



INTRODUCTION TO MICROSOFT GRAPH

Session content



- What is Microsoft Graph?
- What can you do with it?
- Important tools to support development
- Authentication
 - Azure AD endpoints
 - OAuth 2.0 authorization flows
 - Azure AD app registrations

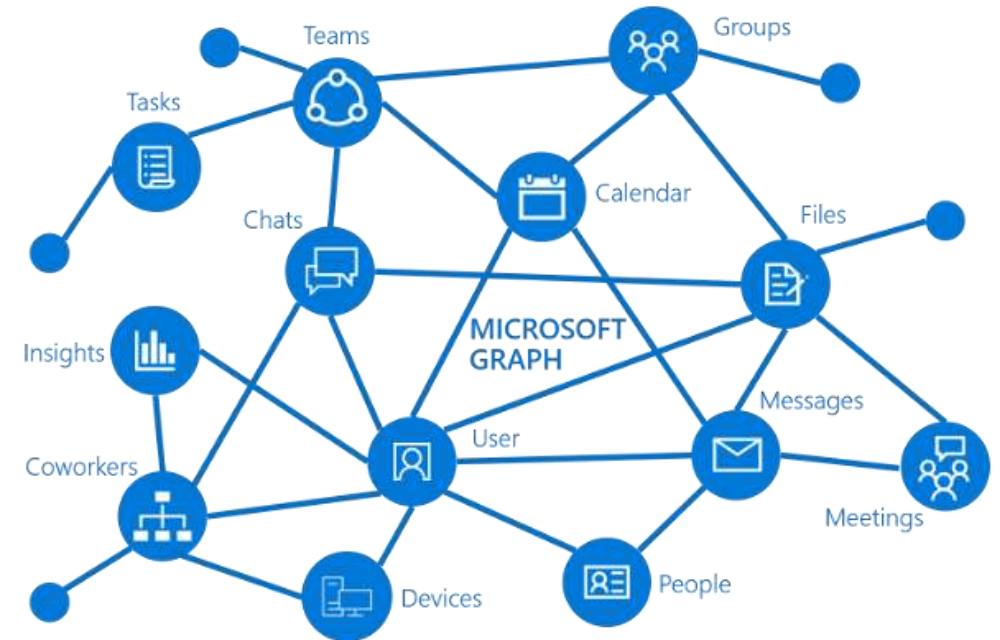
What is Microsoft Graph? A REST API!



Enterprise
Mobility + Security



Windows 10



What can you do with it?



CRUD operations

- Users, groups, calendars, events, files, emails, notes, sites, lists, plans, teams, channels, messages ...

Service specific operations

- Convert a file to PDF
- Create an event
- Send an email
- Invite a guest user
- Assign a task
- Add user to group ...

Insights & Reports

- Relevant people for the user
- Docs: trending, viewed, modified, shared
- Activity & usage



USING MICROSOFT GRAPH FROM A SPFX WEB PART

What can you do with it?



- OData query string parameters
\$count, \$expand, \$filter, \$format, \$orderby,
\$search, \$select, \$skip, \$skipToken, \$top
- \$batch request
 - Multiple requests at once
 - Improves performance
 - Max 20 requests
 - dependsOn
 - No dynamic input
- Paging, throttling, track changes, get change notifications, extend objects with custom data

```
POST
https://graph.microsoft.com/v1.0/$batch

{
  "requests": [
    {
      "id": "1",
      "method": "GET",
      "url": "/groups/group-id-here/events"
    },
    {
      "id": "2",
      "method": "GET",
      "dependsOn": "1",
      "url": "/me/planner/tasks?$top=1"
    }
  ]
}
```

Microsoft Graph SDKs

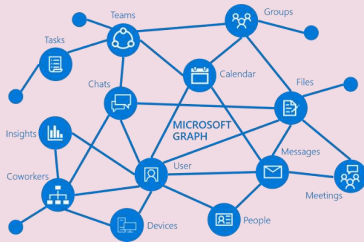


- Available for many platforms
 - .NET, ASP.NET MVC, Xamarin, UWP, JavaScript, Angular, Java, Android, iOS, Ruby, Python, PHP
- Alternatively, you can construct the REST requests yourself
 - `https://graph.microsoft.com/[version]/[operation]?[odata parameters]`
 - GET, POST, PUT, PATCH, DELETE
 - Authorization, Content-Type
 - {JSON}

