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2022

Transforming to DevOps, CJ/CD: Continuous Journey Continuous Disaster?

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I like to read, experiment, talk and write about software and the software development process.

The fun I experience in my job is the combination of people and technology.

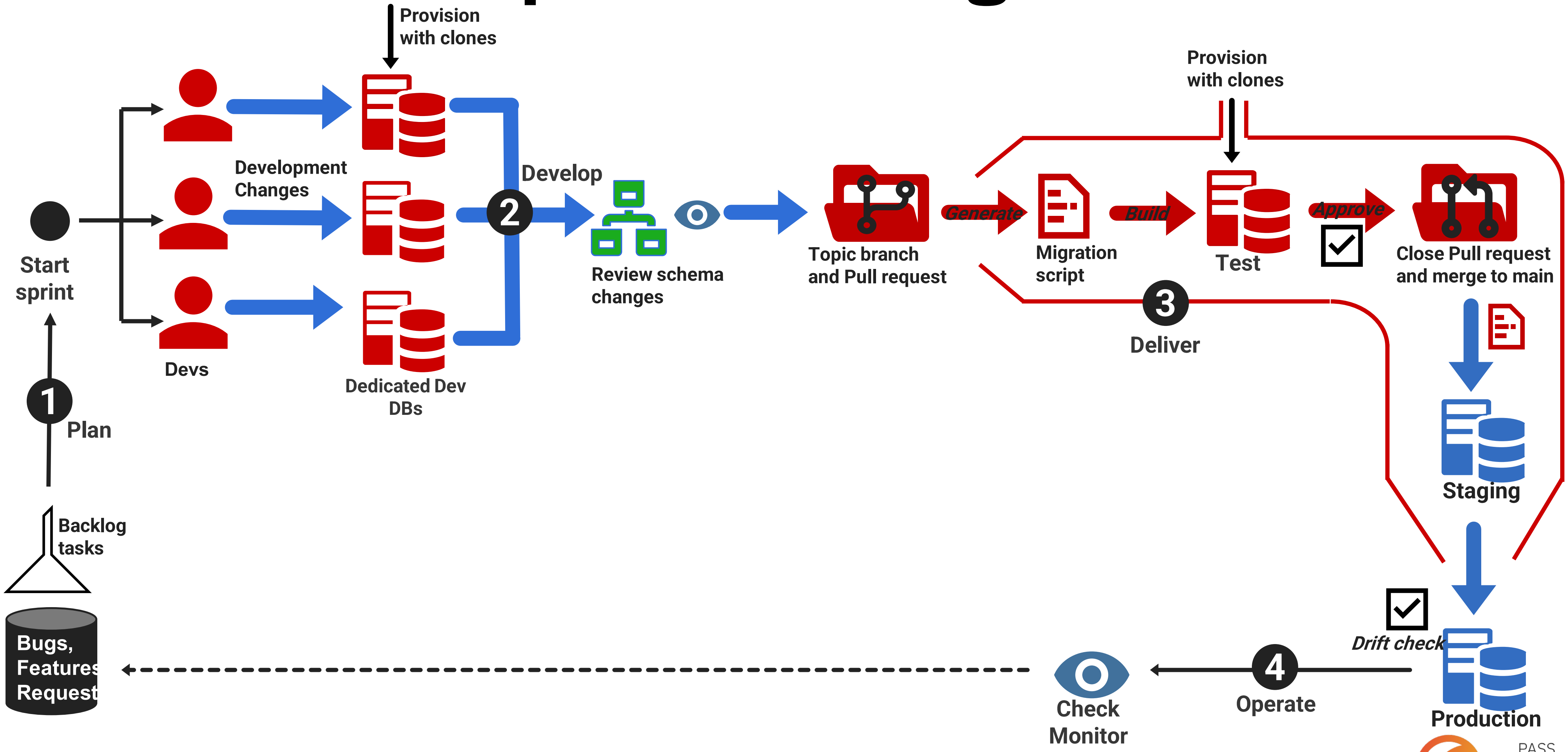
Focus areas in my working life:

- Software development
- (Database) DevOps
- Whisky

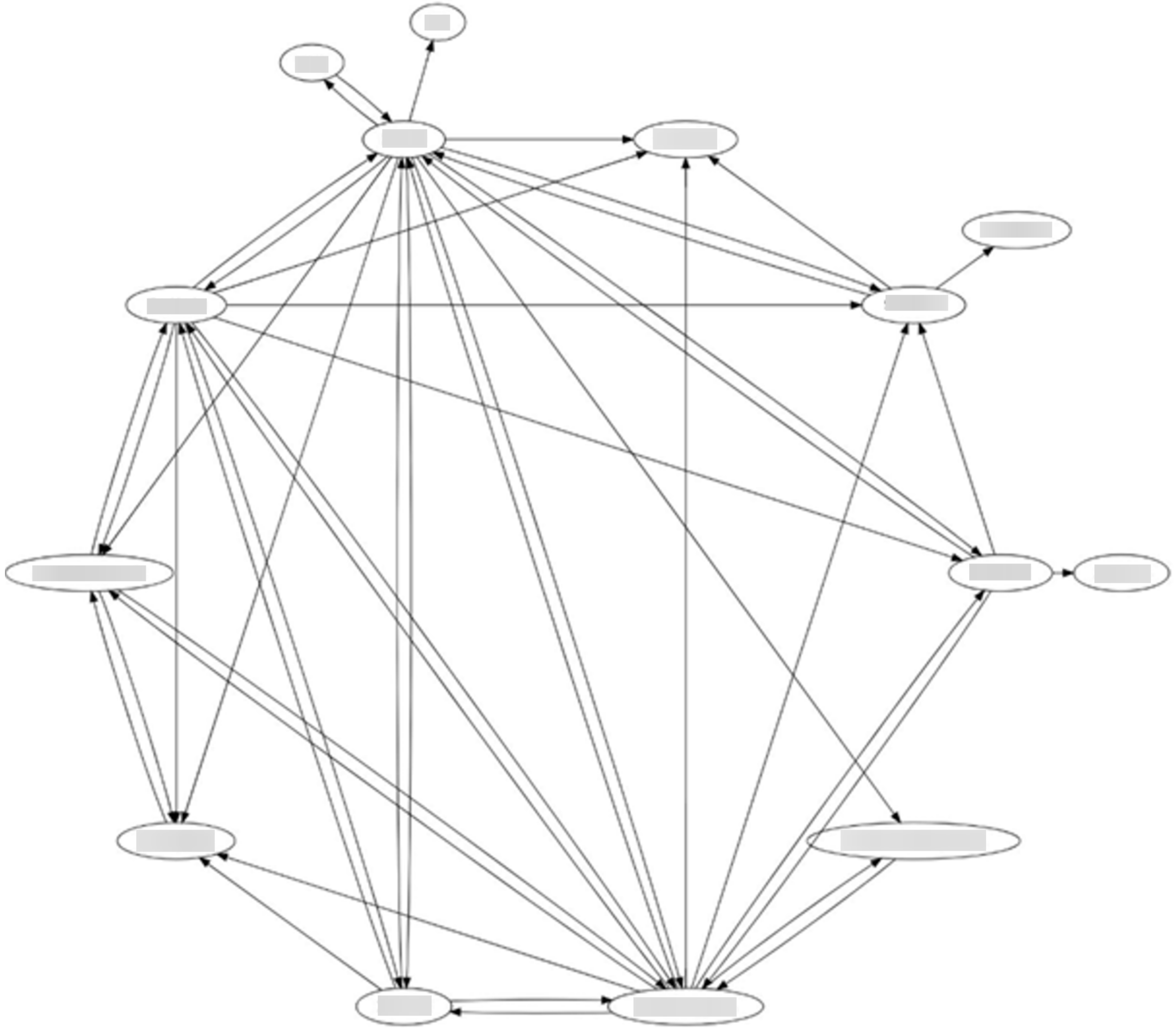
What to expect of todays session

- Transforming to DevOps, CJ/CD?
- The 4 DevOps phases walk through
- Room for discussion & questions

