



Move from deployment to production with Fabric and Power BI

Power BI Brussels User Group

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What is lifecycle management?

(according to GPT)

- The process of **planning, developing, deploying**, and **maintaining** Power BI content across different environments within an organization.
- The goal is to ensure that Power BI content is developed, tested, and deployed in a **controlled and consistent manner**, from initial development through to production use.
- Key components:

Environments (Dev / Test / Prod)

Version Control

Documentation

Monitoring

Security and Permissions

Why is lifecycle management important?

Some reasons to consider



Keep track of changes across multiple versions



Backup and roll back functionality



Compare changes between versions



Collaborate with others



Separate tasks and permissions





Orchestrate your process with testing and approvals



Rules and automation

What is Git and Azure DevOps (ADO)?

(according to GPT)

-  Git is a **distributed version control system** that tracks changes in code, enabling collaboration among developers and providing a history of revisions for software projects.
-  Azure DevOps is a comprehensive **set of tools and services that facilitates the entire (software) development lifecycle**, from planning and coding to building, testing, and deployment, all while fostering collaboration among development teams.

Native tools available in Fabric

Power BI Desktop
Developer Mode Preview



Development

Git integration Preview



Versioning &
Collaboration

Deployment Pipelines



Orchestration

+APIs and many 3rd party solutions

Power BI Desktop Developer Mode (preview)



Deep-dive blog



Documentation



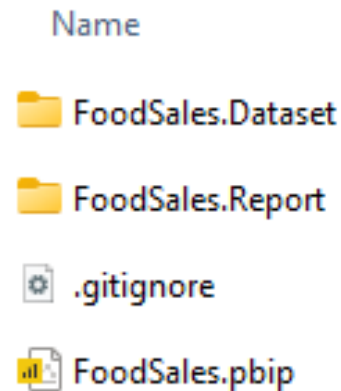
Power BI Developer Mode (public preview)

Save-as, open and publish Power BI Project files (.PBIP)

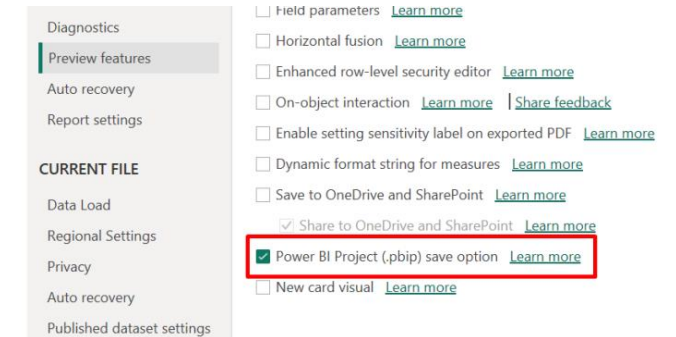
FoodSales .pbip [Save](#)



Folder with metadata files for Dataset and Report



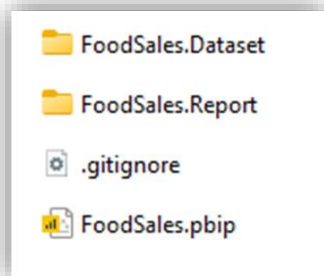
Needs to be enabled as a preview feature



Power BI Developer Mode (public preview)

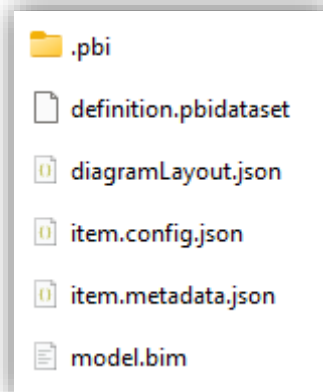
Power BI Metadata Files

Project folder



- PBIP file allows to open the project in Power BI Desktop
- PBIP file is only a shortcut to the folder

FoodSales.Dataset

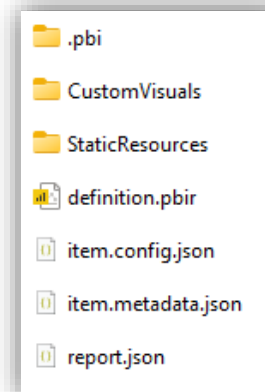


Dataset folder holds model definitions

Model.bim



FoodSales.Report



- PBIR file opens report and points to the dataset
- Report.json holds pages & visual definitions

