

Manage Modern Workplace Infrastructure as Code in Azure Devops Level 400 (Speaking in Dutch)

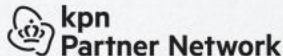
Dennis Westerman





Presentatie & Code

Scan de eind-QR voor GitHub pagina.





Hoofdpunten

- De uitdaging naar Modern Workplace
- DTAP > End to End Flow
- Opbouw van Infrastructure as Code in Azure DevOps
- Q and A kan aan het einde van de sessie





Dennis Westerman

Technisch Consultant

40 jaar, woonachtig in Zeewolde





Microsoft – Cloud, computers, ×



<https://www.microsoft.com/nl-nl/>



Intune



Azure Active Direc...



Security



Microsoft

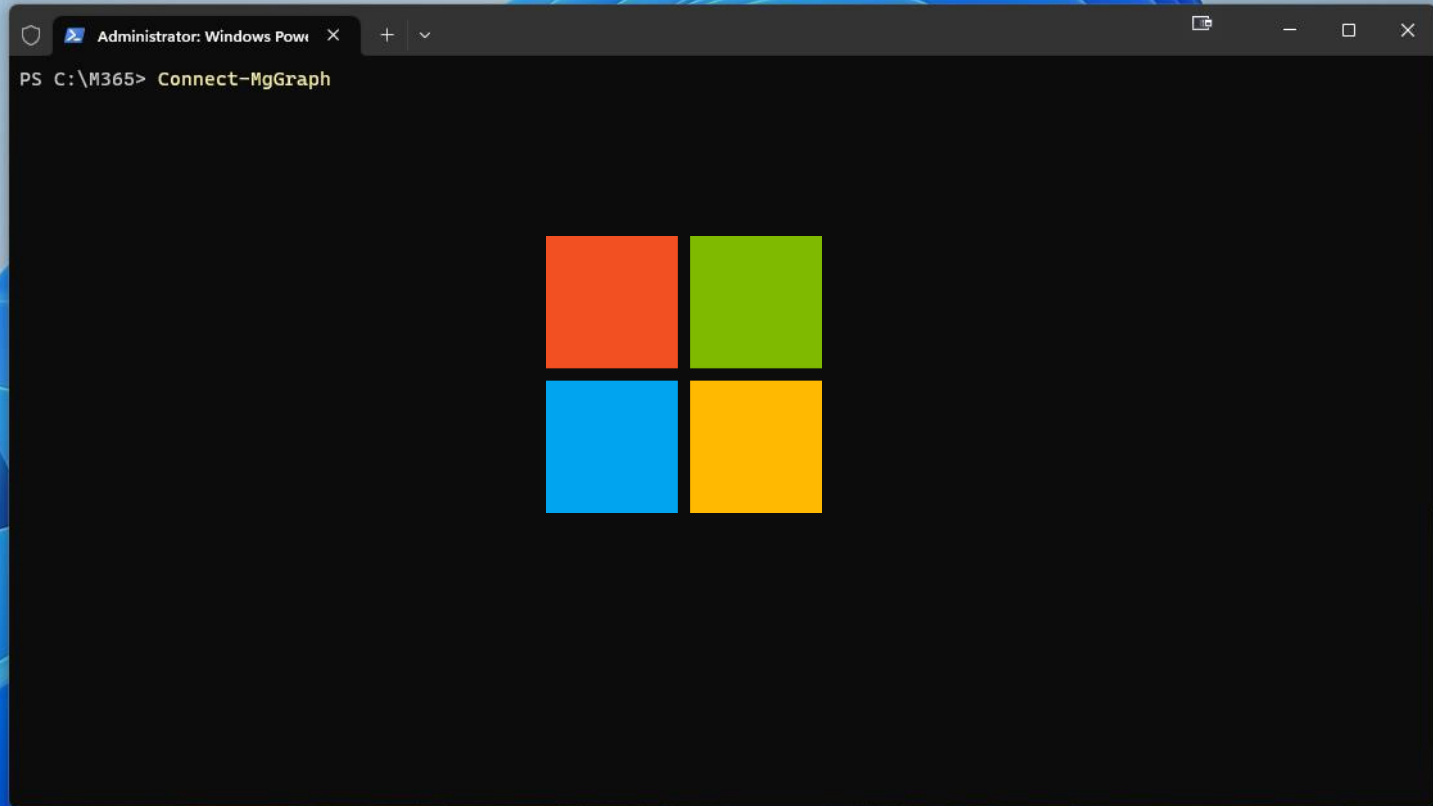
Microsoft 365

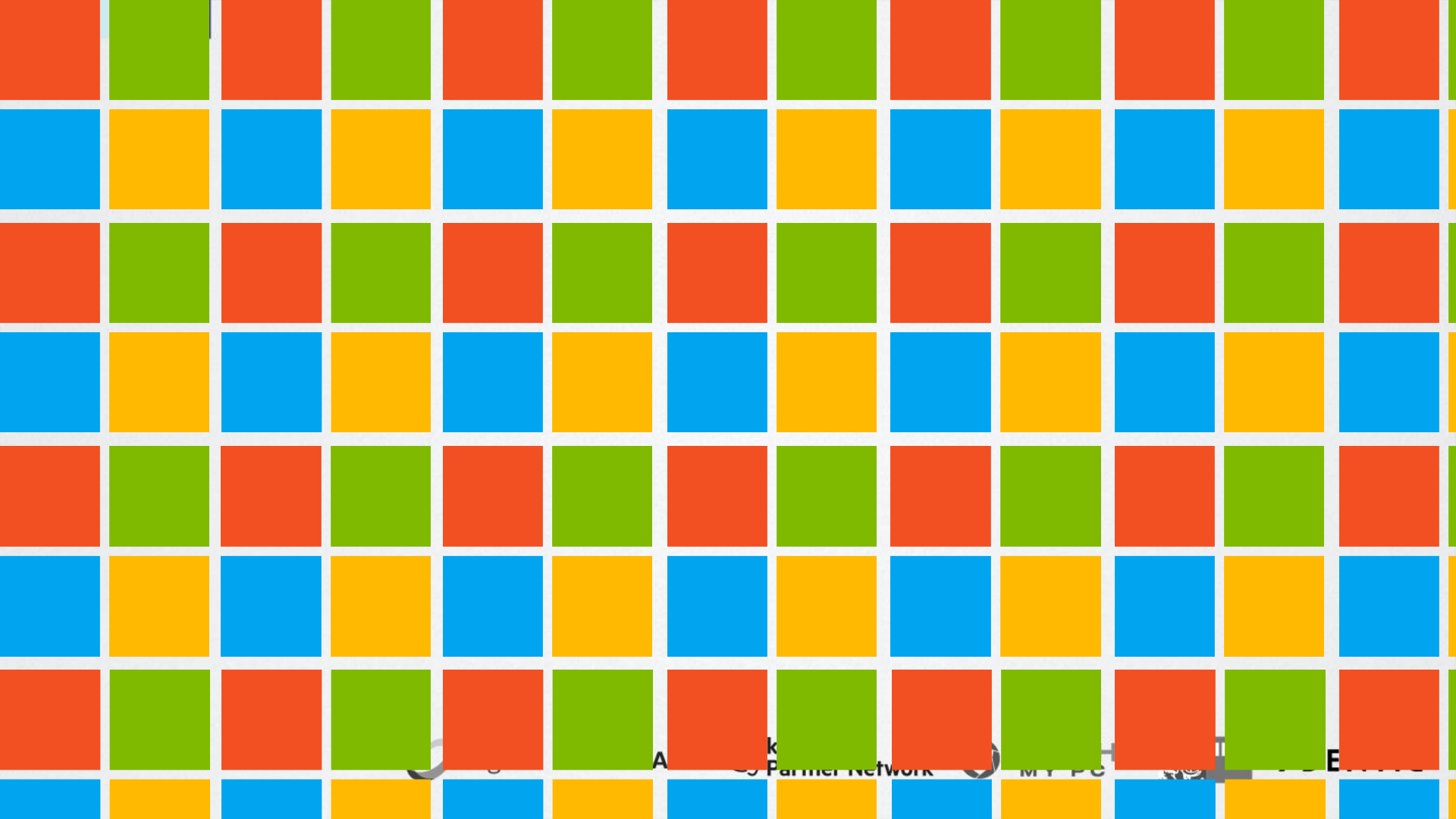
Teams

Windows

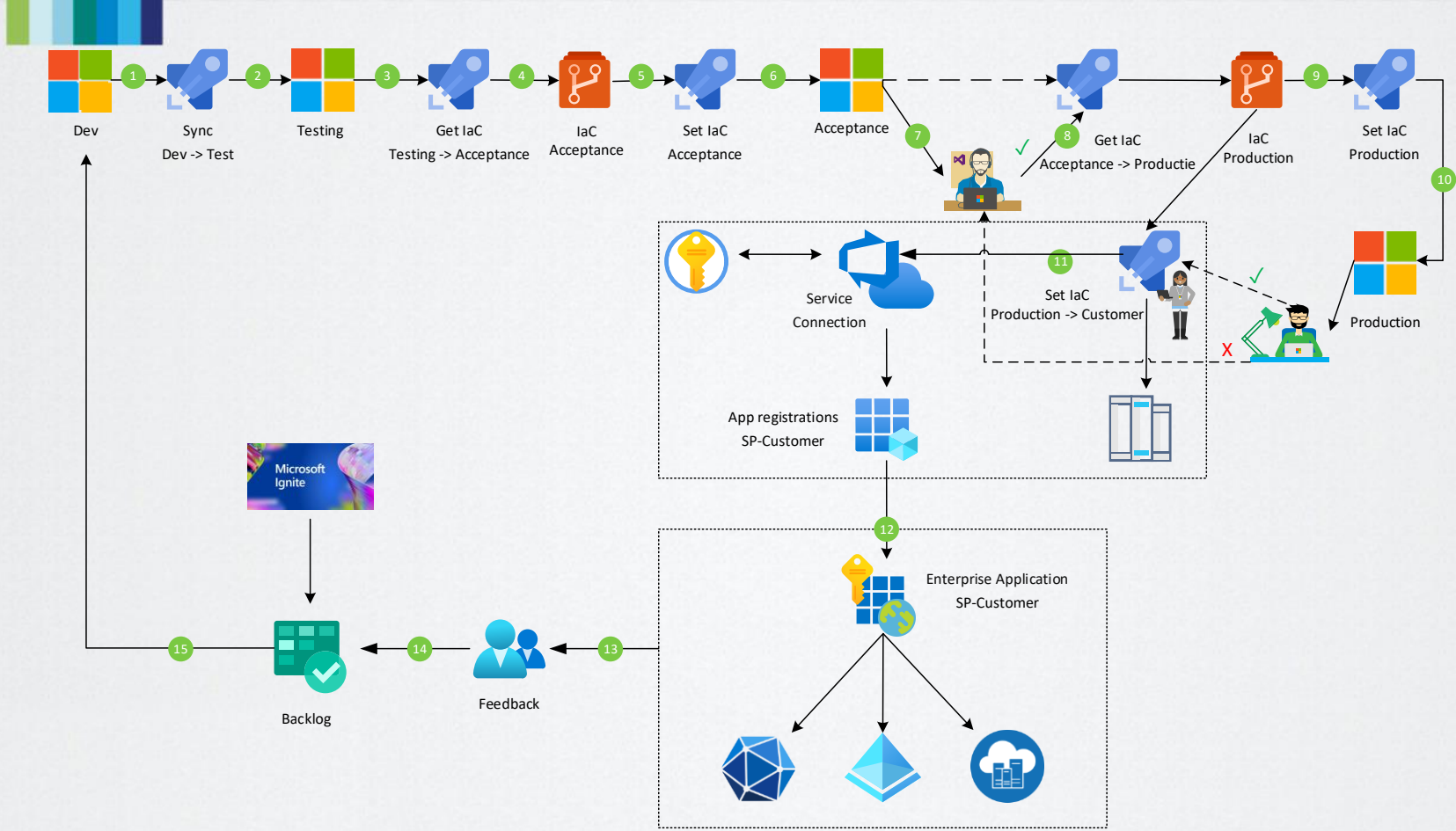
Surface

```
883     $currentPermission.Add( Name , $role.Value)
884     $currentPermission.Add('AdminConsentGranted', $false)
885
886     $appServicePrincipal = Get-MgServicePrincipal -Filter "AppId eq '$($app.AppId)"
887     if ($null -ne $appServicePrincipal)
888     {
889         $roleAssignments = Get-MgServicePrincipalAppRoleAssignment -ServicePrincipal $appServicePrincipal
890         foreach ($auth2Grant in $roleAssignments)
891         {
892             $foundPermission = $auth2Grant | Where-Object -FilterScript { $_.AppRoleAssignedTo.AppId -eq $app.AppId }
893             break
894         }
895
896         if ($foundPermission)
897         {
898             $currentPermission.AdminConsentGranted = $true
899         }
900     }
901 }
902 $permissions += $currentPermission
903 }
904 $i++
```

