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# Git Good: Best Practices for CI/CD and Collaboration in Microsoft Fabric

Peer Grønnerup

# WHO AM I?

## PEER GRØNNERUP

*Head of Engineering at Tabular Editor*

*+15 years working with BI, Data Platform design*

*Part of the Fabric Private Preview (Project Trident)*

***... and all in on Fabric Automation and CI/CD!***

https://www.linkedin.com/in/groennerup/

https://peerinsights.emono.dk/

# Download FabricOps source code

https://github.com/gronnerup/FabricOps

**Disclaimer:**
The solution demonstrated in this session is provided for **demonstration and educational purposes only**. It is **unsupported**, and there are no guarantees regarding functionality, stability, or future updates. You are free to use it **as-is** or modify it to fit your needs. Use at your own risk.

# Where are we going – Git Good in Fabric

Architecting for scale


Workspaces, repos and environments

Branching for real-world collaboration

Automating deployments

Tips, Tricks & Summing up

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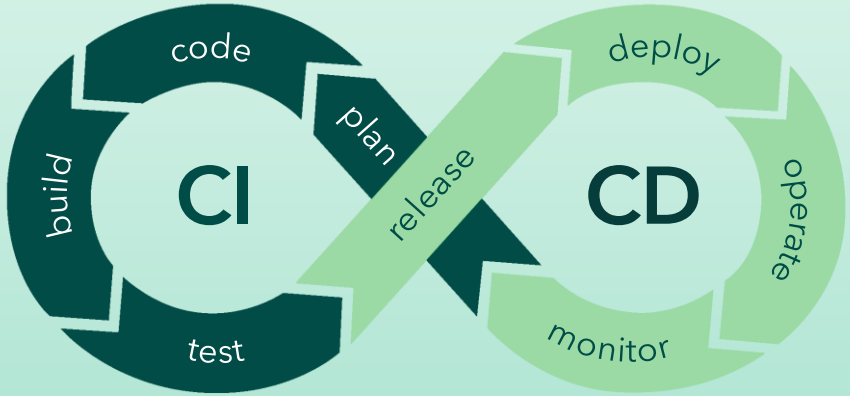
- Architecture & platform setup
- Fabric Git integration & repo structure
- Ways-of-working & collaboration
- Touch branching strategies & release flows
- CI/CD pipelines
- fabric-cicd library and Fabric CLI
- Automation in general

- Fabric solutions development & items
- How to implement dynamic code
- The Fabric Terraform Provider,
- The Fabric REST APIs or CLI in depth
- Fabric Deployment pipelines
- Security & governance
- Cover branching strategies in detail

# The basics of CI/CD and Version Control - Why it matters

## The automation engine that powers DevOps workflows

- Git is the distributed version control for tracking changes over time
- Git uses commits, branches, and pull requests to manage work
- CI validates changes automatically (build, test, checks)
- CD packages and deploys changes consistently across environments
- CI/CD pipelines automate validation and deployment

