

Jerry-rigging with Powershell and the Power-BI API

what's the
opposite of
jerry-rigged?



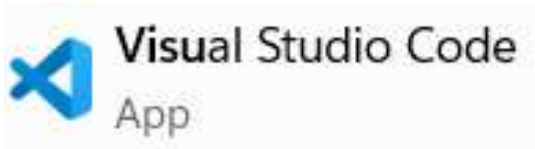
refined, faultless, finished,
flawless, meticulous, perfect,
perfected, polished, well-done,
adept



GOALS

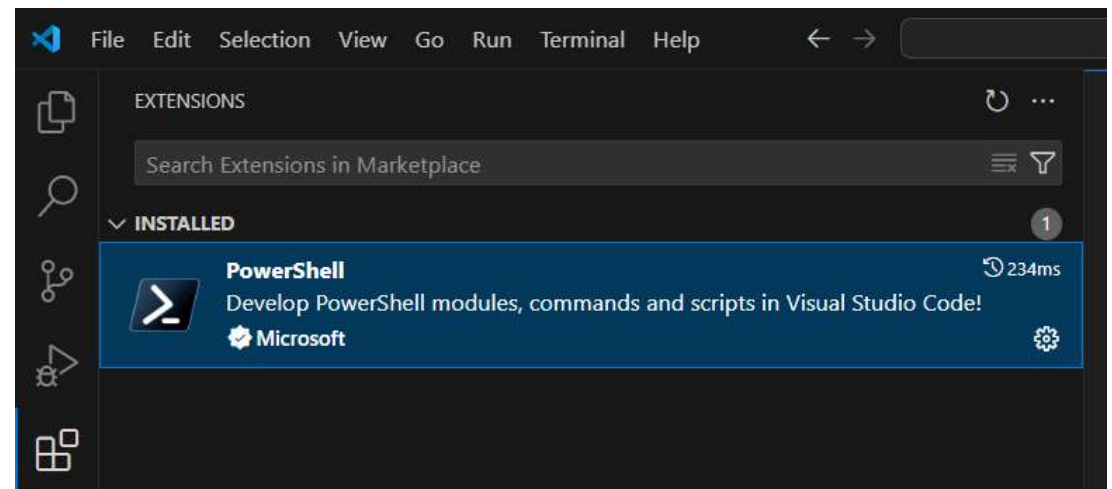
- Basic understanding of PowerShell and Power-BI service API
- To show you just another way to automate stuff
- To show you the advantages of using the Power-BI API's
- Some basic scenario's
 - Refreshing a dataset
 - Getting user activity
- To get you start thinking about monitoring
- Alternatives to PowerShell
- Links to other solutions

Powershell? On my computer?



Cross-platform command-line shell and scripting language that's built for task automation and configuration management.

<https://learn.microsoft.com/en-us/training/modules/introduction-to-powershell/>



Powershell versions can be confusing

The top-left screenshot shows the Microsoft Learn website with a dropdown menu for PowerShell versions. The dropdown is open, showing options: PowerShell 7.4 (LTS), 7.5 (preview), 7.4 (LTS), 7.3, 7.2 (LTS), 5.1, and Previous versions. The top-right screenshot shows the Windows PowerShell ISE interface with a script file named 'nieuwpowershell.ps1' containing the command '\$PSVersionTable'. The bottom-right screenshot shows a Windows PowerShell terminal window displaying the output of '\$PSVersionTable'.

<https://learn.microsoft.com/en-us/powershell/scripting/whats-new/migrating-from-windows-powershell-51-to-powershell-7?view=powershell-7.4>

Powershell ISE only supports version 5.1 and does not support version 7 -> hence move to Visual studio code

Name	Value
PSVersion	7.4.1
PSEdition	Core
GitCommitId	7.4.1
OS	Microsoft Windows 10
Platform	Win32NT
PSCompatibleVersions	{1.0, 2.0, 3.0, 4.0...}
PSRemotingProtocolVersion	2.3
SerializationVersion	1.1.0.1
WSManStackVersion	3.0