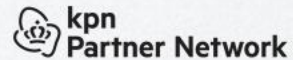








Pipelines, de Basis



```
1 #·YAML_Example
2 trigger: none
3
4 pool:
5   ·vmImage: 'ubuntu-latest'
6
7   stages:
8   - stage: Stage1
9     jobs:
10    - job: YAML_Example
11      steps:
12        Settings
13        - task: PowerShell@2
14          inputs:
15            targetType: 'inline'
16            script: |
17              # Write your PowerShell commands here.
18              Write-Host "Hello Experts Live"
```



```
1 # YAML_Example
2 trigger: none
3
4 pool:
5   vmImage: 'ubuntu-latest'
6
7 stages:
8   - stage: Stage1
9     jobs:
10    - job: YAML_Example
11      steps:
12        Settings
13        - task: PowerShell@2
14          inputs:
15            targetType: 'inline'
16            script: |
17              # Write your PowerShell commands here.
18              Write-Host "Hello Experts Live"
```



Stage(s)

```
1 #·YAML_Example
2 trigger: none
3
4 ✓ pool:
5   ·vmImage: 'ubuntu-latest'
6
7   stages:
8   ✓ - stage: Stage1
9     · jobs:
10    ✓ · - job: YAML_Example
11      · steps:
12      Settings
13      ✓ · - task: PowerShell@2
14      · inputs:
15      · targetType: 'inline'
16      ✓ · script: |
17        · # Write your PowerShell commands here.
18        · Write-Host "Hello Experts Live"
```



Stage(s)

Jobs(s)

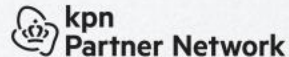
Steps(s)

Task(s)



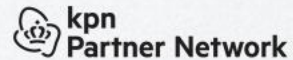


Infrastructure as Code



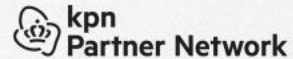


Get Template





laC > Repo



```

19 | . . . # Create structure
    |       Validate
20 | . . . - template: '/Automation/Template/Create_Structure.yml'
21 | . . .   parameters:
22 | . . .     path: 'Tenant Configuration/Conditional Access/JSON/README.md'
23 |
    |       Validate
24 | . . . - template: '/Automation/Template/Git_User.yml'
25 | . . .   parameters:
26 | . . .     userEmail: '${ variables.userEmail }'
27 | . . .     userName: '${ variables.userName }'
28 |
29 | . . . # Commit the changes to the repository
    |       Validate
30 | . . . - template: '/Automation/Template/Commit.yml'
31 |
32 | . . . # Get Conditional Access
    |       Settings
33 | . . . - task: PowerShell@2
34 | . . .   displayName: 'Get Conditional Access'
35 | . . .   inputs:
36 | . . .     filePath: "Tenant Configuration/Conditional Access/PS1/Get_Conditional_Access.ps1"
37 |
38 | . . . # Commit the changes to the repository
    |       Validate
39 | . . . - template: '/Automation/Template/Commit.yml'
40 |
41 | . . . # Remove the README.md files
    |       Validate
42 | . . . - template: '/Automation/Template/Remove_README.yml'
43 | . . .   parameters:
44 | . . .     path: 'Tenant Configuration/Conditional Access/JSON'
45 |
46 | . . . # Commit the changes to the repository
    |       Validate
47 | . . . - template: '/Automation/Template/Commit.yml'