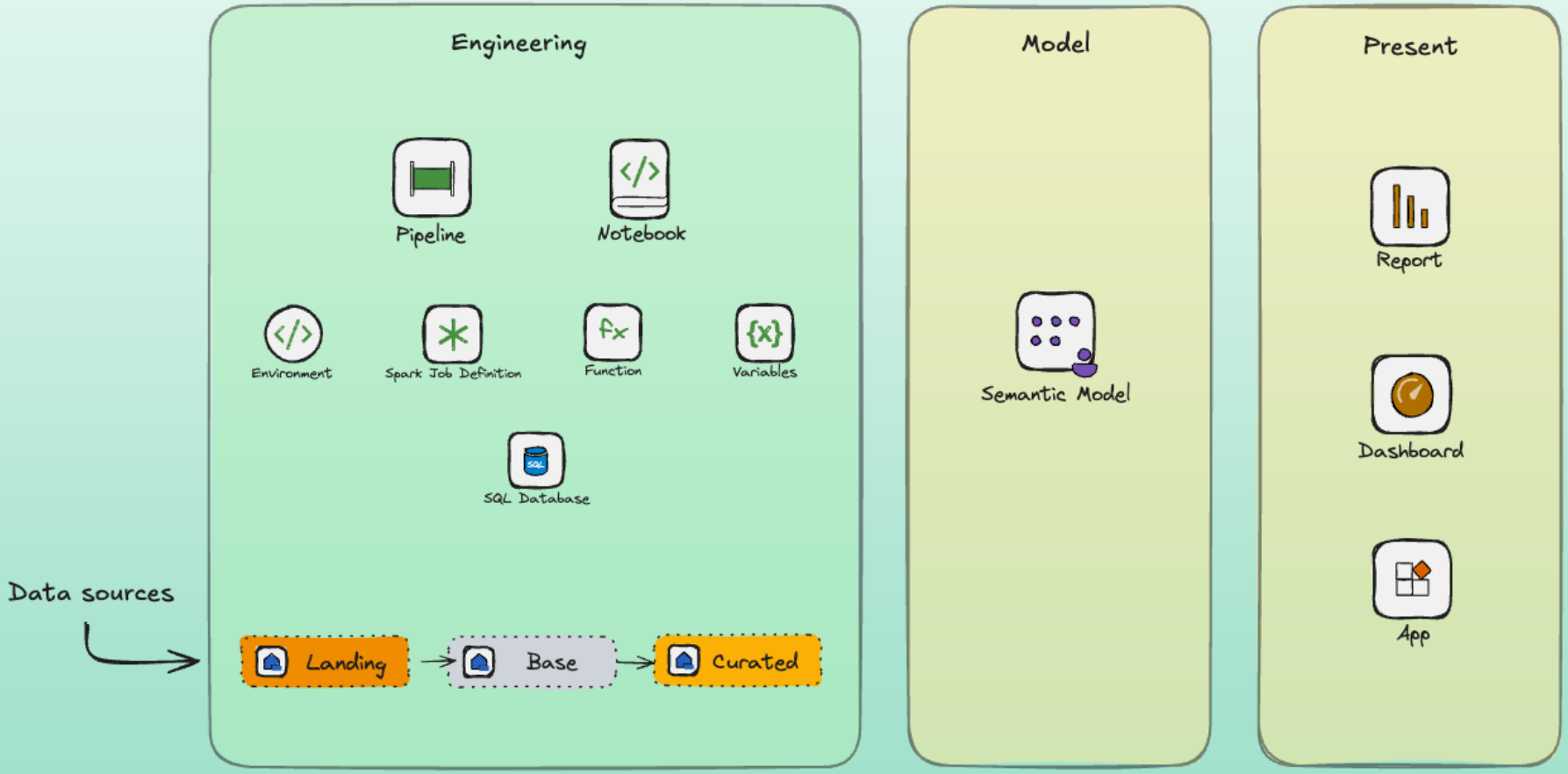



## The Fabric angle of things

- Fabric supports GitHub and Azure DevOps as git provider
- Fabric items in Git are declarative and cloud-native
- Items map directly to Git folders in your repository

