



# Power BI Development on Steroids

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Power BI CAT

Microsoft

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Lives in Porto, Portugal

+15 years working on Microsoft Data Stack

♥ Power BI & Data Architecture



Slides here:

<https://github.com/RuiRomano/sessionslides>

## Power BI Dev on Steroids

- Tools
- {Dev} Techniques
- Fast Paced 😊

*Focus on the possibilities not details...*

# Tools

My personal take on:

- DAX Studio
- Tabular Editor
- ALM Toolkit



# DAX Studio


<https://daxstudio.org/> by Darren Gosbell

## DAX Query Editor

### Main Use Cases:

- DAX Query Editor / Builder / Formatter
- [DAX Performance Tuning & Debugging](#)
- Quick Inspect Model w/ “View Metrics”
- Export Data: Folder / SQL Server ♡


Learn more: [Tool Intro](#)





# DAX Studio

The ultimate tool for working with DAX queries

Download the latest release of DAX Studio here:

 **DAX Studio v2.16.2**  
(installer)

 Size: 8.16Mb |  12 Jul 2021 | downloads: **3,212**

The details of the new features and fixes included in this release are available in the [changelog](#)



# Tabular Editor

<https://tabulareditor.com/> by Daniel Otykier

Massive productivity boost!

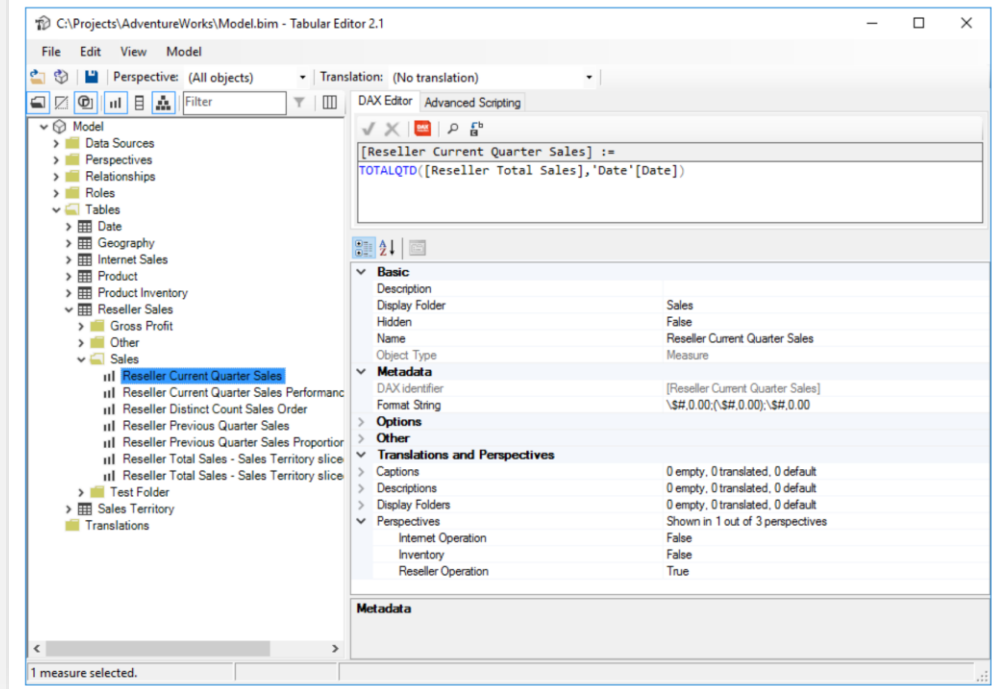
Main use cases:

- Model Development – Efficiently & Faster
- Deployment with options (ex: only schema) 💎
- Automation with [Scripting](#)
- Copy items between PBIX files
- [Best Practices Analyzer](#)
- Restore a PBIX from powerbi.com 💎

Learn more: [Tool Intro](#)

## Tabular Editor

Tabular Editor is a tool that lets you easily manipulate and manage measures, calculated columns, display folders, perspectives and translations in Analysis Services Tabular and Power BI XMLA Models (from Compatibility Level 1200 and onwards). The tool is written entirely in .NET WinForms (C#).



