



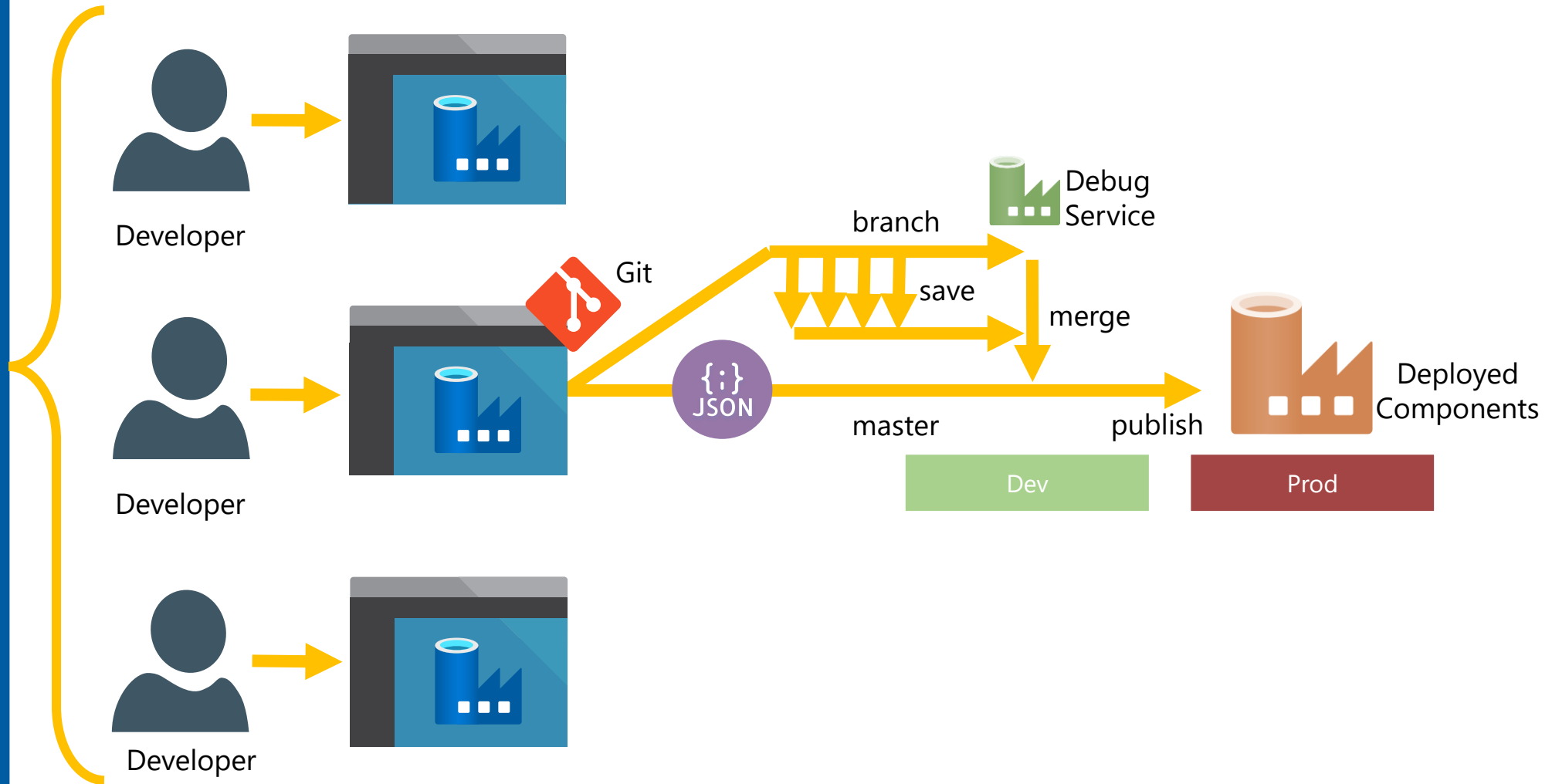
Module 8: CI/CD with Azure DevOps

- 🔌 Source Control vs Developer UI
- 🔌 ARM Templates Deployments
- 🔌 PowerShell Deployments