# Architecting for scale

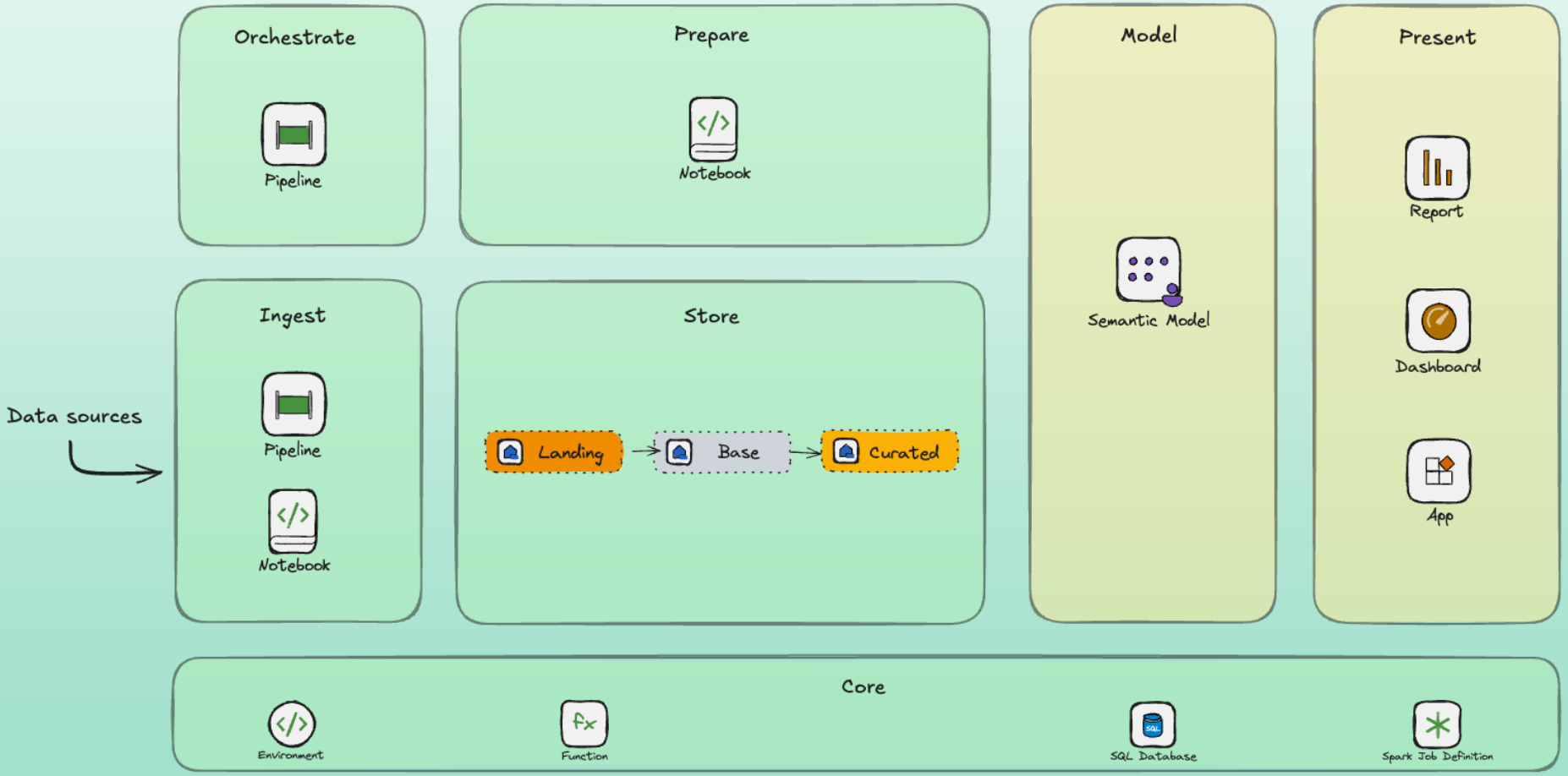
# Reference Architecture - Basic




Fabric workloads

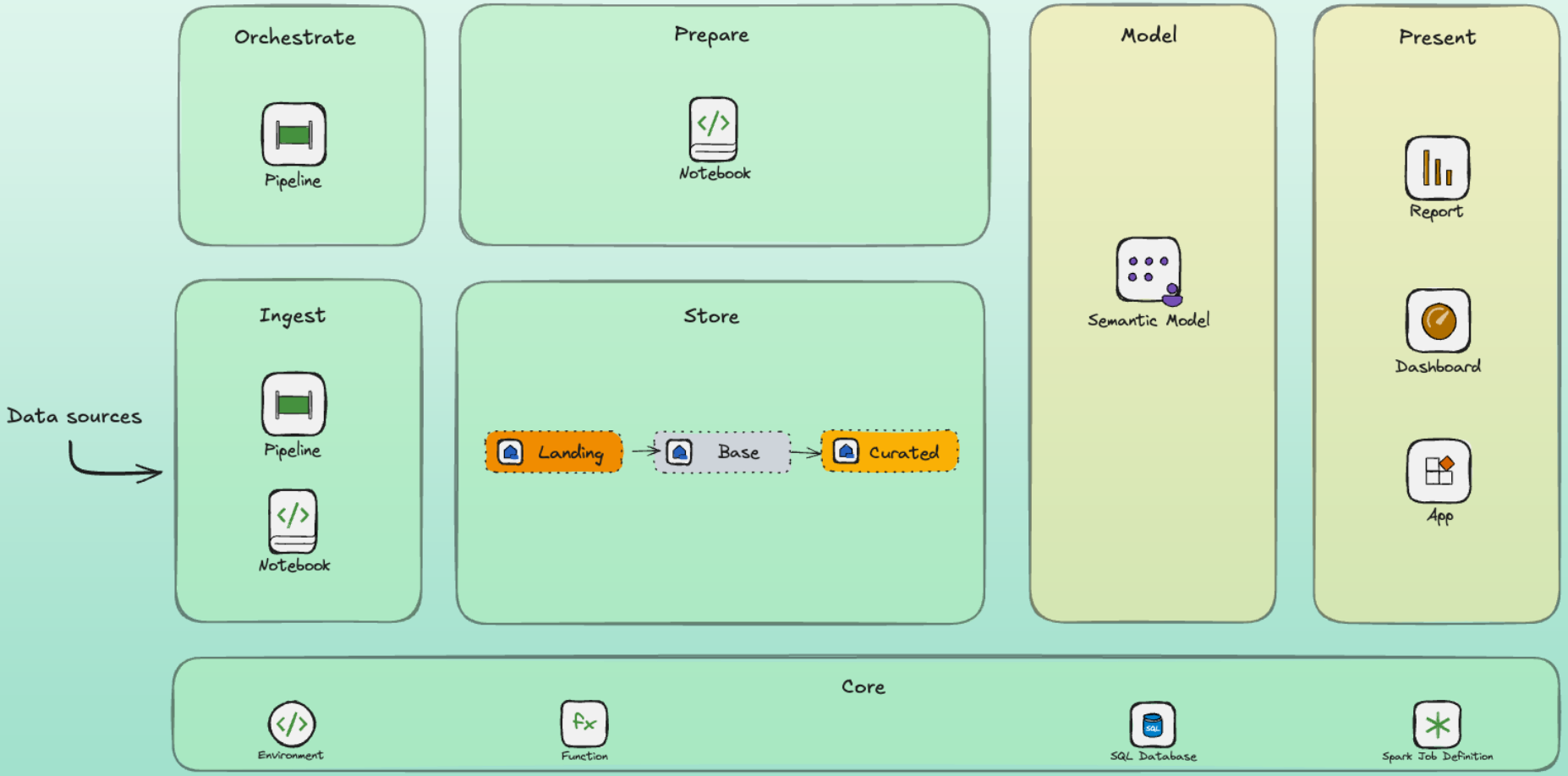
Power BI workloads

# Reference Architecture - Enterprise

