



Microsoft Exchange Community (MEC)

# Technical Airlift





# Modernizing Exchange scripts

Bringing your Exchange Scripts in the Modern Age #MECAIR212





# /me

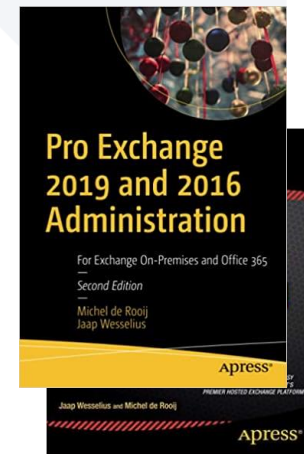
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# Exchange Scripts

- PowerShell Scripts to perform Exchange-related tasks
- Converting EWS:
  - MECAIR105: Moving from EWS to OAuth and Graph API (Julian Stephan)
  - MECAIR127: Developing 3<sup>rd</sup> party apps with Exchange APIs (Glen Scales)



# Modernizing Scripts

- Why?
  - Pushed by Technology
  - Forced by Lifecycle or Events
- How?
- Next Steps



# Technology Push

- Basic Authentication > Modern Authentication
  - BA gets disabled EXO Oct'22 (Jan'23 w/additional grace period)
- Security Practices
  - "Saved Creds" > Certificate, Managed Id
- Jobs
  - Remote vs Azure Automation



# Module Lifecycles can be .. challenging



| Module       | Current        | Last Update | Retires  | Comment                                 |
|--------------|----------------|-------------|----------|---|
| Remote PS    | N/A            | N/A         | 1Jan'23  | BA dependency                           |
| EXOMv1       | 1.4.1          | 18jul'19    | 1Jan'23  | EAC click-to-run module, no CBA support |
| EXOMv2       | 2.0.6 Preview8 | 13Aug'22    |          | GA=2.0.5 (11May'21)                     |
| MSOnline     | 1.1.183.66     | 15Nov'21    | 31Mar'23 |   |
| AzureAD (v2) | 2.0.2.149      | 1Feb'22     | 31Mar'23 | GA=2.0.2.140 (19Aug'21)                 |
| MSGraph      | 1.11.1         | 23Aug'22    |          | AKA MS PowerShell Graph SDK             |





# EXOMv2 with CBA

- Create (self-signed) certificate (e.g. using Create-SelfSignedCertificate.ps1)
- Create Azure App registration in your tenant
- Add certificate for authentication ('Secret' not Security Best Practice)
- Add Exchange.ManageAsApp API permission (+ any other permissions, eg Graph)
- Grant admin consent
- Grant Service Principal of App the Exchange Administrator role

- Install .pfx certificate
- `Install-Module ExchangeOnlineManagement -AllowPreRelease`
- `Connect-ExchangeOnline -CertificateThumbprint <Thumb> -AppId <AppId> -Organization '<tenant>.onmicrosoft.com'`
- <https://docs.microsoft.com/en-us/powershell/exchange/app-only-auth-powershell-v2>
- <https://eightwone.com/2020/08/05/exchange-online-management-using-exov2-module/>





# EXOMv2: Preview vs GA

- GA is version 2.0.5 (from May 2021)
- Current version 2.0.6 Preview 8
- Certificate Based Auth went GA in 2.0.6 Preview 5
- In Preview 7, nearly all cmdlets REST-based or backed
  - REST-only allows disabling BA in WinRM client
- But Preview 7 also removed few UnifiedGroup cmdlets
  - Fallback to RPS which requires BA



# REST-backed vs REST-based

| REST-Backed                   | REST-Based                  |
|-------------------------------|-----------------------------|
| Get-Mailbox                   | Get-EXOMailbox (+ 8 others) |
| Compatibility                 | Performance                 |
|                               | Code changes highly likely  |
|                               | PropertySet & Properties    |
|                               | No Set-EXO*                 |
| Modern Authentication support |                             |
| Reliable, Resilient           |                             |



# How?

- *"We daily run a script to manage a partner send connector in EXO"*
  - *Running on a VM locally as a scheduled task*
- *"I read Basic Authentication goes away; we need to do something?"*
- *"Where do we start?"*