Source Control vs Developer UI



Data Factory Continuous Integration





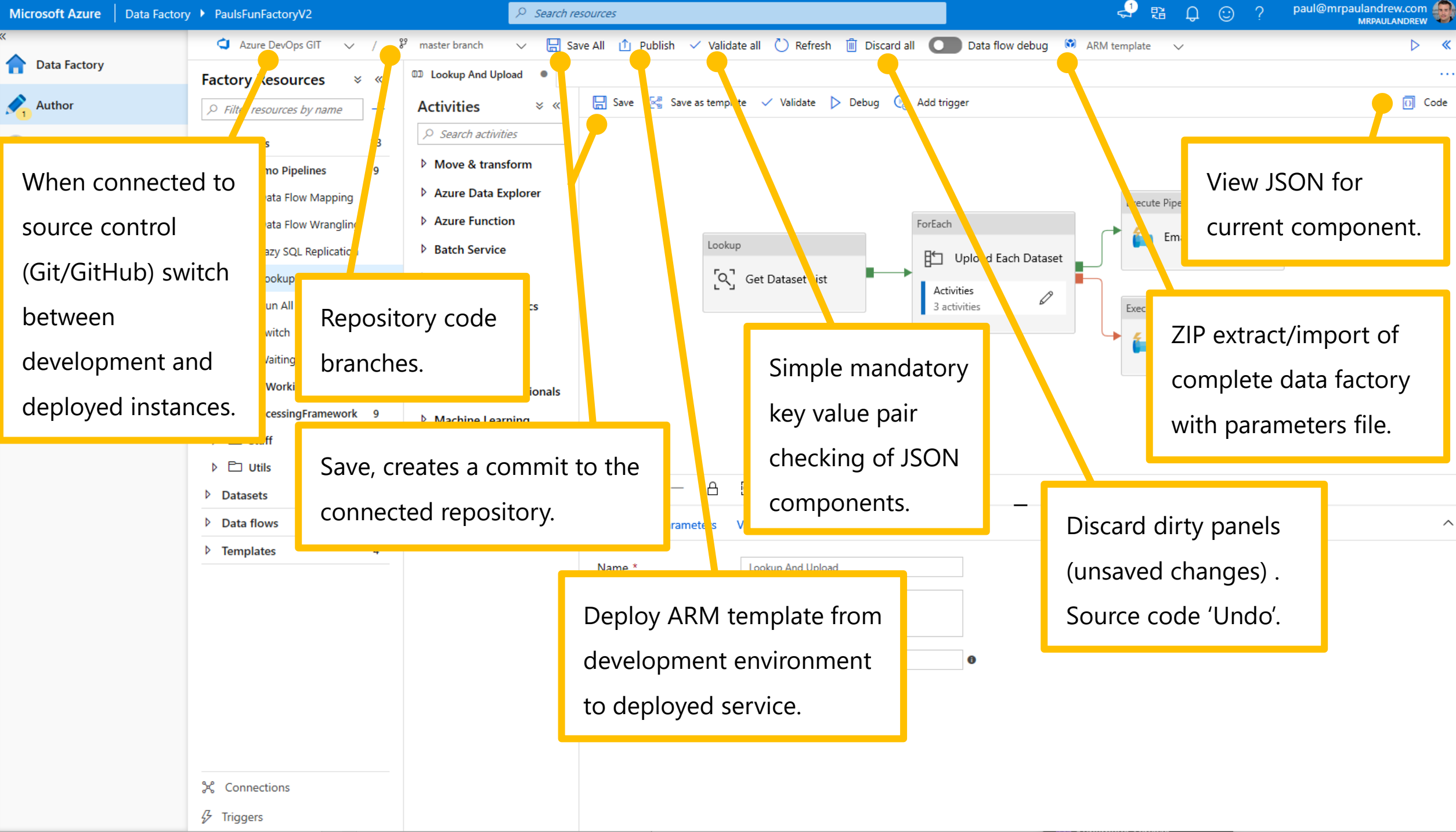
PaulsFunFactory



Documentation



Author & Monitor



When connected to source control (Git/GitHub) switch between development and deployed instances.

Repository code branches.

Save, creates a commit to the connected repository.

Deploy ARM template from development environment to deployed service.

Simple mandatory key value pair checking of JSON components.

Discard dirty panels (unsaved changes) . Source code 'Undo'.

View JSON for current component.

ZIP extract/import of complete data factory with parameters file.

- Factory Resources**
- Filter resources by name
- Pipelines 23
 - Demo Pipelines 9
 - Data Flow Mapping
 - Data Flow Wrangling
 - Lazy SQL Replication
 - Lookup And Upload
 - Run All SSIS Packages
 - Switch
 - WaitingPipeline
 - Working Progress 2
 - ProcessingFramework 9
 - Stuff 4
 - Utils 1
 - Datasets 27
 - Data flows 6
 - Templates 4

Activities

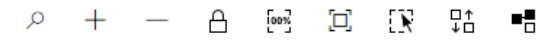
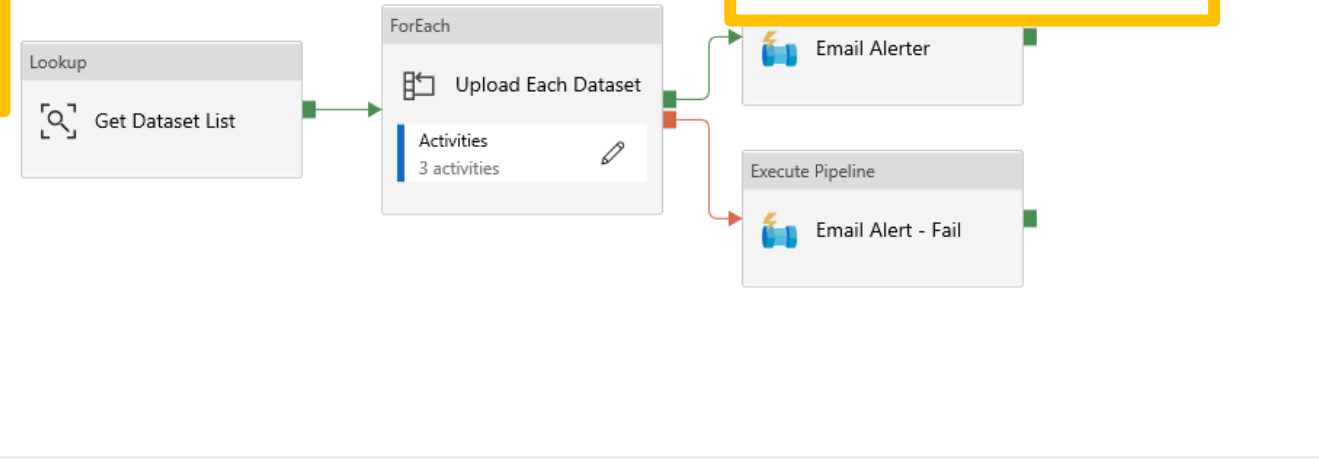
Search activities

- Databricks
 - Data Lake Analytics
 - General
 - HDInsight
 - Iteration & conditionals
 - Machine Learning

Save Save as template Validate Debug Add trigger

Debug the Control Flow.
Run the pipeline.

Debug the Data Flow.
Get a cluster ready.