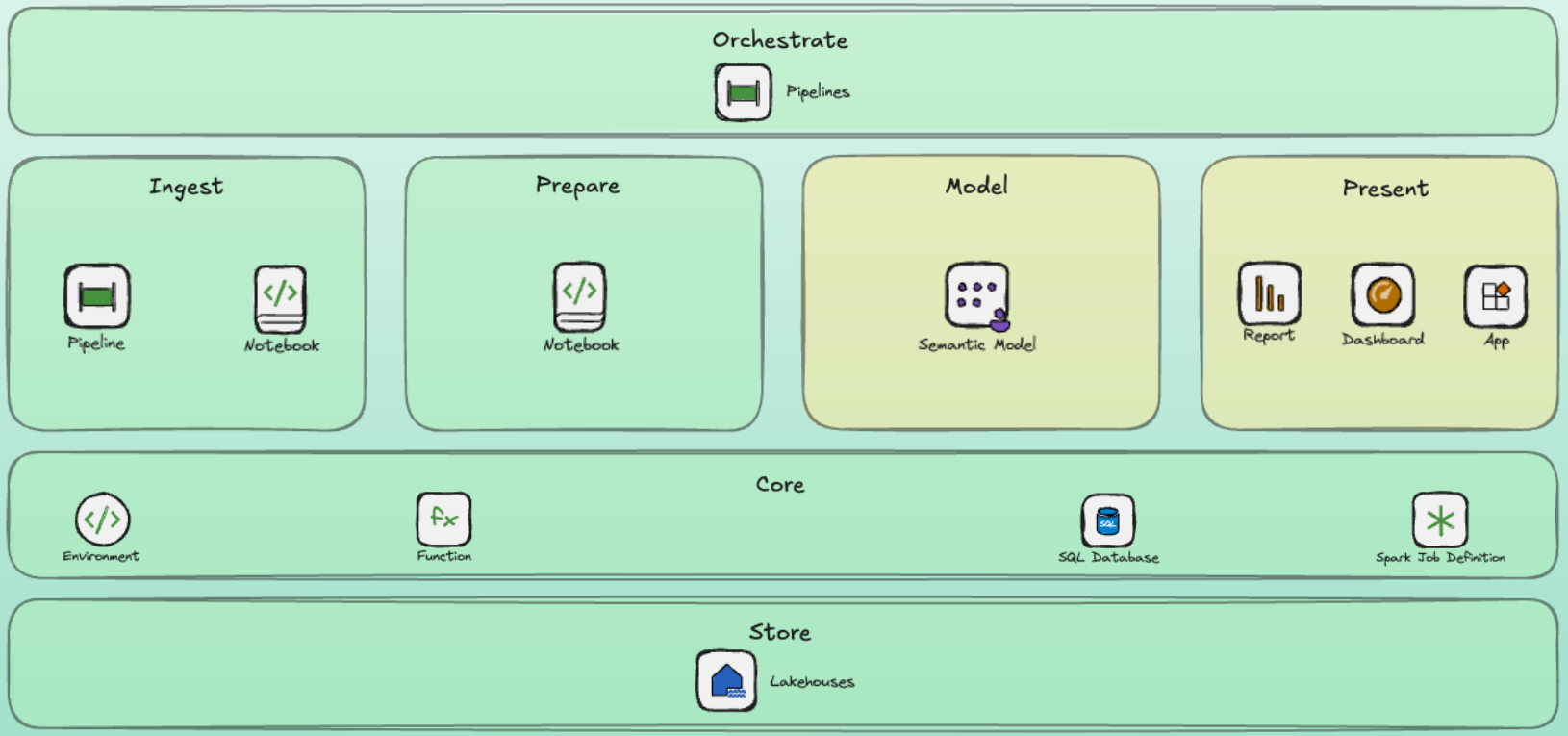


# Workspaces, repos and environments

# Reference Architecture - Enterprise



# Fabric Workspace structure




x3

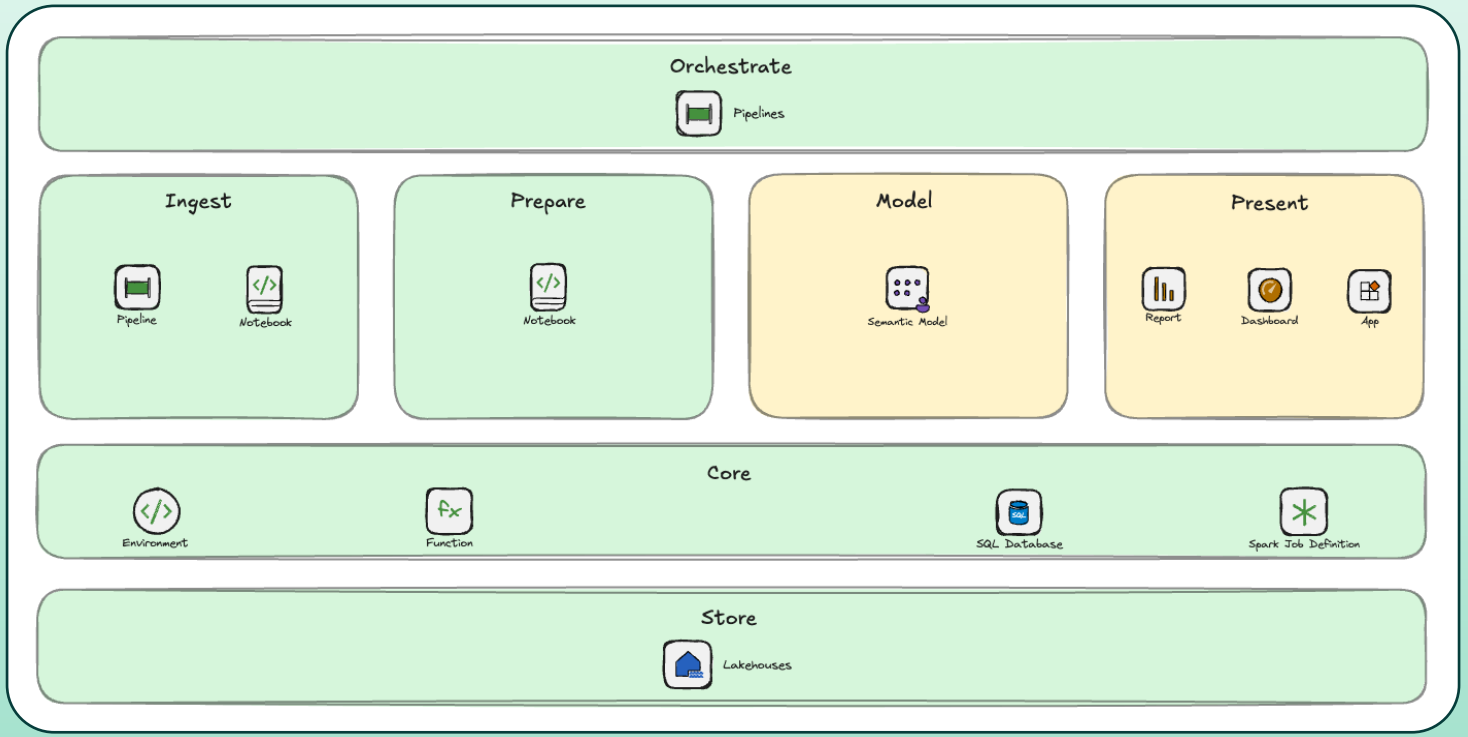
[dev, tst, prd]

