NIC Cloud Connect

Oslo Spektrum
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Cloud Connect

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Learn to Automate Identity Management like a Pro with Graph PowerShell!

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THE PAST, THE PRESENT & THE FUTURE

Where are we heading?

- The ancient:
  - Q: What was the first directory managing PowerShell module?
- The past:
  - MSOL PowerShell 😳 (Get-MsolUser)
- The present up to now..
  - AzureAD / AzureAD PowerShell 😏 (Get-AzureADUser)
  - EOL ~~*June 30 2023*~~ March 30, 2024
  - Connected to the depreciation of Azure AD Graph
- The now-> Future!
  - PowerShell Graph SDK FTW!  (Get-MgUser)

https://techcommunity.microsoft.com/t5/microsoft-entra-azure-ad-blog/important-azure-ad-graph-retirement-and-powershell-module/ba-p/3848270

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Q: ? 🤔

- What are one of the biggest drawbacks of the MSOL and Azure AD PowerShell modules?

- A: 🤯 They are dependent on Windows Powershell 😏

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Graph PowerShell SDK 101

- Install, Update & Configure
- 1.0 vs Beta (This has changed from SDK v1 to v2!)
- Graph Modules
- How to Connect
- Permission Scopes
  - Delegated
  - Application

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Install Graph PS SDK

```
# Install Current User
Install-Module -Name Microsoft.Graph -Scope CurrentUser

# Install for All Users (Admin privilege)
Install-Module -Name Microsoft.Graph -Scope AllUsers

# Install Beta
Install-Module -Name Microsoft.Graph.Beta
```

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Verify Modules

```
Get-Module -Name Microsoft.Graph - ListAvailable -All

Get-InstalledModule -Name Microsoft.Graph.*
```

Connect to Graph

```
# Interactive authentication:
Connect-MgGraph

# Device authentication:
Connect-MgGraph -UseDeviceAuthentication

# Access token:
Connect-MgGraph -AccessToken $AccessToken

# Application:
Connect-MgGraph -ClientId "YOUR_APP_ID"
 -TenantId "YOUR_TENANT_ID" -CertificateThumbprint "YOUR_CERT_THUMBPRINT"

# Managed Identity:
Connect-MgGraph -Identity
```

https://learn.microsoft.com/en-us/powershell/microsoftgraph/authentication-commands?view=graph-powershell-1.0

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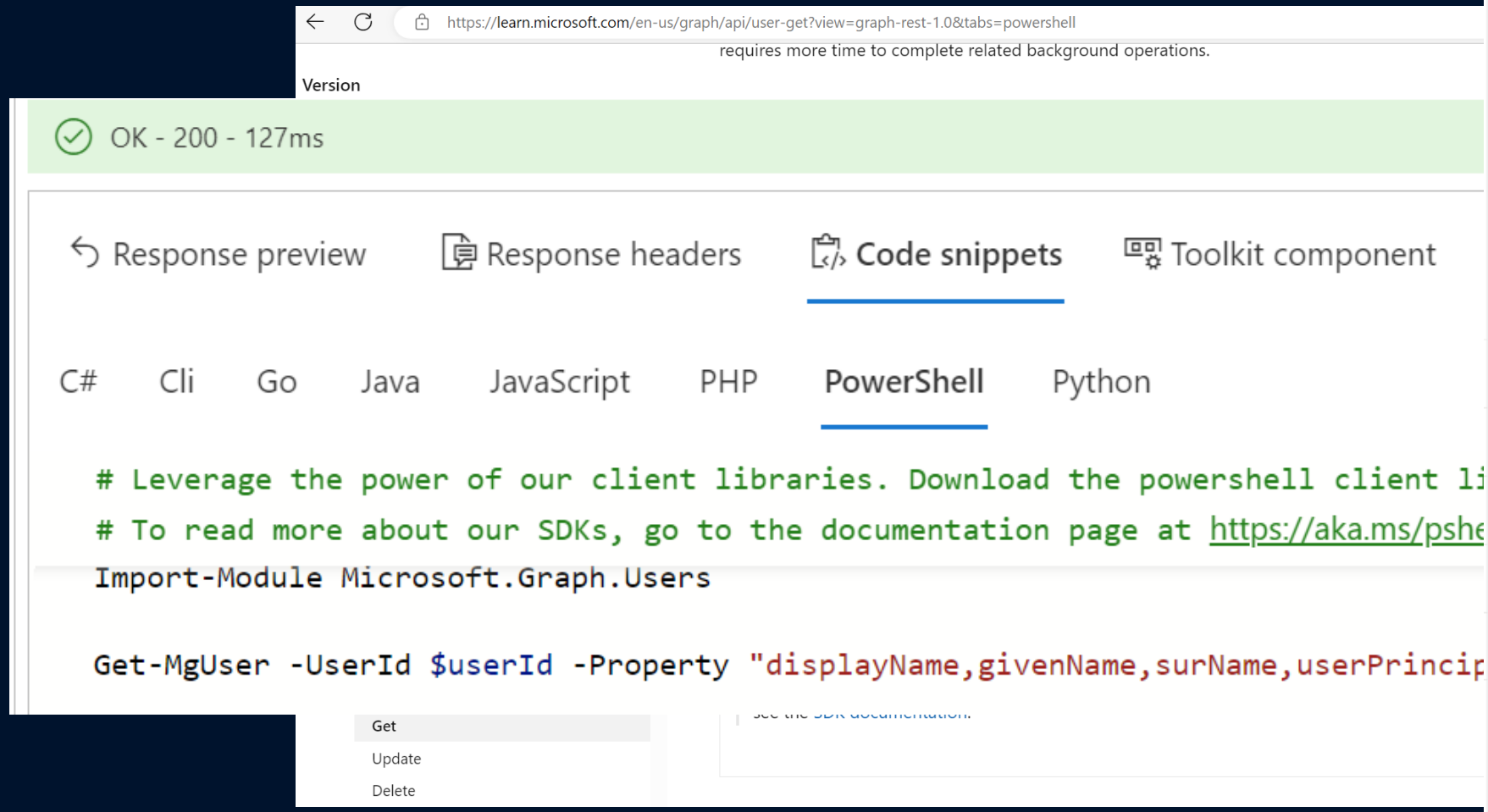
Scopes | Roles | Permissions 

