

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



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**City of  
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# Data Saturday Gothenburg 2023

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# Tonie Huizer



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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 today's session

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



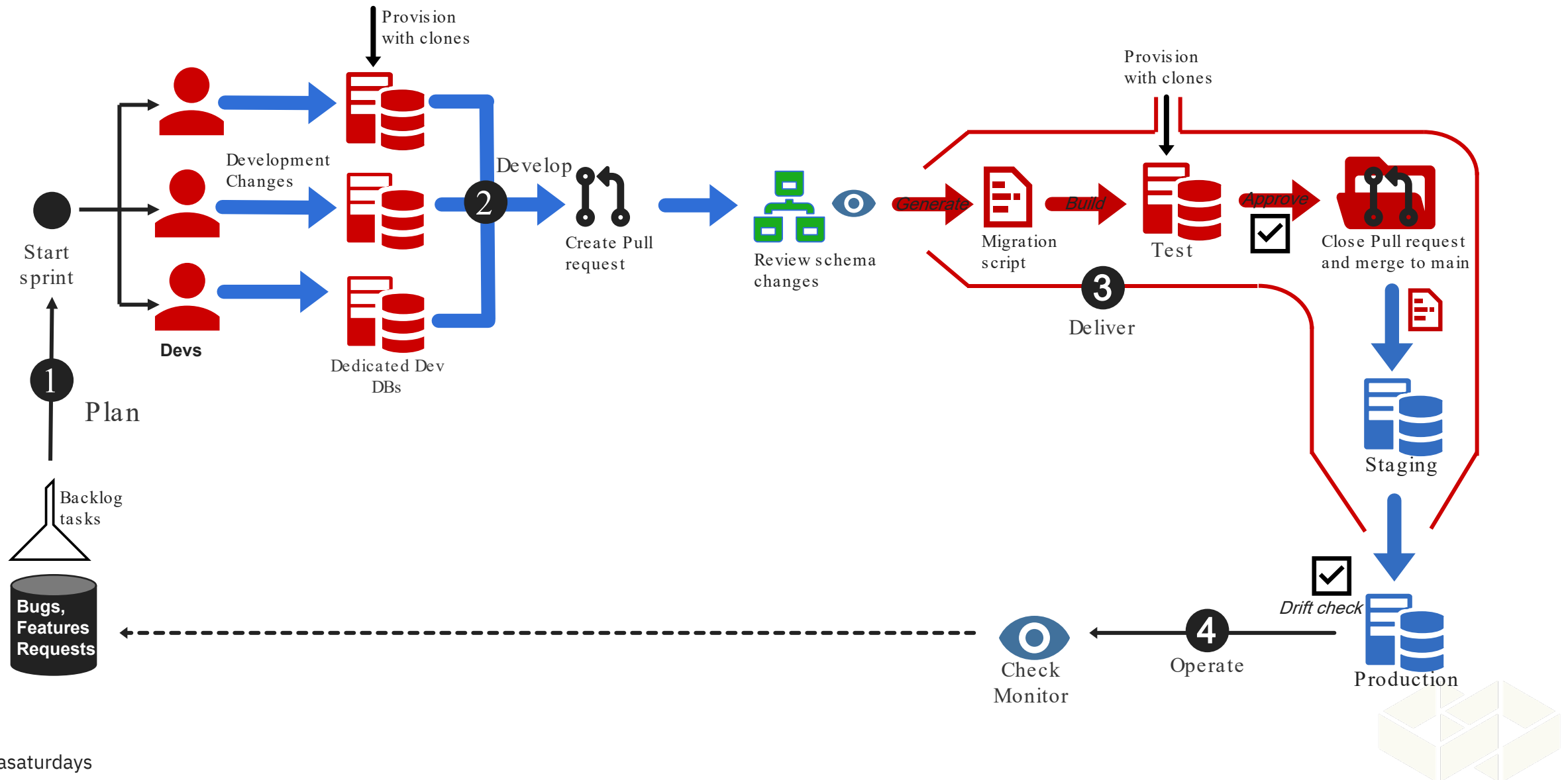