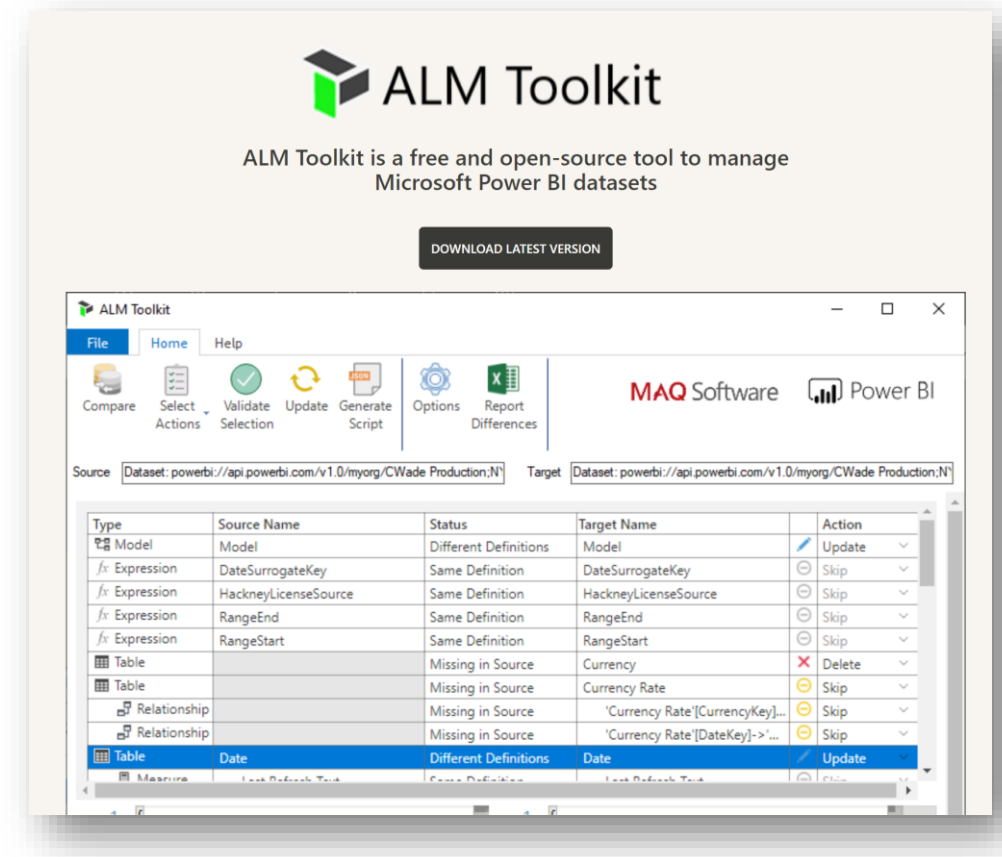
# ALM Toolkit

<http://alm-toolkit.com/> by Christian Wade

Schema diff tool for Tabular Datasets

Main Use Cases:

- Compare between PBIX Files
- Compare local to published 💎
- Merge models => Multiple Developers!



Learn more: [Tool Intro](#)