Fabric workloads

Power BI workloads

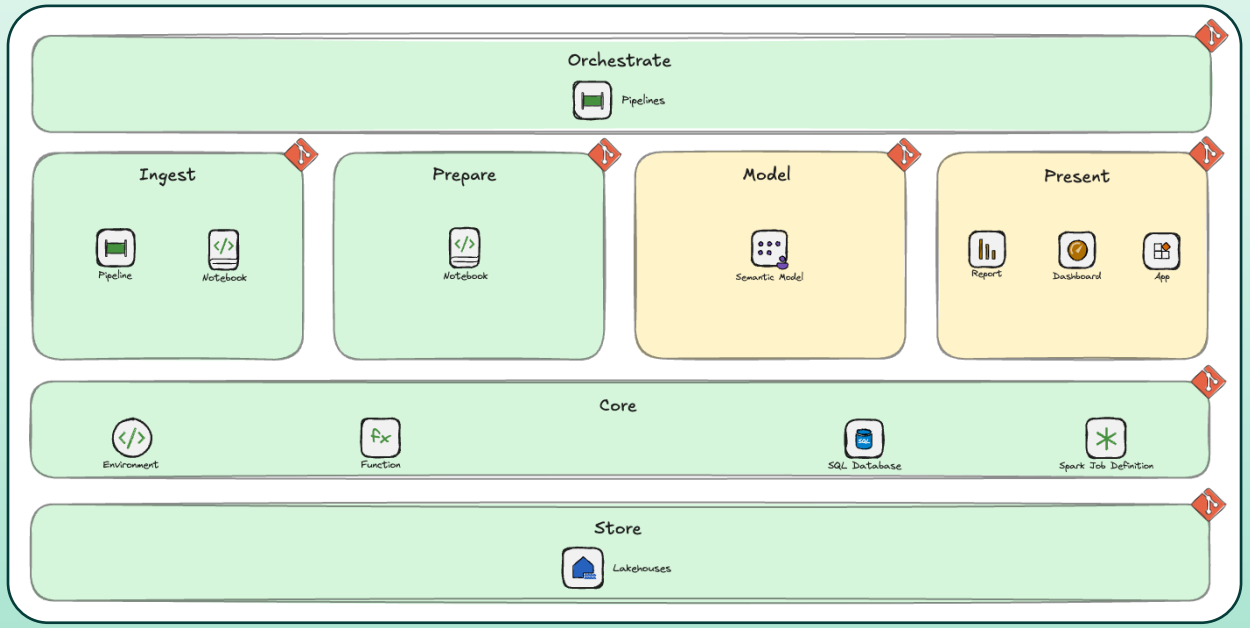
# Fabric Workspace structure

- Security and Access
- Separation of duties
- Network & connectivity
- Capacity isolation
- Governance & compliance
- Testing & Deployment
- Item organization
- Git integration and CI/CD



# My go-to for Microsoft Fabric Git Setup

- Organize your workspaces by layer
- Use a clear naming conventions
- Use the Git provider of your choice
- Branching strategy depends…
- Setup Git integration on selected workspaces in development
- Use a mono repo approach



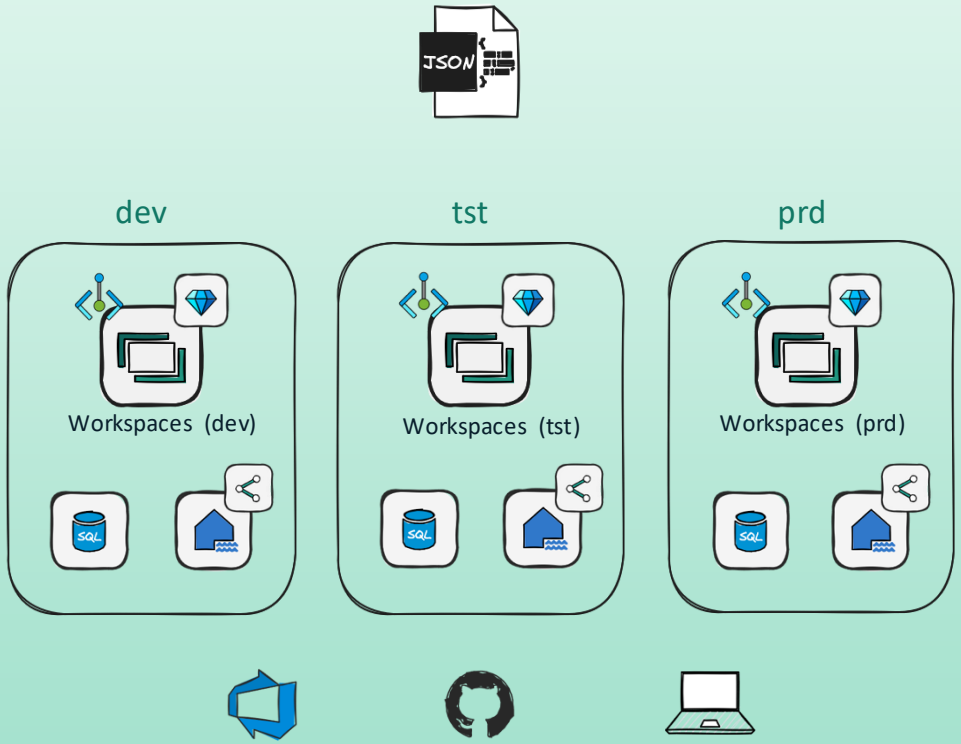
# My go-to for Microsoft Fabric Git Setup

Git Repo structure

.azure-pipelines
.github
automation
documentation
solution
/core
/ingest
/model
/orchestrate
/prepare
/present
/store