# Refactoring

| From EXOMv1, MSOnline, AzureAD  | To EXOMv2  |
|---|--|
| <b>Connect-ExchangeOnline</b> -Credential ..                                    | <b>Connect-ExchangeOnline</b><br>-Organization ..onmicrosoft.com<br>-AppId .. -CertificateThumbprint ..  |
| <b>Connect-MsolService</b> -Credential ..<br><b>Connect-AzureAD</b> -Credential | Connect-AzureAD -TenantId ..<br>-CertificateThumbprint .. -ApplicationId ..<br><br><b>Connect-Graph</b> -TenantId ..<br>-CertificateThumbprint .. -ClientId .. |
| <b>Get-Mailbox</b><br><b>Get-MsolUser</b><br><b>Get-AzureADUser</b>             | <b>Get-Mailbox</b> (or <b>Get-EXOMailbox</b> + edits)<br><b>Get-MgUser</b> + edits   |



# Helpful Resources

- Exchange Online BA->MA, RPS -> REST
  - <https://github.com/michelderooij/Analyze-ExoScript>
- AzureAD MSOL/AzureAD -> MSGraph
  - <https://merill.net/2022/04/graph-powershell-conversion-analyzer/>
  - <https://github.com/FriedrichWeinmann/PSAzureMigrationAdvisor>
  - <https://docs.microsoft.com/en-us/powershell/microsoftgraph/migration-steps>
  - <https://developer.microsoft.com/en-us/graph/graph-explorer>





# Demo





# Next Step: Azure Automation

- Well suited for cloud-only, headless jobs
- Requires Azure Subscription
- Automation Account
  - Managed Identity
  - Deploy modules, eg ExchangeOnlineManagement
  - Attach certificates, variables (eg TenantId, AppId) etc.
  - (Schedule) Runbook



# Setup EXO & Azure Automation

- Create Automation Account
  - Managed Identity
- Add 'Reader' role to Automation Account (in Resource Group)
- Create Azure AD application (process similar to EXOv2 app)
- Configure Automation Account
  - Add certificate
  - Add Module ExchangeOnlineManagement
  - For Preview modules, use 'Deploy to Azure Automation' from PowerShell Gallery
  - Create Runbook (attached to Automation Account)
  - Schedule













# Runbook


[Home](#) > [EXOAA1 | Runbooks](#) > [EXODemo \(EXOAA1/EXODemo\)](#) >

## Edit PowerShell Runbook ...

EXODemo

 Save  Publish  Revert to published  Test pane  Feedback

>  CMDLETS

>  RUNBOOKS

>  ASSETS

```
1 Import-Module ExchangeOnlineManagement
2
3 $OrgId= Get-AutomationVariable -Name 'OrgId'
4 $AppId= Get-AutomationVariable -Name 'AppId'
5 $CertThumbPrint= (Get-AutomationCertificate -Name 'MECDEMO').Thumbprint
6
7 Connect-ExchangeOnline -CertificateThumbPrint $CertThumbPrint -AppID $AppId -Organization $OrgId
8
9 $Mbx= Get-Mailbox
10
11 Write-Output $Mbx
```





# Demo



# Take Aways

- Conversion requires work
- Prioritize Modern Authentication
  - MA changes easier than switching modules
- Review your scripts and processes
  - Use mentioned sites and tools for assessment and guidance
  - Use Azure Sign-In Logs to identify BA usage
- Use EXOMv2 module, get familiar with PowerShell Graph SDK
- Consider Azure Automation for tasks





# Related Sessions

Sep14

- MECAIR216: ATE: Basic Auth deprecation in EXO (repeat) by Greg Taylor & Friends, 10am
- MECAIR222: Modernizing EWS apps with Graph by Toni Pohl, 11am
- MECAIR233: Master the Graph for Exchange PowerShell by Tony Redmond 11am

Sep13

- MECAIR105: Moving from EWS to OAuth and Graph API by Julian Stephan
- MECAIR127: Developing 3<sup>rd</sup> party apps with Exchange APIs by Glen Scales
- MECAIR103: Get Ready for Basic Auth deprecation in EXO by Greg Taylor
- MECAIR106: ATE: Basic Auth deprecation in EXO by Greg Taylor & Friends



Thank You!  
#WeAreMEC

<https://aka.ms/MECAIR212Survey>



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