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MEETUPS

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Foundation of the Graph API



Session Intro



Understanding of the Graph API



Understanding of the different ways you can authenticate



Have a toolbox which you can rely upon to start your journey



Understand how to be more efficient and how to paginate

First things, First...

What is the Graph API

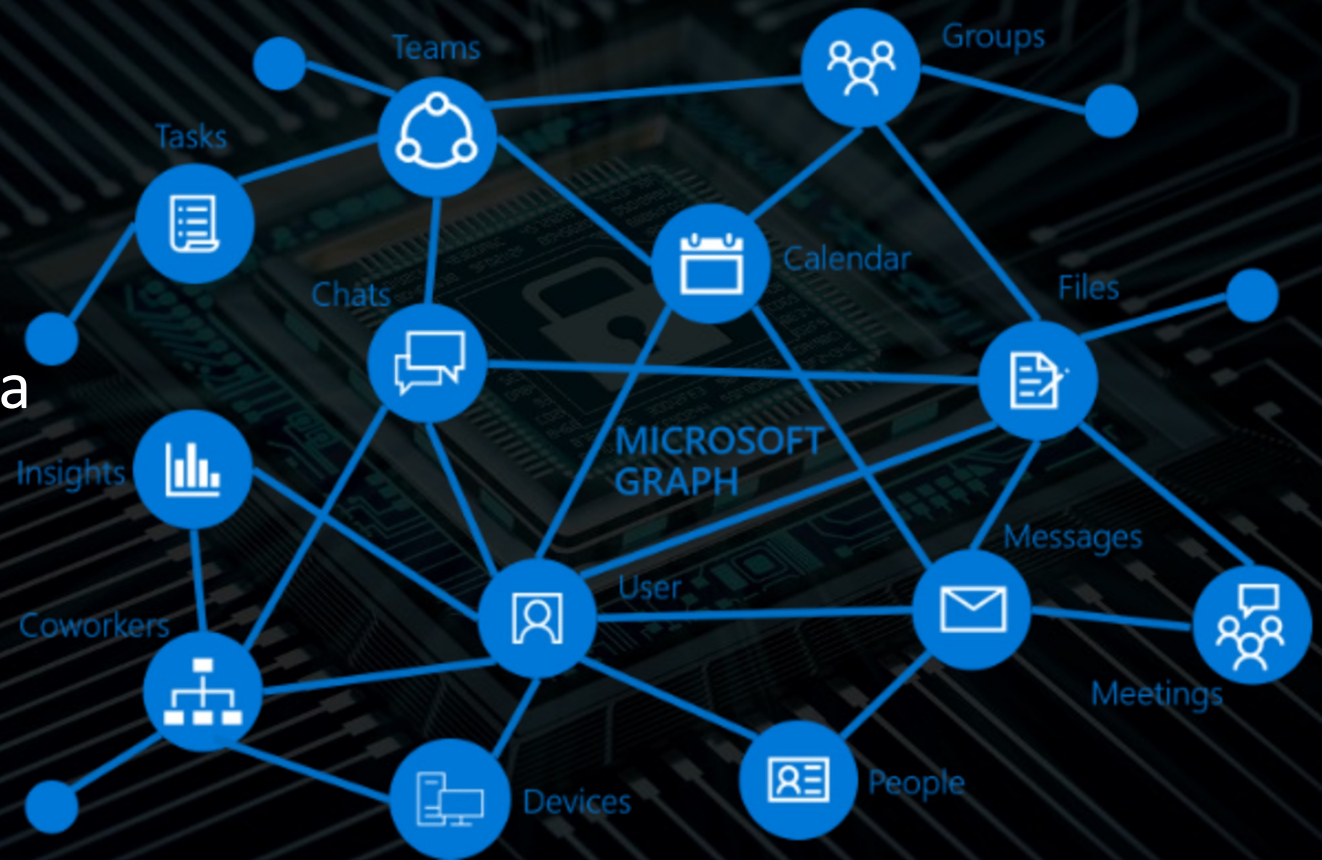


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What is the Graph API?

