



# Power BI and PowerShell

## A Match Made in Heaven

Craig Porteous



# Craig Porteous

Senior Data Engineer @ Incremental Group

Worked in BI with the Microsoft stack for more than 10 years.

SQL Glasgow UG co-leader. DATA:Scotland Founder. Microsoft Data Platform MVP



<https://craigporteous.com>



@cporteous



<https://github.com/cporteu>



<https://www.linkedin.com/in/craigporteous/>





A close-up photograph of a hand holding a pen, writing on a checklist on graph paper. The checklist has several items with checkboxes, some of which are already marked. The background is a blurred blue and white pattern.

# What we'll cover

- Why do we need to manage Power BI?
- What can we do with PowerShell?
- API vs PowerShell Module(s);
- Not an admin? There are still options
- Put it into practice.



# Why do we need to manage Power BI?



Error Handling



Manage Content



Control Security

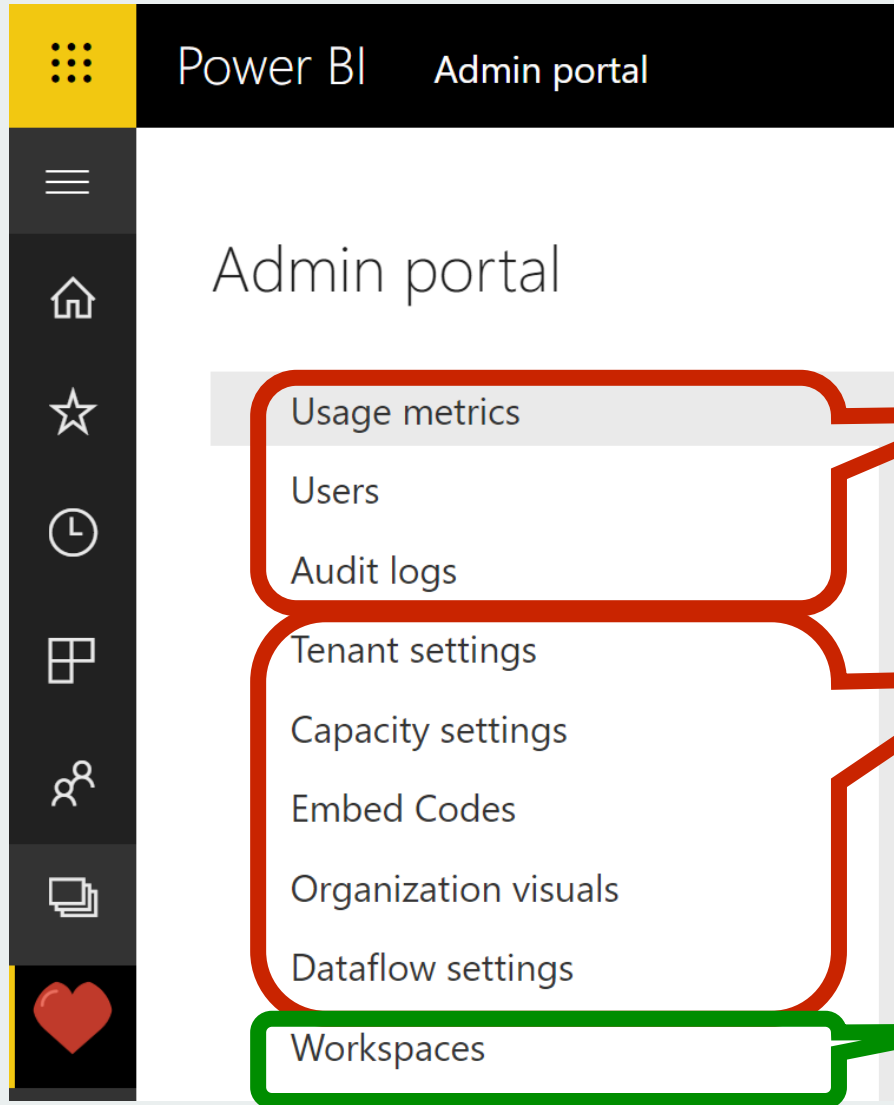


Data





# The Power BI Admin Portal



App Engagement info

Organisation level settings

Content Management



# What can we do with PowerShell?



Manage Workspaces, Reports, Datasets etc

Refresh datasets and view history

Control and audit Permissions

Track User and Tenant Licenses

Circumvent license restrictions ;)

