DevOps Strategies for Power BI

Dhyanendra Singh Rathore

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Dhyanendra Singh Rathore

Power BI Tech Lead @ Autoliv

- ✓ **Stockholm, Sweden**
- ✓ **Tech Blogger & Speaker**
- ✓ **Automation & Optimization**

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Agenda

- DevOps Overview
- CI strategies
- CD strategies
- Comparing CI/CD strategies
- Finding a CI/CD strategy for your team
- Q & A

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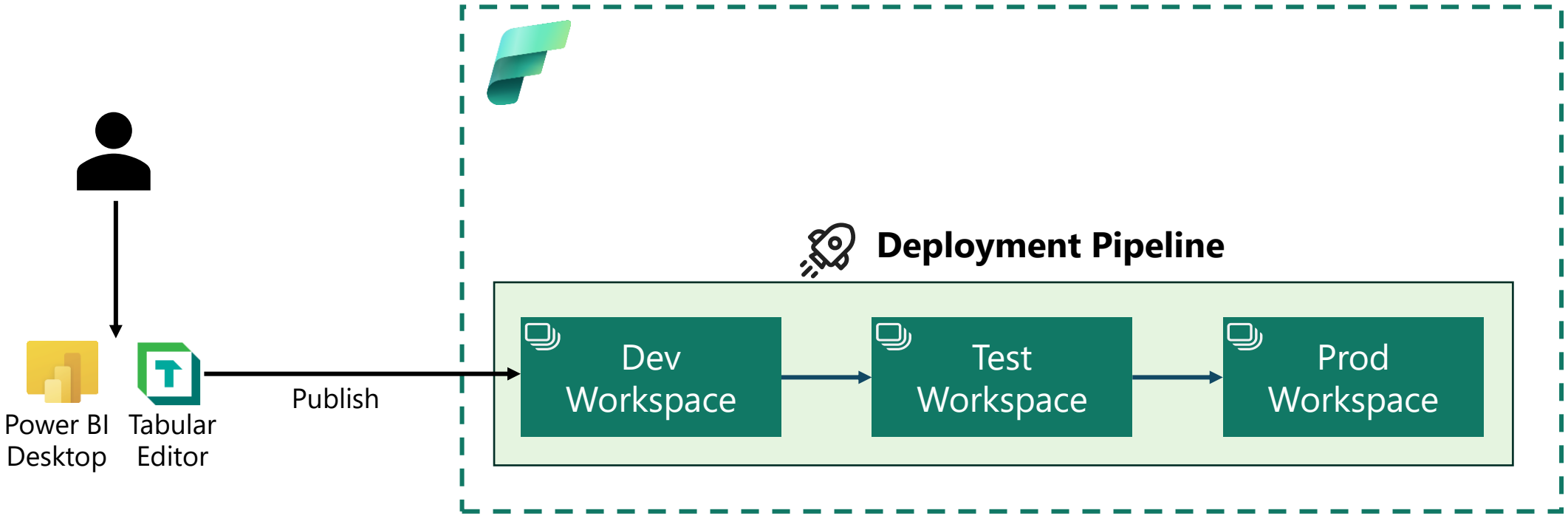
Traditional Power BI Workflow

