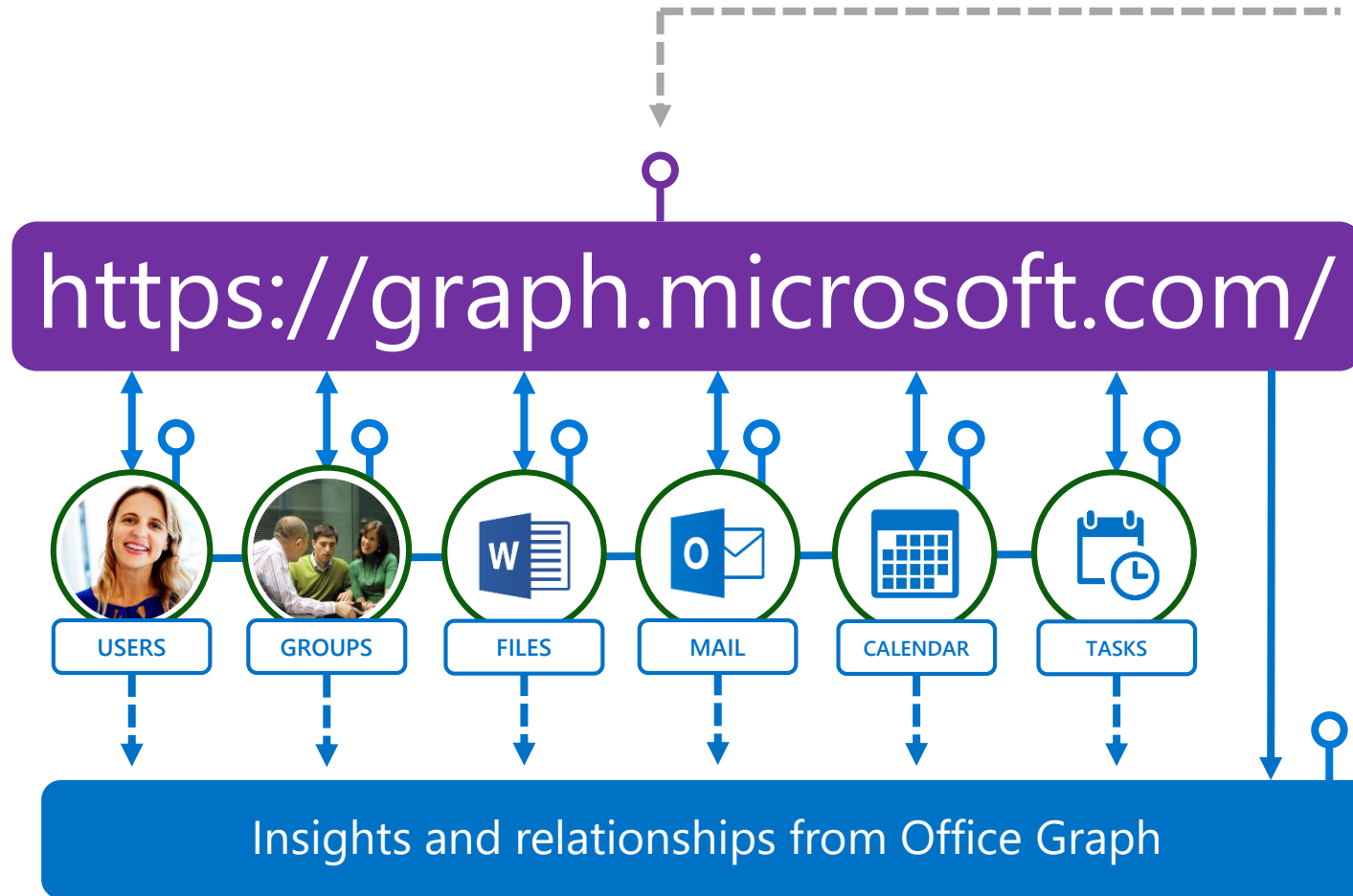
Office 365 Developer momentum

"The most strategic
developer surface area
for us is Office 365"