# Database DevOps – the challenge



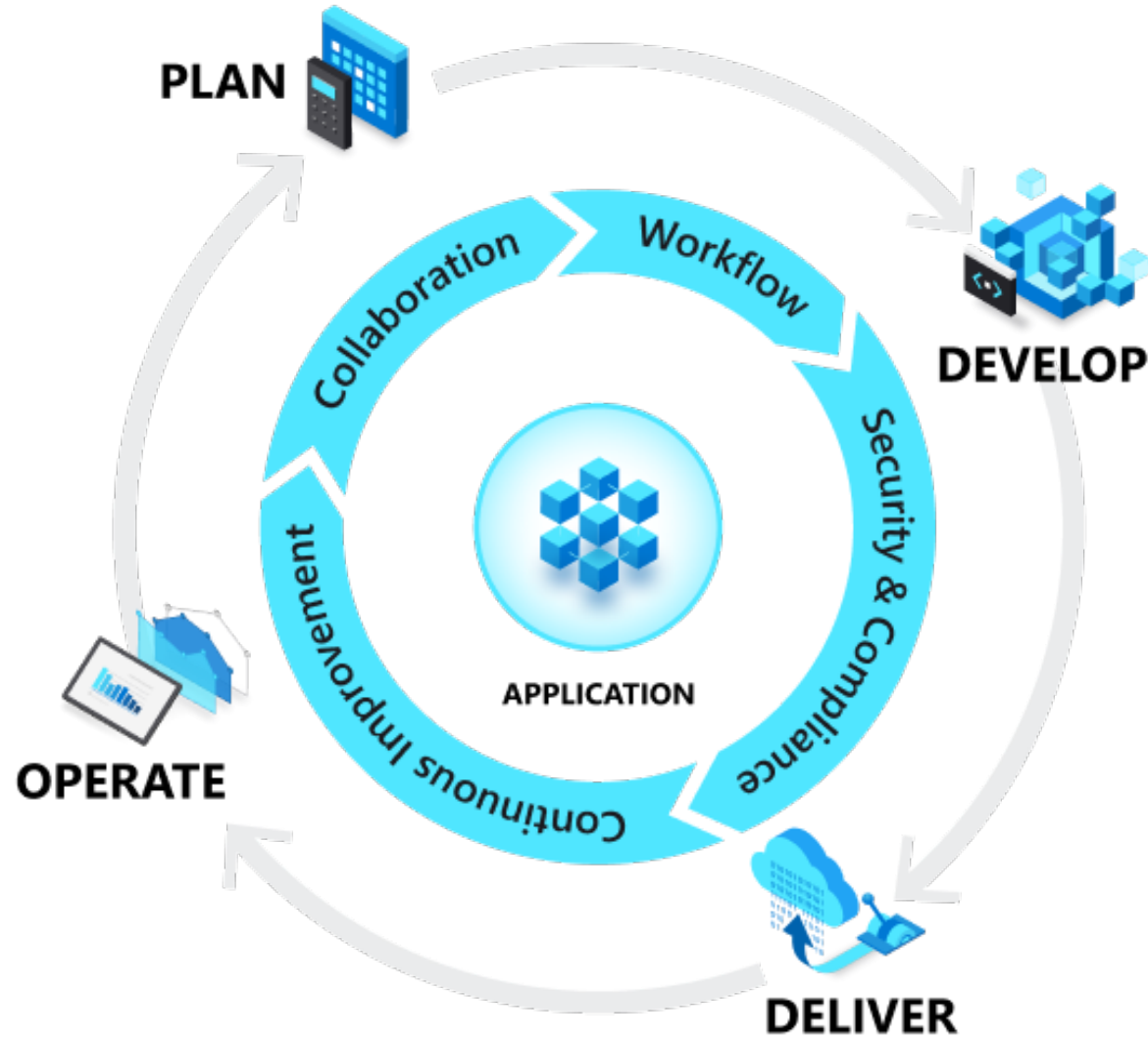
#datasaturdays



# Database DevOps – the end goal



# DevOps



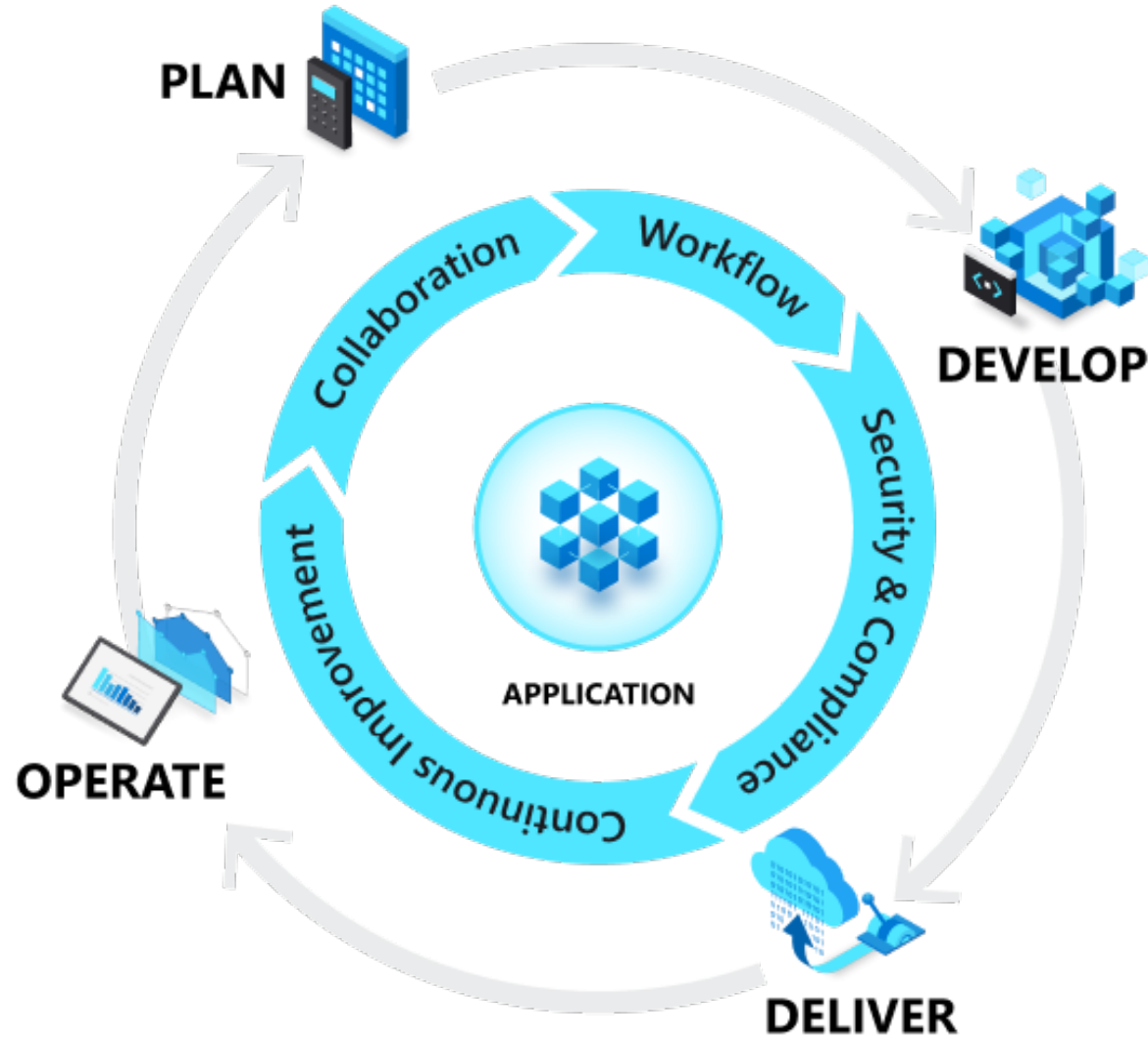
“DevOps is the union of people, process, and products to enable continuous delivery of value to our end users.”