General Parameters Variables Output

Name * Lookup And Upload

Description Simple dynamic demo pipeline

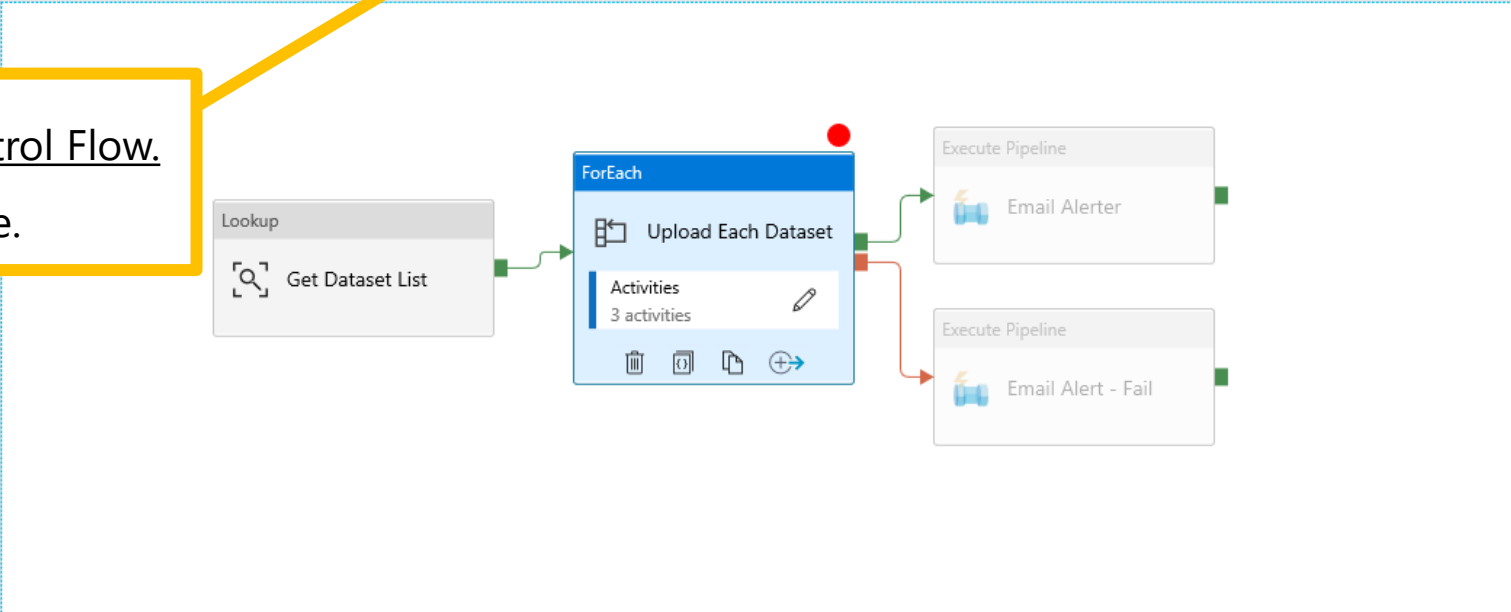
Concurrency

Annotations + New

- Factory Resources
- Filter resources by name
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- Demo Pipelines9
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- Activities
- Search activities
- Databricks
- Data Lake Analytics
- General
- HDInsight
- Iteration & conditionals
- Machine Learning

Debug the Control Flow.
Run the pipeline.




General Settings Activities (3) User properties

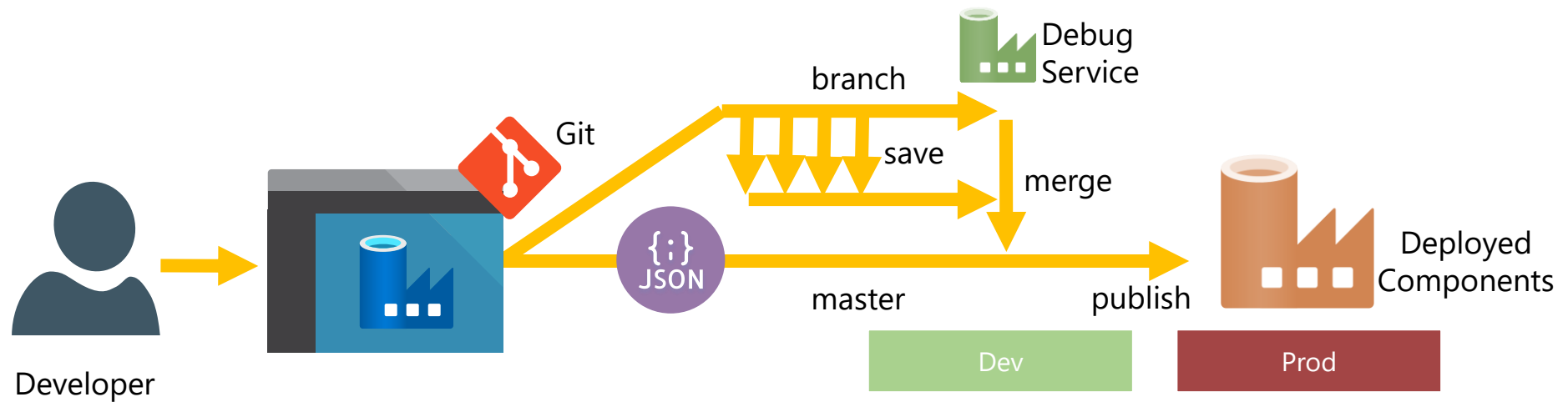
Name * Upload Each Dataset [Learn more](#)

Description

ARM Template Deployments

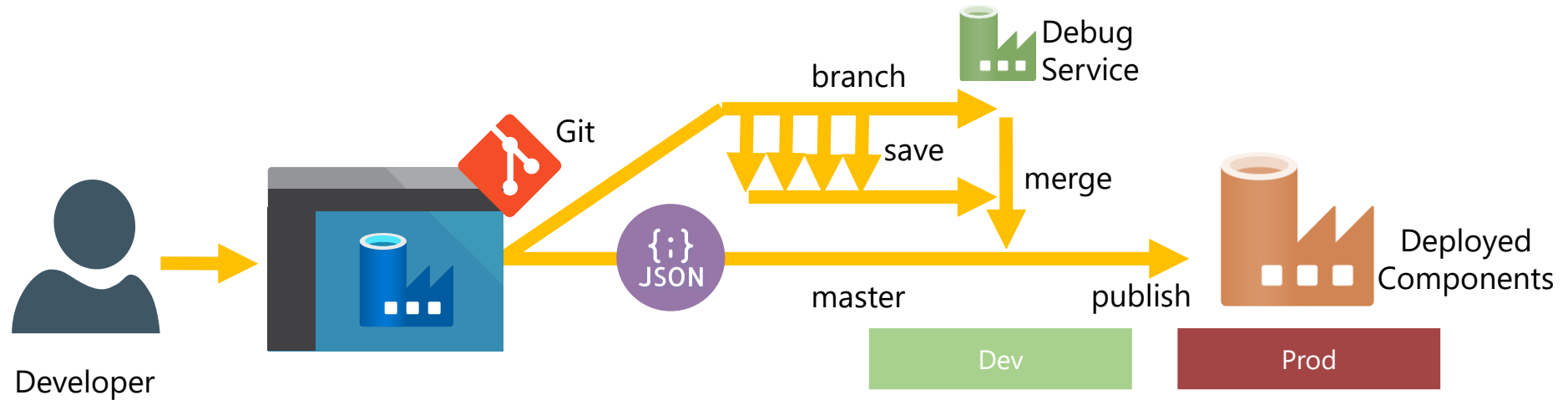
A large, solid blue shape that starts as a diagonal line from the bottom-left and extends towards the top-right, ending in a rounded corner. It occupies the right half of the image.