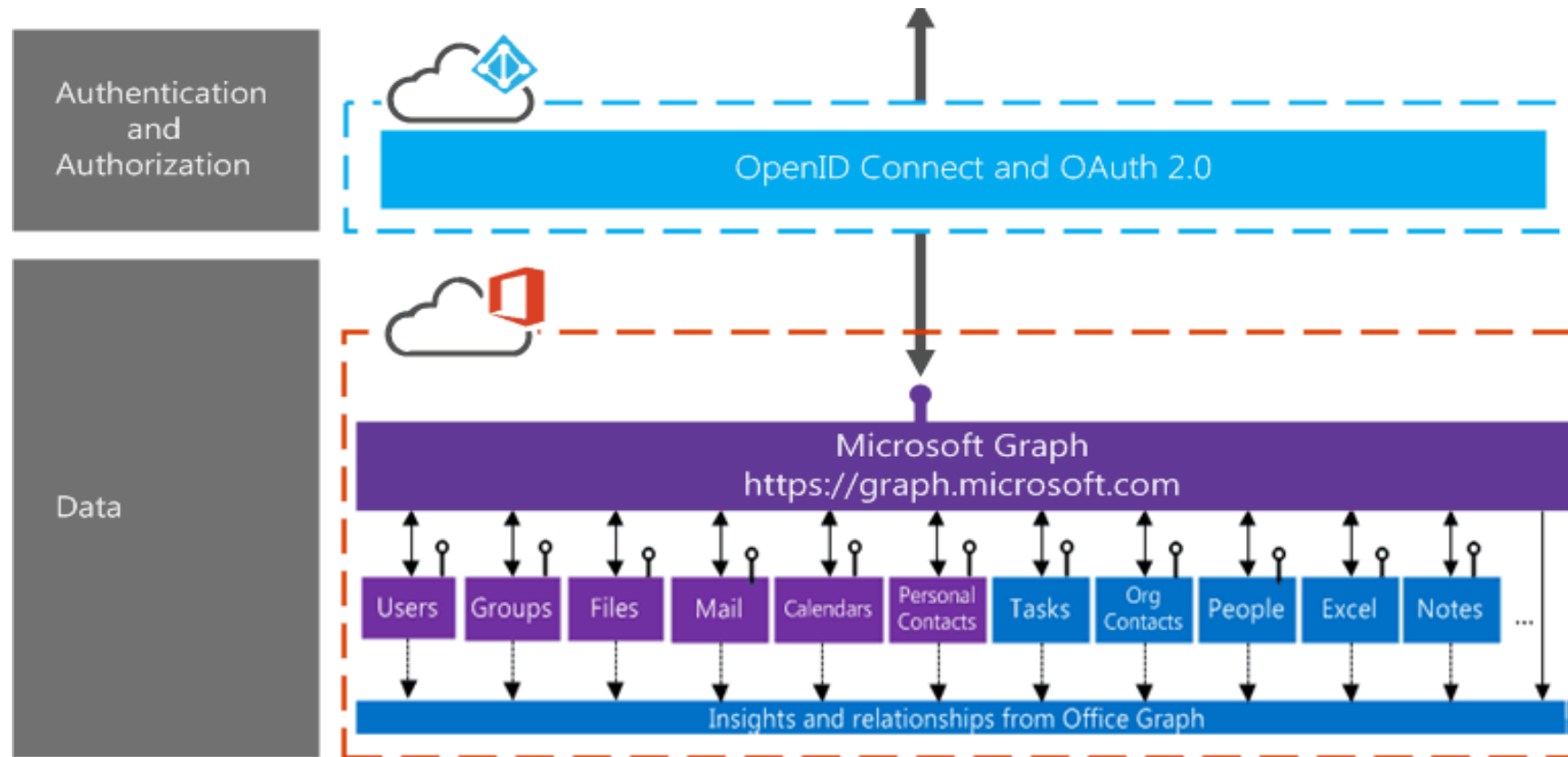
- Satya Nadella



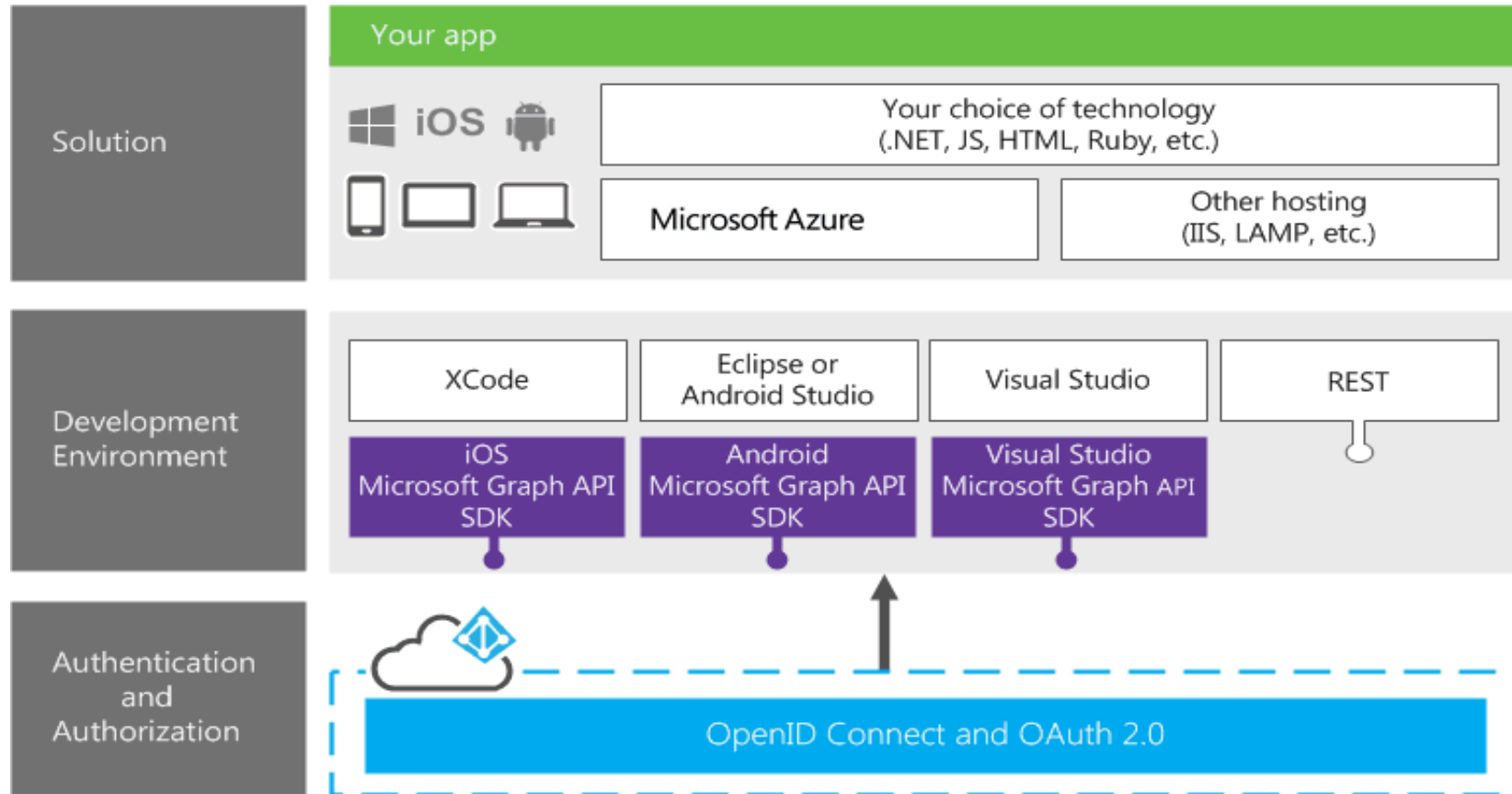
Microsoft Graph



Integration with Office 365



Integration with Office 365



What is the Microsoft Graph?