- Donovan Brown, Microsoft





# DevOps



# Plan DevOps practices

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

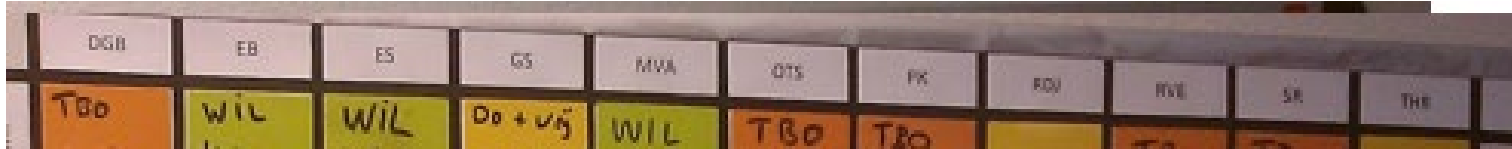


# Attempts to plan with boards & sprints

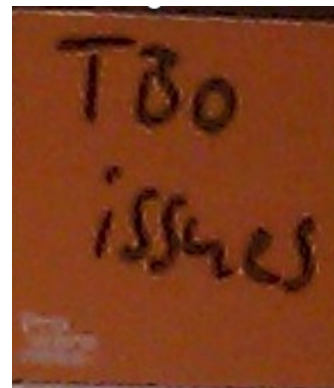


# Working in sprints didn't work

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 119 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