Data Factory Continuous Delivery

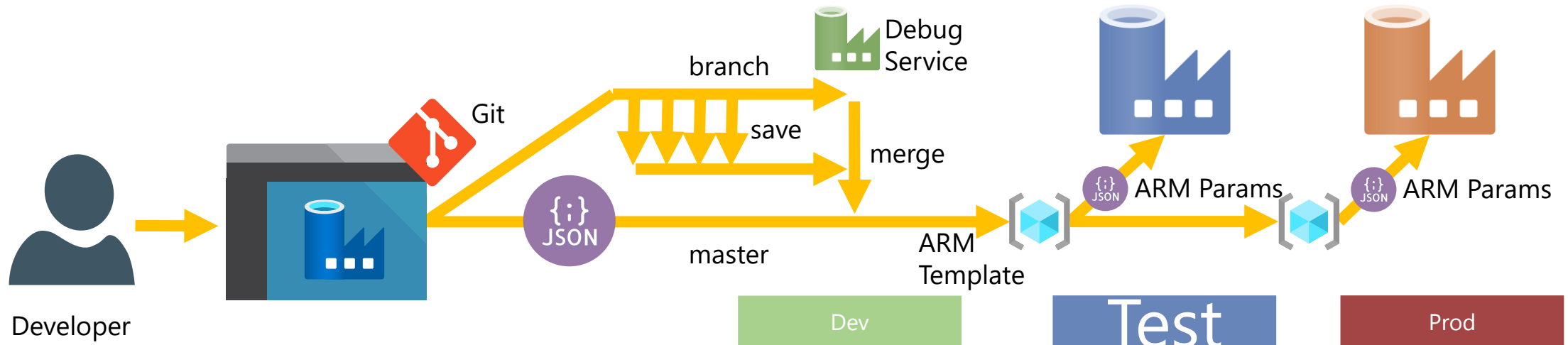


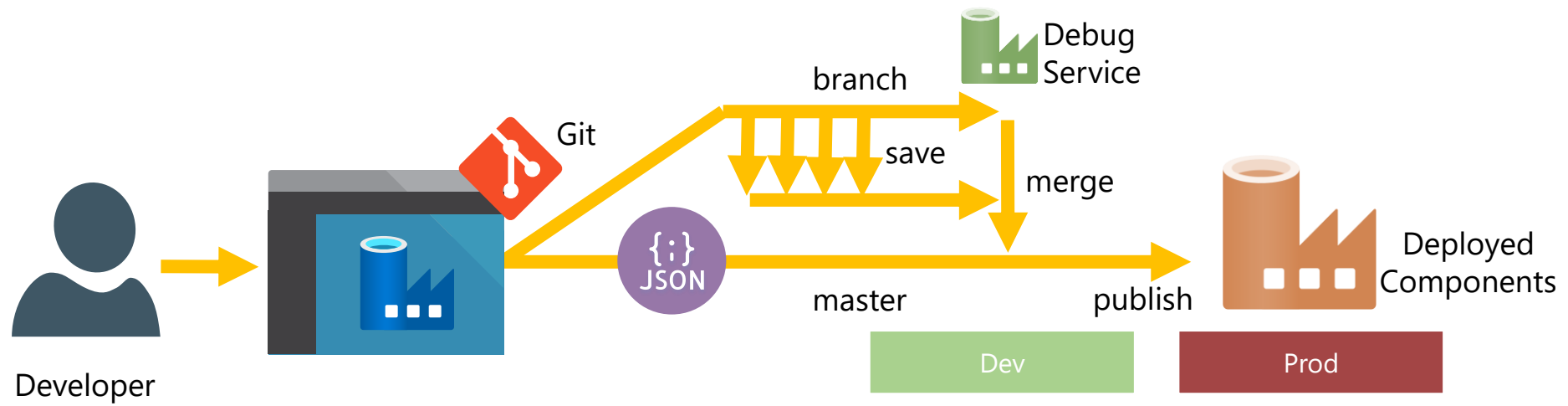
Data Factory Continuous Delivery

Option 1 – Single Data Factory Service

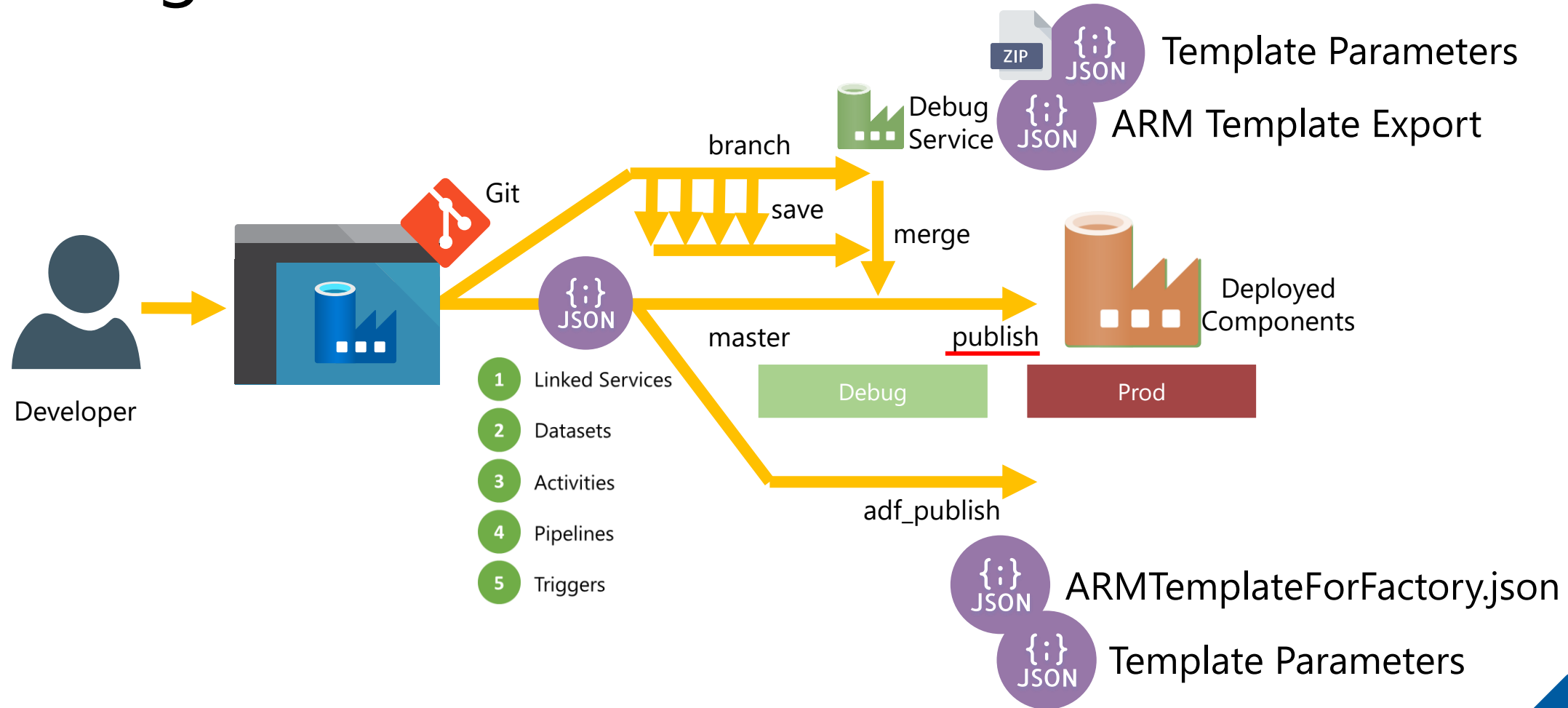


Option 2 – ARM Templates for Multiple Data Factory Services

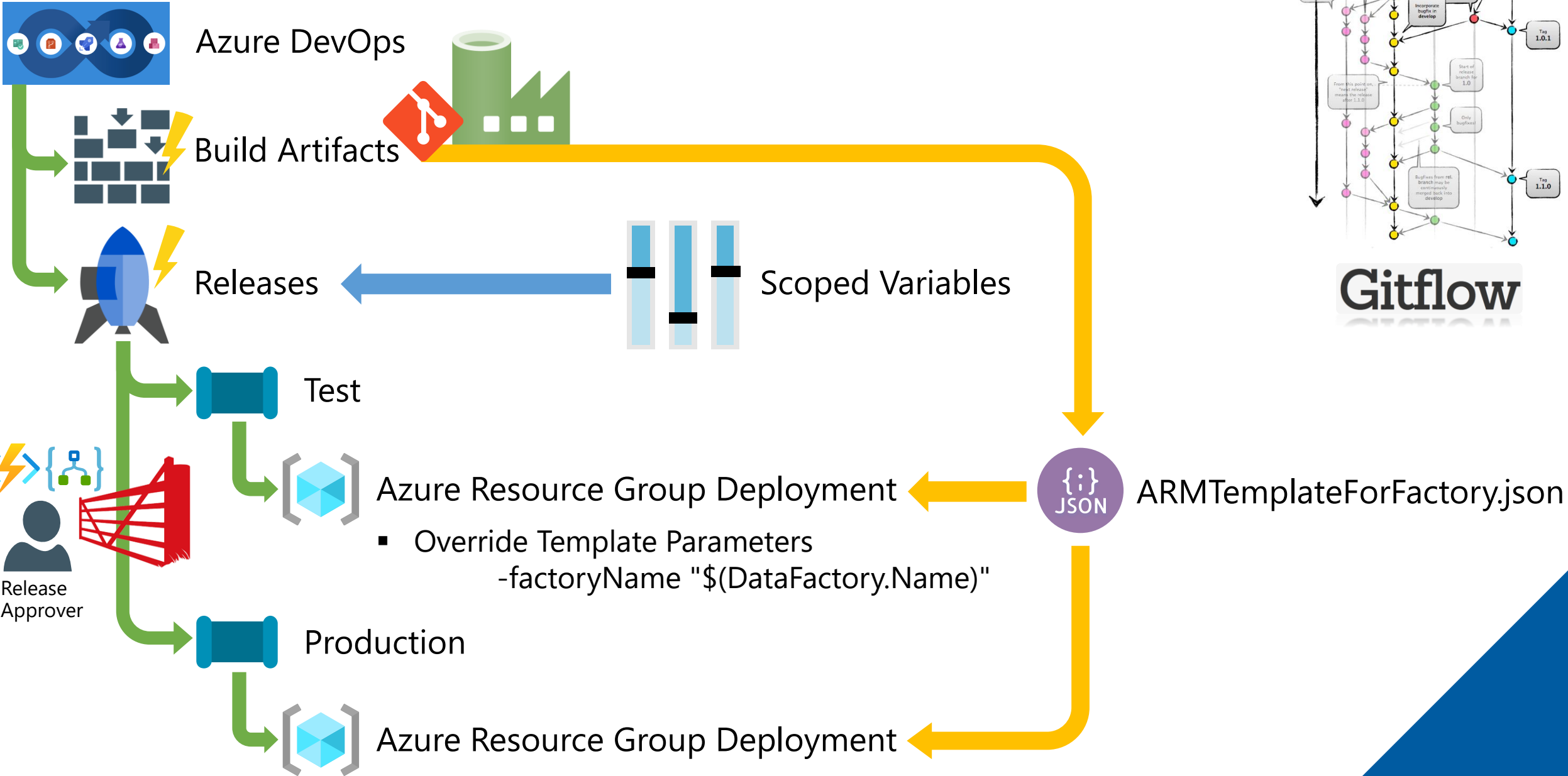




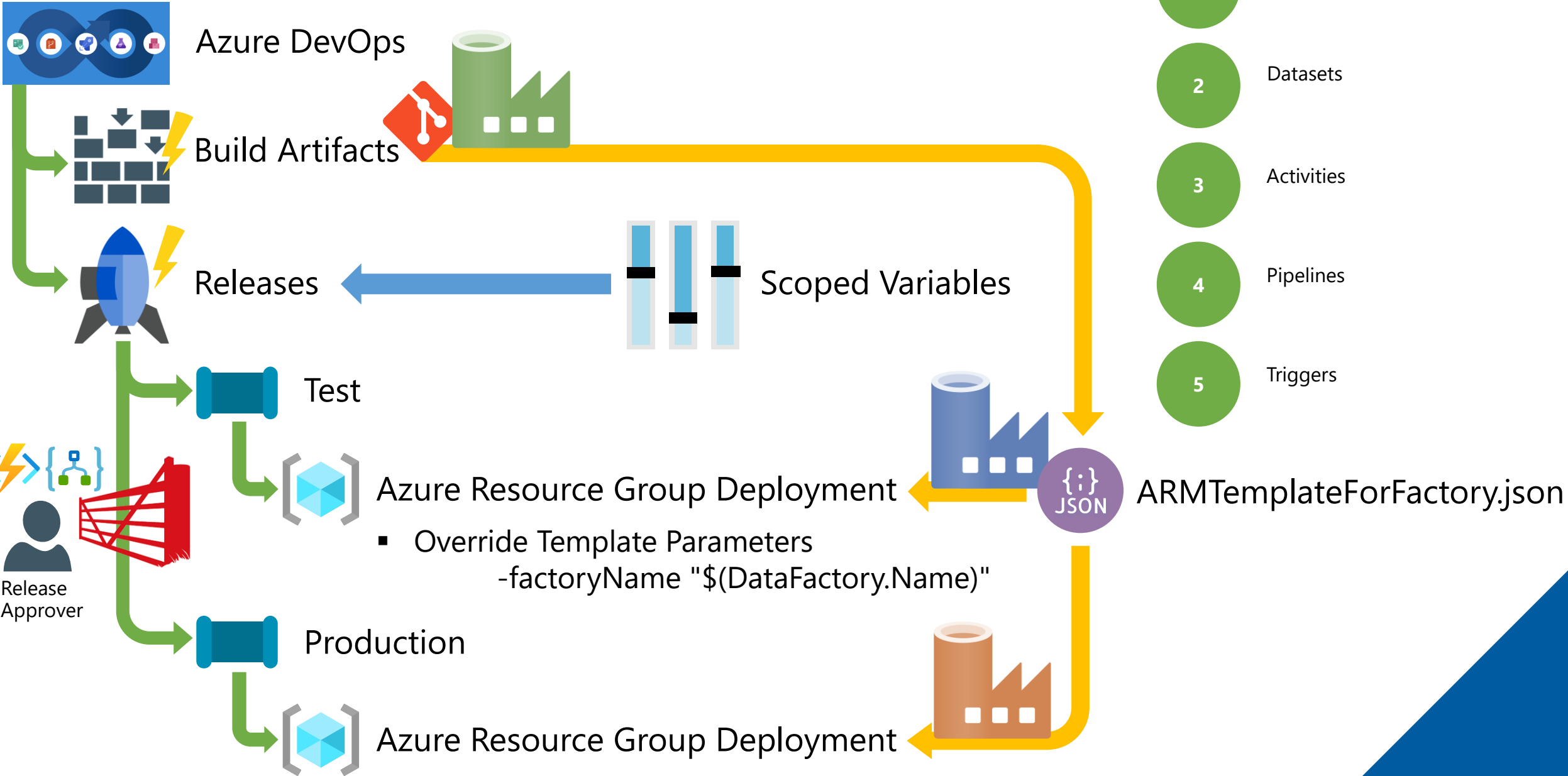
Getting Our ADF Source Code



Data Factory Continuous Delivery



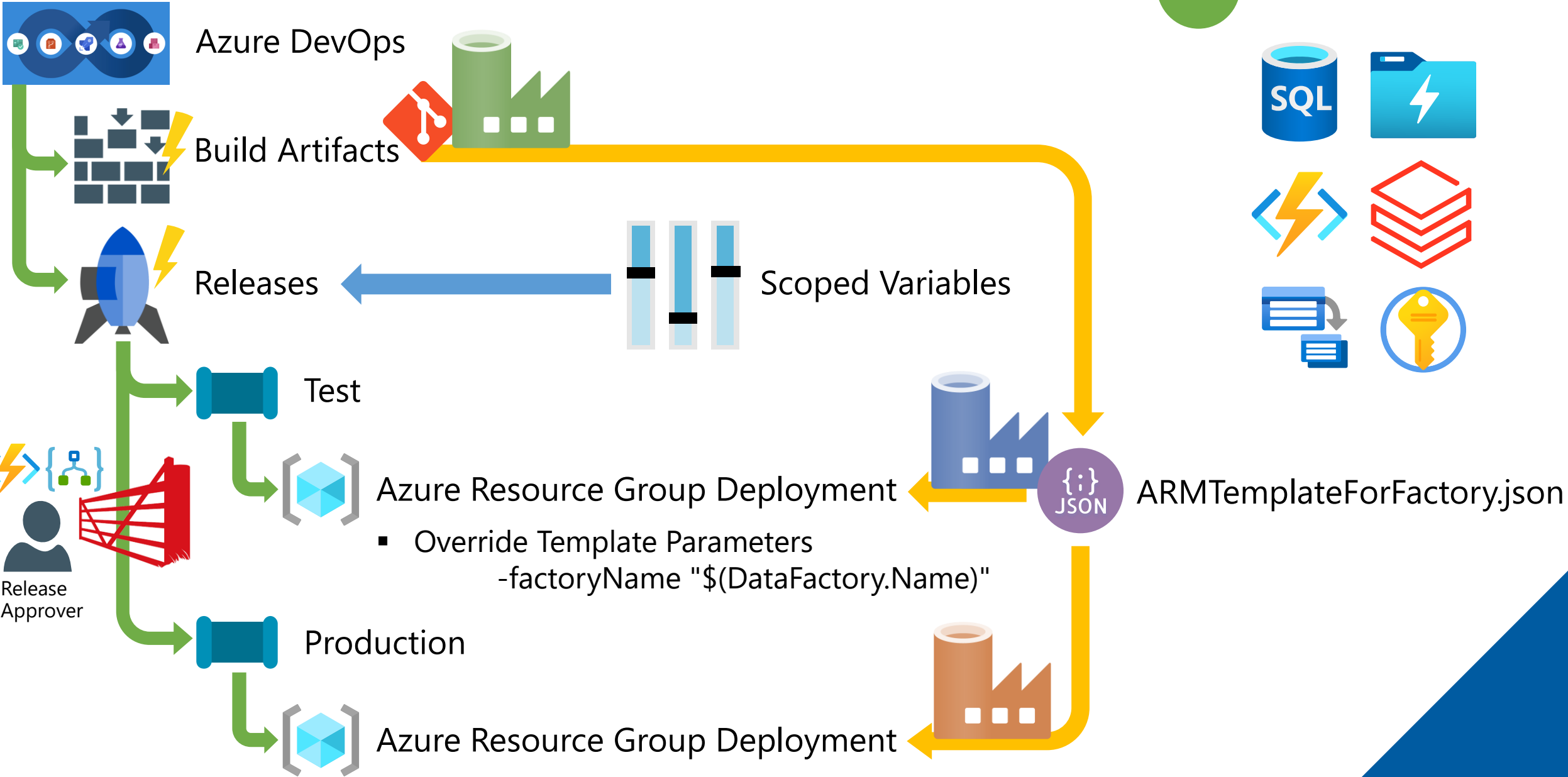