Name	Value
PSVersion	5.1.22621.2506
PSEdition	Desktop
PSCompatibleVersions	{1.0, 2.0, 3.0, 4.0...}
BuildVersion	10.0.22621.2506
CLRVersion	4.0.30319.42000
WSManStackVersion	3.0

Name	Value
PSVersion	5.1.22621.2506
PSEdition	Desktop
PSCompatibleVersions	{1.0, 2.0, 3.0, 4.0...}

Manage Power-BI in Powershell

Run as administrator:

```
Install-Module -Name MicrosoftPowerBIMgmt
```

Choose an execution policy (example):

```
Set-ExecutionPolicy -ExecutionPolicy remotesigned -Scope Process
```

```
Set-ExecutionPolicy -ExecutionPolicy remotesigned -Scope CurrentUser
```

Login and get a bearer token

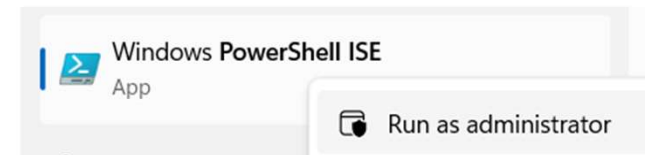
```
Login-PowerBI
```

```
$headers = Get-PowerBIAccessToken
```

<https://learn.microsoft.com/en-us/powershell/power-bi/overview?view=powerbi-ps>

<https://github.com/microsoft/powerbi-powershell?tab=readme-ov-file#microsoft-power-bi-cmdlets-for-windows-powershell-and-powershell-core>

https://learn.microsoft.com/en-us/powershell/module/microsoft.powershell.core/about/about_execution_policies?view=powershell-7.4





Recycle Bin



DevCenter



EULA



VSCode

powershell is



All

Apps

Documents

Web

Settings

Folders

Photos



Best match



Windows PowerShell ISE

App



Apps



Windows PowerShell ISE (x86)