- A unified endpoint
 - Enterprise Mobility services
 - M365 Services
 - Windows Services
 - (Universal Print, notifications etc)
- The entry point to your cloud data
- SDKs and Native Endpoints
 - PowerShell
 - Python
 - C#
 - etc..



Lets make things a little easier...

The Graph API Toolbox



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Top Tools...



- Postman ([Postman API Platform](#))
 - [Use Postman with the Microsoft Graph API - Microsoft Graph | Microsoft Learn](#)
 - [MMS MOA 2024 - Foundation of the Graph API | Postman API Network](#)



- Graph Xray ([Graph X-Ray \(merill.net\)](#))



- Graph Explorer([Graph Explorer | Microsoft Graph](#)) (aka.ms/ge)

- PowerShell SDK



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Let's look at the tools!!

DEMO TIME!!!



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Authentication



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Authentication Methods

- Delegated Access
 - Device Code Credential
 - UI Based
- Application Access
 - Service Principle (App Registration)
 - Secrets
 - Certificates
 - Managed Identity

Authentication

DEMO!!



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Rest Methods

GET, POST, DELETE & PATCH



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Rest Methods

- GET
 - Used for retrieval of information
 - Cannot be used to change resources in any way
 - Idempotent, The data should always return the same values
- POST
 - Used for creation of resources (with a few exceptions)
 - Non-idempotent, meaning if you perform the same POST request twice, you will get 2 different response and potentially 2 different resources created
 - A success code is generally 201 Created
- DELETE
 - Used for deleting resources
 - Idempotent
 - General Success Codes, 200 (OK), 202 (Accepted, If in a que), 204 (No Content)
- PATCH
 - Used to make 'partial' updates to a resource
 - General Responses are 200, or 204

HTTP STATUS CODE GUIDE

2XX

- 200 - OK
- 201 - CREATED
- 202 - ACCEPTED
- 204 - NO CONTENT



EVERYTHING IS A-OK

4XX

- 404 - BAD REQUEST
- 401 - UNAUTHORISED
- 403 - FORBIDDEN
- 404 - NOT FOUND
- 408 - REQUEST TIMEOUT
- 429 - TOO MANY REQUESTS



YOU FLUFFED UP

5XX

- 500 - INTERNAL SERVER ERROR
- 501 - NOT IMPLEMENTED
- 502 - BAD GATEWAY
- 503 - SERVICE UNAVAILABLE
- 504 - GATEWAY TIMEOUT



THE SERVICE FLUFFED UP

Let's Talk Scenarios



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Usage Scenario – Group Creation & Hydration

Real World Scenario

- Creating New Groups for Teams/Projects

Possible Solution and Benefit

- Follow a standardised process
- Reduce Human Error
- Use automation and flows

Usage Scenario – Intune Policy Manipulation

Real World Scenario

- Intune Policy Backup
- Policy Restore
- Policy Duplication
- CI/CD Deployments
- The list goes on....

Possible Solution and Benefit

- Keep a back up of your policy configurations
- Be able to re-deploy your policies at speed
- Configure Greenfield Tenants in a fraction of the time

Handling Pagination...

- SDK's (Python, C#, PowerShell etc...)
 - They have options to handle this (e.g. PowerShell you would add -All)
- HTTP Method JSON Response
 - JSON Response Body has an odata.NextLink key-value pair
 - Still Requires the Bearer token (for authentication) to be passed in the headers

[Paging Microsoft Graph data in your app - Microsoft Graph | Microsoft Learn](#)

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Making Some Graph Calls..



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Time is precious 😊

Let's Talk Efficiency



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Filter, Select & Search

- Filters
 - Retrieve a subset of resources matching a defined criteria
- Select
 - Select only the properties you require from the retrieved resource
- Search
 - Restrict a set of results based on a match in the search criteria
 - Support Varies per entity
 - [Use the \\$search query parameter in Microsoft Graph - Microsoft Graph | Microsoft Learn](#)

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Filtering, Select & Search...



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More Advanced Options...

- Batching
 - [Combine multiple HTTP requests using JSON batching - Microsoft Graph | Microsoft Learn](#)
- Sequencing
 - Can either be fully parallel or fully sequential

Q&A

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