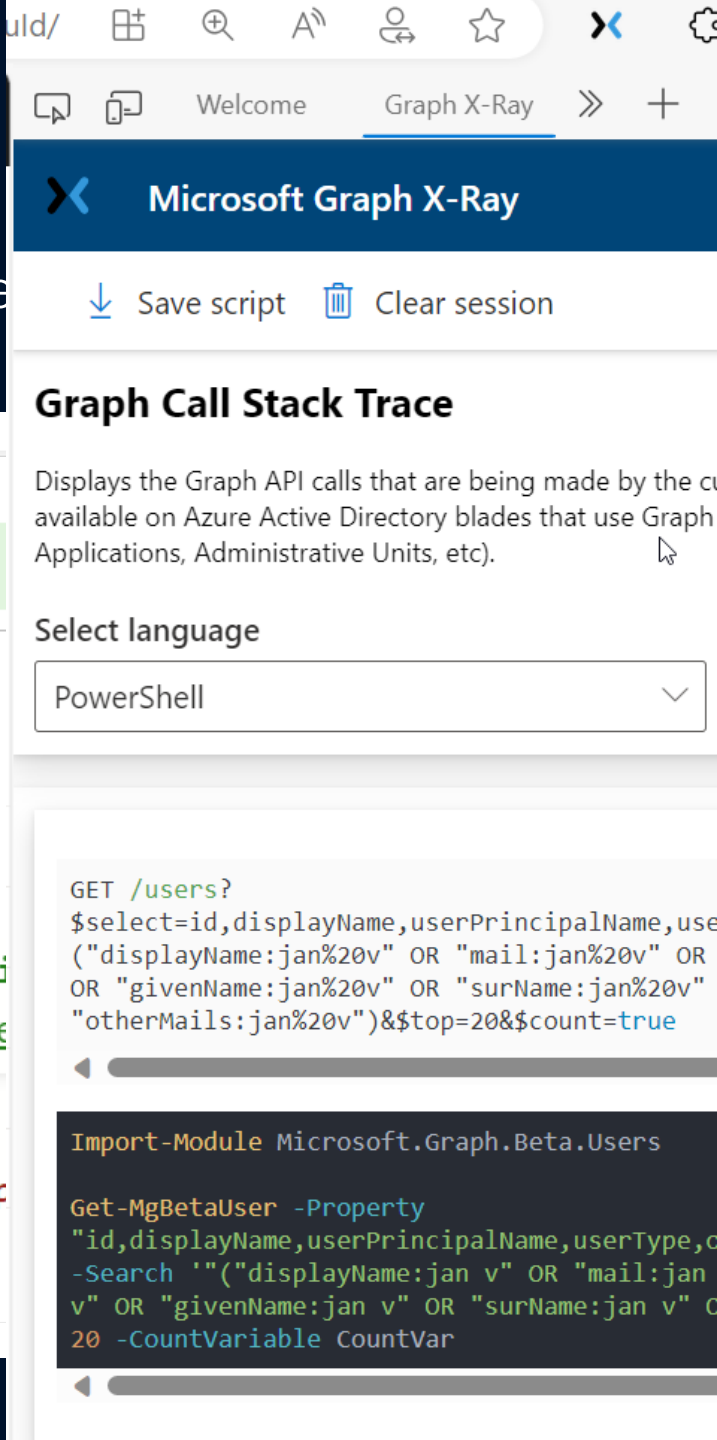
```
# Connect with Scopes
Connect-MgGraph -Scopes User.Read.All

# Find necessary permissions
Find-MgGraphCommand -command Get-MgUser |
 Select -First 1 -ExpandProperty Permissions
```