Before

- Before Microsoft Graph we had different APIs for each of the Microsoft Office 365 Services: Files, Mail, Contacts, ...
- For each endpoint we had a different OAuth token



What is the Microsoft Graph?

Now!!!

- Gateway to Office 365
- Single endpoint that proxies multiple Microsoft Services
- Version endpoints – beta, v1.0
- Simplifies token acquisition and management
- Eliminates the need to traditional discovery



Single authentication flow for Office 365

Sign users in using OAuth 2 / OpenID Connect.

Device apps, web sites, SPAs and service apps.

Pin apps to Microsoft Office 365 launcher (My apps).



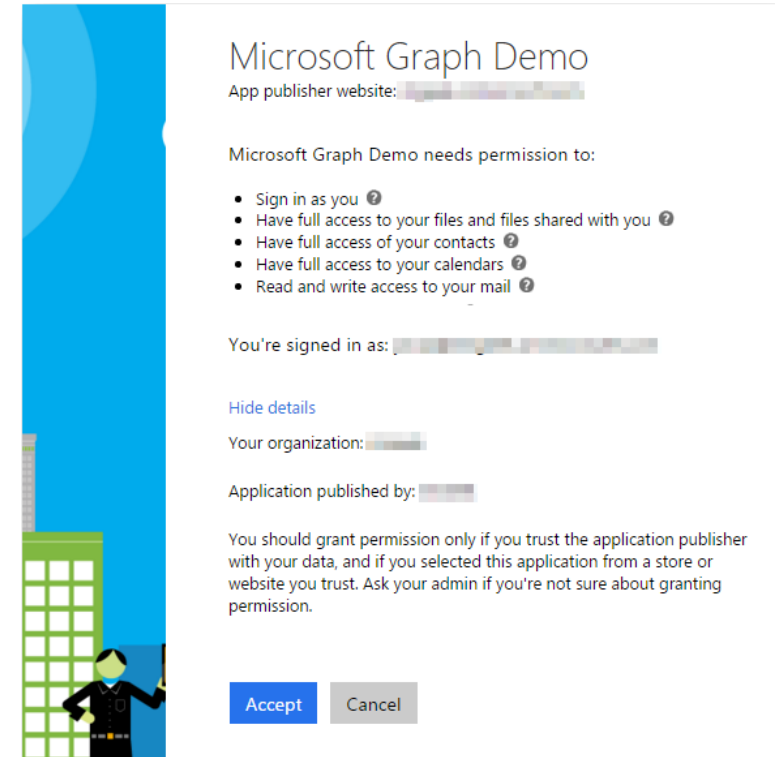
Common consent window

Single auth flow for accessing all O365 services

Admin and end-user consent

Secure protocol

- OpenID Connect and OAuth 2.0
- No capturing user credentials
- Fine-grained access scopes
- Long-term access through refresh tokens.



Authentication Option

Azure AD only

- Separate auth flow supports Azure AD accounts only

Azure AD and Microsoft Accounts (Consumer)

- Converged auth flow supports Azure AD accounts and Microsoft accounts (outlook.com, hotmail.com, etc.)