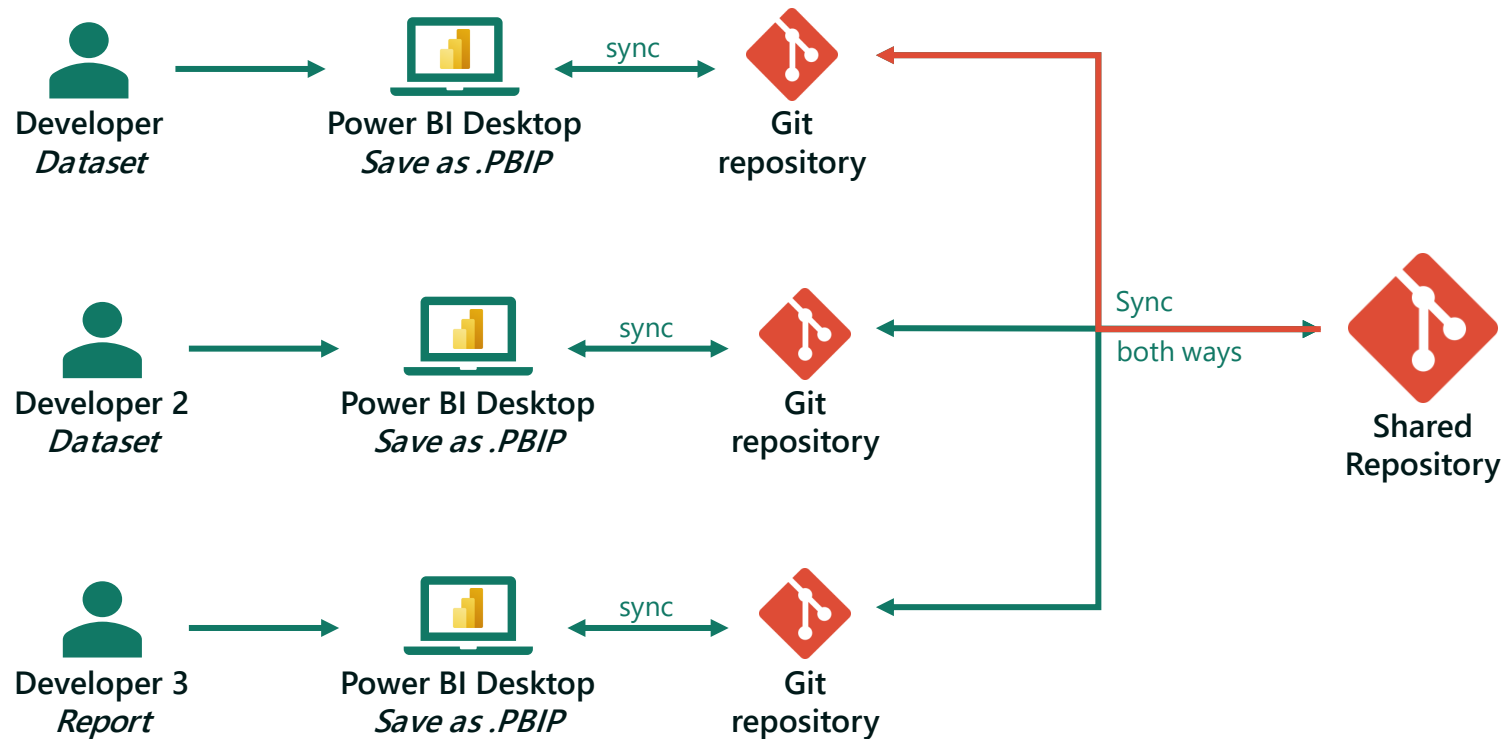
Report folder holds report definitions

Report.json



Development process

Collaborate with colleagues



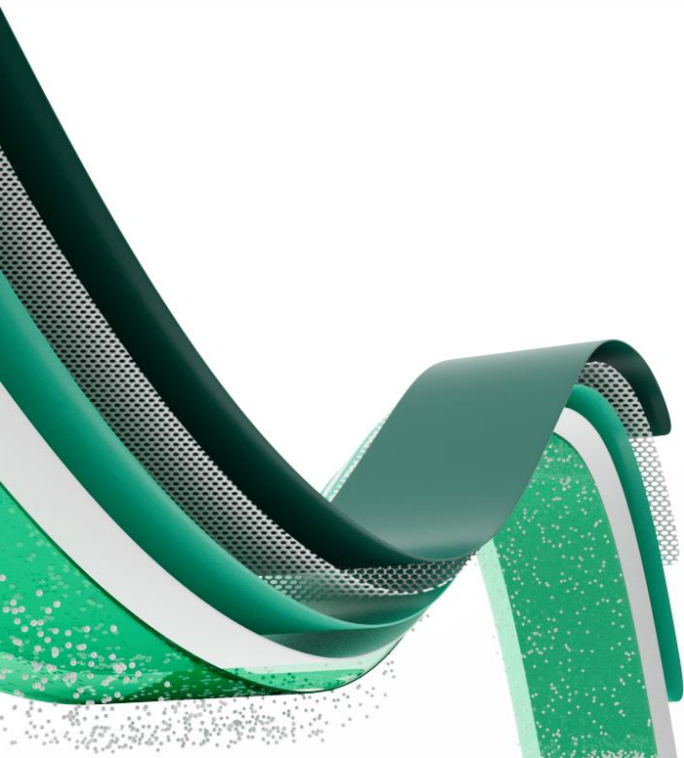
Individuals sync (**commit**) their work into their own repository (**branch**)

Once ready, branches can be merged (**push**) in shared repository (**main branch**)