Use Docs and Graph Explorer

- https://aka.ms/graph og https://aka.ms/ge great resource
  with Graph PowerShell CmdLets >:_





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BRIDGING THE GAP FROM THE PAST TO THE PRESENT –
Introducing the Azure AD Compatibility Adapter

Azure AD Compatibility Adapter

- Uses Graph PowerShell SDK

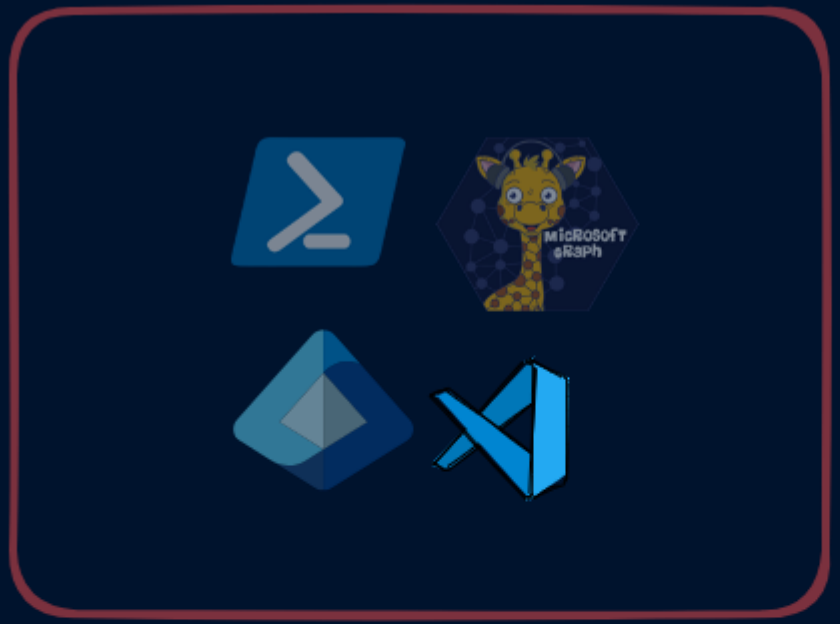
```
Install-Module Microsoft.Graph.Compatibility.AzureAD -AllowPrerelease

Import-Module Microsoft.Graph.Compatibility.AzureAD -Force
```

- Authenticates the same way as Graph PS (Connect-MgGraph)

```
*CompatAD* -> Get-CompatADUser ..
```

Demo Graph PowerShell ++



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SERVERLESS AUTOMATION

Serverless Automation for Graph PowerShell

- Azure Functions
  - Useful for both automation, scheduling and API request scenarios

- Azure Automation
  - Useful for scheduling and automation of scripts and workflows

Azure Functions PowerShell

- Develop in Function App 😏
- Develop locally in Visual Studio Code 
  - Azure Function Core Tools Develop Azure Functions locally using Core Tools | Microsoft Learn
  - func init MyProjFolder --worker-runtime powershell
  - func new --template "Http Trigger" --name MyHttpTrigger