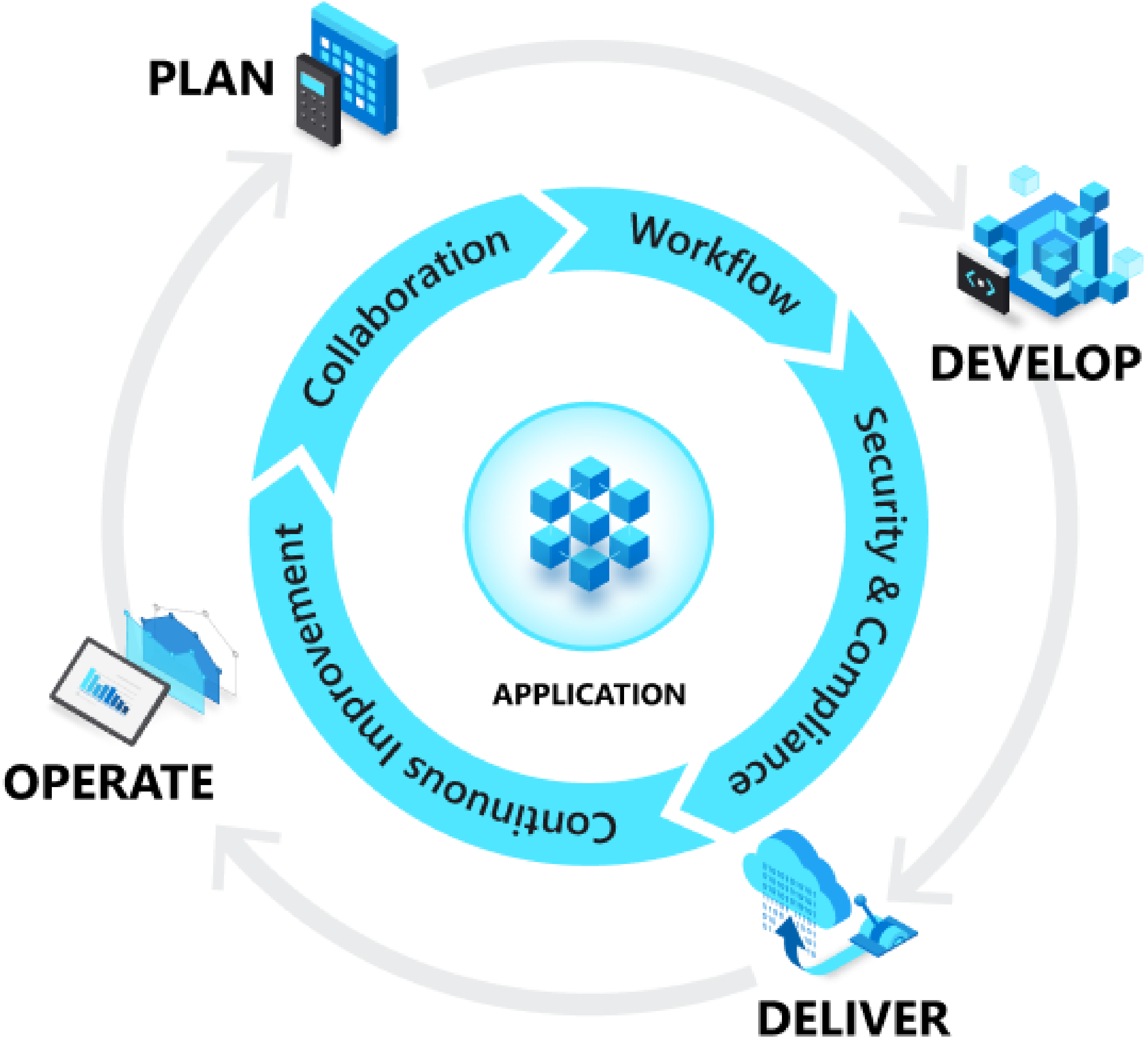
Database DevOps – the end goal



Database Devops – the challenge



DevOps



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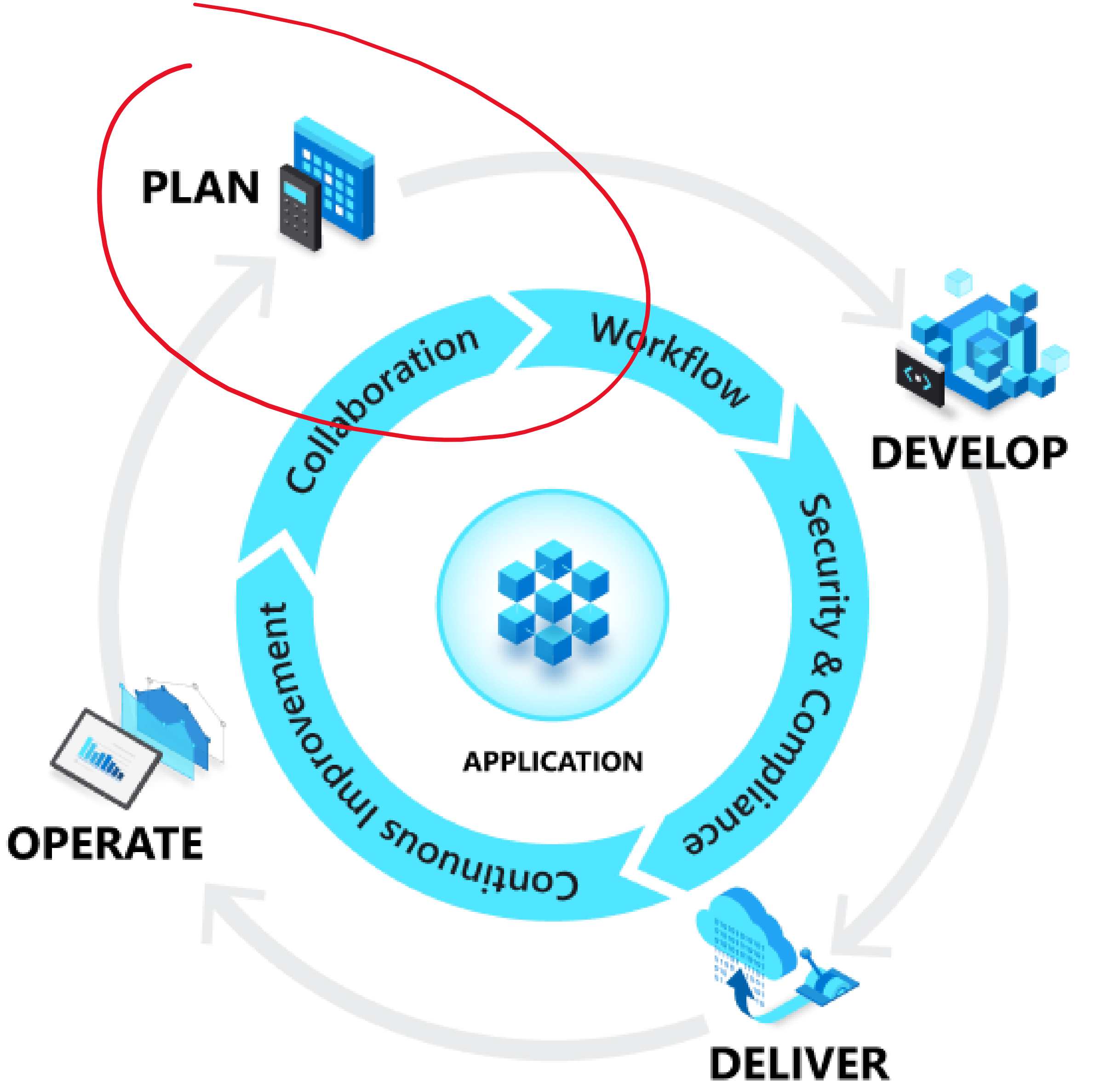
"DevOps is the union of people, process, and products to enable continuous delivery of value to our end users."

- Donovan Brown, Microsoft

DevOps



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Plan DevOps practices

- Create backlogs
- Use Kanban boards
- Visualize progress with dashboards
- Manage Agile software development with Scrum

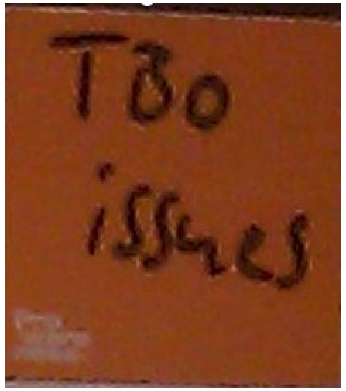
Attempts to plan with boards & sprints

Working in sprints didn’t work

Why?

- Team was too big
- No fixed iteration path

- Little involvement of the stakeholders
- Unrefined backlog items
- No links or integration



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Demo # 1

This time it worked

For 99 sprints in a row (and counting)

- ✓ Team split up per end-customer
- ✓ Focus and involvement of the stakeholder
- ✓ Training in scrum methodology
- ✓ Better integration of tools
- ✓ Mandatory linking development to work