Users can sync updates (**pull**) back into their local repository

Demo

Developer Mode

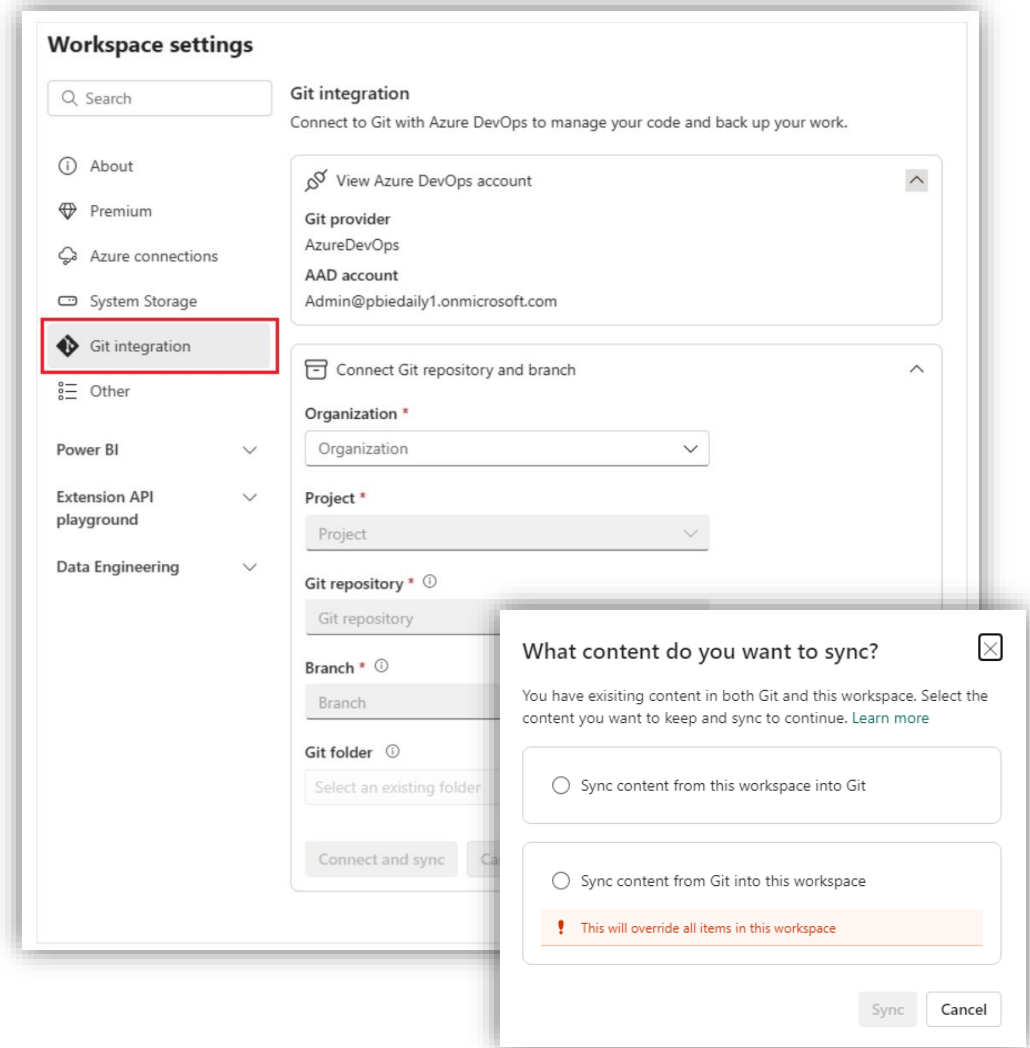


Git integration (preview) 



Fabric Git integration

- Configured on workspace level
- Requires Premium workspace and Fabric enabled
- Currently only Azure DevOps
- Actions depend on workspace and ADO permissions
- Only syncs metadata; no “custom” subfolders
- Supports branch switching
- Supports bi-directional syncing
- Currently supports Reports, Paginated Reports and Datasets



Fabric Git integration

- ✓ Synced (the item is the same in the workspace and Git branch)
- ✗ Conflict (the item was changed in both the workspace and Git branch)
- ⊘ Unsupported item
- ⬇ Uncommitted changes in the workspace
- ↻ Update required from Git
- ⚠ Item is identical in both places but needs to be updated to the last commit

1. Status indicates status
2. Branch and sync timestamp are indicated on the bottom of the workspace
3. Source control shows number of pending changes allows to open action pane

My_FoodSales
Isolated workspace for editing

+ New Upload Create deployment pipeline Create app Manage access ...

3 Source control 1 Filter by keyword Filter ...

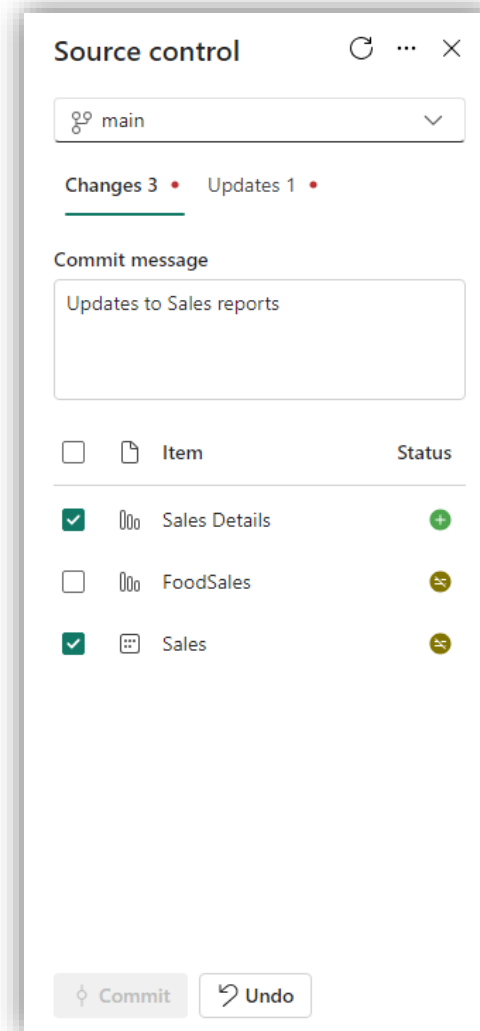
Name	Git status	Type	Owner	Refreshed	Next refresh	Endorsement	Sensitivity	Included in app
FoodSales	✓ Synced	Report	My_FoodSales	25/07/23, 13:46:25	—	—	Confidential\Microsof...	No
FoodSales	1 ⬇ Uncommitted	Dataset	My_FoodSales	25/07/23, 13:46:25	N/A	—	Confidential\Microsof...	

2 main Last synced: 7/25/2023 at 1:10 PM e8dcc5b9

Synchronize: Changes and Updates

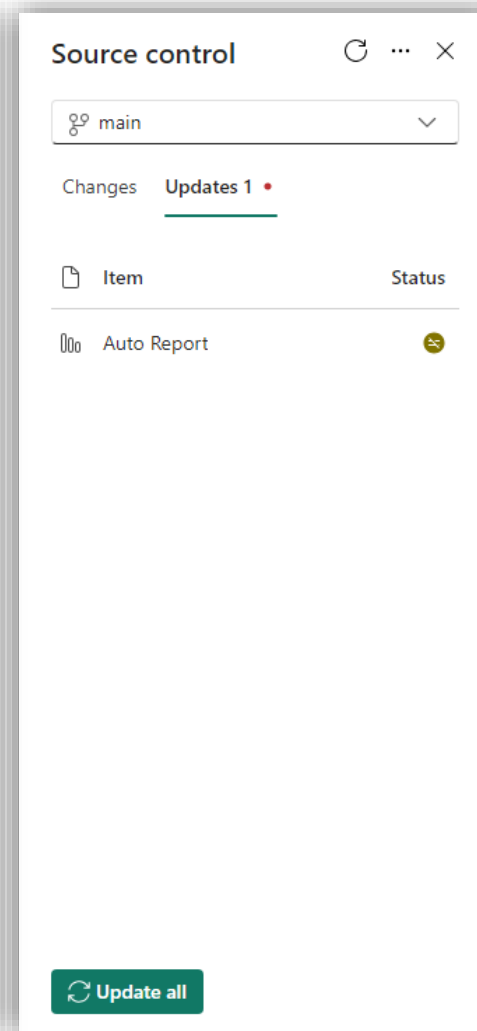
Changes

- Shows changes in the workspace (web authoring)
- Option to input commit message
- Selective commit / undo possible
- Undo selected changes (revert to last commit)
- Requires to first apply updates