# Development Techniques

REST APIs

XMLA Endpoint Scripting

Smart Calculation Groups

File Proxy

Copy Layout

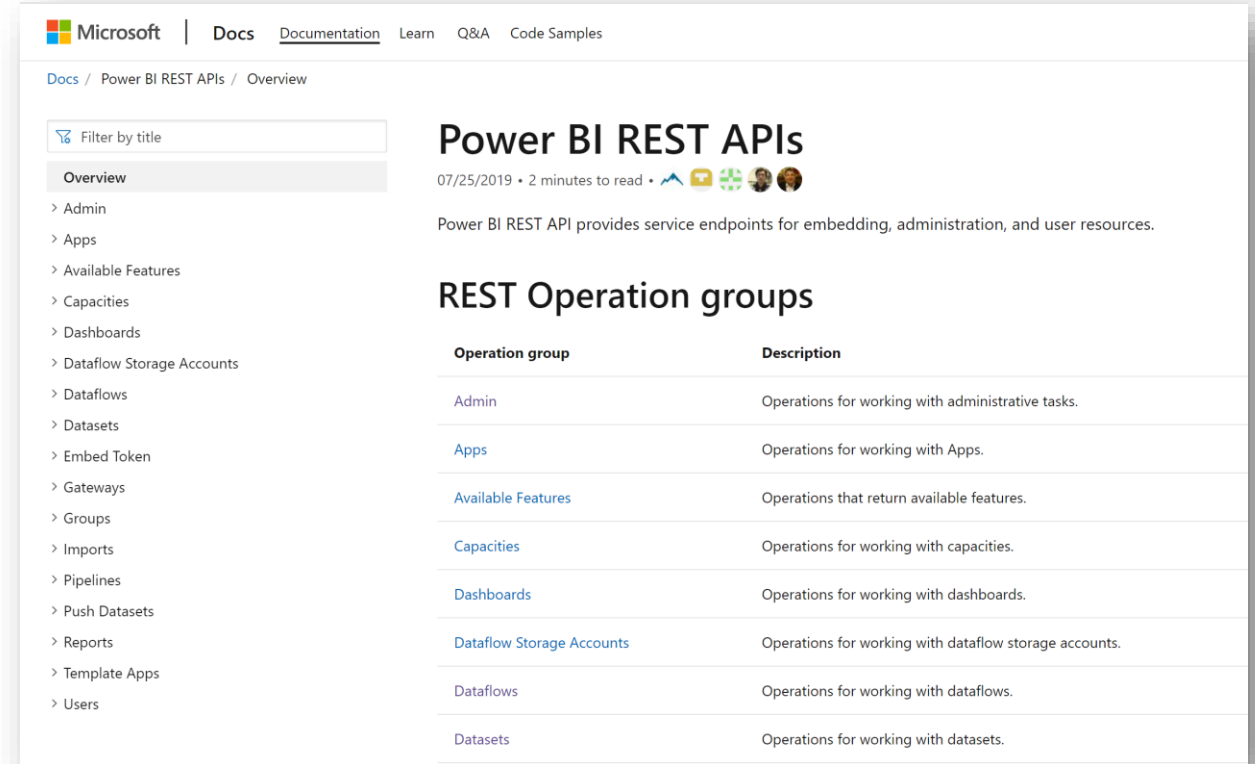




# Power BI REST API's ?

Collection of REST API's for:

- Administration
- Monitoring
- Productivity / DevOps
- Real-Time
- Embedding



Microsoft | Docs Documentation Learn Q&A Code Samples

Docs / Power BI REST APIs / Overview

Filter by title

**Overview**

- > Admin
- > Apps
- > Available Features
- > Capacities
- > Dashboards
- > Dataflow Storage Accounts
- > Dataflows
- > Datasets
- > Embed Token
- > Gateways
- > Groups
- > Imports
- > Pipelines
- > Push Datasets
- > Reports
- > Template Apps
- > Users

## Power BI REST APIs

07/25/2019 • 2 minutes to read • 📄 📱 🌐 👤

Power BI REST API provides service endpoints for embedding, administration, and user resources.

### REST Operation groups

Operation group	Description
<a href="#">Admin</a>	Operations for working with administrative tasks.
<a href="#">Apps</a>	Operations for working with Apps.
<a href="#">Available Features</a>	Operations that return available features.
<a href="#">Capacities</a>	Operations for working with capacities.
<a href="#">Dashboards</a>	Operations for working with dashboards.
<a href="#">Dataflow Storage Accounts</a>	Operations for working with dataflow storage accounts.
<a href="#">Dataflows</a>	Operations for working with dataflows.
<a href="#">Datasets</a>	Operations for working with datasets.

[Power BI REST APIs - Power BI REST API | Microsoft Docs](#)

Links: [PBI API Session](#)