Automation

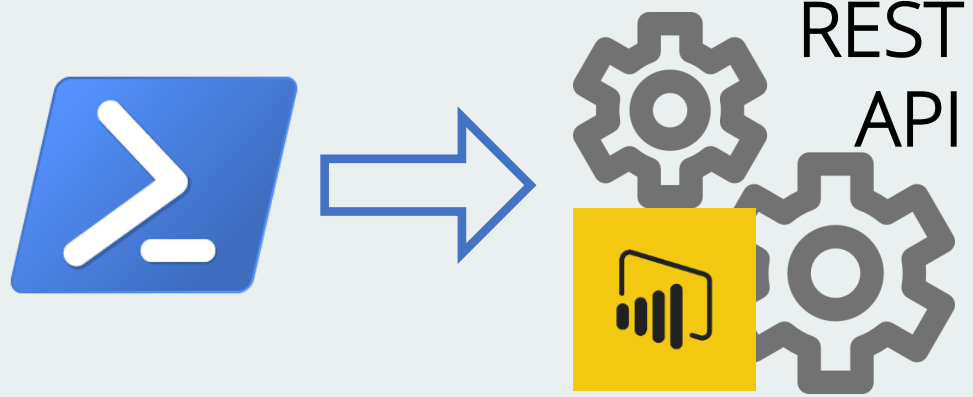


# API vs PowerShell Modules



## Azure PowerShell Modules

- msOnline (v1)
- AzureAD (v2)