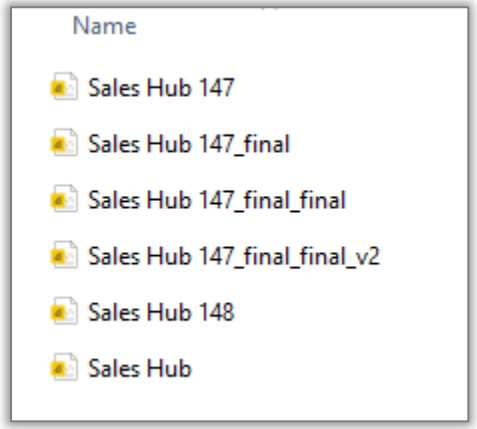


Challenges

Change history

Parallel development

Solution



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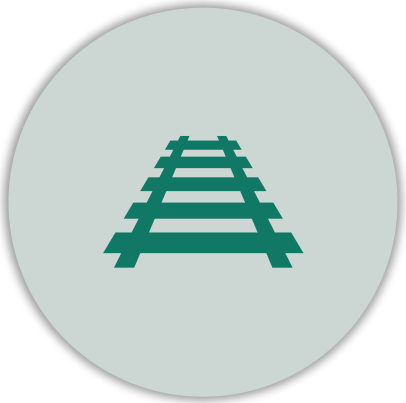
Why DevOps?

Change history



Parallel development

Automated quality checks

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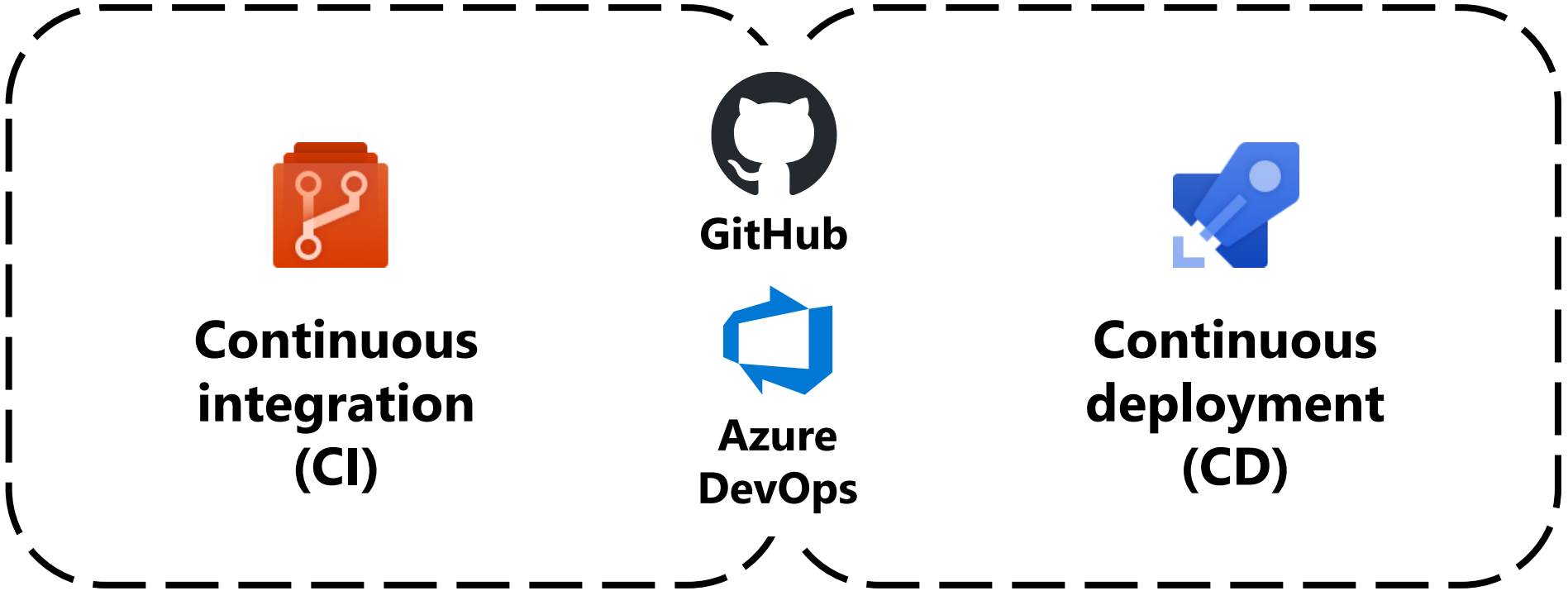
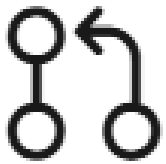
DevOps – CI/CD