# REST API - Rebind Reports

## Why?

Dataset issue/corruption

Minimize user impact on a dataset change / refresh

Azure AS to Premium Migrations

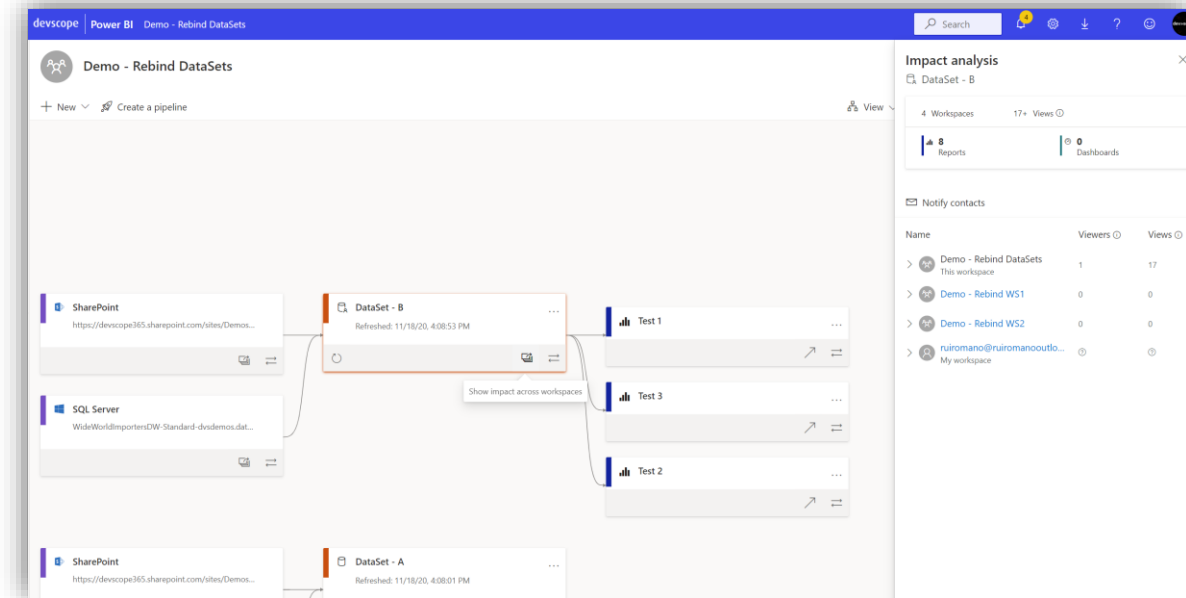
...

## Two Approaches:

- Manual - By specifying the reports & datasets to rebind
- Automatic - From one dataset to the other

REST API: [Rebind API](#)

Links: [Automatic Rebind Script](#)



# REST API – Power BI DevOps

If you have Premium 

Must Watch: [Daniel Otykier Session](#)

Azure DevOps

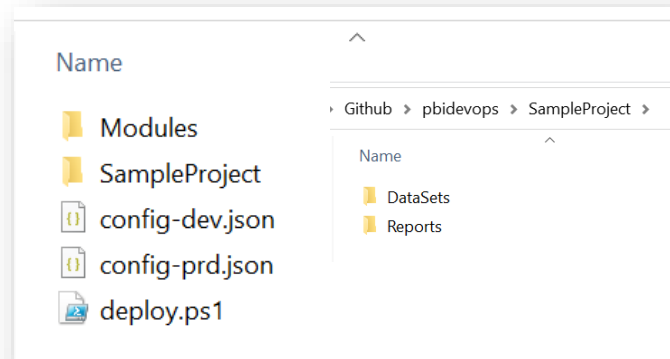
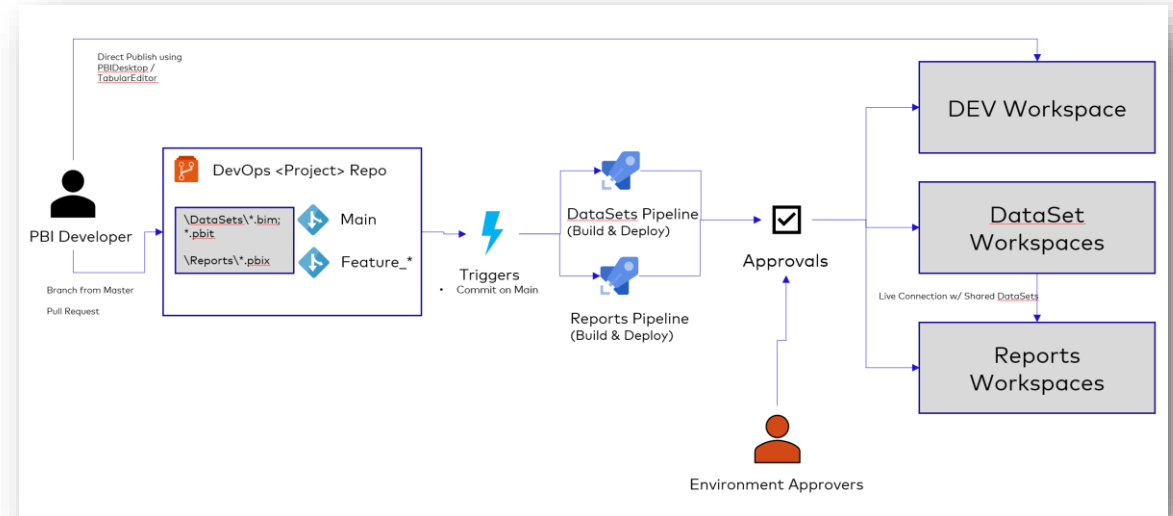
Tabular Editor