# Automating Fabric solution setup

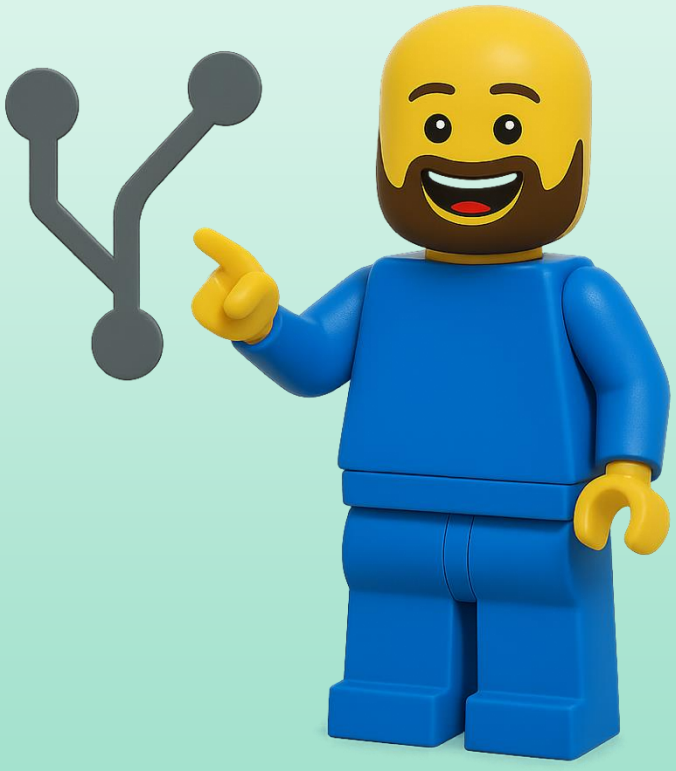
- Recipe based solution (json)
- Utilizes Python and the Fabric CLI
- Can run from Azure DevOps, GitHub or from any client machine running python
- Minimum requirements:
  - A Service Principal
  - A Fabric Capacity




Github Download source code: https://github.com/gronnerup/FabricOps

# Show time!

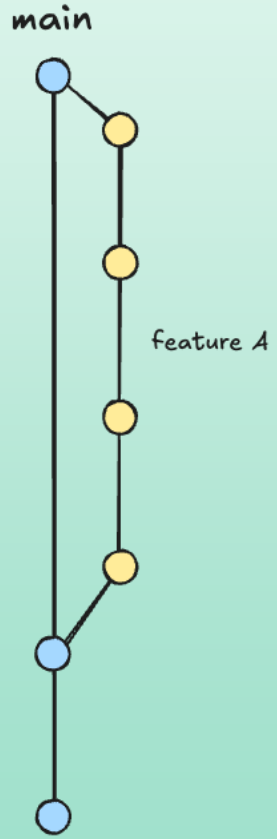
# Branching for real-world collaboration



# Branching for real-world collaboration

**Branching Isn’t Just Git Hygiene - It’s a Collaboration Strategy!**

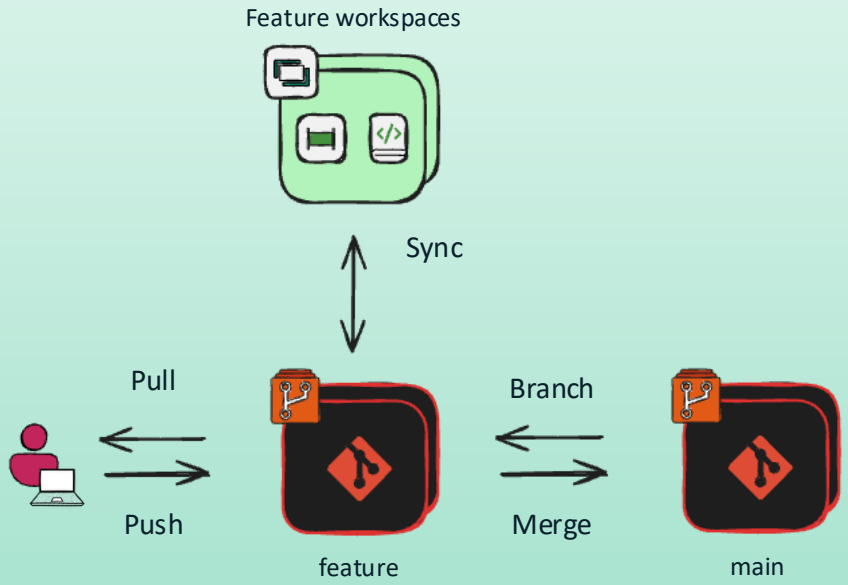
- Git is the source of truth, and branching is how we manage change
- Branches gives developers a seperate workspace for their code and…
  - Isolates development
  - Protects the mainline of our code
  - Enables parallel development
  - Help organize and structure releases
  - Is crucial for streamlined collaboration
  - Enables experiments



# Development process – Ways-of-working

**Development flow - Supported by automation!**

1. Create branch from main
2. Develop
3. Create PR
4. Merge feature to main
5. Delete feature branch and workspaces




https://learn.microsoft.com/en-us/fabric/cicd/best-practices-cicd

https://peerinsights.emono.dk/automating-feature-workspace-maintainance-in-microsoft-fabric

https://justb.dk/blog/2025/02/fabric-spark-notebooks-and-cu-consumption/

# Demo time!

# Automating deployment

# Release process – The main options…

## Fabric Deployment pipelines

- No code experience
- For simpler solutions
- No support for *:
  - Pre-deployment opr.
  - Post-deployment opr.
  - Test & validation

## Git based deployment

- Suitable when using Gitflow
- Each environment connected to git branch
- No need for building environments
- Might require post-deployment operations

## Git based deployment using build environment

- Supports building enviroments
- Deployment through ADO Pipelines/Github actions
- Supports manipulation of item definitions

# CI/CD Building Blocks for Microsoft Fabric

### Tools & automation options

- Azure DevOps Pipelines
- Github actions
- Python scripts & wrappers
- Fabric CLI wrappers