Plan DevOps practices

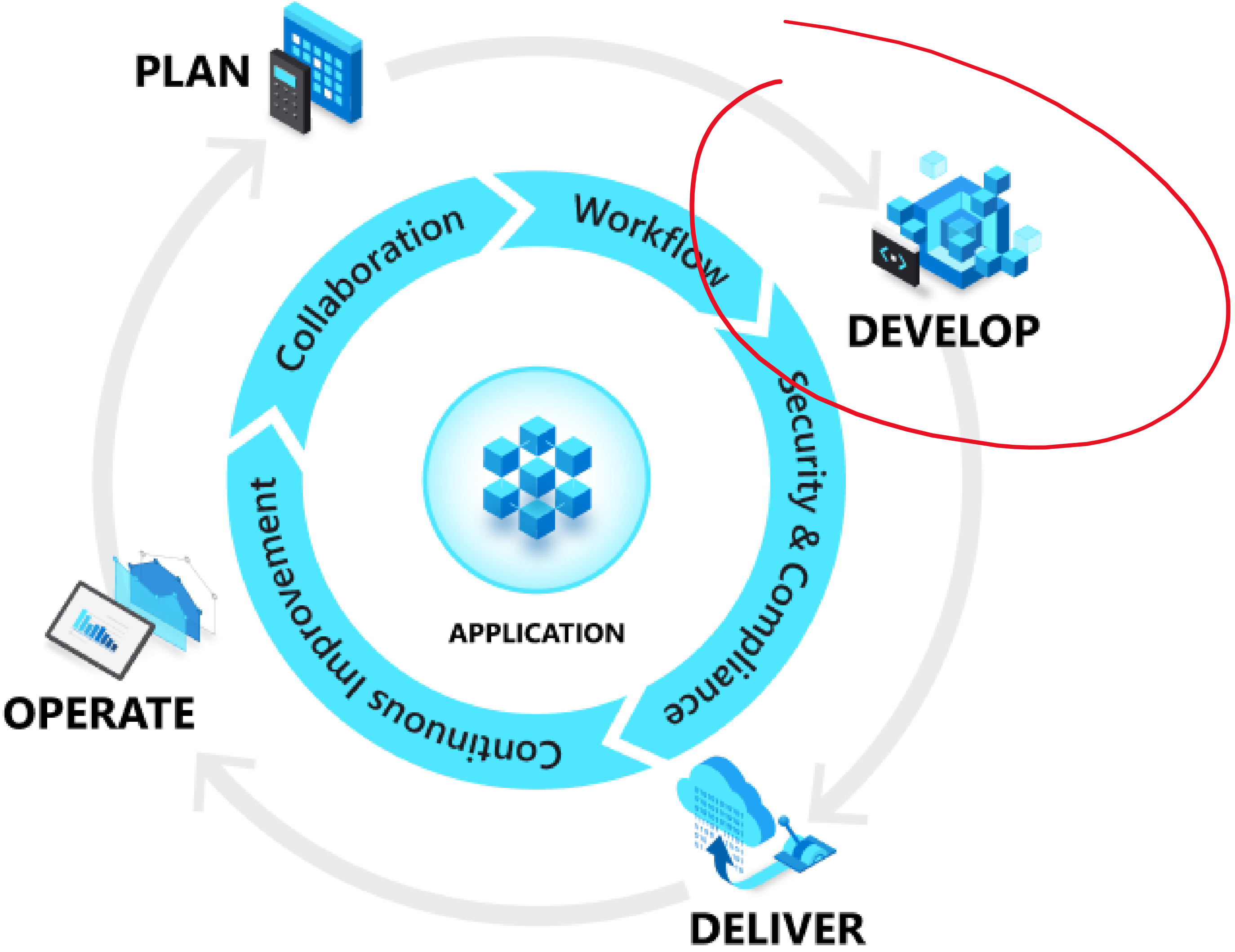
✓ Create backlogs

✓ Use Kanban boards

✓ Visualize progress with dashboards

✓ Manage Agile software development with Scrum

DevOps



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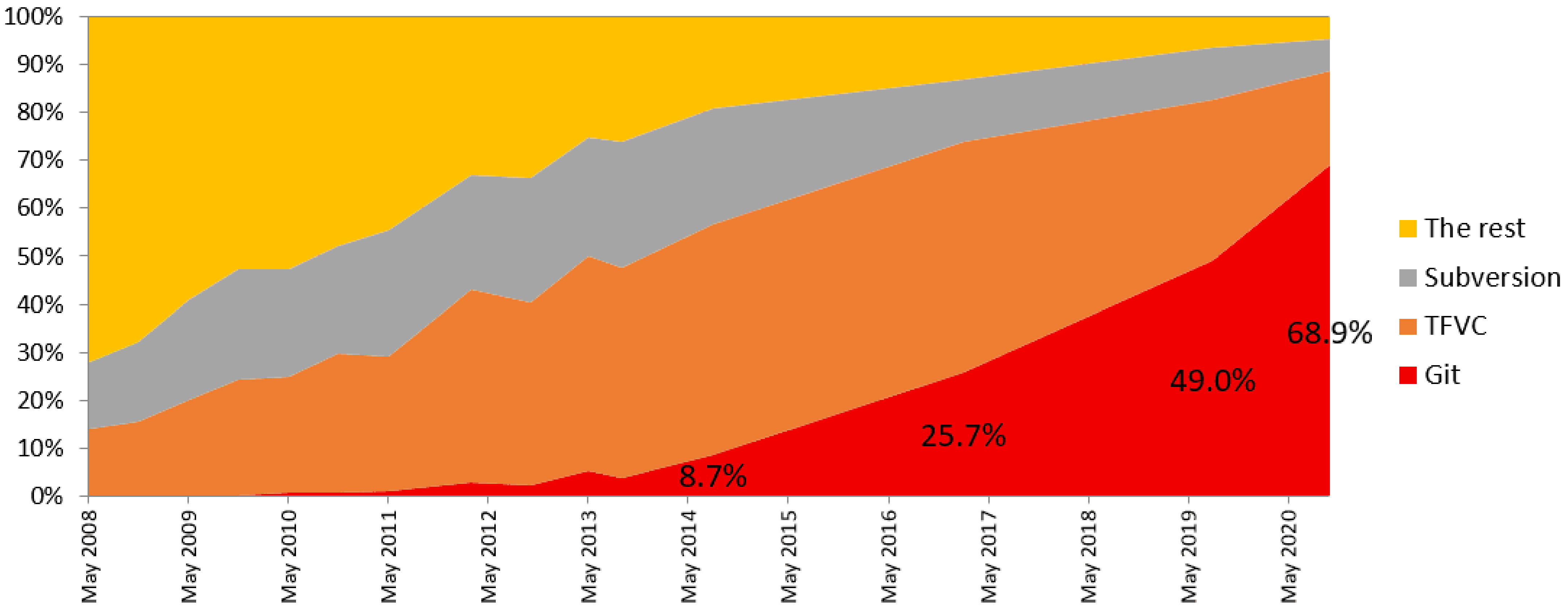
Develop DevOps practices

- Choose a VCS to collaborate and work in parallel
- Automate repetitive tasks
- Turn code into immutable artifacts