Search the web



powershell is - See more search results



powershell ise



powershell ise download



powershell ise 7



powershell is null or empty



Command



Windows PowerShell ISE

App



Open



Run as administrator



Open file location



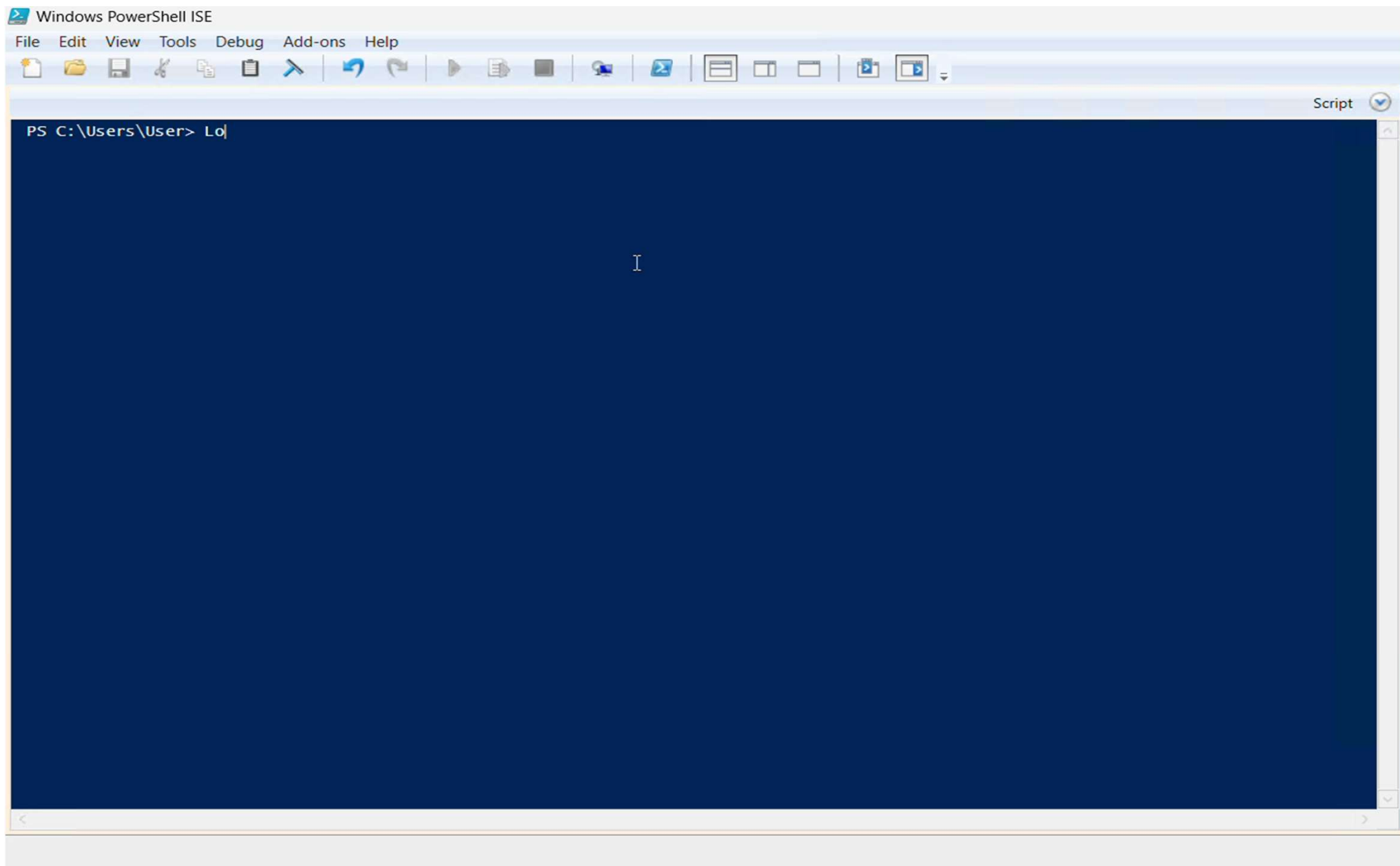
Pin to Start



Pin to taskbar



Uninstall



Do I have access?

Yes, but it depends on your authorization level;