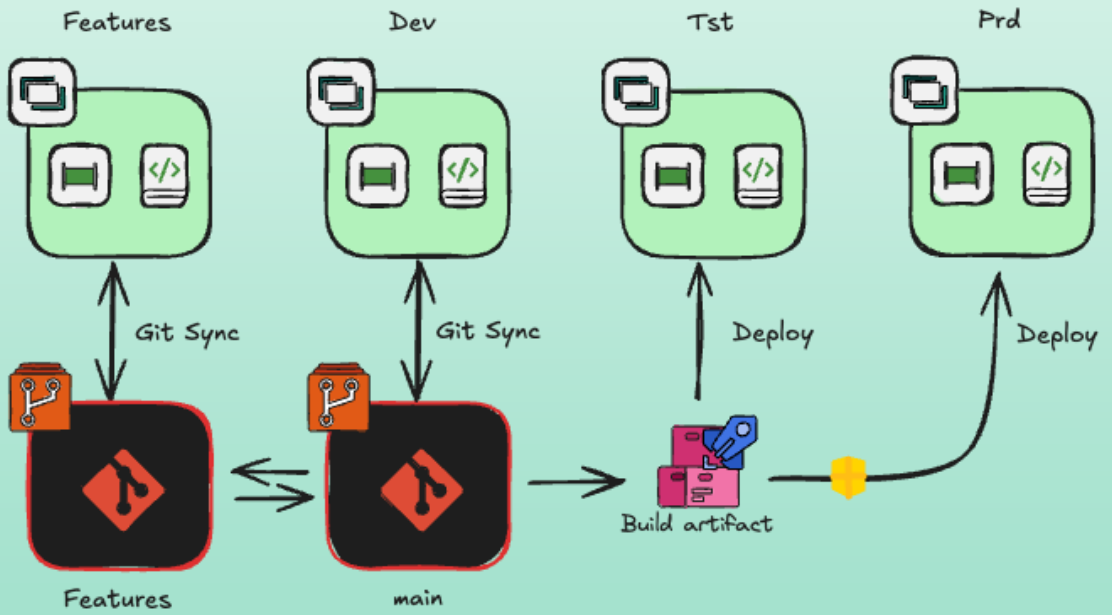
### fabric-cicd Python Library

- Developer friendly
  - Code-first approach
  - No need to call Fabric APIs directly
- Environment supports
  - Parameterization
  - Reusable for locale, DevOps and more…
- Smart deployment
  - Deploy all supported items (with public APIs)
  - Auto-unpublish orphaned artifacts