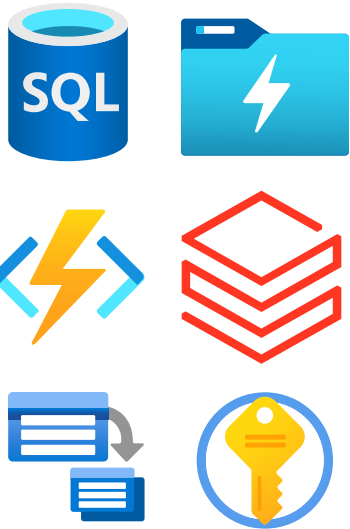
Data Factory Continuous Delivery



Data Factory Continuous Delivery

1

Linked Services



PowerShell Deployments

A large, solid blue shape that starts as a diagonal line from the bottom left and curves upwards to the right, filling the top right corner of the slide.

Data Factory Continuous Delivery - Option 3

- 1 Linked Services
- 2 Datasets
- 3 Activities
- 4 Pipelines
- 5 Triggers



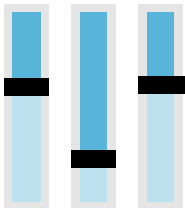
Azure DevOps



Build Artifacts



Releases



Scoped Variables



Test



Run PowerShell



params.json

Azure Resource Group Deployment

Set-AzDataFactoryV2Pipeline

Set-AzDataFactoryV2Dataset

Set-AzDataFactoryV2LinkedService

Override Template Parameters

-factoryName "\$(DataFactory.Name)"



Production



Run PowerShell



params.json

Set-AzDataFactoryV2IntegrationRuntime

Set-AzDataFactoryV2Trigger

Azure Resource Group Deployment



linkedservices.json

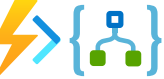
pipelines & activities.json

datasets.json

triggers.json

AKVTemplateForFactory.json

and publish



Release Approver

Data Factory Continuous Delivery - Option 3

- 1 Linked Services
- 2 Datasets
- 3 Activities
- 4 Pipelines
- 5 Triggers



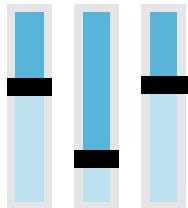
Azure DevOps



Build Artifacts



Releases



Scoped Variables



Test



Run PowerShell



params.json

Set-AzDataFactoryV2Pipeline
Set-AzDataFactoryV2Dataset
Set-AzDataFactoryV2LinkedService