Updates

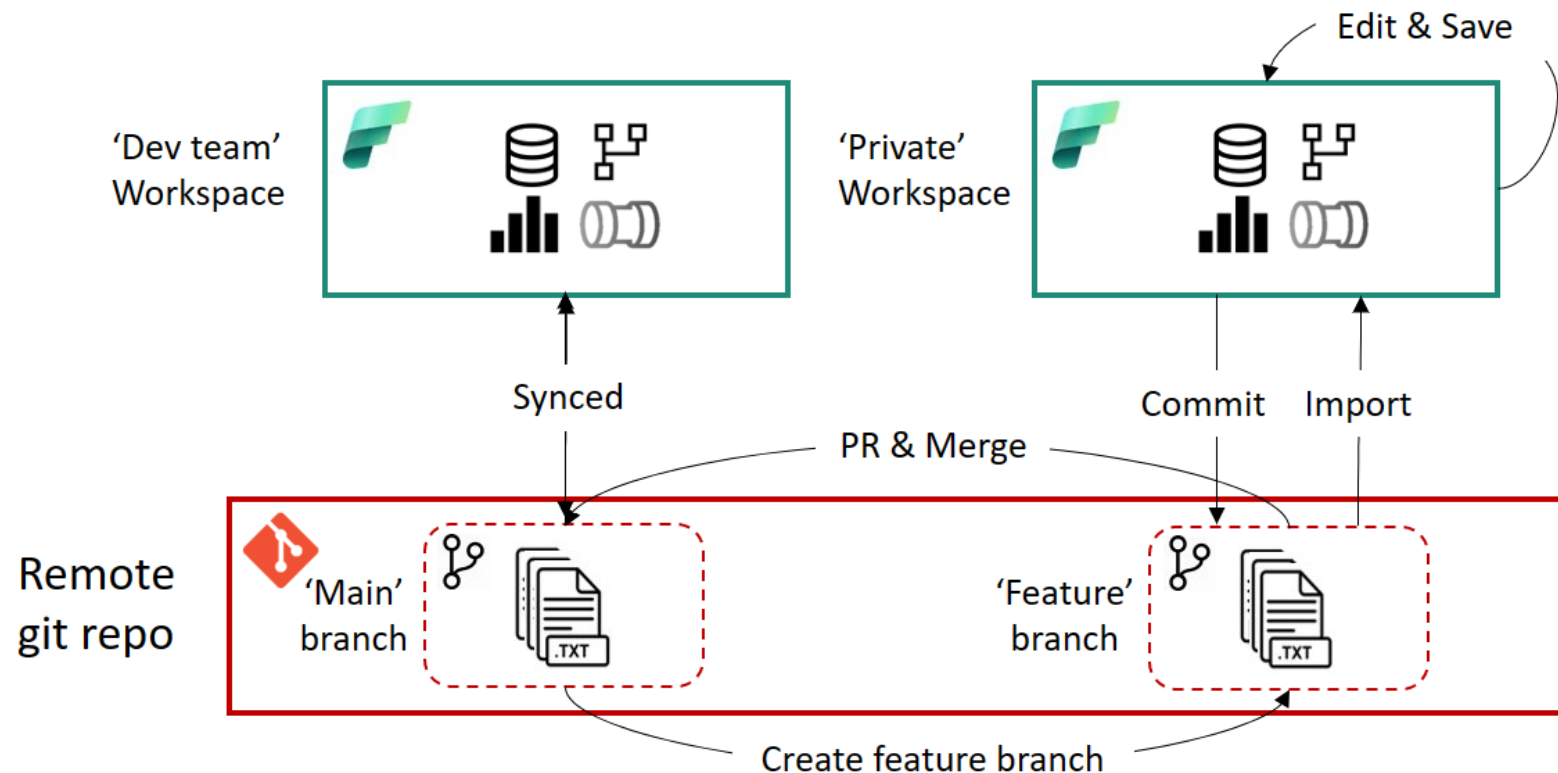
- Shows changes in the git repository
- Allows to update workspace based on connected repository (metadata only)



- + new
- ⌘ modified
- deleted
- × conflict

Manage branches

- For local development: Each developer has local 'feature' branch through IDE
- For web development: Each developer has their own workspace and 'feature' branch
- After commit, a pull request in ADO merges the changes with the 'main' branch