REST API's

Deployment Pipelines

If you don't have Premium

REST API's & PowerShell to the rescue



```
1 #Requires -Modules @{ ModuleName="MicrosoftPowerBIMgmt"; ModuleVersion="1.2.1026" }
2
3 $VerbosePreference = "SilentlyContinue"
4 $ErrorActionPreference = "Stop"
5
6 $currentPath = (Split-Path $MyInvocation.MyCommand.Definition -Parent)
7
8 Import-Module "$currentPath\Modules\PBIDevOps" -Force
9
10 $configPath = "$currentPath\config-prd.json"
11
12 Connect-PowerBIServiceAccount
13
14 # Deploy Workspaces
15
16 Publish-PBIWorkspaces -configPath $configPath
17
18 # Deploy Datasets
19
20 Publish-PBIDataSets -configPath $configPath -path "$currentPath\SampleProject\DataSets"
21
22 # Deploy Reports
23
24 Publish-PBIReports -configPath $configPath -path "$currentPath\SampleProject\Reports"
```

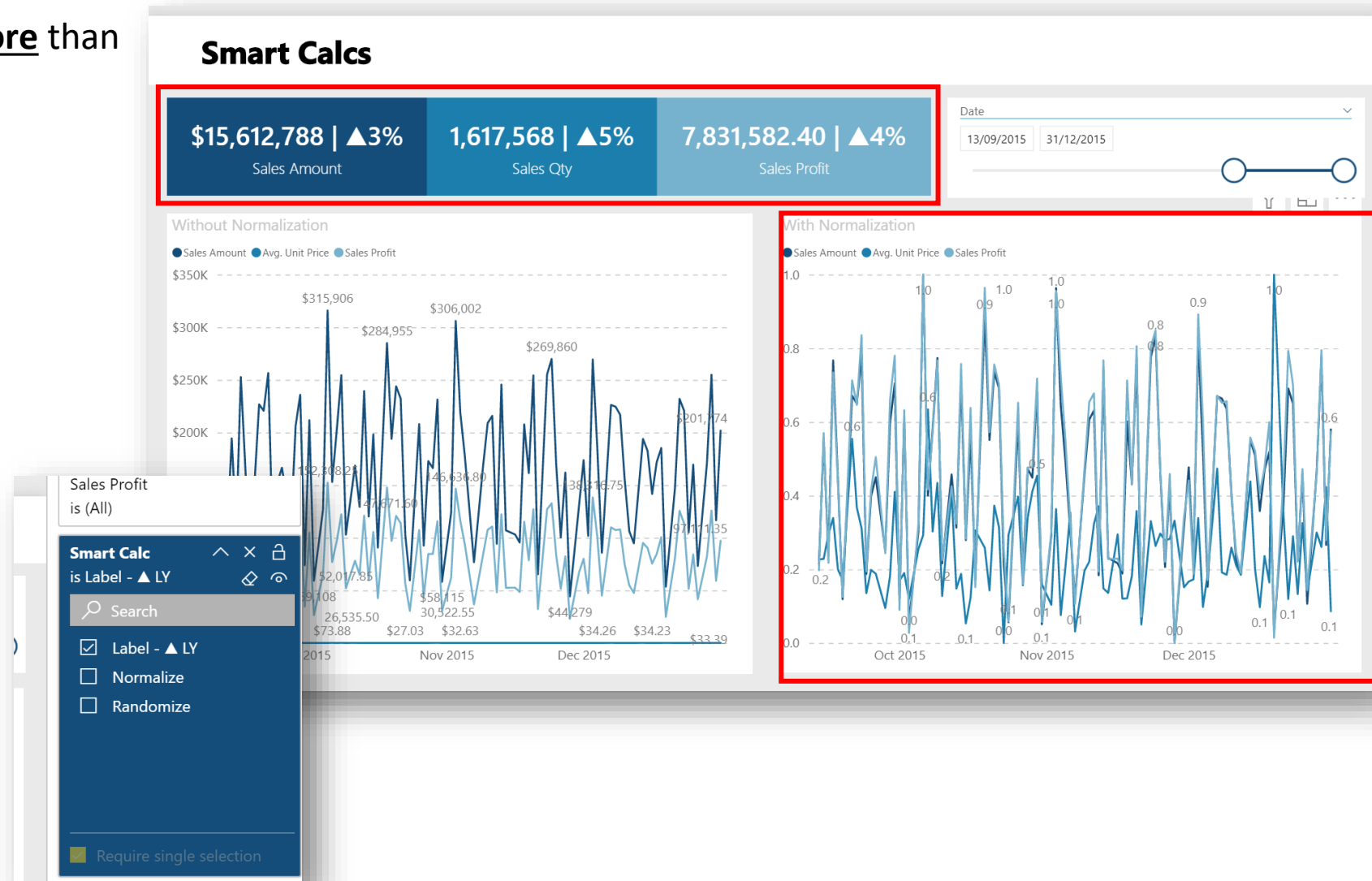
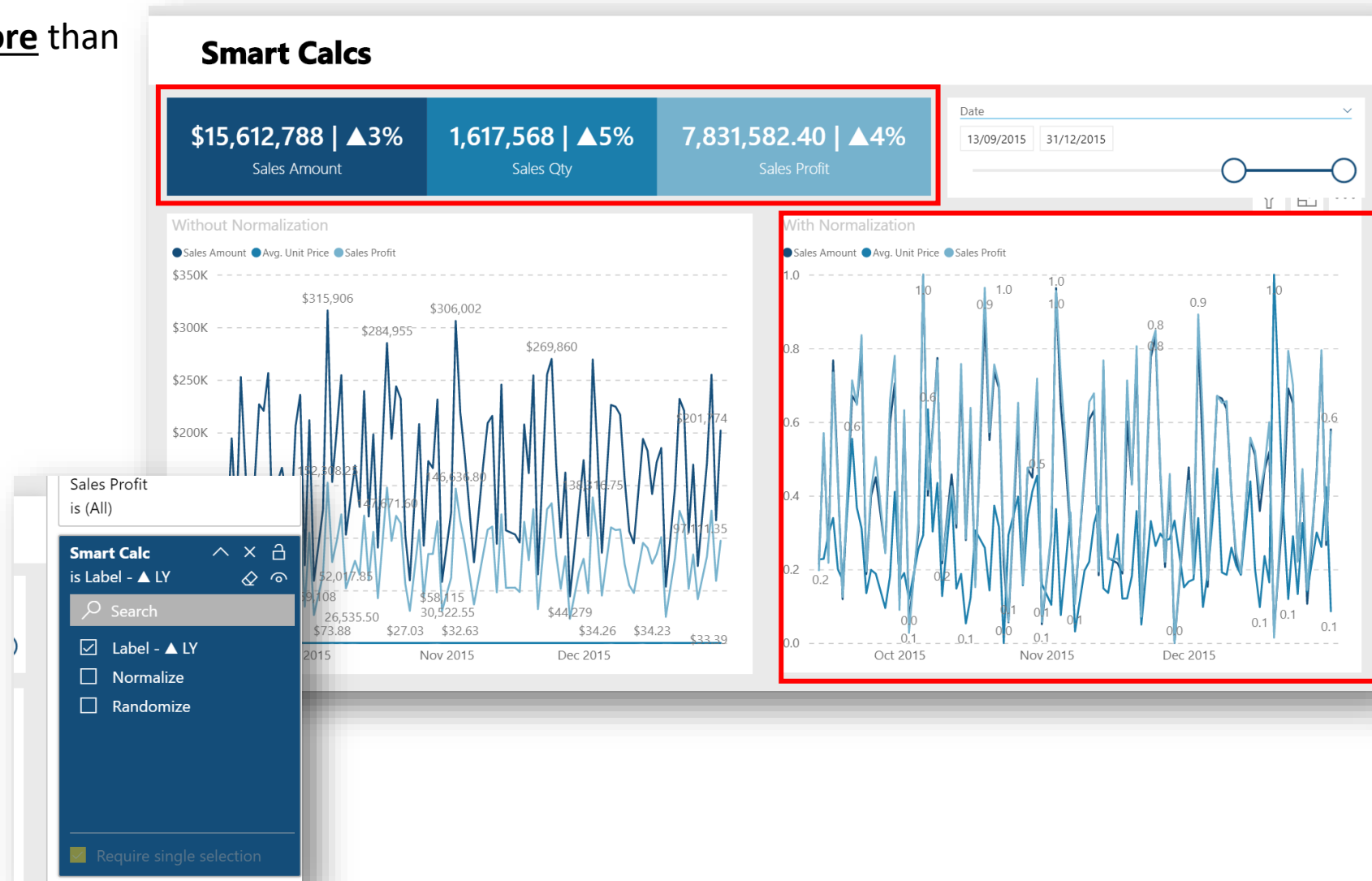
Links: [scripts](#)