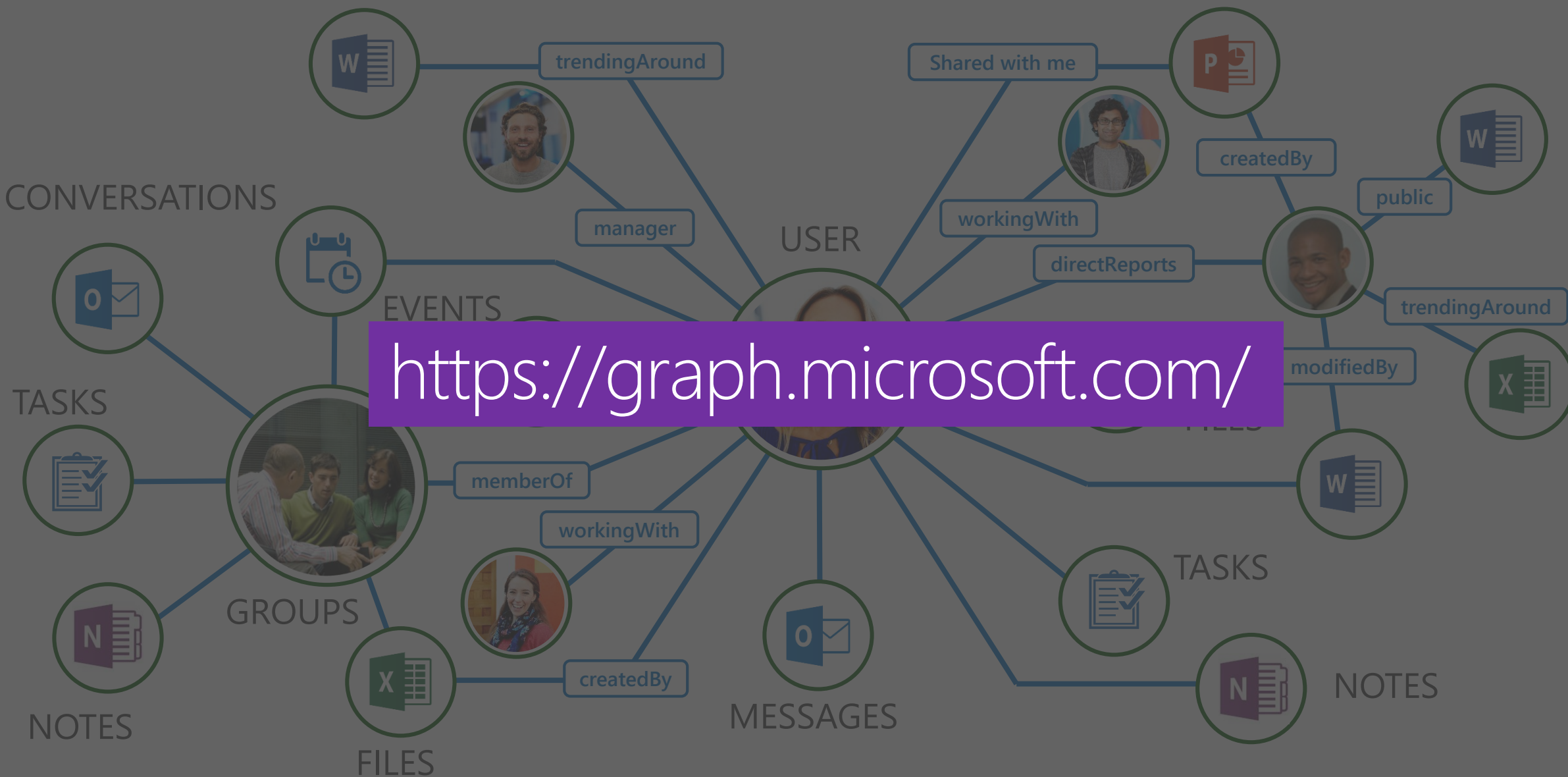
Many apps want to sign users in from both Microsoft account and Azure AD



Getting Started



<https://graph.microsoft.com/>



API endpoint - <https://graph.microsoft.com>

Verb	Operation	Endpoint
GET	My profile	https://graph.microsoft.com/v1.0/me
GET	My photo	https://graph.microsoft.com/v1.0/me/photo/\$value
GET	My mail	https://graph.microsoft.com/v1.0/me/messages
GET	All the items in my drive (OneDrive)	https://graph.microsoft.com/v1.0/me/drive/root/children
GET	My joined teams	https://graph.microsoft.com/beta/me/joinedTeams
GET	My notebooks	https://graph.microsoft.com/v1.0/me/onenote/notebooks
POST	Create a section	https://graph.microsoft.com/v1.0/me/onenote/notebooks/{notebook-id}/sections
GET	My organization default SharePoint Website	https://graph.microsoft.com/v1.0/sites/root



Microsoft Graph Explorer



Microsoft Graph

Demonstration

Microsoft Graph Explorer

Application Registration Portal

Portal to register your apps

<https://apps.dev.microsoft.com>

Microsoft Graph Permissions

The settings you set here may vary depending on whether you get a token from our V1 or V2 endpoint. [Learn More](#)

Delegated Permissions [Add](#) [Learn More](#)

User.Read ✕



My applications

Converged applications [Learn More](#)

[Add an app](#)

Name	App ID / Client Id	
Training Management		Delete

Live SDK applications [Learn More](#)

[Add an app](#)

Name	App ID / Client Id	
		Delete



Microsoft Graph Permissions

When registering an app we need to select the needed permission that our app we have via Microsoft Graph.