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The Requirements.psd1 file

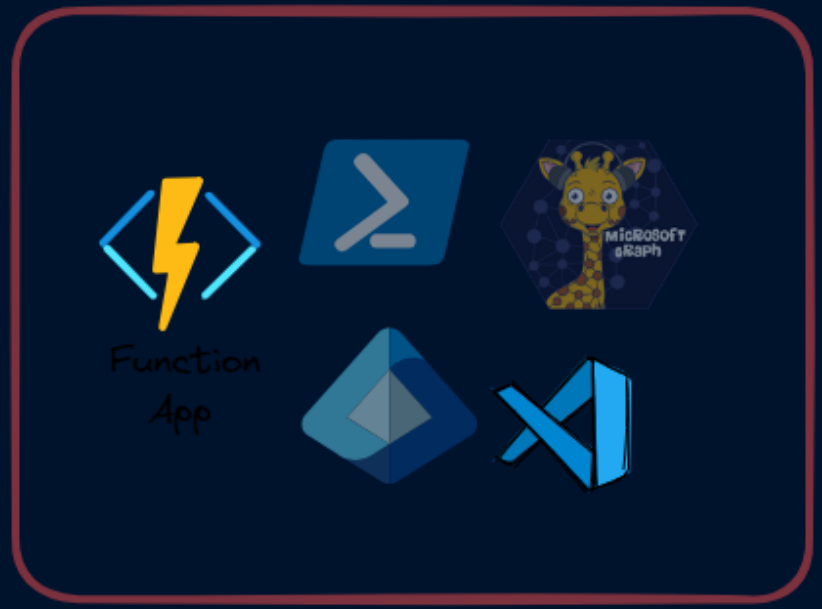
- Managed Dependencies
- Load Graph PowerShell modules automatically 🪄

```
# This file enables modules to be automatically managed by the Functions service.
# See https://aka.ms/functionsmanageddependency for additional information.
#
@{
    # For latest supported version, go to 'https://www.powershellgallery.com/packages/Az'. Uncomment the ne
    # 'Az' = 'MAJOR_VERSION.*'
    'Microsoft.Graph.Authentication' = '2.*'
}
```

Azure Automation and Graph PowerShell

- Automation Account
- Graph PowerShell Modules
- Managed Identity

Demo Serverless & PowerShell & MS Graph!



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AUTOMATE GRAPH WITH DEVOPS

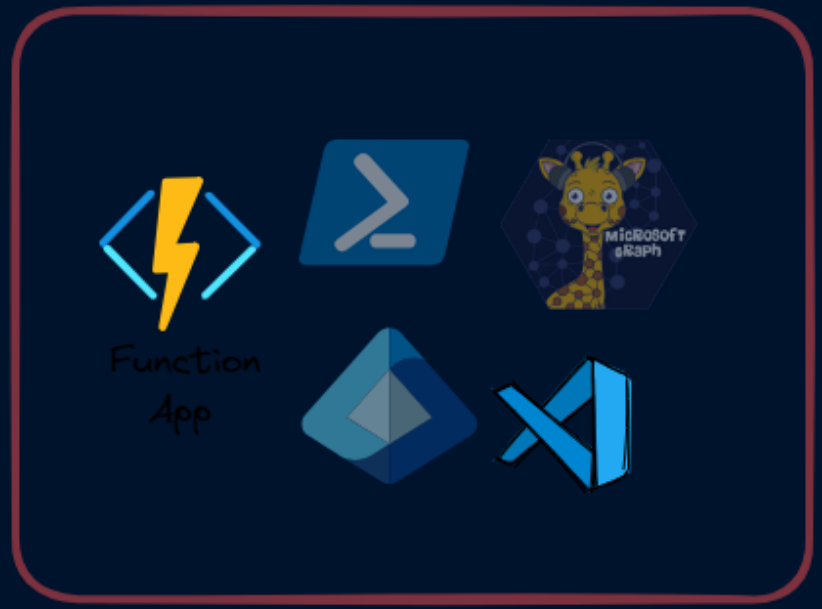
Bonus! DevOps with Workload Identity Federation!

- Run Azure Pipelines as federated identity as service connection to access Microsoft Graph PowerShell SDK!
- ..or Run GitHub Actions Workflow connecting to MS Graph using federated identity

- WHY? 😏
  - Entra ID Automation
    - Policy as Code
    - Configuration as Code
    - Ref. Vending Machine

https://gotoguy.blog/2023/09/15/connect-to-microsoft-graph-in-azure-devops-pipelines-using-workload-identity-federation/

Demo DevOps Pipelines, PowerShell & MS Graph!



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Presentation & Demo Source :\>

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Please help evaluate the session and speaker, and comments appreciated!

→ See next slide