New pull request

Test into main

Overview Files 3 Commits 1

Title

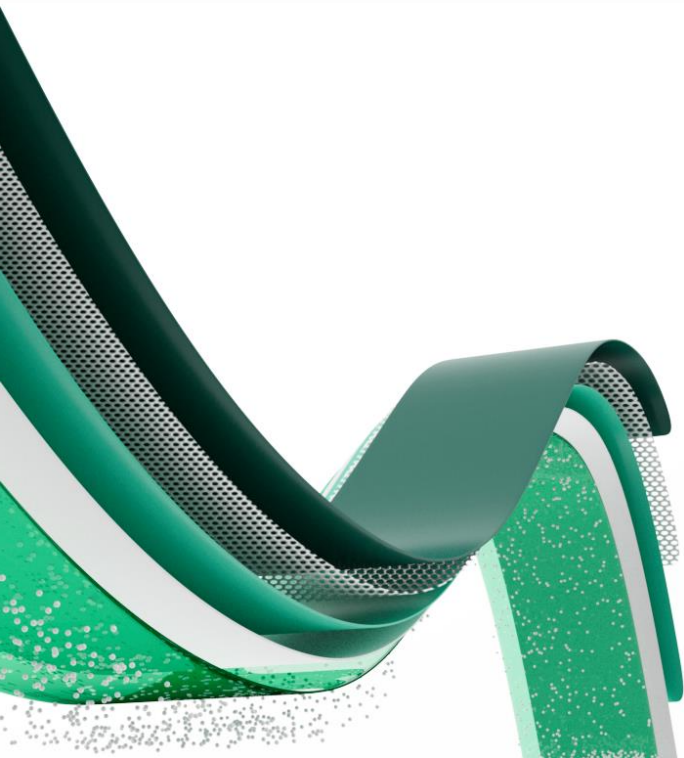
Adapted layout autoreport

Description

Adapted layout autoreport

Demo

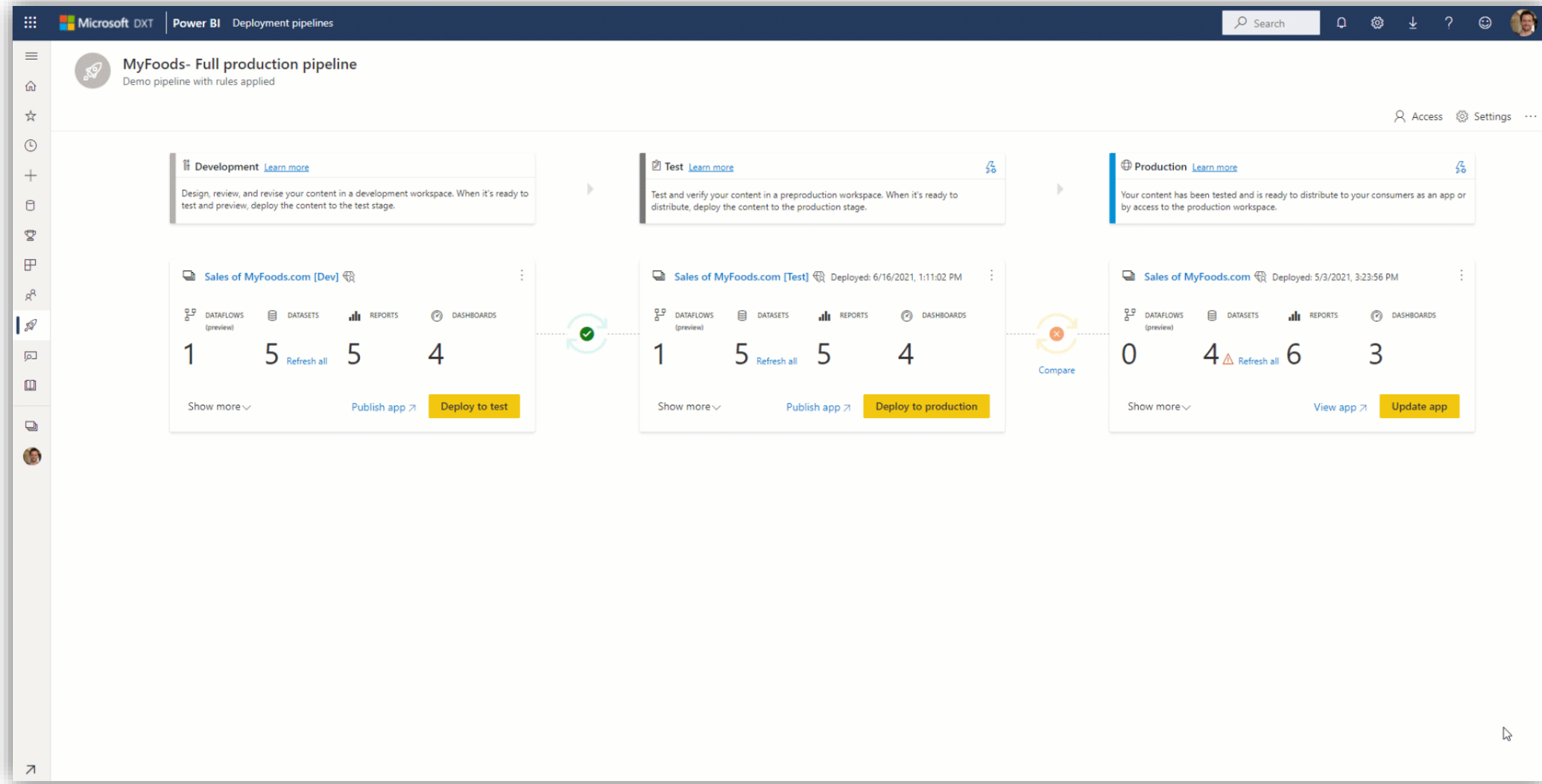
Git integration



Deployment Pipelines

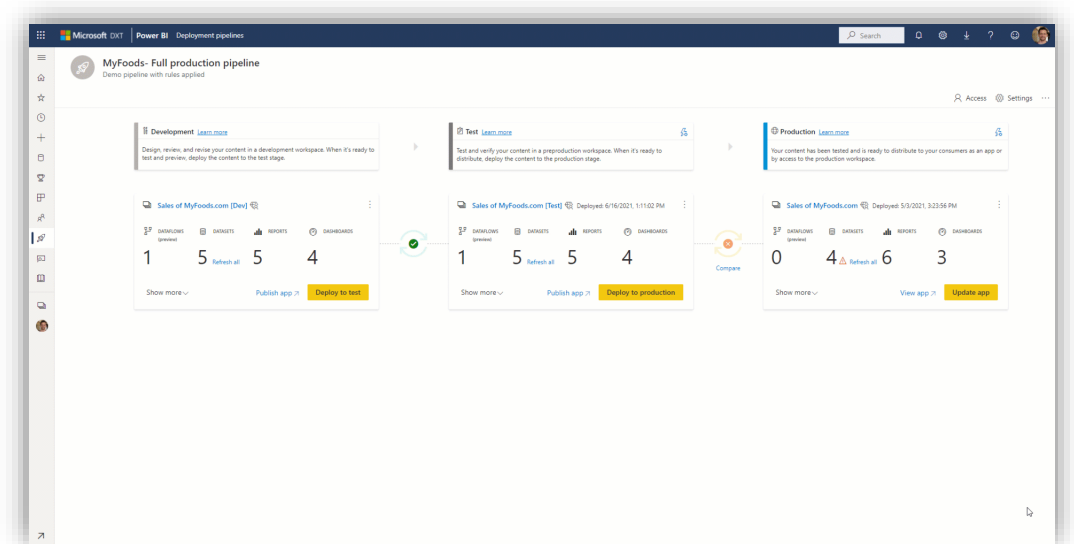


What are deployment pipelines?