```

```
19 | ... | # Create structure
    | ... | Validate
20 | ... | - template: '/Automation/Template/Create_Structure.yml'
21 | ... | parameters:
22 | ... | path: 'Tenant Configuration/Conditional Access/JSON/README.md'
```

```
24 | ... | Validate
25 | ... | - template: '/Automation/Template/Git_User.yml'
26 | ... | parameters:
27 | ... |   userEmail: '{{ variables.userEmail }}'
    | ... |   userName: '{{ variables.userName }}'
```

```
40 | - '{{ if eq(parameters.gitUser, 'Dennis Westerman') }}':
41 |   - name: gitUser
42 |     value: 'Dennis Westerman'
43 |   - name: userEmail
44 |     value: 'dennis@westerman.it'
```

```
29 | ... | # Commit the changes to the repository
    | ... | Validate
30 | ... | - template: '/Automation/Template/Commit.yml'
31 | ... |
32 | ... | # Get Conditional Access
    | ... | Settings
33 | ... | - task: PowerShell@2
    | ... | displayName: 'Get Conditional Access'
    | ... | inputs:
34 | ... |   filePath: "Tenant Configuration/Conditional Access/PS1/Get_Conditional_Access.ps1"
35 | ... |
36 | ... | # Commit the changes to the repository
    | ... | Validate
37 | ... | - template: '/Automation/Template/Commit.yml'
38 | ... |
39 | ... | # Remove the README.md files
    | ... | Validate
40 | ... | - template: '/Automation/Template/Remove_README.yml'
41 | ... | parameters:
42 | ... | path: 'Tenant Configuration/Conditional Access/JSON'
43 | ... |
44 | ... | # Commit the changes to the repository
    | ... | Validate
45 | ... | - template: '/Automation/Template/Commit.yml'
```

Who want to commit?

- ☒ Dummy
- ☐ Dennis Westerman

```
19 | ... | # Create structure
    | ... | Validate
20 | ... | --template: '/Automation/Template/Create_Structure.yml'
21 | ... | parameters:
22 | ... |   path: 'Tenant Configuration/Conditional Access/JSON/README.md'
23 | ... |
    | ... | Validate
24 | ... | --template: '/Automation/Template/Git_User.yml'
25 | ... | parameters:
26 | ... |   userEmail: '${ variables.userEmail }'
27 | ... |   userName: '${ variables.userName }'
28 | ... |
29 | ... | # Commit the changes to the repository
    | ... | Validate
30 | ... | --template: '/Automation/Template/Commit.yml'
31 | ... |
32 | ... | # Get Conditional Access
    | ... | Settings
33 | ... | --task: PowerShell@2
34 | ... | displayName: 'Get Conditional Access'
35 | ... | inputs:
36 | ... |   filePath: "Tenant Configuration/Conditional Access/PS1/Get_Conditional_Access.ps1"
37 | ... |
38 | ... | # Commit the changes to the repository
    | ... | Validate
39 | ... | --template: '/Automation/Template/Commit.yml'
40 | ... |
41 | ... | # Remove the README.md files
    | ... | Validate
42 | ... | --template: '/Automation/Template/Remove_README.yml'
43 | ... | parameters:
44 | ... |   path: 'Tenant Configuration/Conditional Access/JSON'
45 | ... |
46 | ... | # Commit the changes to the repository
    | ... | Validate
47 | ... | --template: '/Automation/Template/Commit.yml'
```

```
19 | ... | # Create structure
    | ... | Validate
20 | ... | --template: '/Automation/Template/Create_Structure.yml'
21 | ... | parameters:
22 | ... |   path: 'Tenant Configuration/Conditional Access/JSON/README.md'
23 | ... |
    | ... | Validate
24 | ... | --template: '/Automation/Template/Git_User.yml'
25 | ... | parameters:
26 | ... |   userEmail: '${ variables.userEmail }'
27 | ... |   userName: '${ variables.userName }'
28 | ... |
29 | ... | # Commit the changes to the repository
    | ... | Validate
30 | ... | --template: '/Automation/Template/Commit.yml'
31 | ... |
32 | ... | # Get Conditional Access
    | ... | Settings
33 | ... | --task: PowerShell@2
34 | ... | displayName: 'Get Conditional Access'
35 | ... | inputs:
36 | ... |   filePath: "Tenant Configuration/Conditional Access/PS1/Get_Conditional_Access.ps1"
37 | ... |
38 | ... | # Commit the changes to the repository
    | ... | Validate
39 | ... | --template: '/Automation/Template/Commit.yml'
40 | ... |
41 | ... | # Remove the README.md files
    | ... | Validate
42 | ... | --template: '/Automation/Template/Remove_README.yml'
43 | ... | parameters:
44 | ... |   path: 'Tenant Configuration/Conditional Access/JSON'
45 | ... |
46 | ... | # Commit the changes to the repository
    | ... | Validate
47 | ... | --template: '/Automation/Template/Commit.yml'
```