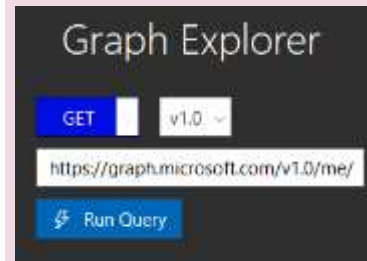
Important tools



Documentation



Graph Explorer



Postman Collections



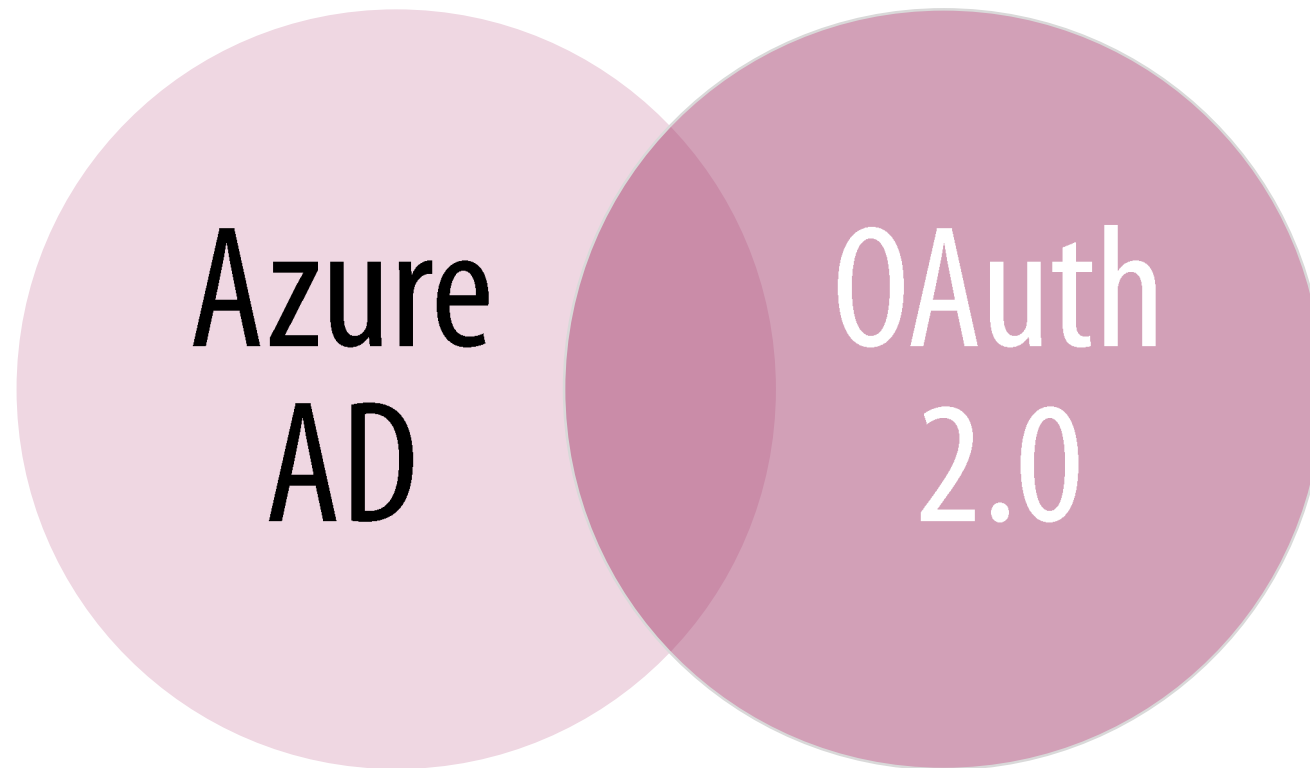
Fiddler





USING THE TOOLS

Authentication & authorization



Azure AD endpoints



v1.0

- Supports work and school accounts
- Old and reliable
- Consent to all permissions at once
- Azure AD Authentication Library (ADAL)

How to choose?