SVN and TFVC didn't do the job



Switching to git

- Migrate a VCS
- Adopt a branching strategy
- Create a branch naming convention

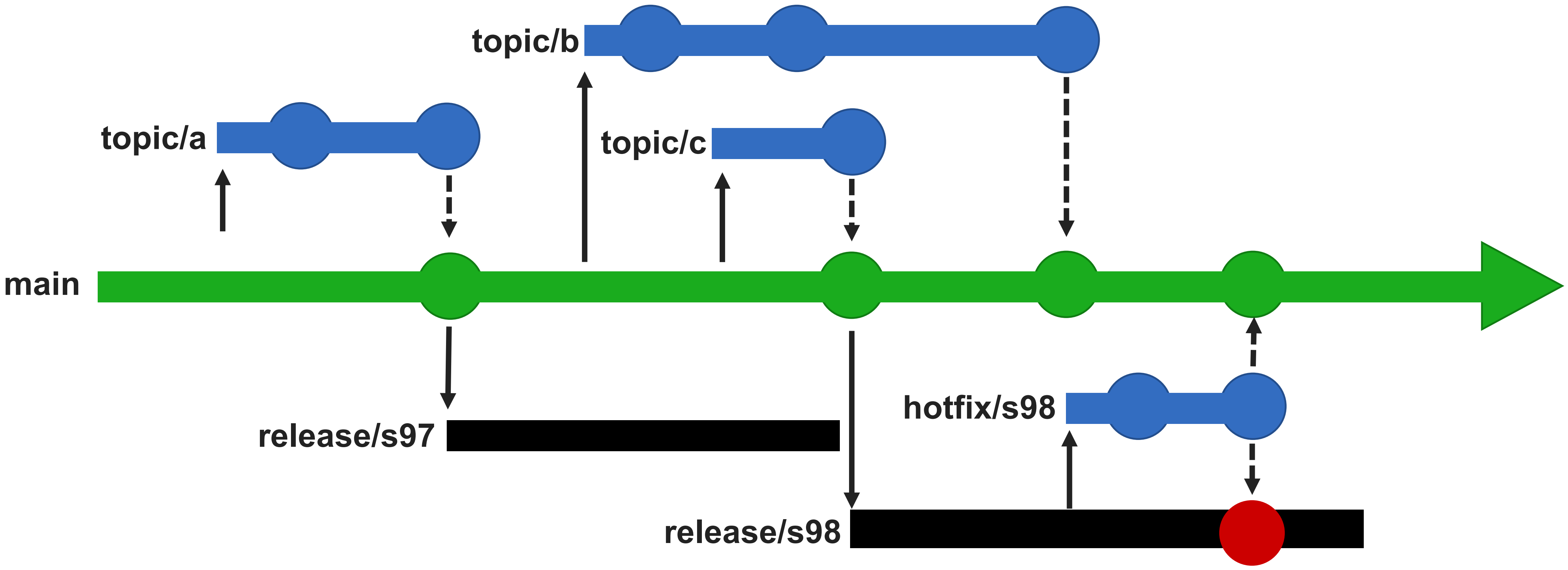
Migrate a VCS

- Functional
  - Split up the big repo per customer / project
  - Separate the components
- Technical
  - SVN → Git → TFVC → Git

Branching strategy

- Release flow
  - Short living topics
  - Main branch always in release state
  - Hotfix the release, cherry pick main

Release flow in action



Create a branch naming convention

Topic / hotfix

<branch category>/<hot fixed release - >bug<TicketId>-PascalCasingDescription

hotfix/s100-mms12220-FireFighting

topic/mms12345-MyDescription

Release branch

<branch category>/<unique identification>

release/s100

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Demo # 2

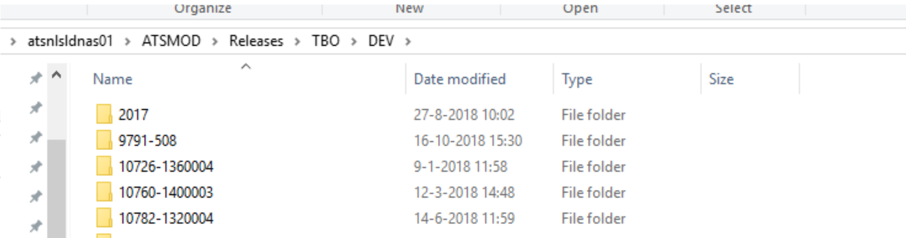
Git compared to SVN / TFVC

- ✓ One repo per solution
- ✓ Parallel work with branching
- ✓ Less time managing version control
- ✓ Always visible what is released

Develop DevOps practices

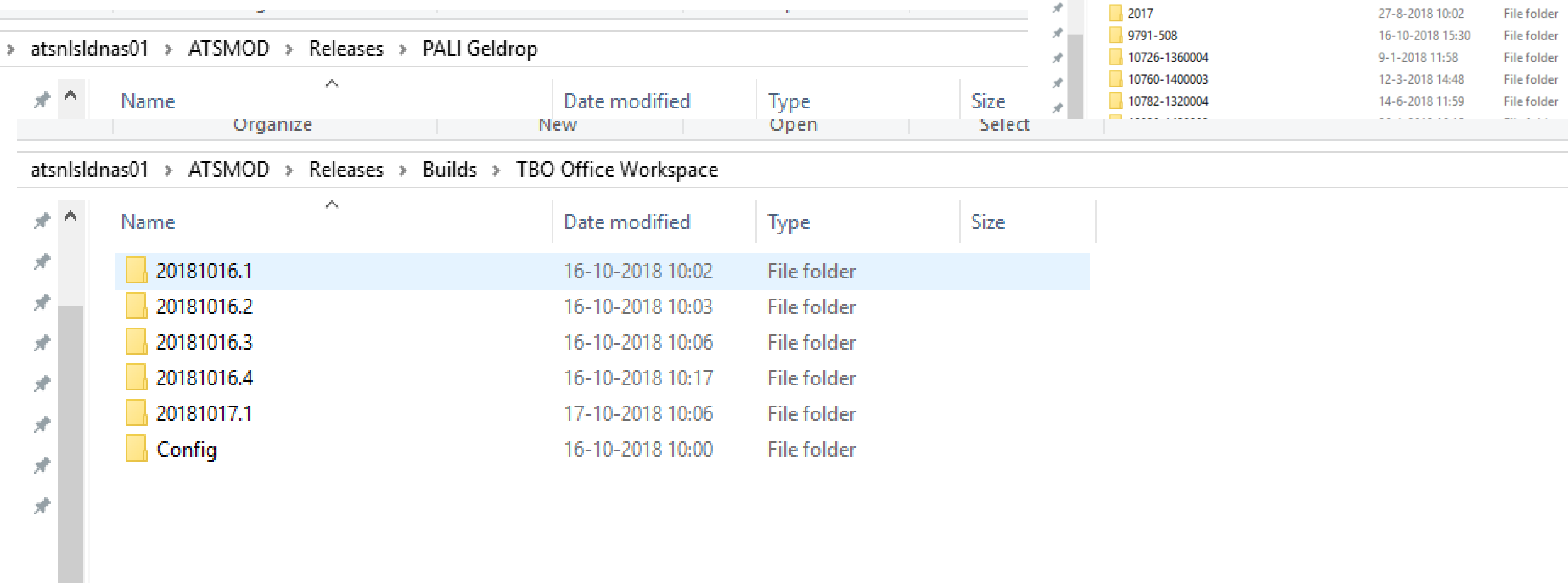
- ✓ Choose a VCS to collaborate and work in parallel
- Automate repetitive tasks
- Turn code into immutable build artifacts