## Power BI REST API

- Using Invoke-RESTMethod
- **MicrosoftPowerBIMgmt**







# DEMO

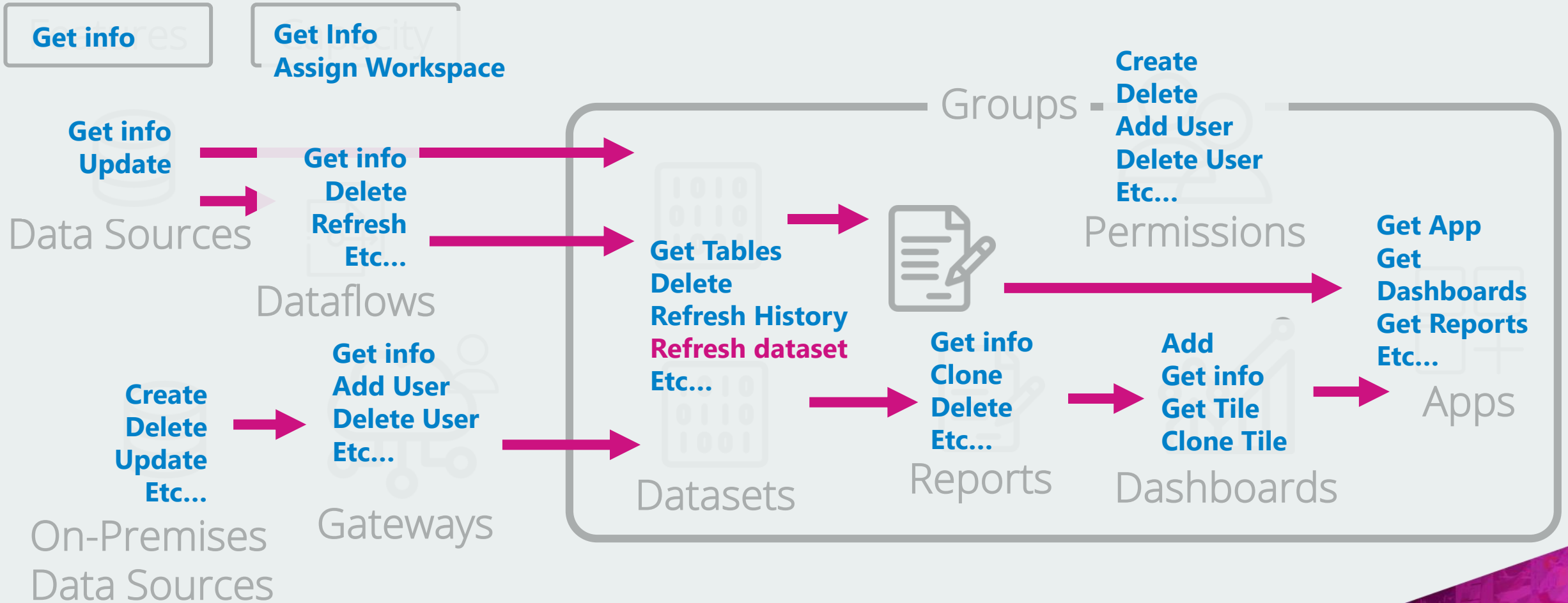
LE  
CAT

Richard Branson  
Founder at Virgin Group

...y fool can know. The po  
ert Einstein

UK Bo

# REST API Capabilities



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







# DEMO





LE  
CAT

Richard Branson  
Founder at Virgin Group  
1d

any fool can know. The power  
of Einstein

UK Bo

# What can't we do with PowerShell

-  Read Data
-  Create Dashboards
-  Publish or Update Apps
-  Author Reports







# Not an admin? All is not lost!

- Restricted to Workspaces you are a member of;
- Read and start dataset refreshes;
- View and update security\*;
- Track user and tenant licenses;
- You can still use the Power BI Mgmt module.