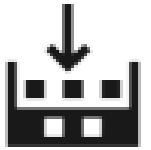

Continuous integration (CI)
GitHub
Azure DevOps
Continuous deployment (CD)

DevOps – Relevant Terms

Branches



Pull Requests (PR)

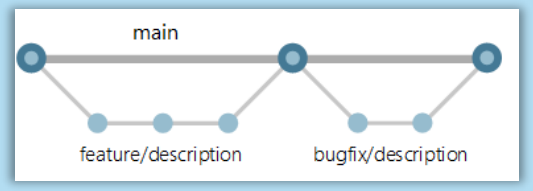


Pipelines: build & release

Branching Strategy – Ground Rules

Use feature branches for your work

- Use feature branches for new features and bug fixes
- Use a naming convention for feature branches

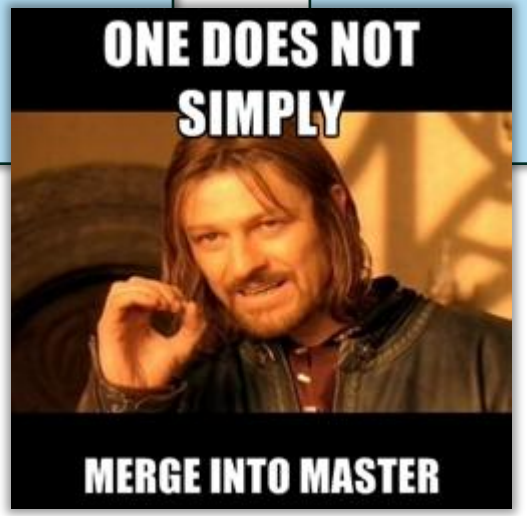


Review and merge code with pull requests

- Avoid merging branches to the main branch without a pull request
- 2 reviewers is an optimal number
- Share reviewer responsibilities across the team

Keep a high quality, up-to-date main branch

- Automatically add reviewers when a pull request is created
- Setup automatic best practice evaluation and other quality checks with build pipelines



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Prerequisites

Power BI/Fabric

- ✓ Power BI Pro license
- ✓ Power BI Premium
  OR
- ✓ Fabric Capacity
- ✓ Workspace Admin

Azure DevOps

- ✓ Access or rights to a create repository
- ✓ Rights to create build & release pipelines

Admin Portal: Tenant settings

- ✓ Users can synchronize workspace items with their Git repositories

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Disclaimer

Git support in preview

- ✓ Paginated reports
- ✓ Reports connected to Power BI models
- ✓ Semantic models

Git not supported

- ✓ Reports connected to AAS and SSAS models
- ✓ Push datasets
- ✓ Semantic models connected to AS
- ✓ Dataflows Gen1

Power BI features In preview

- ✓ Power BI Projects – PBIP Legacy, PBIR
- ✓ TMDL view in Power BI Desktop

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Continuous Integration (CI)