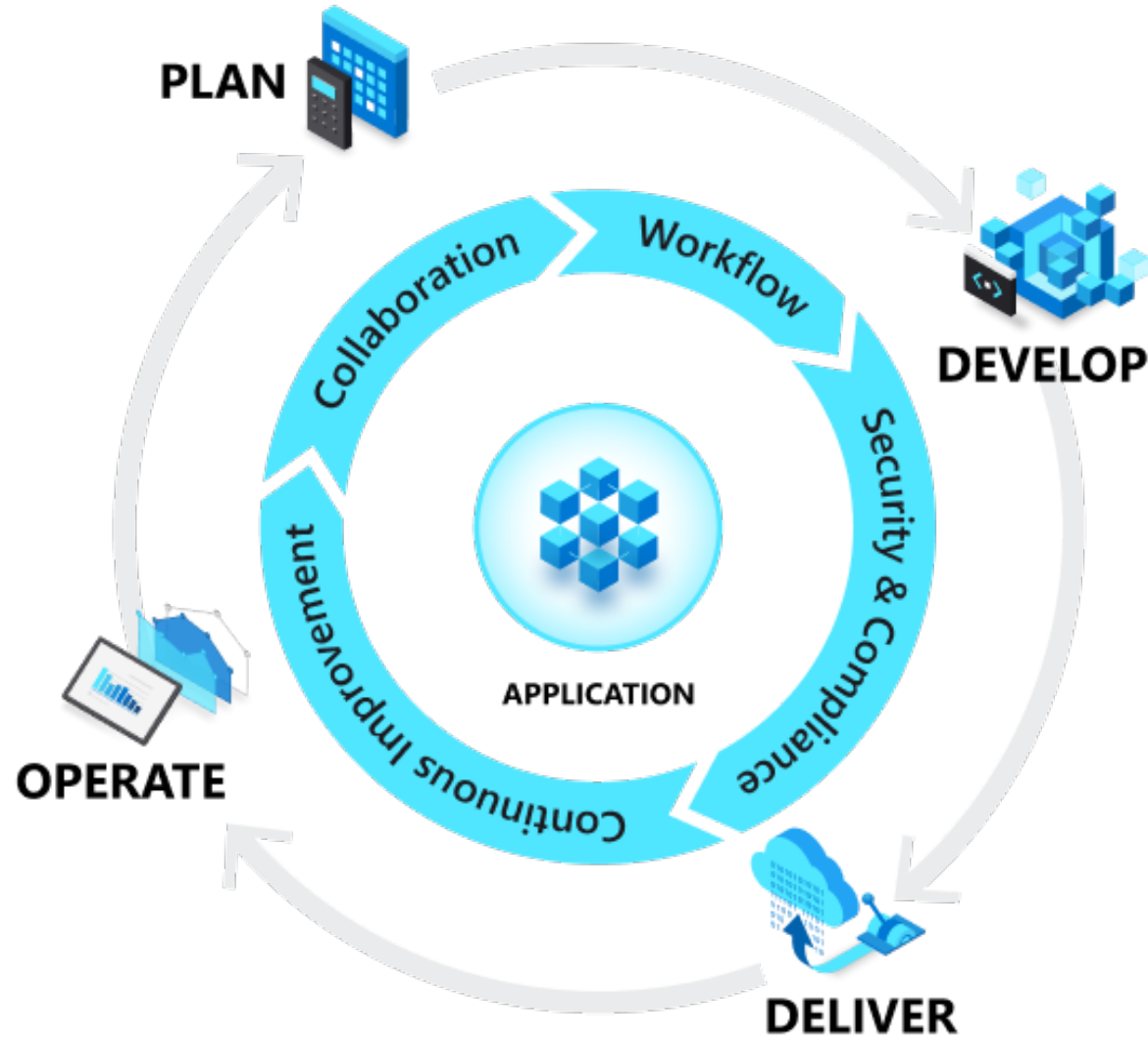


# Plan DevOps practices

- ✓ Create backlogs
- ✓ Use Kanban boards
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- ✓ Manage Agile software development with Scrum