Production

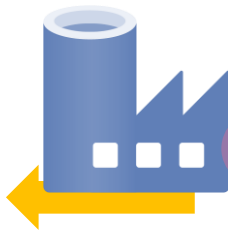


Run PowerShell



params.json

Set-AzDataFactoryV2IntegrationRuntime
Set-AzDataFactoryV2Trigger



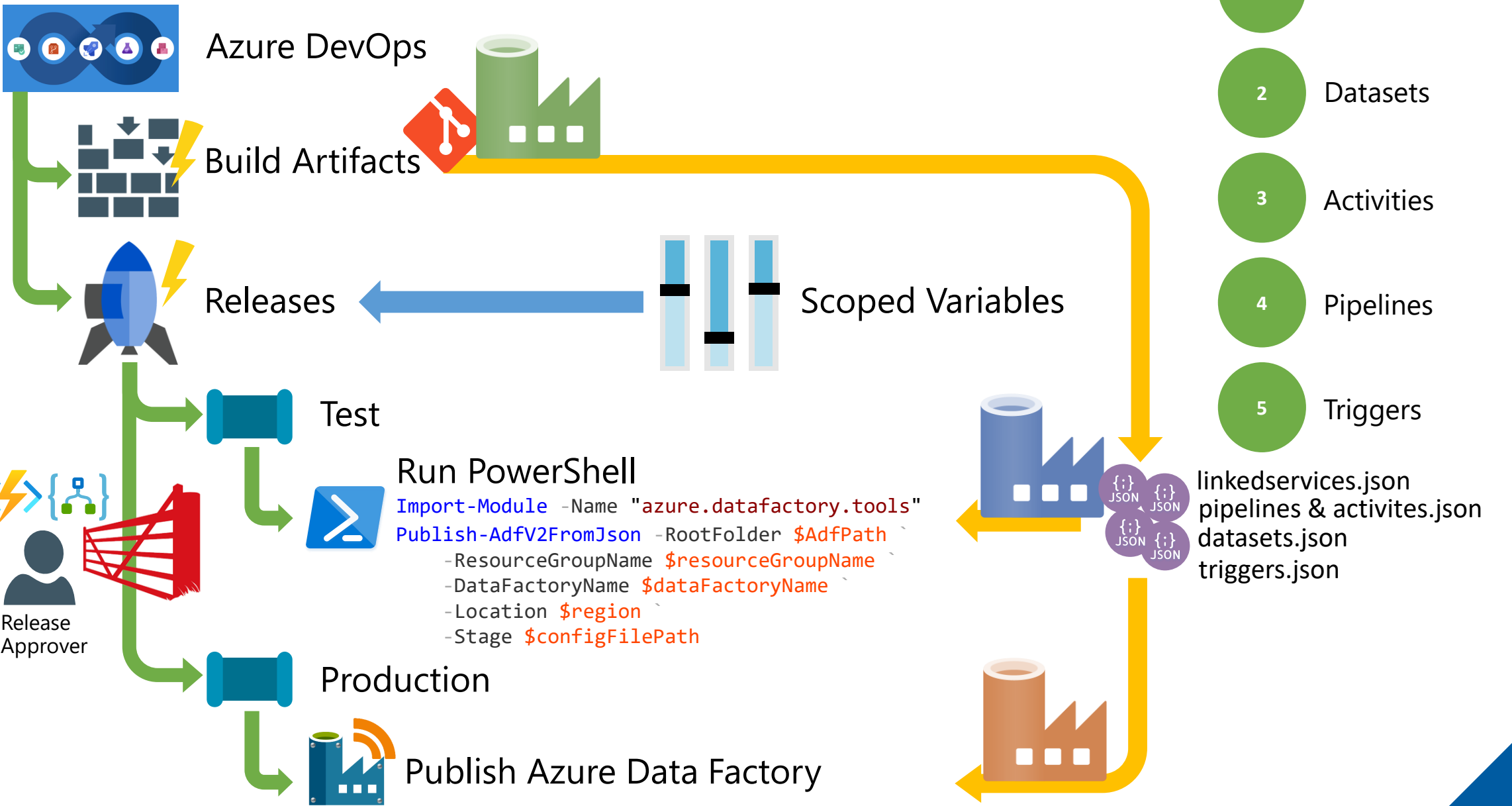
linkedservices.json
pipelines & activities.json
datasets.json
triggers.json

1) Handle own dependencies

2) Handle own removals.

Release Approver

Data Factory Continuous Delivery - Option 4





Deployment Options Summary

Option 1 – Use a single Data Factory service.

Option 2 – ARM Templates for multiple Data Factory services (environments).

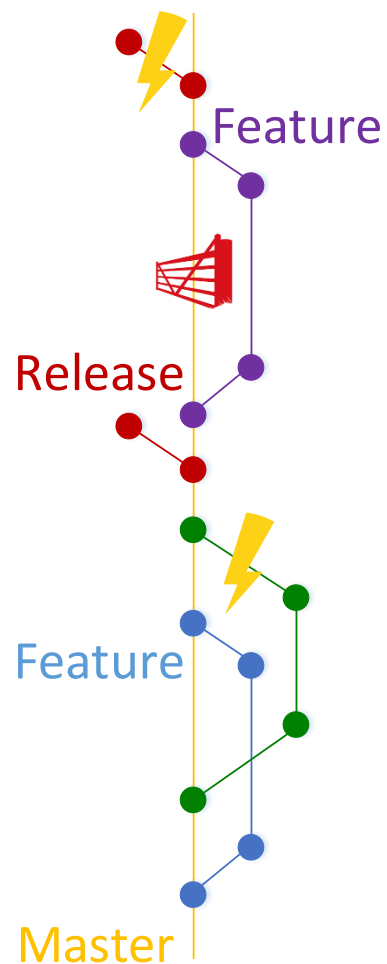
Option 3 – Use PowerShell cmdlets for each ADF artifact.

Option 4 – Use a PowerShell module or custom Azure DevOps task.



Data Factory DevOps Story Summary

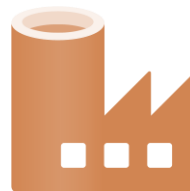
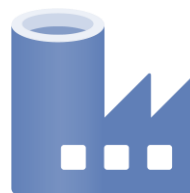
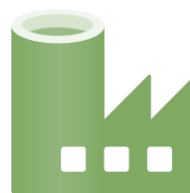
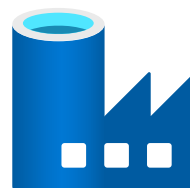
What is your code branching strategy?



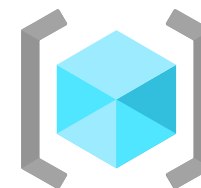
Which source control tool to use?



How many environments do we want?



What deployment method do we want to use?



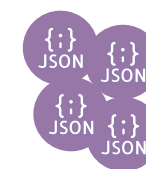
What artifacts are we going to use?...

OR

How much control do you want?



ARMTemplate
ForFactory.json



linkedservices.json
pipelines &
activities.json
datasets.json
triggers.json

Module 8:

CI/CD with Azure DevOps

🔊 Source Control vs Developer UI



🔊 ARM Templates Deployments



🔊 PowerShell Deployments