Manual building, a repetitive task



› atsnlsldnas01 › ATSMOD › Releases › TBO › DEV ›

Name	Date modified	Type	Size
2017	27-8-2018 10:02	File folder	
9791-508	16-10-2018 15:30	File folder	
10726-1360004	9-1-2018 11:58	File folder	
10760-1400003	12-3-2018 14:48	File folder	
10782-1320004	14-6-2018 11:59	File folder	

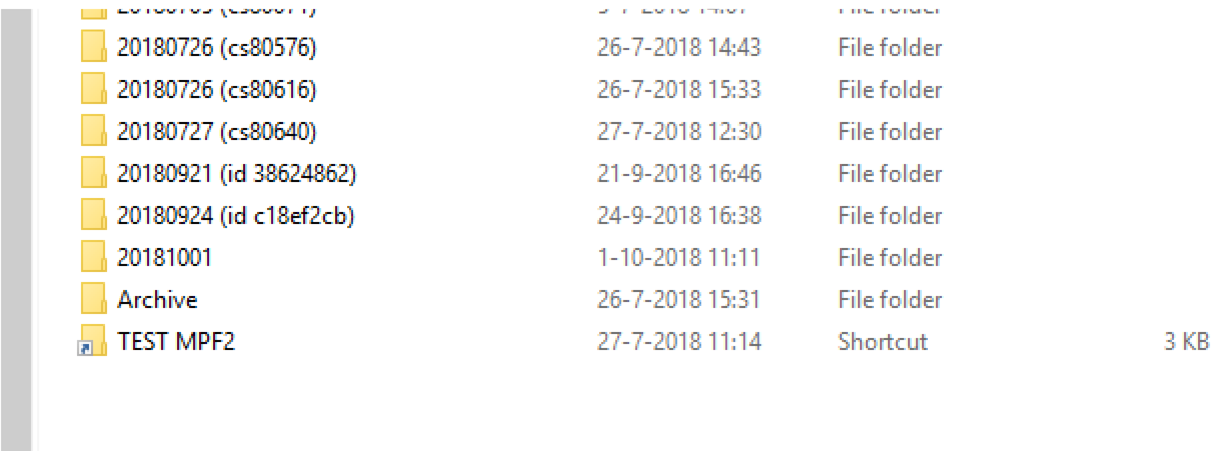


› atsnlsldnas01 › ATSMOD › Releases › PALI Geldrop

Name | Date modified | Type | Size

atsnlsldnas01 › ATSMOD › Releases › Builds › TBO Office Workspace

Name	Date modified	Type	Size
20181016.1	16-10-2018 10:02	File folder	
20181016.2	16-10-2018 10:03	File folder	
20181016.3	16-10-2018 10:06	File folder	
20181016.4	16-10-2018 10:17	File folder	
20181017.1	17-10-2018 10:06	File folder	
Config	16-10-2018 10:00	File folder	



20180726 (cs80576)	26-7-2018 14:43	File folder	
20180726 (cs80616)	26-7-2018 15:33	File folder	
20180727 (cs80640)	27-7-2018 12:30	File folder	
20180921 (id 38624862)	21-9-2018 16:46	File folder	
20180924 (id c18ef2cb)	24-9-2018 16:38	File folder	
20181001	1-10-2018 11:11	File folder	
Archive	26-7-2018 15:31	File folder	
TEST MPF2	27-7-2018 11:14	Shortcut	3 KB

Automate repetitive tasks

- Standardize the process
- Use pipelines, but first…
    - Start local to automate
    - Use verbose logging

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Demo # 3

Build artifact & automate repetitive tasks

- ✓ Pipeline for building the code
- ✓ Stopped updating the file version manually
- ✓ One version for the build, artifact and release