Microsoft Graph Permissions

The settings you set here may vary depending on whether you get a token from our V1 or V2 endpoint. [Learn More](#)

Delegated Permissions [Add](#) [Learn More](#)

User.Read ×

Select Permission

Scope	User can consent ?	Admin can consent ?	Description
<input type="checkbox"/> Calendars.Read	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Calendars.Read.Shared	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Calendars.ReadWrite	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Calendars.ReadWrite.Shared	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Contacts.Read	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Contacts.Read.Shared	✓ Yes	✓ Yes	▼
<input type="checkbox"/> Contacts.ReadWrite	✓ Yes	✓ Yes	▼

1 Selected

Ok

Cancel



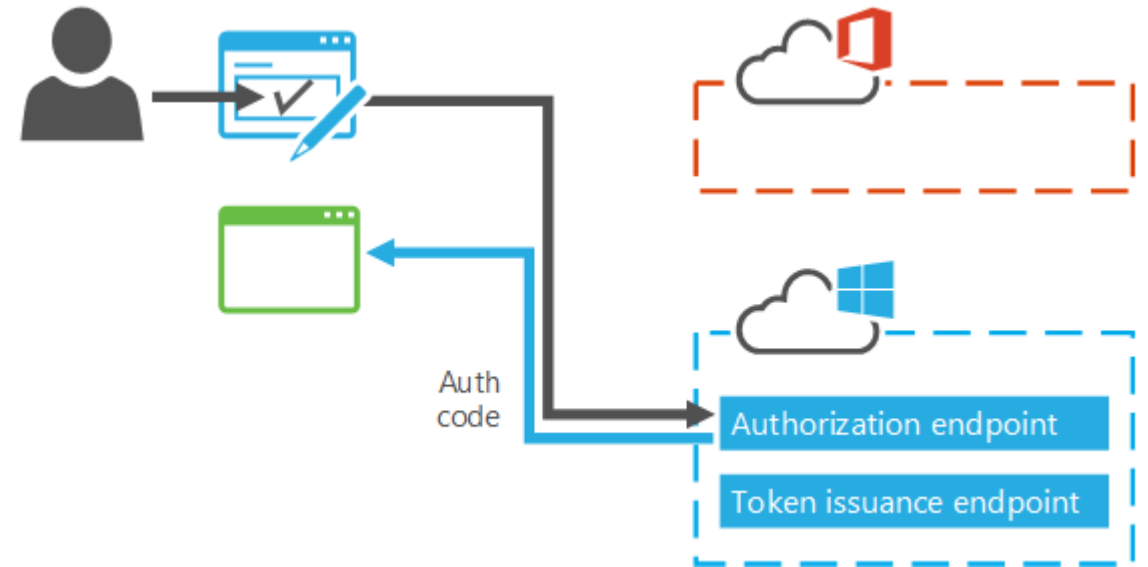
Microsoft Graph

Demonstration

Register a new Application

Microsoft Graph Authentication process

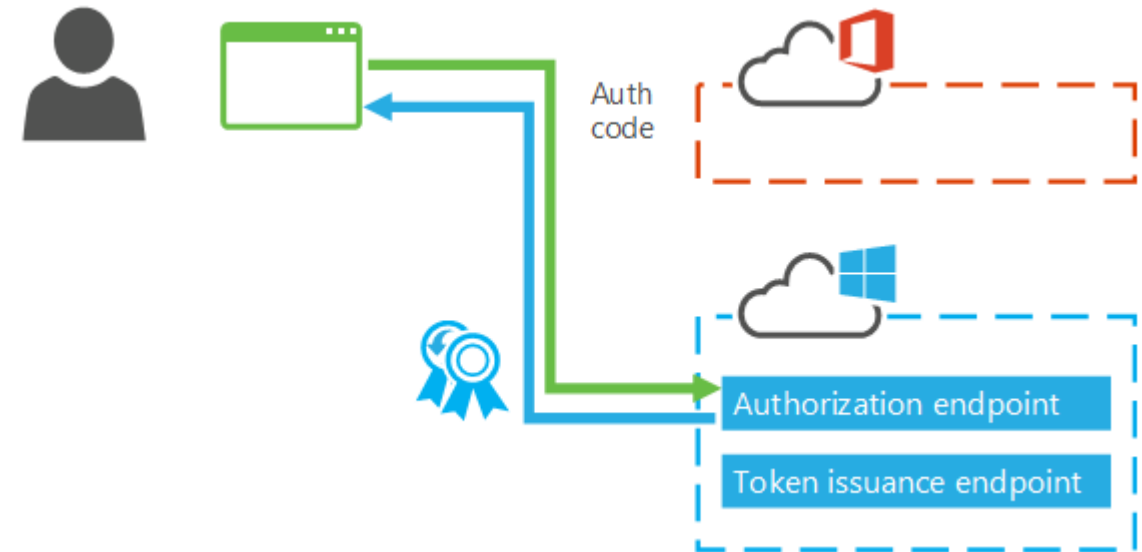
The app goes to the Azure AD authorization endpoint and the user authenticates and grants consent (if consent has not been granted before). Azure AD issues an authorization code.



Microsoft Graph Authentication process

Your app redeems the authorization code.

Azure returns an access token and a refresh token.



Microsoft Graph Authentication process

Your app can now call the Microsoft Graph using the URI and the access token.



Microsoft Graph SDK

Current version is 1.7.0

- <https://www.nuget.org/packages/Microsoft.Graph>

Always lagging behind the Graph REST API