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Defining a CI Strategy

Development tools

Isolated development environments

Review & quality checks

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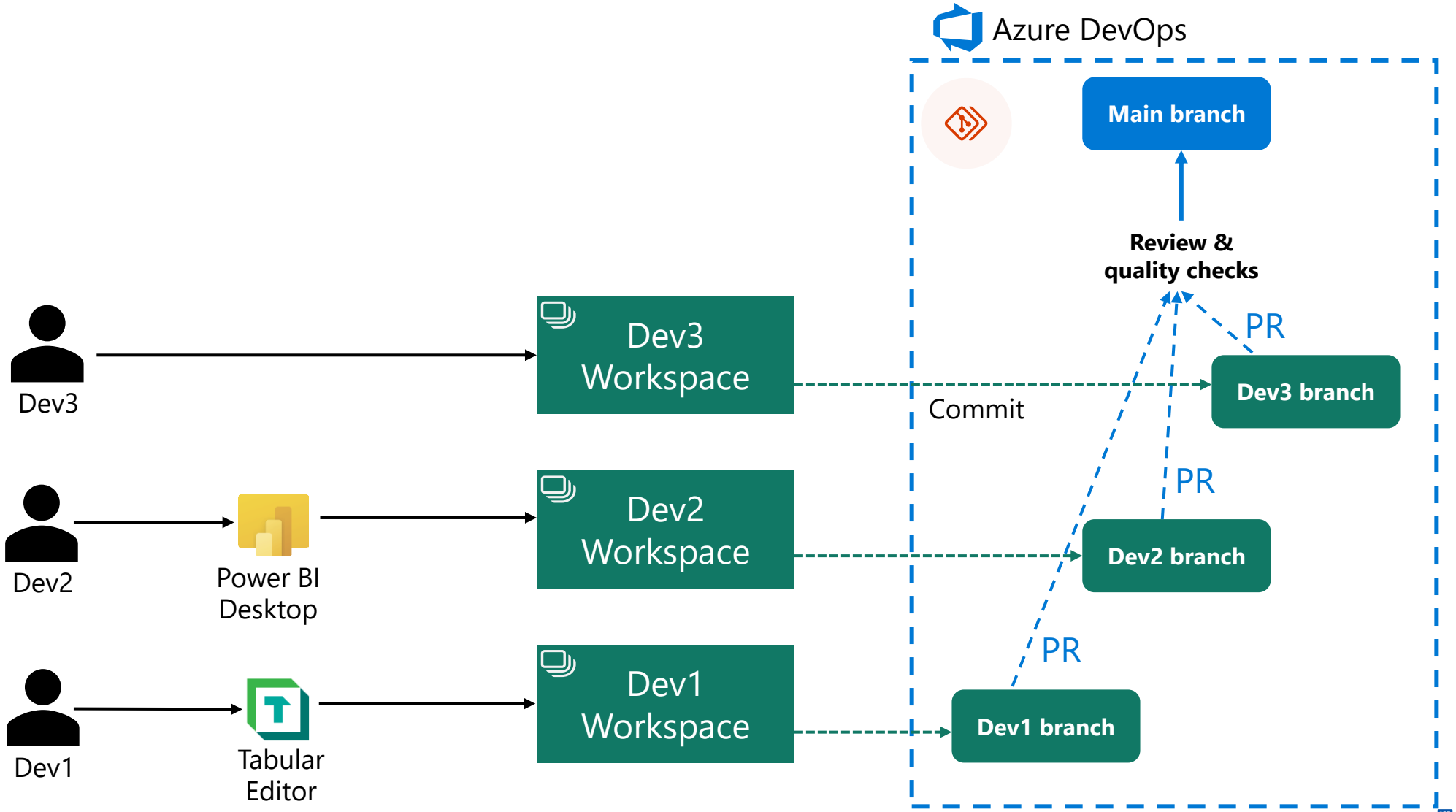
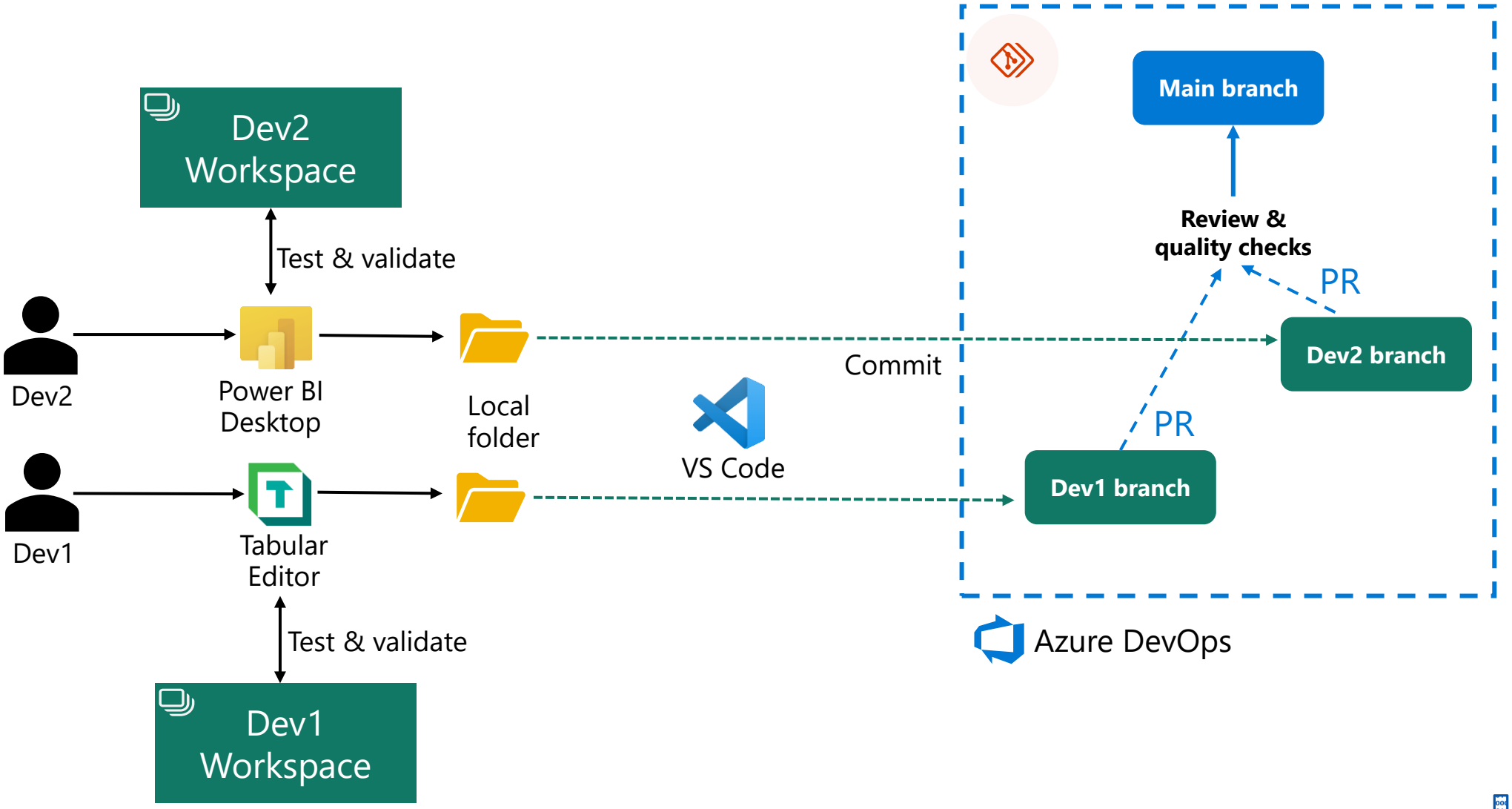
CI Strategy – Using Workspace