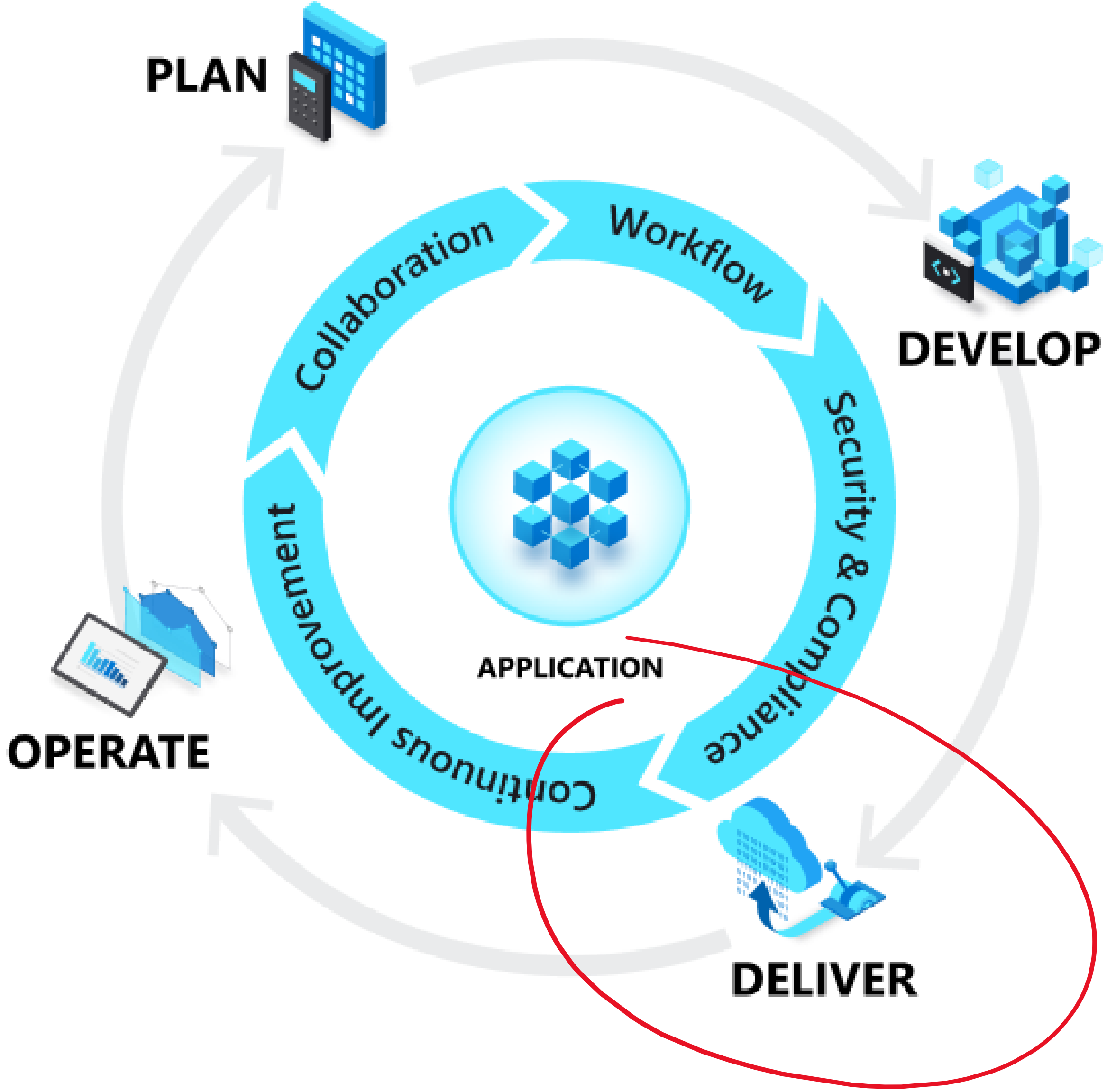
Develop DevOps practices

✓ Choose a VCS to collaborate and work in parallel

✓ Turn code into immutable build artifacts

✓ Automate repetitive tasks

DevOps



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Deliver DevOps practices

- Automate delivery processes
- Use release pipelines with approvals
- Release artifacts to different environments

Previous deliver workflow

- Copy build from share
- Manual deploy database changes
- Manual alter config
- Informal approval
- Shared environment & database

Deliver workflow improvements

- Test in parallel, just like development
- Make use of disposable environments
- Implement Pull Request Release workflow

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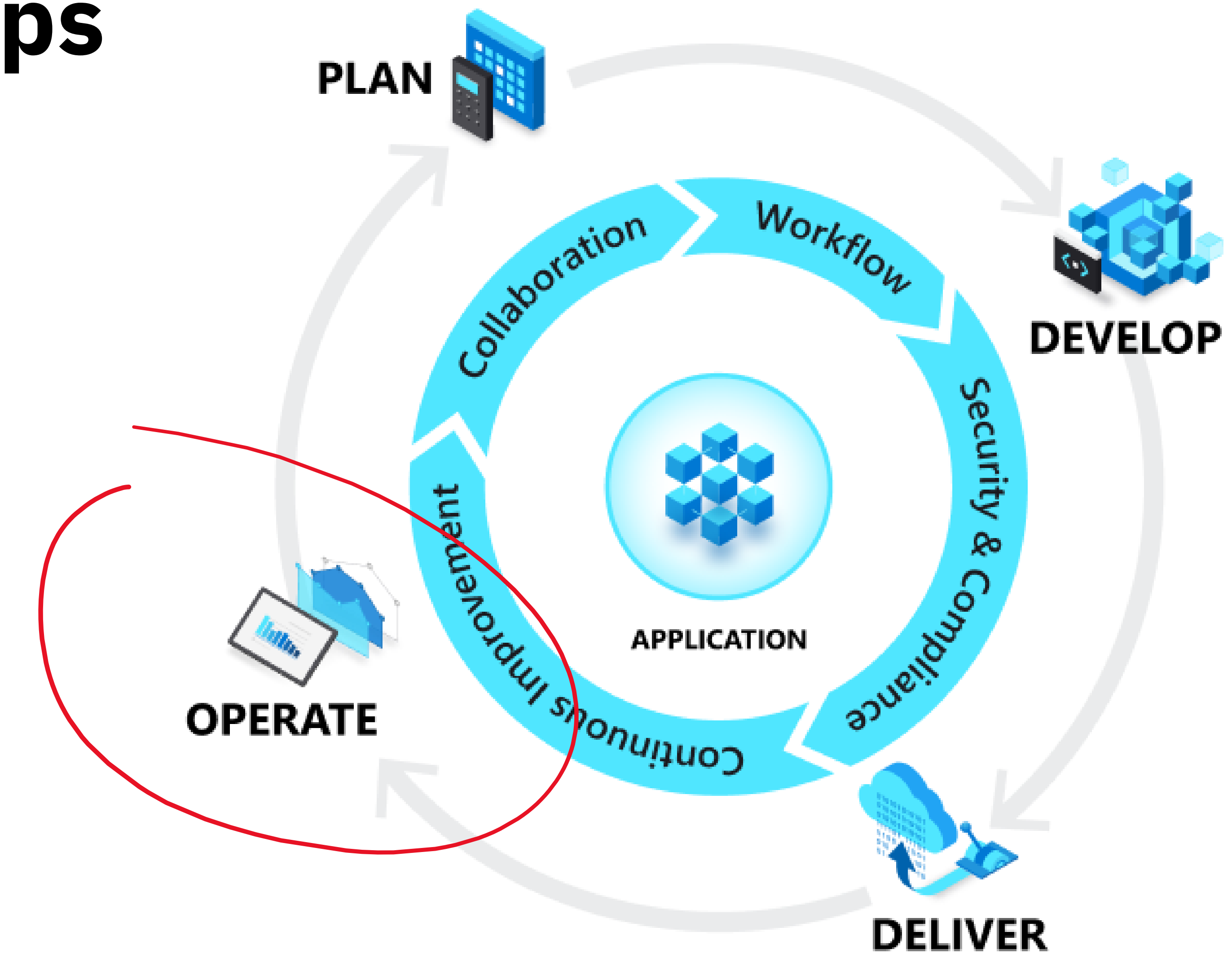
Demo # 4