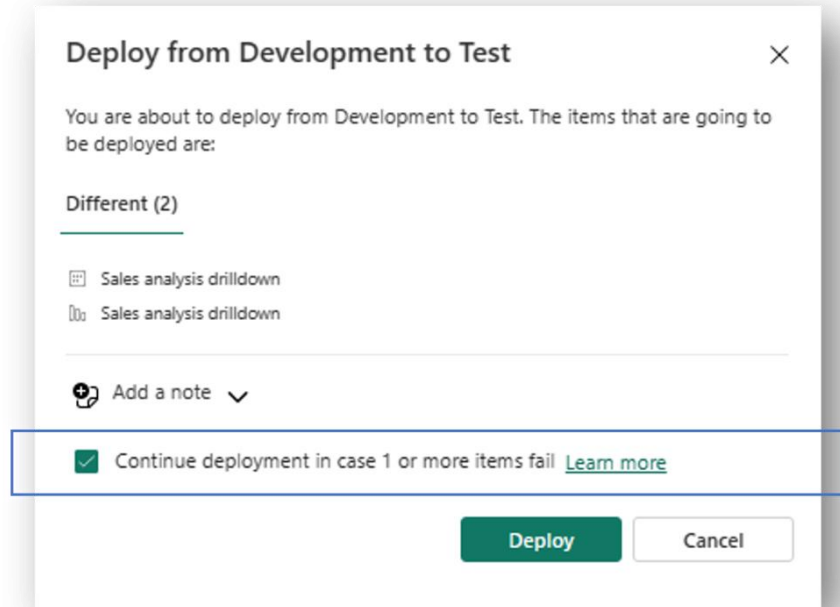


What are deployment pipelines?

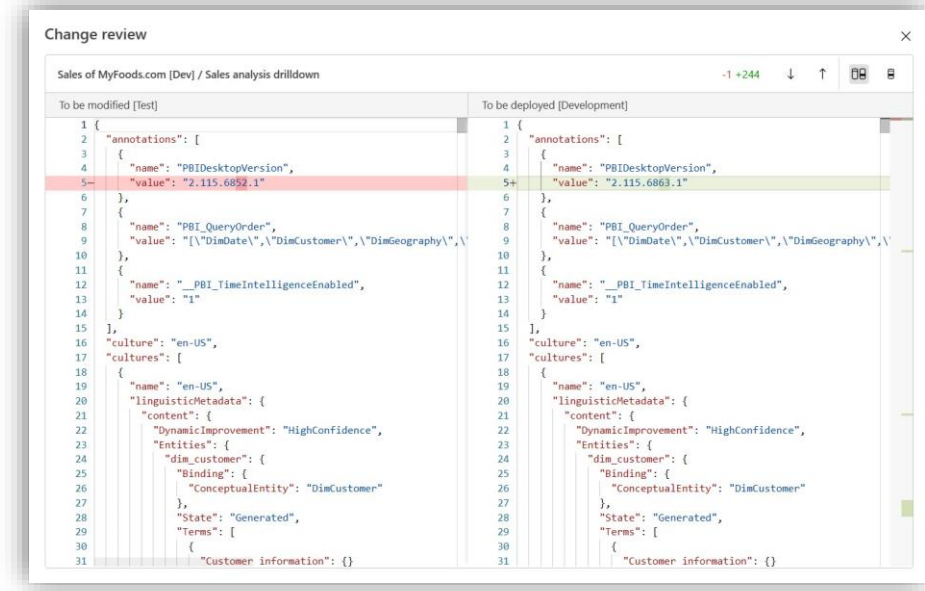
- Three different stages (Development, Test, Production)
- Easily copy items between stages (selective deploy)
- Auto-binding between stages
- Only copies metadata
- Different parameter / data sources can be configured in each stage
- Different access rights can be configured in each stage



Deployment Pipeline recent improvements



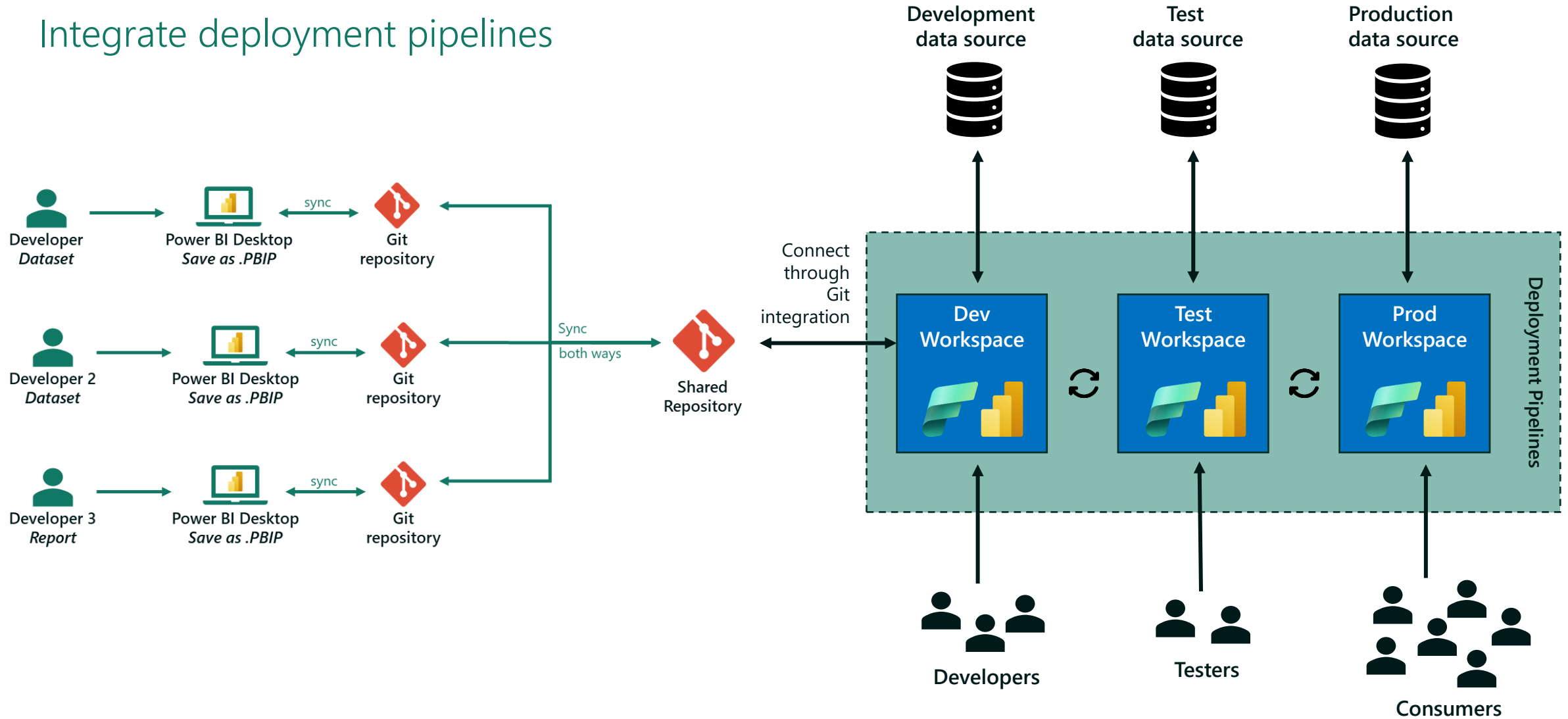
- Deployment note
- Continue deployment in case of errors