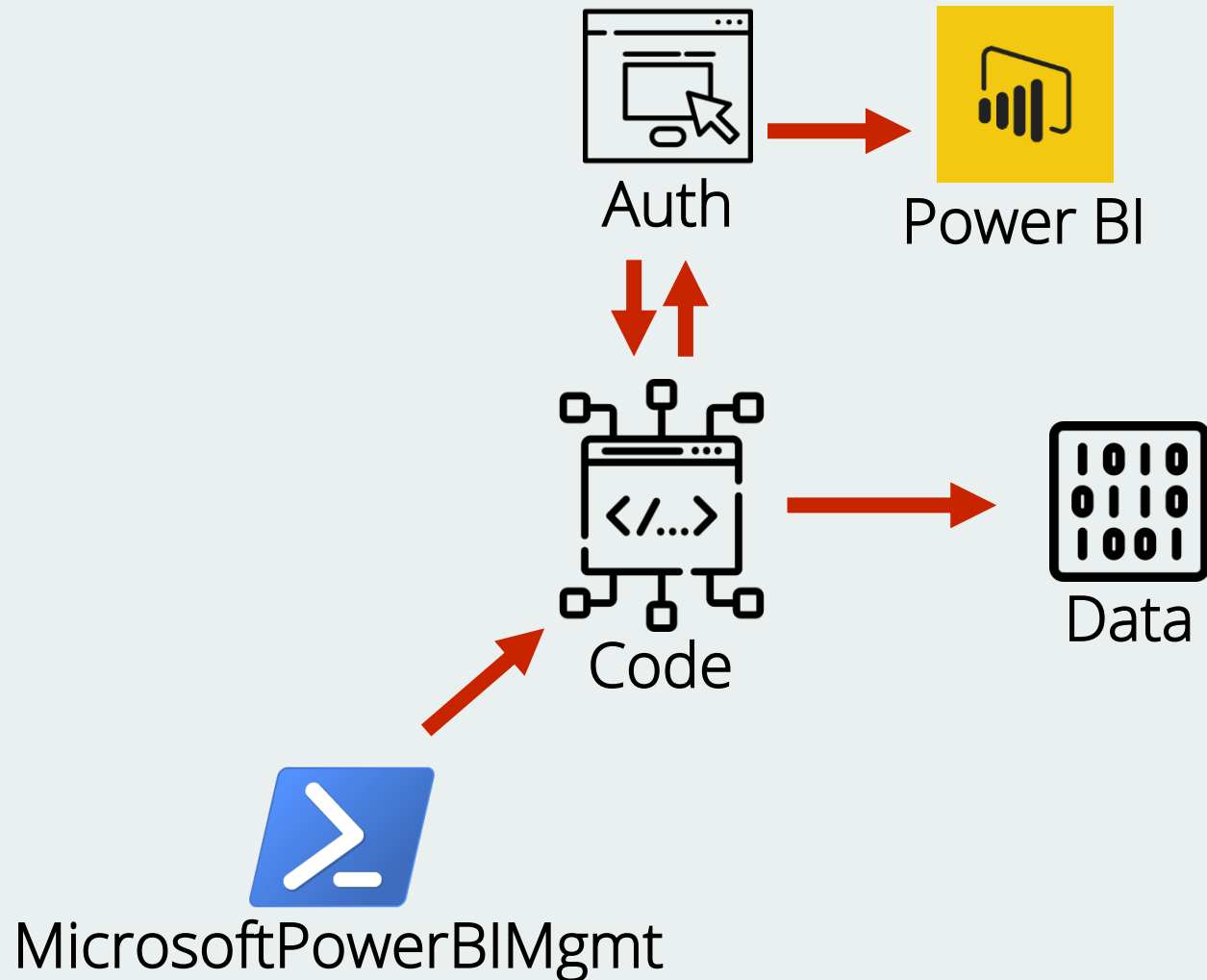
# Piecing it all together

- Authentication options;
- Prerequisites to automation;
- Create and update a dataset entirely in PowerShell.