- Do you need to support personal accounts? → v2.0
- Want to use the cool new stuff? → v2.0
- Want to be sure everything just works? → v1.0

v2.0 (aka Microsoft identity platform)

- Supports personal Microsoft accounts, too
- Newer, recently GA'd
- Consent to permissions as you go
- Microsoft Authentication Library (MSAL)

If you want or need to support personal Microsoft accounts in your application, or you're writing a new application, use Microsoft identity platform.

But before you do, make sure you understand the limitations.

[<https://docs.microsoft.com/en-us/azure/active-directory/develop/azure-ad-endpoint-comparison>]

OAuth 2.0



- Industry-standard protocol for authorization
- Common OAuth 2.0 grant flows
 - Authorization code
 - Implicit
 - Client credentials
 - Resource owner credentials
- + Refresh

Setting up an application registration



Application type

- Web app / API
- Native / Public

Permissions

- Application
- Delegated

Other optional configurations

- Client Secret
- Certificate
- Reply URLs
- Allow implicit



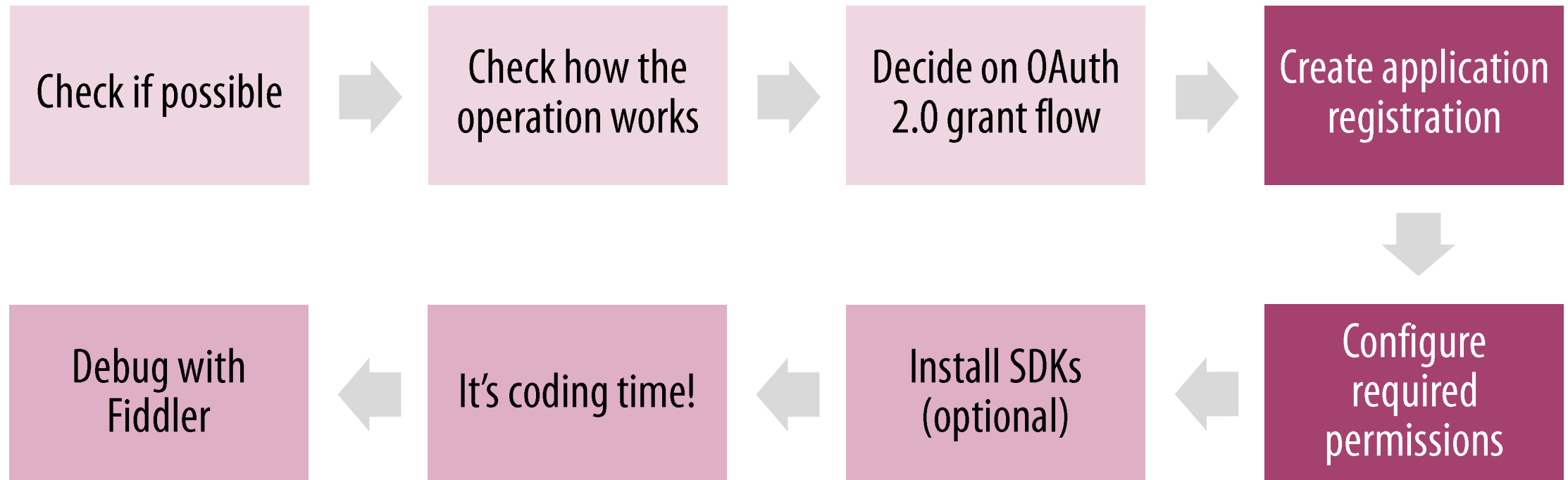
SETTING UP AN APP REGISTRATION

How to choose the flow and app registration type?



OAuth 2.0 grant	Context	Permission type	Code layer	App reg. type
Authorization code	Logged in user	Delegated	Server	Web app / API
Implicit	Logged in user	Delegated	Client	Web app / API
Client credentials	Application identity	Application	Server	Web app / API
Resource owner password credential	Service credentials (user)	Delegated	Server	Web app / API, Native / Public

Recap





thank you



questions?



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1. INSTALL THE
COLLABSUMMIT APP



2. RATE THE SESSIONS
THAT YOU HAVE
ATTENDED

3. WIN ONE OF THE 4
C64-MINIS



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