- Code change review for Datasets and Dataflows

Development process

Integrate deployment pipelines



Demo

Deployment Pipelines



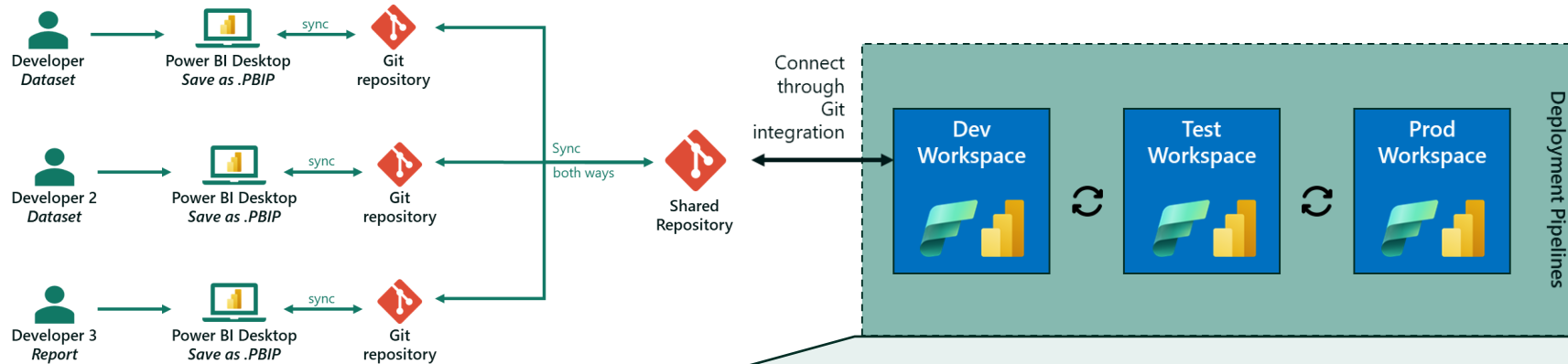
Development process

Leverage the power of Azure DevOps

Examples of
external tools
(non-exhaustive)

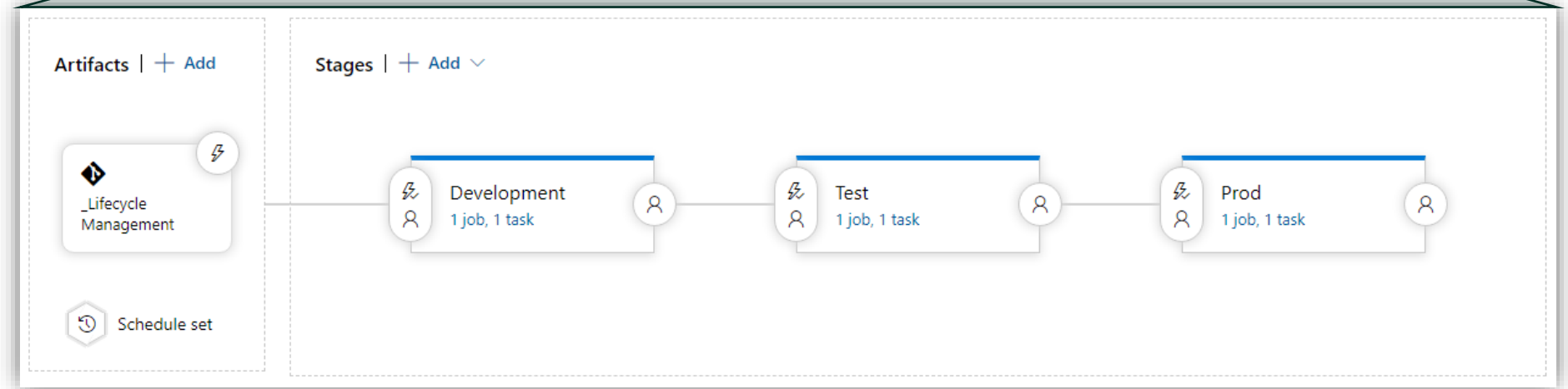


Best Practice Analyzer
by Michael Kovalsky



Power BI automation tools (ADO Extension),
Fabric APIs and external tools

- Azure DevOps**
- Release Pipelines
- Approvals
- Automate stages
- Automate tests
- Automate refresh
- Leverage external tools
- ...



Lookout – What is coming?

TMDL: Tabular Model Definition Language

```
tables > SalesTmdl
1  /// Sales table for year over year analysis
2  table Sales
3      lineageTag: 97143e5b-7736-4fcb-8942-26b92b1f5684
4      ordinal: 2
5
6      partition Sales-d8b4c40b-46fd-40ea-9a19-16e7e640a21a = H
7      mode: Import
8      expression:=
9      let
10         Source = #"RAW-SalesDataAdjustedAndSalesRandomized",
11         #Changed Type1 = Table.TransformColumnTypes(Source,{{"Order Number", Int64.Type}, {"
12         #Removed Columns" = Table.RemoveColumns(#Changed Type1,{"Unit Price"}),
13
14         #Changed Type1" = Table.TransformColumnTypes(#Removed Columns,{{"Delivery Date", t
15         #Filtered Rows" = Table.SelectRows(#Changed Type1, each [Order Date] >= RangeStart
16         #Changed Type2" = Table.TransformColumnTypes(#Filtered Rows,{{"Delivery Date", typ
17         #Added Custom" = Table.AddColumn(#Changed Type2, "Environment", each Environment),
18         #Changed Types" = Table.TransformColumnTypes(#Added custom,{{"Environment", type t
19
20         in
21         #Changed Types"
22
23  /// 12 Month moving average sales calculation
24  measure 'Sales Amount (12M average)' =
25      VAR v_selDate =
26          MAX ( 'Calendar'[Date] )
27      VAR v_period =
28          DATESINPERIOD ( 'Calendar'[Date], v_selDate, -12, MONTH )
29      VAR v_result =
30          CALCULATE ( AVERAGEX ( VALUES ( 'Calendar'[Date] ), [Sales Amount] ), v_period )
31      VAR v_firstDate =
32          MINX ( v_period, 'Calendar'[Date] )
33      VAR v_lastDateSales =
34          MAX ( Sales[Order Date] )
35      RETURN
36          IF ( v_firstDate <= v_lastDateSales, v_result )
37  formatString:= $ #,##0
38  lineageTag: 7f060f7e-287e-46c3-a745-24c4507bc77b
39  annotation PBI_FormatHint = ("isCustom":true)
```