MW

+

Modern Workplace

> Automation

> Customers

> Doc

> Tenant Configuration

> Azure Active Dire...

> Company branding

> Conditional Access

> PS1

> YML

> YML

> Update

> Workplace Devices

.gitignore

azure-pipelines.yml

Get_IaC.yml

README.md

Setup_Environment...

Setup_Wizard.yml

Update_Corp_Apps...

main

Tenant Configuration / Conditional Access

Conditional Access

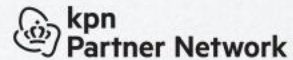
+ New

Contents

History

Name ↑	Last change	Commits
PS1	26 apr	3c740bbd cc Dennis Westerman
YML	2h ago	0a6a6004 cc Dennis Westerman

Set Template



```
4 parameters:
5 - name: Customer
6   displayName: Choose Customer
7   type: string
8   default: 'Dummy'
9   values:
10  - Dummy
11  - DSC.ms ←
12  - DSC.nu ←
```

```
13
14 - name: Template
15   displayName: Template
16   type: string
17   default: 'Dummy'
18   values:
19   - Dummy
20   - IaC_AAD
```

```
22 variables:
23 - ${if eq(parameters.Customer, 'DSC.ms')}:
24   - name: Customer
25     value: sc-dsc-ms
26
27 - ${if eq(parameters.Customer, 'DSC.nu')}:
28   - name: Customer
29     value: sc-dsc-nu
```

Choose Customer

☒ Dummy

☐ DSC.ms

☐ DSC.nu




```
14 - name: Template
15   displayName: Template
16   type: string
17   default: 'Dummy'
18   values:
19     - Dummy
20     - IaC_AAD
```

```
22 variables:
23 - ${if eq(parameters.Customer, 'DSC.ms')}:
24   - name: Customer
25     value: sc-dsc-ms
26
27 - ${if eq(parameters.Customer, 'DSC.nu')}:
28   - name: Customer
29     value: sc-dsc-nu
```

```
31 - ${if eq(parameters.Template, 'Dummy')}:
32   - name: Template
33     value: 'Automation/Template/Dummy.yml'
34
35 - ${if eq(parameters.Template, 'IaC_AAD')}:
36   - name: Template
37     value: 'Tenant Configuration/YML/IaC_AAD.yml'
```

Template

☒ Dummy
☐ IaC_AAD



```
39 - group: ${variables.Customer}}
```

```
41 stages:  
42   - stage: Tenant1  
43     displayName: 'JOB'  
44     pool:  
45       vmImage: ubuntu-latest
```

```
46   jobs:  
47     Validate  
48     - template: ${variables.Template}  
49       parameters:  
50         serviceConnection: $(Customer)
```



MW

Modern Workplace

+

Overview

Boards

Repos

Pipelines

Pipelines

Environments

Releases

Library

Library

Variable groups

Name ↕

fx SC-01-DEV

fx sc-dsc-ms

fx sc-dsc-nu

fx Version

```
1 # IaC_AAD.yml
2 parameters:
3   - name: serviceConnection
4     type: string
5
6 jobs:
7   - job: 'IaC_AAD'
8     steps:
9       - checkout: self
10        path: 's'
```

Validate

```
12     - template: '/Tenant Configuration/Azure Active Directory/YML/Setup_AAD.yml'
13       parameters:
14         serviceConnection: ${parameters.serviceConnection}
```

Validate

```
16     - template: '/Tenant Configuration/Conditional Access/YML/Set_Conditional_Access.yml'
17       parameters:
18         serviceConnection: ${parameters.serviceConnection}
```