# DevOps



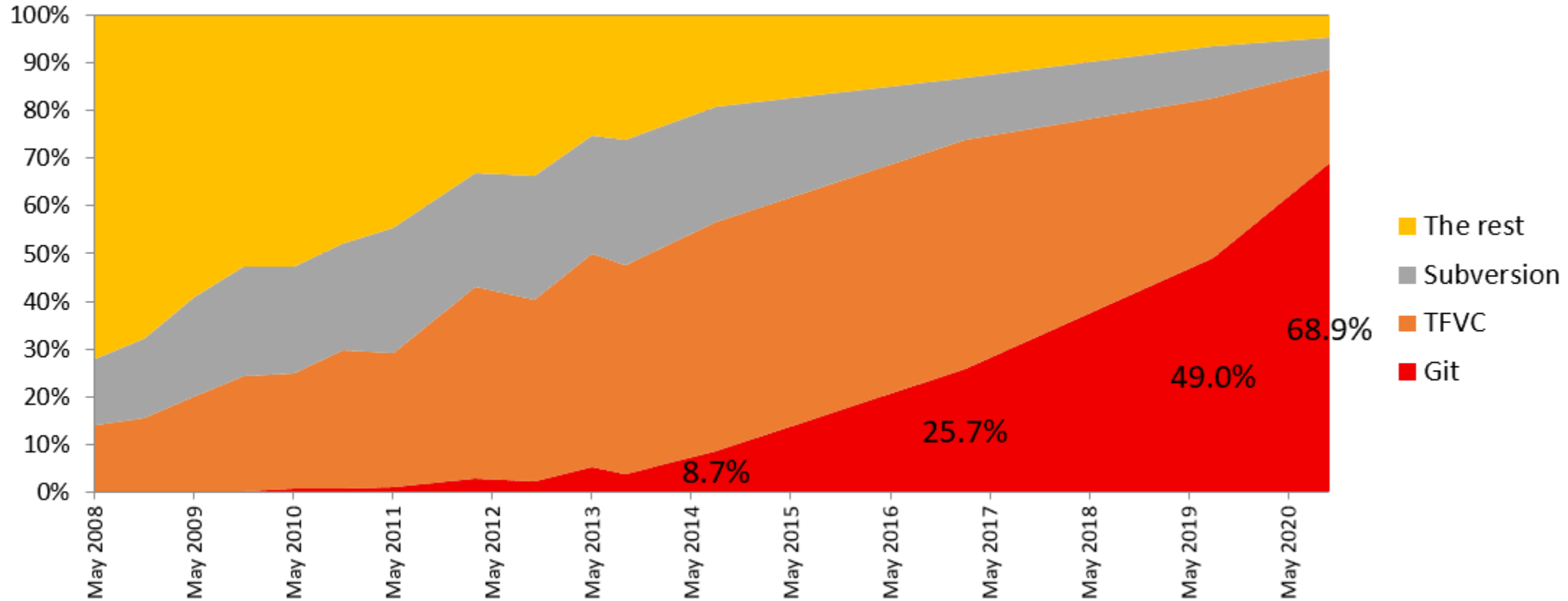


# Develop DevOps practices

- 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

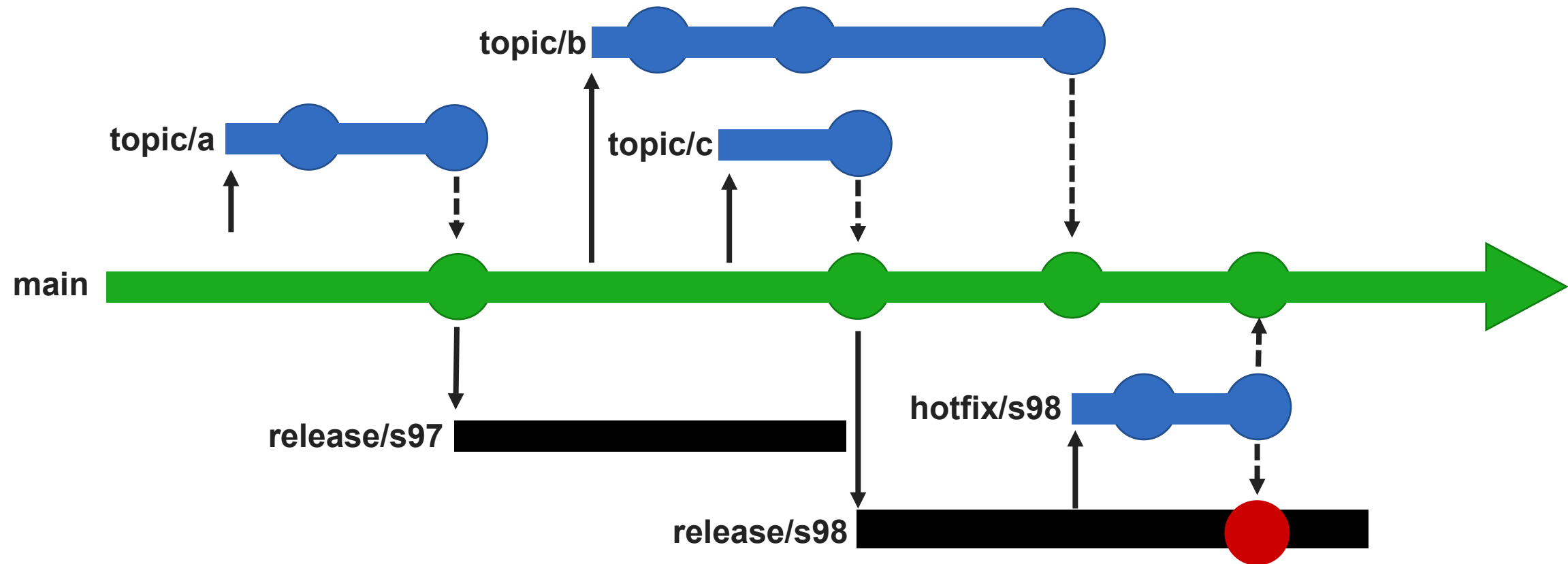


# Branching strategy

- 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

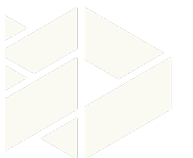
atsnlsldnas01 > ATSMOD > Releases > PALI Geldrop

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 > 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