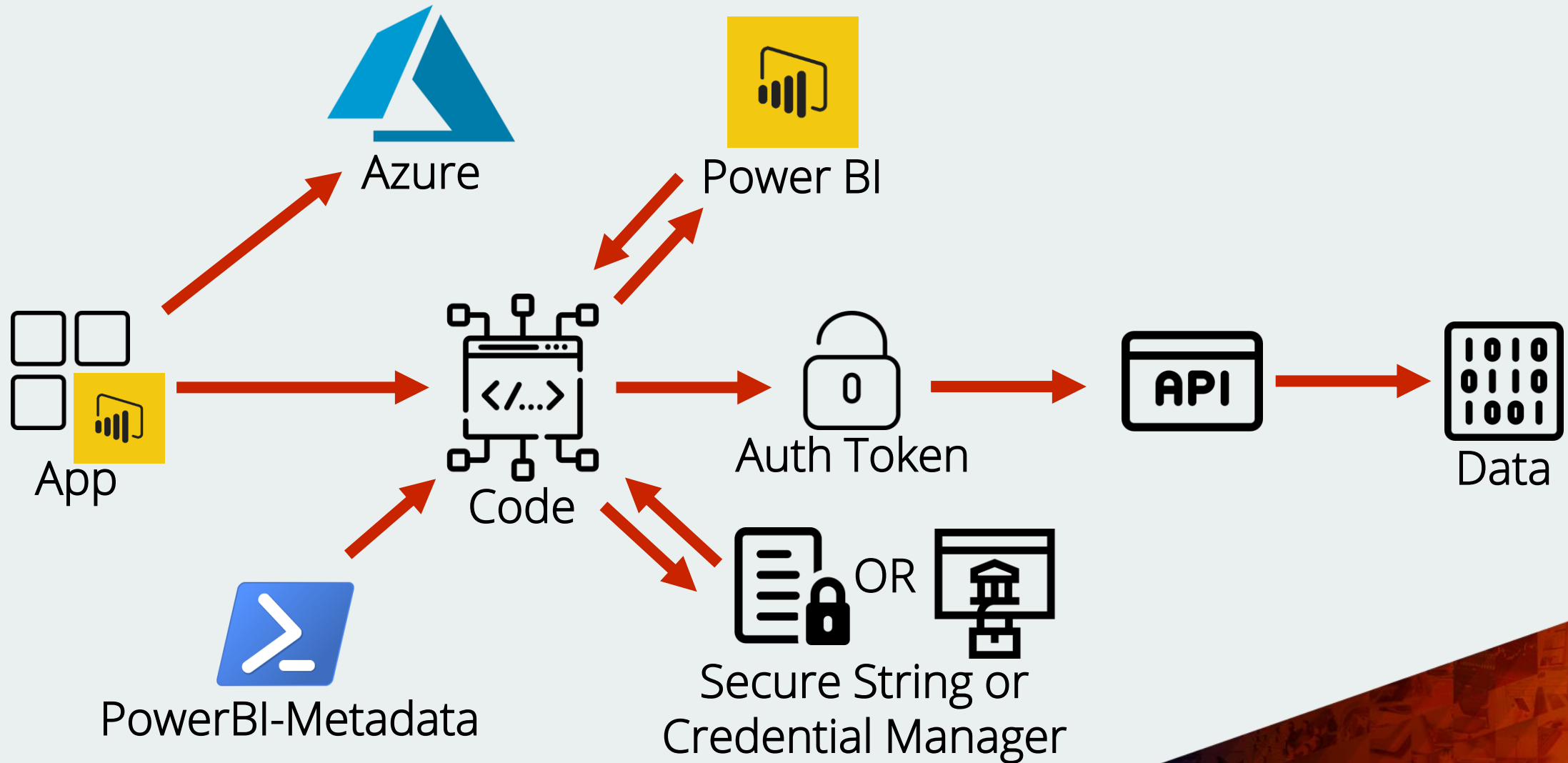




# Prompted Authentication

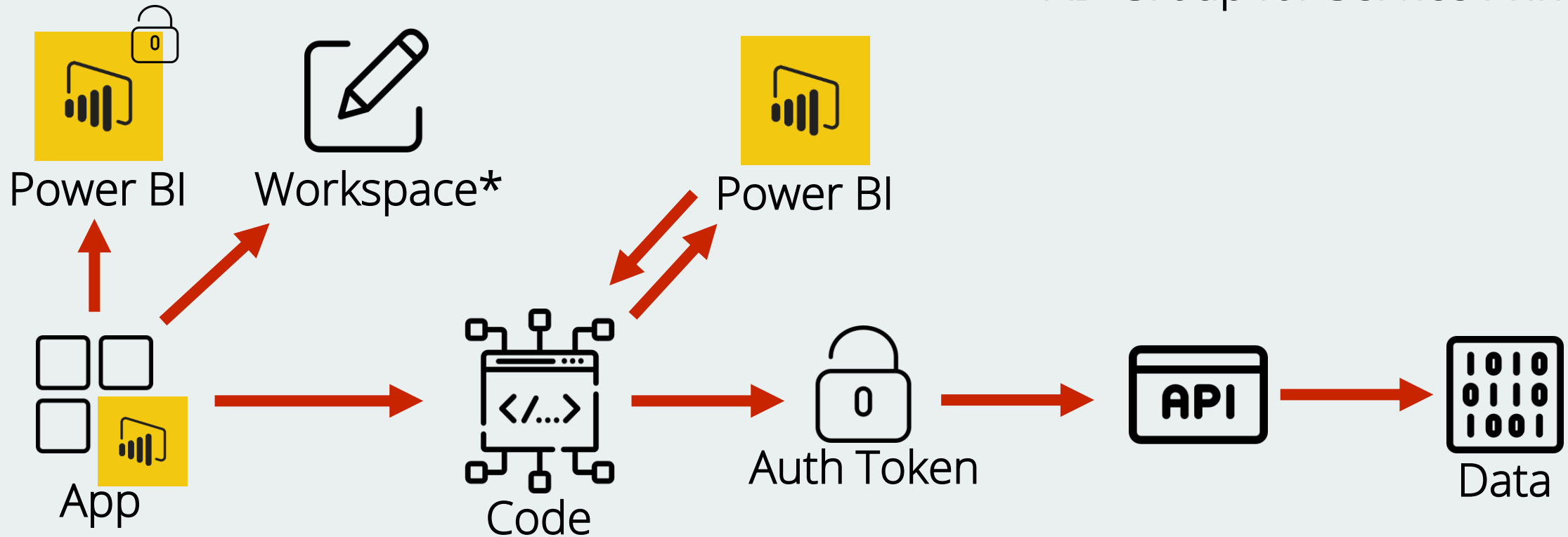


# Unattended Authentication



# Service Principals

Requires:  
Power BI Admin  
AD Group for Service Principal



\*This authentication method only works with v2 workspaces





DEMO

LE  
CAT

Richard Branson  
Founder at Virgin Group  
Ltd.

...y fool can know. The po  
...ert Einstein

UK Bo

# PowerShell s Power BI

- But...
- Unattended Authentication isn't "Official"
- 2FA is not compatible with unattended auth
- Automation isn't simple ☹ ....yet!
- The API is always evolving.
- Modules are a work in progress – **Contribute!**







# Questions?

<https://github.com/cporteou/Presentations>