# Release process - 3 selected options

## Option 1

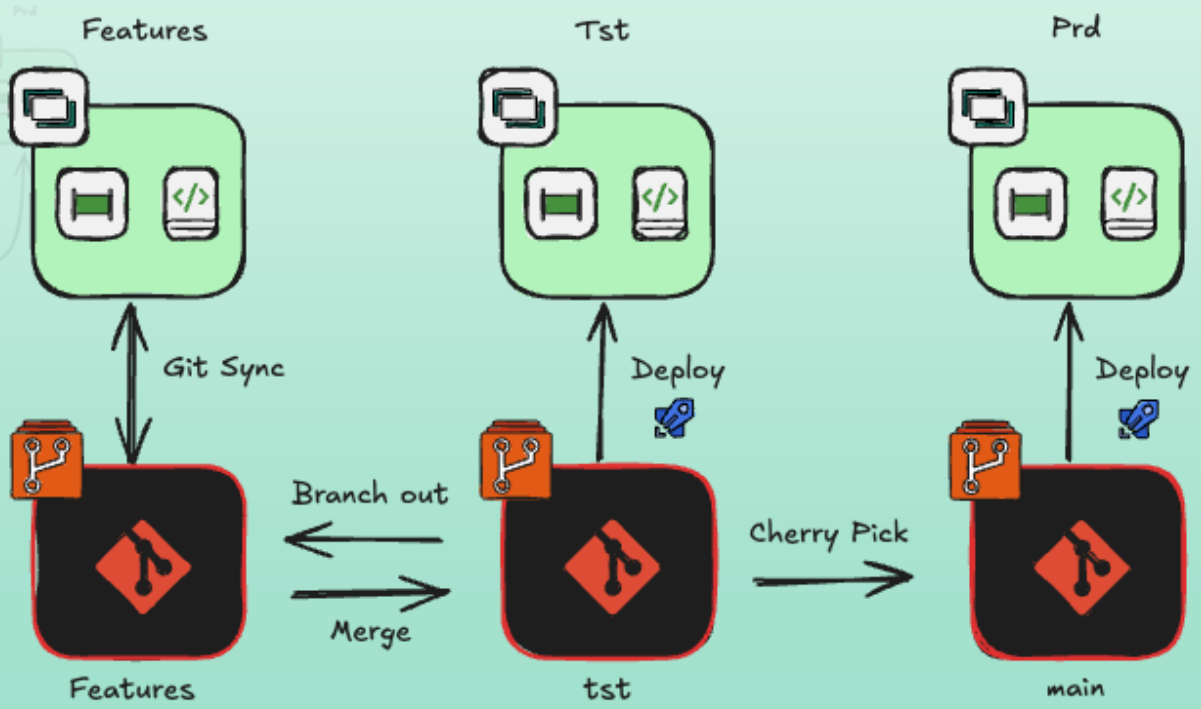
Dev = Main



# Release process - 3 selected options

## Option 2

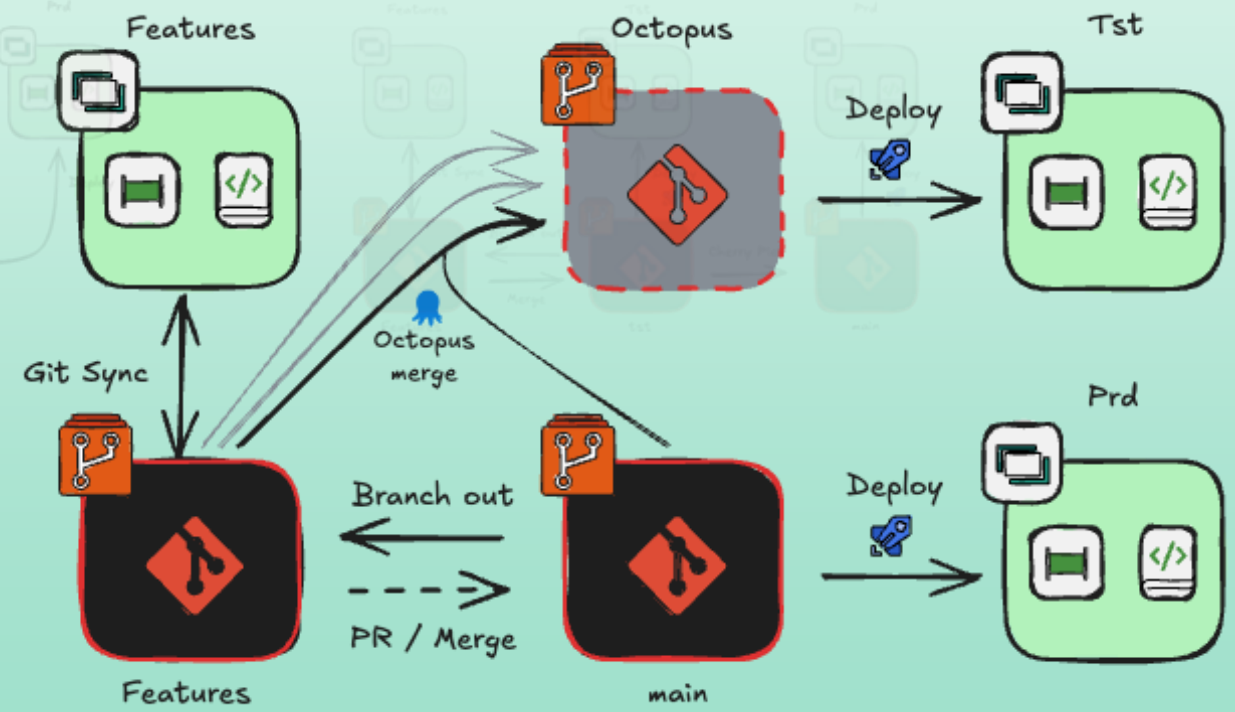
PR to test – Cherry pick to main



# Release process - 3 selected options

## Option 3

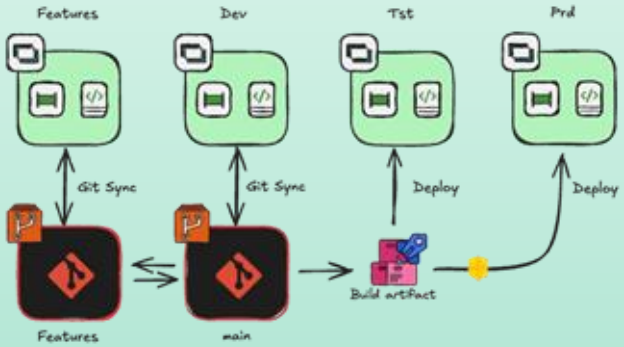
Octopus deploy



# Release process - 3 selected options

## Option 1

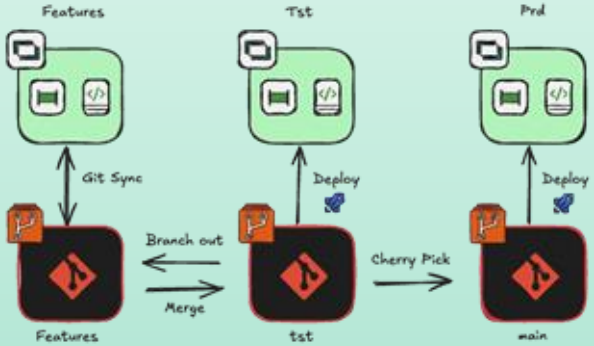
Dev = Main




- Smaller and more simple solitions
- Small teams
- No or very low interdependency between features

## Option 2

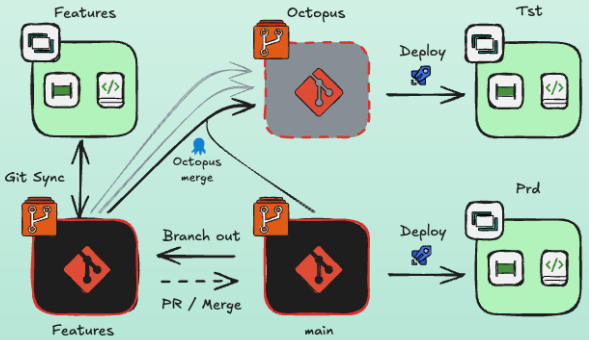
PR to test – Cherry pick to main




- Medium to large solutions
- High-risk changes
- Supports per-feature validation
- Supports incremental and selective testing and deployment

## Option 3

Octopus deploy




- Large teams
- Many parallel features
- Interdependent changes
- High-risk changes
- Support validation and test

# Demo time!

# Tips, Tricks & Summing up

# Tips, Tricks & Summing Up!

- Split your workloads and layers across multiple workspace
- Use mono-repo structure as a starting point
- Give thoughts to how to integrate workspaces with Git - Everything is not enterprise
- Leverage the Fabric CLI, REST APIs, and/or Terraform for automation
- Use the fabric-cicd Python library to deploy Fabric items
- Design everything with automation in mind
  - Invest in dynamic pipelines, notebooks and reusable patterns
  - Apply strict and consistent naming conventions
- Implement a metadata-driven framework for scalability robustness and speed
- Stay curious - Get inspired by what others build!

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# TIME FOR QUESTIONS!

## BEFORE CONNECTION IS TERMINATED BY PEER...

# Share **your thoughts** and help our speakers!

**fabfeb.app/feedback**

# Thank you!