CI Strategy – Using Client Tools



CI Strategies – Comparison

	Using Workspace	Using Client Tools
Learning Curve	Low	High
Additional Tools	No	Yes (Git, VS Code with extensions)
Cherry picking	No	Yes
Merge conflict resolution	Limited	Flexible
Operational features	Limited • can't create pull requests • can't visualize change history	Extended
Supported Power BI file types	PBIX, PBIP (TMSL, TMDL)*	PBIP (TMSL, TMDL)* only
Supported file types	Fabric only	All

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Continuous Deployment (CD)

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Defining a CD Strategy

Feature parity across environments

Custom changes during deployments

Complexity

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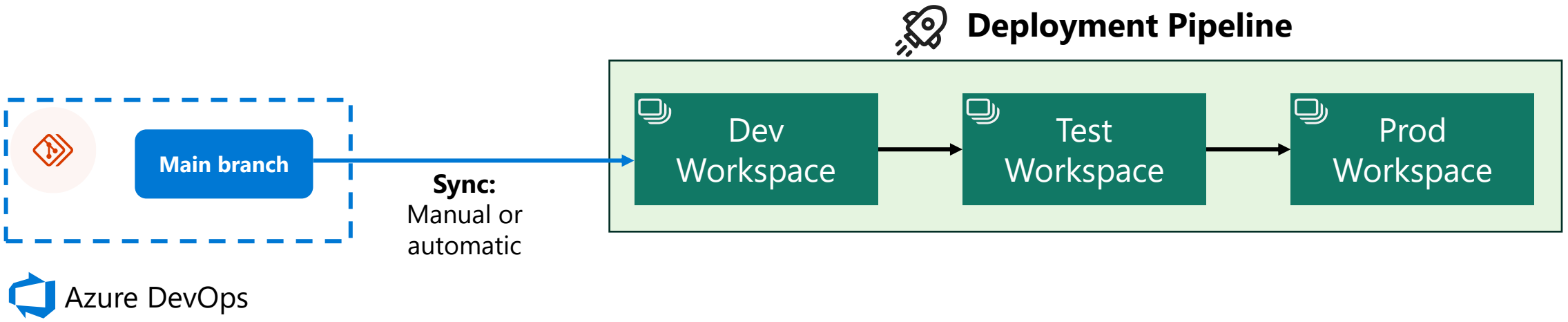
CD Strategy – Fabric Deployment Pipelines



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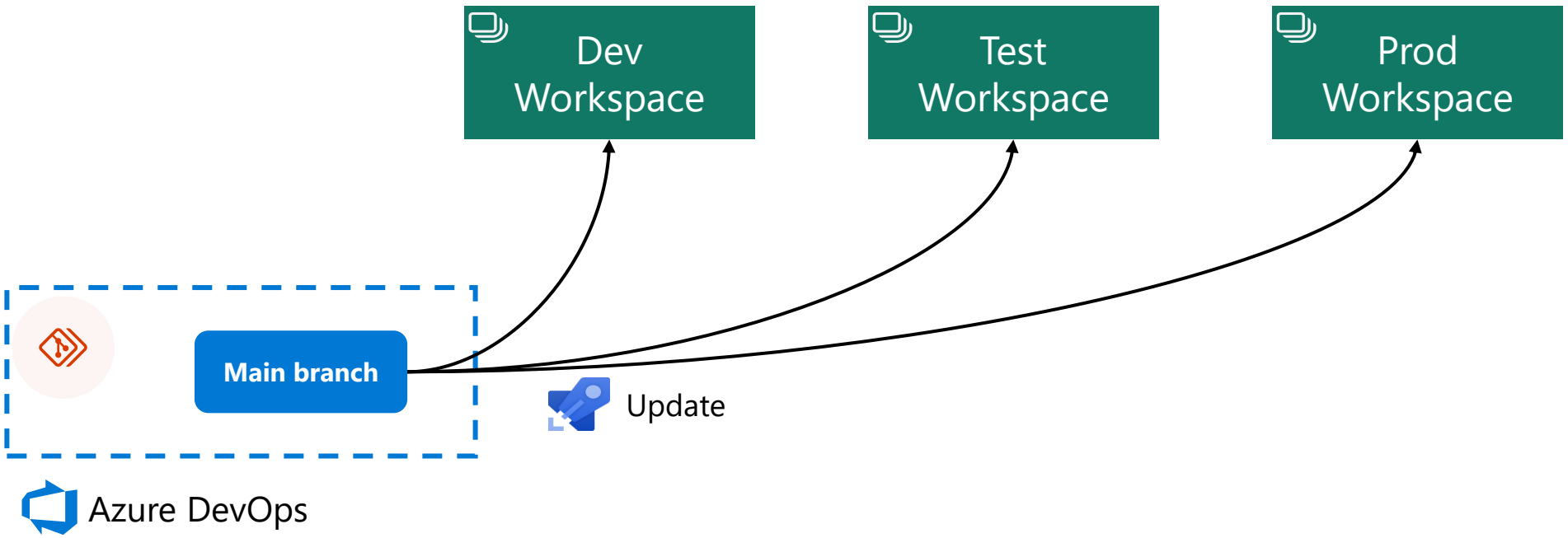
CD Strategy – Git based Single Main Branch