Template

☐ Dummy

☒ IaC_AAD

```
6  steps:
7    | # Connect to Microsoft Graph
      Validate
8    | - template: '/Automation/Template/Connect_to_MSGraph.yml'
9    |   parameters:
10   |     serviceConnection: '${{parameters.serviceConnection}}'
11
      Settings
12   | - task: PowerShell@2
13   |   displayName: 'Disable Security Defaults'
14   |   inputs:
15   |     filePath: 'Tenant Configuration/Azure Active Directory/PS1/Disable Security Defaults.ps1'
16
      Settings
17   | - task: PowerShell@2
18   |   displayName: 'Securing Users Settings'
19   |   inputs:
20   |     filePath: 'Tenant Configuration/Azure Active Directory/PS1/Securing Users Settings.ps1'
21
      Settings
22   | - task: PowerShell@2
23   |   displayName: 'Disable Groups In Access Panel'
24   |   inputs:
25   |     filePath: 'Tenant Configuration/Azure Active Directory/PS1/Disable_Groups_In_Access_Panel.ps1'
26
```

```
6 steps:
7   # Connect to Microsoft Graph
  Validate
8   --template: '/Automation/Template/Connect_to_MSGraph.yml'
9   parameters:
10  --serviceConnection: '${parameters.serviceConnection}'
```



```
11 Settings
12 --task: PowerShell@2
13 --displayName: 'Disable Security Defaults'
14 --inputs:
15 --filePath: 'Tenant Configuration/Azure Active Directory/PS1/Disable Security Defaults.ps1'
```



```
16 Settings
17 --task: PowerShell@2
18 --displayName: 'Securing Users Settings'
19 --inputs:
20 --filePath: 'Tenant Configuration/Azure Active Directory/PS1/Securing Users Settings.ps1'
```

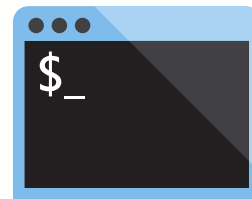


```
21 Settings
22 --task: PowerShell@2
23 --displayName: 'Disable Groups In Access Panel'
24 --inputs:
25 --filePath: 'Tenant Configuration/Azure Active Directory/PS1/Disable_Groups_In_Access_Panel.ps1'
```



6 steps:

```
7 - task: AzureCLI@2
    Validate
8   ·· displayName: 'Get Service Principal'
9   ·· inputs:
10  ··· azureSubscription: '${parameters.serviceConnection}'
11  ··· scriptType: "bash"
    Settings
12  ··· scriptLocation: "inlineScript"
13  ··· inlineScript: |
14  ···· echo "##vso[task.setvariable variable=spId]$servicePrincipalId"
15  ···· echo "##vso[task.setvariable variable=spKey]$servicePrincipalKey"
16  ···· echo "##vso[task.setvariable variable=tid]$tenantId"
    Settings
17  ··· addSpnToEnvironment: true
```



```
18
19 - task: DownloadPackage@1
20   ·· displayName: 'Download Az.Accounts'
21   ·· inputs:
    Settings
22   ··· packageType: 'nuget'
23   ··· feed: 'bf0ec526-3694-4ceb-be0d-d537ee78c18b/8790abb6-2835-417a-9792-b0e81c8c43a5'
24   ··· view:
25   ···· definition: 'a350b0fc-145f-4bae-910c-b36fd871d779'
26   ···· version: '2.12.1'
    Settings
27   ··· downloadPath: '$(System.DefaultWorkingDirectory)/Az.Accounts'
```














































```

49 --task: PowerShell@2
50 ··displayName: 'Connect to Service Principal'
51 ··inputs:
52 ·· ··targetType: 'inline'
53 ·· ··script: |
54 ·· ·· ··$modulePath = "$(System.DefaultWorkingDirectory)/Az.Accounts"
55 ·· ·· ··Import-Module "$modulePath/Az.Accounts.psd1"
56 ·· ·· ··$modulePath = "$(System.DefaultWorkingDirectory)/Az.KeyVault"
57 ·· ·· ··Import-Module "$modulePath/Az.KeyVault.psd1"
58 ·· ·· ··$modulePath = "$(System.DefaultWorkingDirectory)/Microsoft.Graph.Authentication"
59 ·· ·· ··Import-Module "$modulePath/Microsoft.Graph.Authentication.psd1"
60 ·· ·· ··$credential = New-Object System.Management.Automation.PSCredential ("${env:SPID}", (ConvertTo-SecureString ${env:SPKEY} -AsPlainText -
61 ·· ·· ··Disable-AzContextAutosave -Scope Process
62 ·· ·· ··Connect-AzAccount -Credential $Credential -Tenant ${env:TID} -ServicePrincipal
63
64 ·· ·· ··# AnalysisServices, AppConfigurations, Arm, Attestation, Batch, DataLake, KeyVault, MSGraph, OperationalInsights, ResourceManager, Stor
65 ·· ·· ··# Getting MSGraph Token
66 ·· ·· ··$MSGraphToken = (Get-AzAccessToken -ResourceTypeName MSGraph).Token
67 ·· ·· ··Write-Host ("##vso[task.setvariable variable=MSGraphToken;]$MSGraphToken")
68 ·· ·· ··
69 ·· ·· ··# Getting Refresh Token from KeyVault
70 ·· ·· ··$refreshToken = Get-AzKeyVaultSecret -VaultName '${KeyVault}' -Name graphrefreshToken -AsPlainText
71 ·· ·· ··Write-Host ("##vso[task.setvariable variable=refreshToken;]$refreshToken")