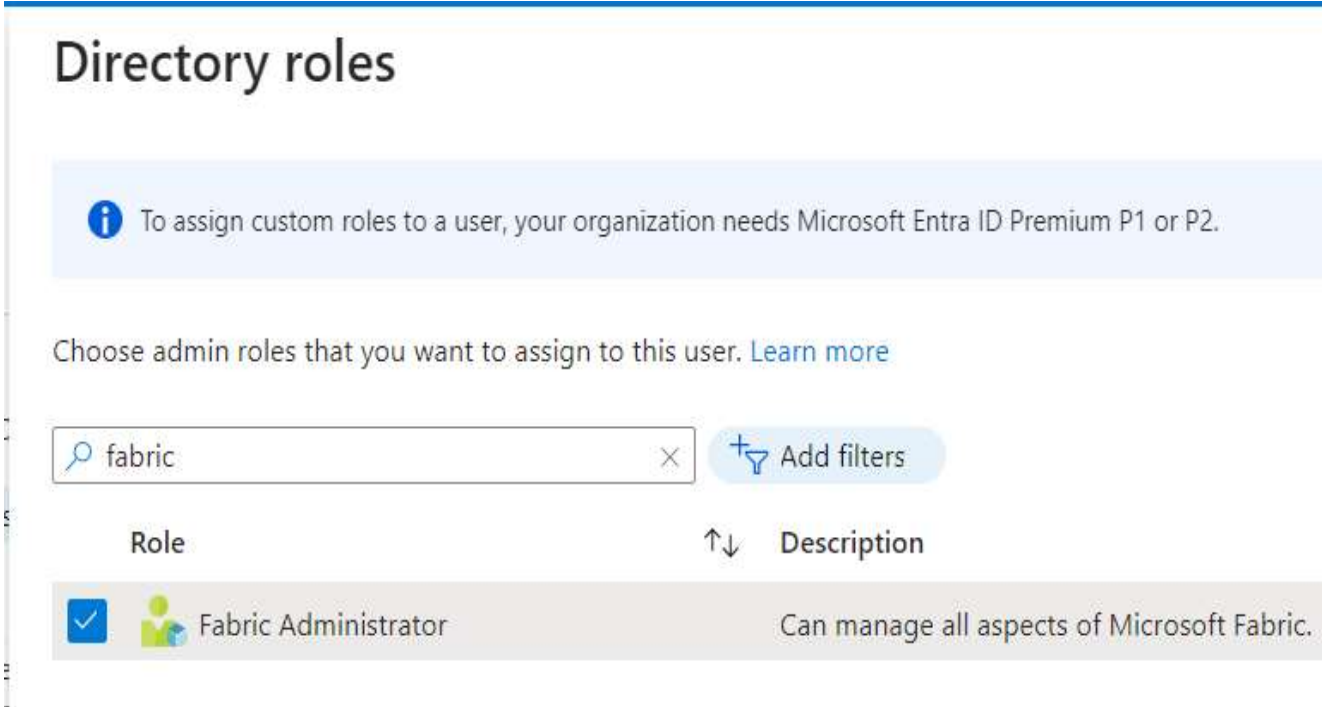
Minimum: my workspace

On average:


Workspace member

The ultimate level:



Fabric admin (ask IT)




Directory roles

 To assign custom roles to a user, your organization needs Microsoft Entra ID Premium P1 or P2.

Choose admin roles that you want to assign to this user. [Learn more](#)

  Add filters

Role	↑↓	Description
<input checked="" type="checkbox"/>  Fabric Administrator		Can manage all aspects of Microsoft Fabric.

Where to connect to?

<https://learn.microsoft.com/en-us/rest/api/power-bi/>

Minimum: my workspace (1)

License: Microsoft fabric free; Role my workspace

-Orange

On average:

Workspace member (2)

License: (Fabric trial) premium; Role: workspace member

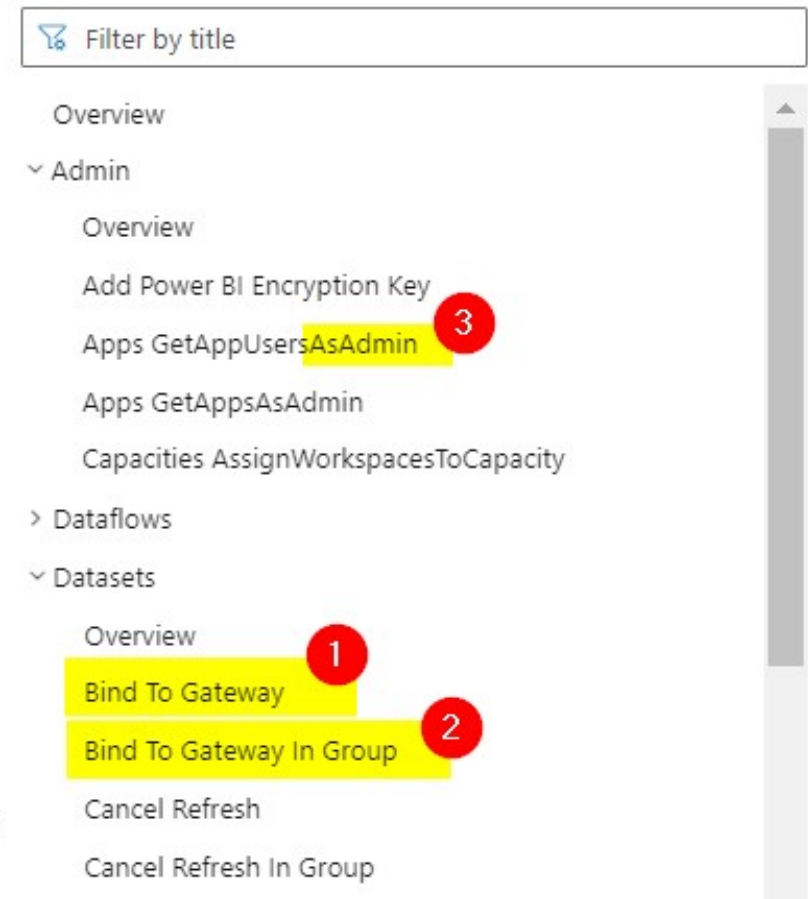
-Groen

The ultimate:

Fabric admin (1)

License: (Fabric trial) Role: Fabric Administrator

-Cyaan



Orange

Scenario:

Uses powerbi to share a report public-likes to refresh the report every day with the api

4 Publish to web

Enabled for the entire organization

People in your org can publish public reports on the web. Publicly published reports don't require authentication to view them.