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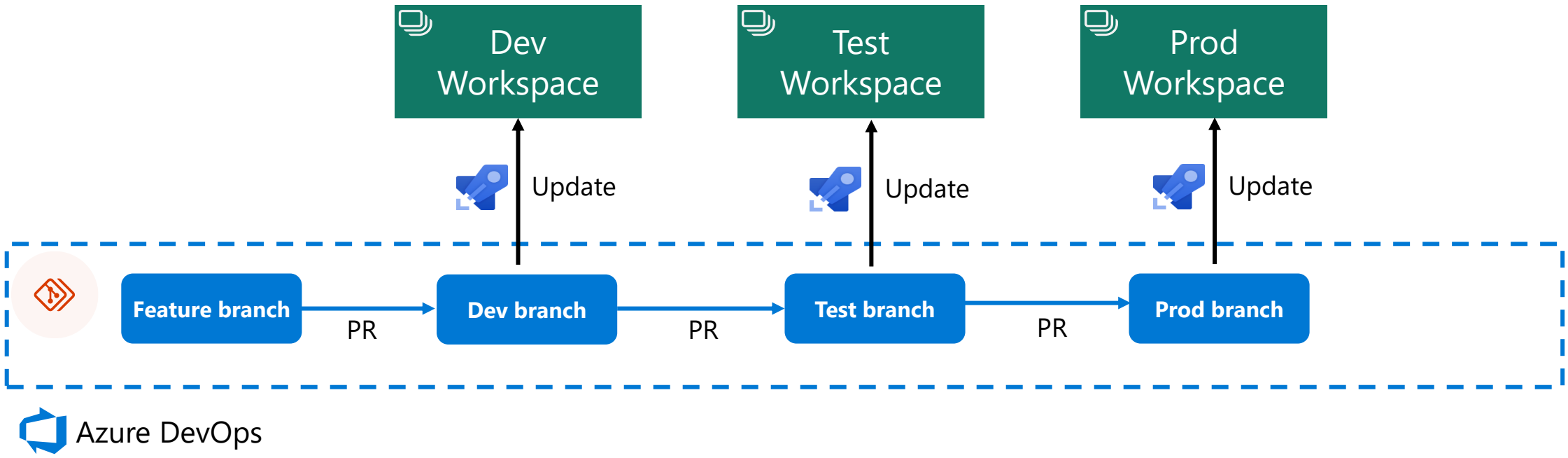
CD Strategy – Git based Multiple Main Branches



CD Strategies – Comparison

	Fabric Deployment Pipelines	Git – Single Main Branches	Git – Multiple Main Branches
Learning Curve	Low	High	Highest
Setup	Simple	Complex	Complex
Complexity	Low	High	Highest
Maintenance	Low	High	Highest
Cherry picking features	No	No	Yes
Custom changes during deployments	No	Yes	Yes
Automation	Low	High	High

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Defining a CI/CD strategy for your team

Development tools required

Training and learning curve

Setup and maintenance complexity

Power BI only or Fabric items

Flexibility and automation capabilities

Combine & evaluate various CI/CD strategies

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Recommendations & Best Practices

- Connect dev workspace to Git and use deployment pipelines
- Use client tools for items that support it
- Developer should work in isolated environments
- Enforce reviews and automated quality checks
- Merging non-working code on the main branch should be unacceptable
- Set up branch naming conventions
- Provide detailed commit messages

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Questions?

Takeaways

Train and promote DevOps in your teams

Automate quality checks

Combine and evaluate different CI/CD strategies

Thank You!!

Dhyanendra Singh Rathore

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Resources

- Git with VS Code