```

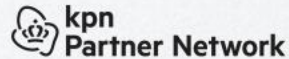
⊗ Some recent issues detected related to pipeline trigger.

View Details

Description	Stages	
<div><div>✓</div><div>#20230522.8 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389 </div></div>	<div>✓</div>	<div> Just now</div> <div> 26s</div>
<div><div>✓</div><div>#20230522.7 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389 </div></div>	<div>✓</div>	<div> 3m ago</div> <div> 48s</div>
<div><div>✓</div><div>#20230522.6 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389 </div></div>	<div>✓</div>	<div> 6m ago</div> <div> 49s</div>
<div><div>✓</div><div>#20230522.5 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389</div></div>	<div>✓</div>	<div> 8m ago</div> <div> 58s</div>
<div><div>✓</div><div>#20230522.4 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389</div></div>	<div>✓</div>	<div> 13m ago</div> <div> 2m 12s</div>
<div><div>✓</div><div>#20230522.3 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  fe33e389</div></div>	<div>✓</div>	<div> 2h ago</div> <div> 46s</div>
<div><div>✓</div><div>#20230522.2 • Updated Setup_AAD.yml</div><div>↳ Manually triggered for   main  9923541c</div></div>	<div>✓</div>	<div> 2h ago</div> <div> 55s</div>
<div><div>✓</div><div>#20230522.1 • Deleted Intunewin</div><div>↳ Manually triggered for   main  33025a4e</div></div>	<div>✓</div>	<div> 2h ago</div> <div> 1m 6s</div>



Updating Tenants



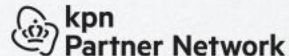
```
3 stages:
4   - stage: Tenant1
5     displayName: 'DSC.MS'
6     variables:
7       - group: sc-dsc-ms
8     pool:
9       vmImage: ubuntu-latest
10    jobs:
11      Validate
12      - template: '/Update/2304.yml'
13        parameters:
14          serviceConnection: sc-dsc-ms
```

```
15   - stage: Tenant2
16     displayName: 'DSC.NU'
17     variables:
18       - group: sc-dsc-nu
19     pool:
20       vmImage: ubuntu-latest
21    jobs:
22      Validate
23      - template: '/Update/2304.yml'
24        parameters:
25          serviceConnection: sc-dsc-nu
```



Samenvatting

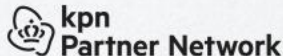
- Begin bij DTAP End to End flow
- Get Pipeline
- Set Pipeline
- Update Pipeline





Uw feedback is belangrijk

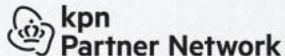
Neem even de tijd om onze sessie te beoordelen, zodat we ons in de toekomst kunnen blijven verbeteren.





Presentatie & Code

GitHub





Thank You