# "Smart" Calculation Groups

Calculation Groups can do **much more** than just Time Aggregations / Variations

## Other very useful use cases:

- Auto Time Variation on Cards
- Normalization
- Randomize



# Copy Report Layout from PowerBI.com

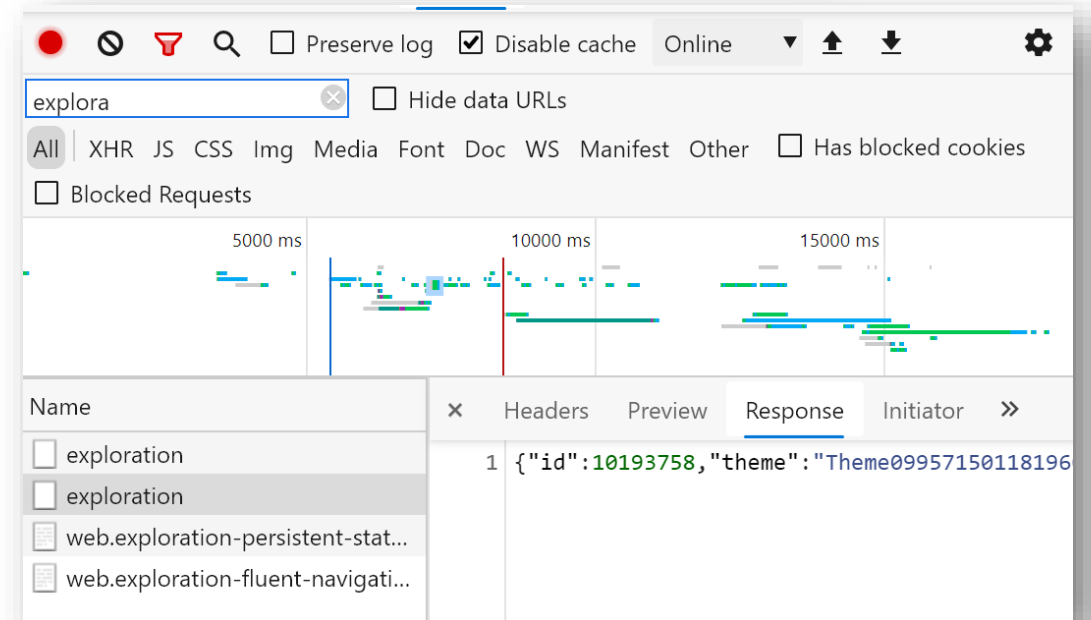
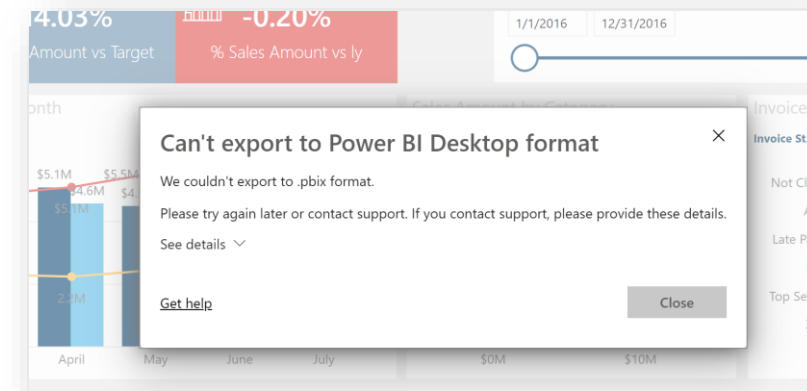
Copy the report layout from a report online to PBI Desktop

Useful when “Download PBIX” doesn’t work

Steps:

1. Open Report
2. Network Trace & Save JSON of “\*exploration” request
3. Unzip PBIX and replace “\Report\Layout” content
4. Delete “\SecurityBindings” and zip as .pbix
5. Theme file can also be download from API Call:  
“\*resourcePackageItem”

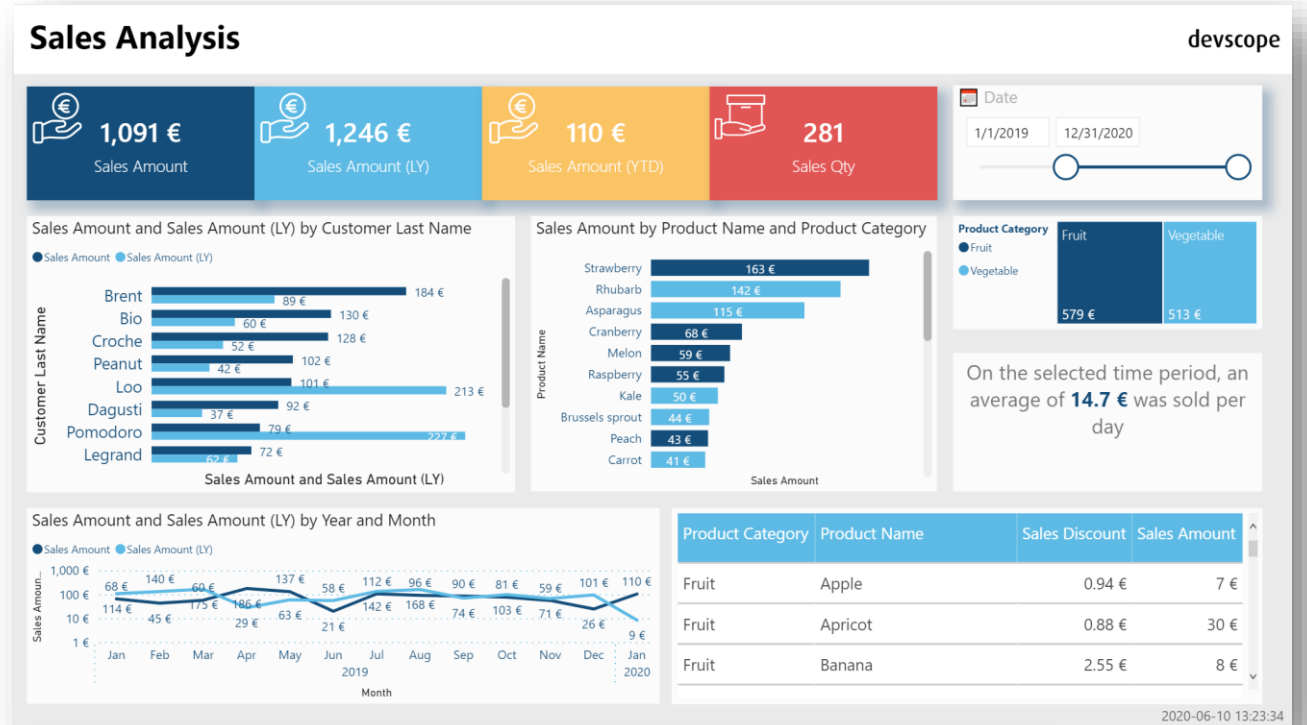
Note: Always use Notepad++ to edit files





# Use Templates!

- FastTrack to new Developments
- Understand theme files  
Much more than just colors
- Built in common tables  
Calendar, Time, System, Calculation Groups...



```
C: > @Repos > Github > pbihacksworkshop > Demos > Report - Template > CompanyTemplate.json > ...
1 {
2   "name": "Theme",
3   "dataColors": ["#144D79", "#5cbae5", "#fac364", "#e15554", "#3bb273", "#7768ae", "#1b7eac"],
4   "foreground": "#144D79",
5   "foregroundNeutralSecondary": "#144D79",
6   "foregroundNeutralTertiary": "#144D79",
7   "background": "#FAFAFA",
8   "backgroundLight": "#5cbae5",
9   "backgroundNeutral": "#5cbae5",
10  "tableAccent": "#252525",
11  "visualStyles":
12  {
13    "*": { "textClasses": {
```

Learn more: <https://docs.microsoft.com/en-us/power-bi/desktop-report-themes>



# Thanks!

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