Go to [Embed Codes](#) in the admin portal to review and manage public embed codes. If any of the codes contain private or confidential content remove them.

Review embed codes regularly to make sure no confidential information is live on the web. [Learn more about Publish to web](#)

☒ Enabled

When publish to web is enabled, existing embed codes work. Choose if users can create new codes

☒ Allow users to create new embed codes

 To enable Publish to Web, you need to disable Block Public Internet Access first.

Parameters and variables

```
$uri = (ForEach-Object {'https://api.powerbi.com/v1.0/myorg/datasets/{0}'  
s://api.powerbi.com/v1.0/myorg/datasets/{0}/refreshes' -f $datasetid })
```

Groen

Scenario:

New to the organization and took over a few workspaces from a person leaving the organization.

-wants to save all reports to his local device for backup purposes

Script source <https://sidequests.blog/2021/02/01/exporting-all-your-power-bi-reports-at-once/>

Loop

```
24  ForEach($workspace in $PBIWorkspace)  
25  {+ {...}  
59  }
```

Cyaan

Scenario:

Manages the Power-BI platform

- Wants to review what happened on the platform

- Stores the configuration of the platform

API's what do I GET back?

The `Invoke-RestMethod` cmdlet sends HTTP and HTTPS requests to Representational State Transfer (REST) web services that return richly structured data.

PowerShell formats the response based to the data type. For an RSS or ATOM feed, PowerShell returns the Item or Entry XML nodes. For JavaScript Object Notation (JSON) or XML, PowerShell converts, or deserializes, the content into `[PSCustomObject]` objects.

API's GET it or POST it

With GET you typically retrieve data

With POST you bring data -> POST is the complex one

Execution choice

	Python	Powershell	Pipelines (lowcode)	Flows (lowcode)
Powershell (user account)		x		
Powershell (service account)		x		
Azure functions (service account)	x	x		
Notebooks (service account)	x			
Notebooks (user account)	x			
Datafactory (service account)			x	
Logic app (service account)				x
Powerautomate (user account)				x

Other folks with content on PowerShell and PBI API's

- https://github.com/nitor-infotech-oss/Power_BI_operations_Powershell
- <https://github.com/Azure-Samples/powerbi-powershell>
- <https://stackoverflow.com/questions/63946142/power-bi-dataset-refresh-completion-data-powershell>
- <https://github.com/microsoft/powerbi-powershell>
- <https://github.com/RuiRomano/pbimonitor?tab=readme-ov-file>

Possible other monitoring solutions out there

- <https://github.com/RuiRomano/pbimonitor?tab=readme-ov-file>
- <https://justb.dk/blog/2021/02/extracting-the-power-bi-activity-log-with-data-factory/>
- <https://www.fourmoo.com/2020/02/12/how-you-can-store-all-your-power-bi-audit-logs-easily-and-indefinitely-in-azure/>
- <https://github.com/kasdali/pbila>
- <https://radacad.com/build-your-own-power-bi-audit-log-usage-metrics-across-the-entire-tenant>
- https://www.powerbisentinel.com/usage-logging/?gad_source=1&gclid=CjwKCAjw17qvBhBrEiwA1rU9w3pAl9Dg7XwAKFIziRv-tZ7BZ75yvvXUBLBDpqlZehsFUEcQukLkgxoC-0oQAvD_BwE
- <https://pbi-guy.com/2022/03/10/power-bi-and-activity-logs-with-python/>
- <https://web.archive.org/web/20230318083127/https://blog.jpries.com/2020/02/07/power-bi-api-usage-monitoring-a-power-bi-report-for-tenant-usage-data/>
- <https://powerbi.tips/2021/10/using-the-power-bi-scanner-api-to-manage-tenants-entire-metadata/>
- <https://github.com/vdvoorder/fabric-things/tree/main/Fabric%20Tenant%20Settings%20Documenter>
- <https://www.linkedin.com/events/eigenpowerbimonitordashboard-gr7183057144714293248/theater/>

Questions?

Slides&files <https://github.com/TheDataHobo/20240515PBIG>