Release Notes

- December 2017 Release Summary (version 1.7.0)
- New features
 - Include symbols in the Nuget package



Microsoft Graph SDK - Install

To install Microsoft.Graph, run the following command in the Package Manager Console:

- `Install-Package Microsoft.Graph`



Microsoft Graph

Demonstration

ASP.NET Application using the Microsoft Graph via SDK

Resources



Resources

Documentation, samples and more

- <https://graph.microsoft.com>
- <https://github.com/microsoftgraph>

Stack Overflow

- [MicrosoftGraph] and [Office365]

Twitter

- #MicrosoftGraph and #Office365dev



Getting Started

Getting Started with APIs

<https://developer.microsoft.com/en-us/graph/quick-start>

Microsoft Graph API Code Samples

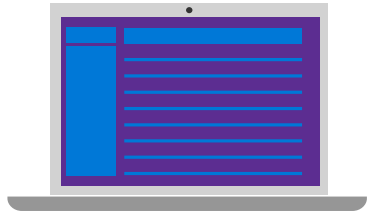
<https://dev.office.com/code-samples>

Microsoft Graph API documentation

<https://developer.microsoft.com/en-us/graph/docs>



Developer Program



E-mail
Newsletters



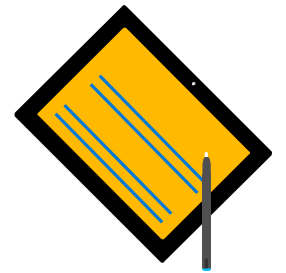
Free
Developer
Subscription



Free
Training



Free
Tools



Webinars

<http://dev.office.com/devprogram>

Questions



Thank You

This are some of the cool features that
you can find on the Microsoft Graph



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TAKE A MOMENT TO GIVE FEEDBACK

Your Feedback Is Important. It Helps The Planning Team Learn What Works And What Does Not So That We Can Continuously Improve.

Feedback Is Also Required For Microsoft To Consider Funding This Event The Following Year.

WHERE IS THE SURVEY???



<https://namctsummit.learnondemand.net>