Deliver DevOps practices

- ✓ Automate delivery processes
- ✓ Use release pipelines with approvals
- ✓ Release artifacts to different environments

DevOps



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Operate DevOps practices

- Monitor & troubleshoot
- Securing knowledge

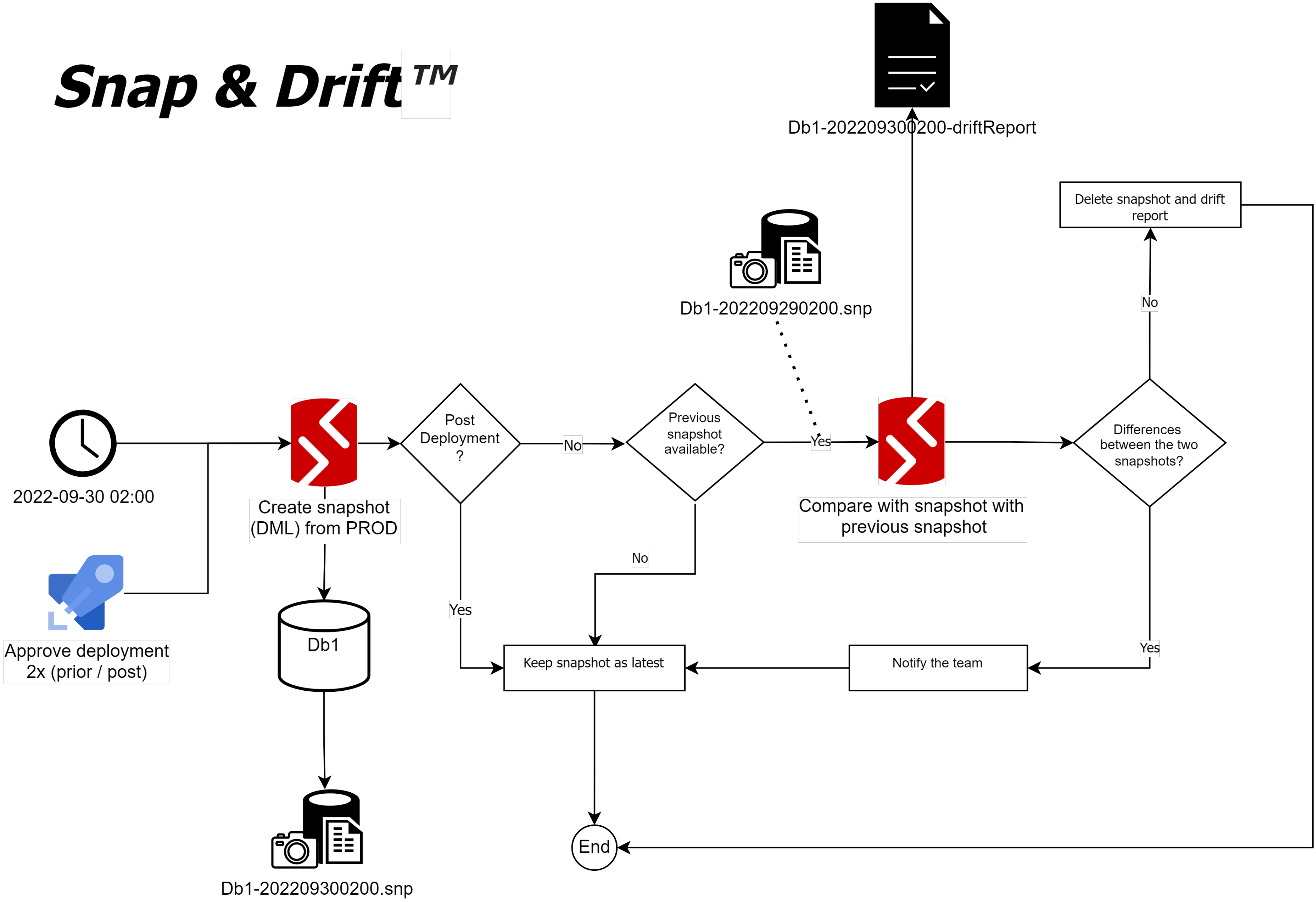
Troubleshoot

- What was changed?
- Who signed off for this?
- Where did the change come from?

Monitor production databases

- Integrated in every deliver
- Nightly automated check
- Create work items on drift

Snap & Drift™



Db1-202209300200-driftReport
Delete snapshot and drift report
Db1-202209290200.snp
No
Post Deployment ?
No
Previous snapshot available?
Yes
Differences between the two snapshots?
2022-09-30 02:00
Create snapshot (DML) from PROD
Compare with snapshot with previous snapshot
No
Yes
Approve deployment 2x (prior / post)
Db1
Keep snapshot as latest
Notify the team
Yes
End
Db1-202209300200.snp

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Demo # 5

Operate DevOps practices

✓ Monitor & troubleshoot

- Securing knowledge

Share and securing knowledge

- Encourage documentation everywhere
- Linking ensures provenance
- SQL Extended properties (SQL Doc)
  - Convert to markdown (wiki) format
- Use Azure DevOps (Elastic)search

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Demo # 6

Operate DevOps practices

- ✓ Monitor & troubleshoot
- ✓ Securing knowledge

Questions?

Session evaluation

Your feedback is important to us

Evaluate this session at:

www.PASSDataComminitySummit.com/evaluation

Thank you

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