Fabric APIs



Overview
> Admin
> Apps
> Available Features
> Capacities
> Dashboards
> Dataflow Storage Accounts
> Dataflows
> Datasets
> Embed Token
> Gateways
> GoalNotes (Preview)
> GoalValues (Preview)
> Goals (Preview)

New Report definition format



```
{
  "config": "{\\\"version\\\":\\\"5.42\\\",\\\"themeCollection\\\":{\\\"
  \"filters\": \"[{\\\"name\\\":\\\"Filter\\\",\\\"expression\\\":{\\\"Hier
  \"layoutOptimization\": 1,
  \"pods\": [
    {
      \"boundSection\": \"ReportSectiona37d01e834c17d07bbeb\",
      \"config\": \"{\\\"acceptsFilterContext\\\":1}\\\",
      \"name\": \"Pod\",
      \"parameters\": \"[{\\\"name\\\":\\\"Param_Filter\\\",\\\"boundFi
      \"type\": 1
    },
    {
      \"boundSection\": \"ReportSection4b3fbaa7dd7908d906d9\",
      \"config\": \"{\\\",
      \"name\": \"Pod1\"
    },
    {
      \"boundSection\": \"ReportSection79828a20a2b300a5d99b\",
      \"config\": \"{\\\",
      \"name\": \"Pod10\"
    },
    {
      \"boundSection\": \"ReportSection23904f9ac2e638d5ed18\",
      \"config\": \"{\\\",
      \"name\": \"Pod11\"
    },
    {
      \"boundSection\": \"ReportSection406bc05d6280a2c44873\",
      \"config\": \"{\\\",
      \"name\": \"Pod12\"
    }
  ]
}
```

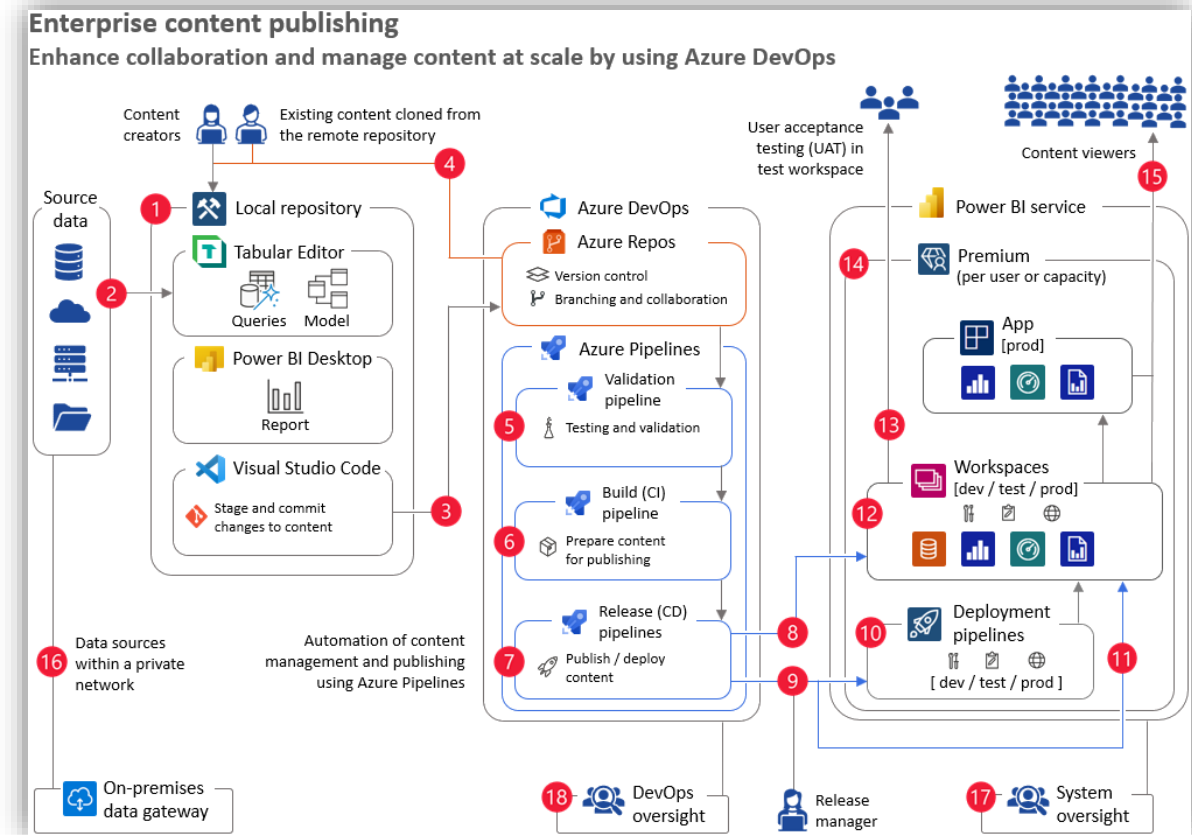

Additional resources

Documentations

-  Microsoft Fabric's lifecycle management tools enable efficient product development, continuous updates, fast releases, and ongoing feature enhancements
-  Power BI Desktop developer mode documentation

Implementation planning guidance

-  Power BI usage scenarios: Self-service content publishing
-  Power BI usage scenarios: Enterprise content publishing



Thank you

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