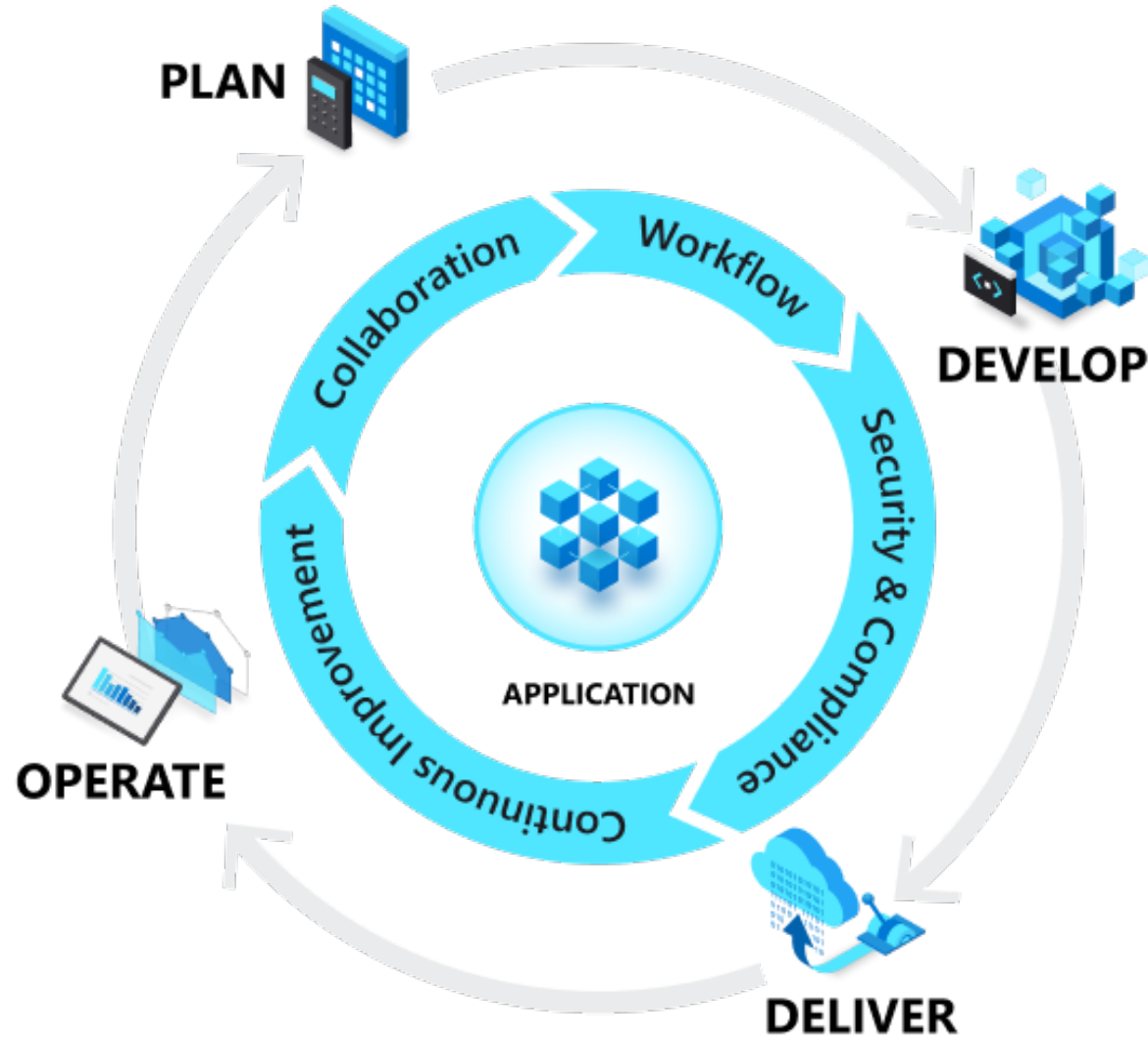


# Develop DevOps practices

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



# DevOps





# 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 workflow improvements

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

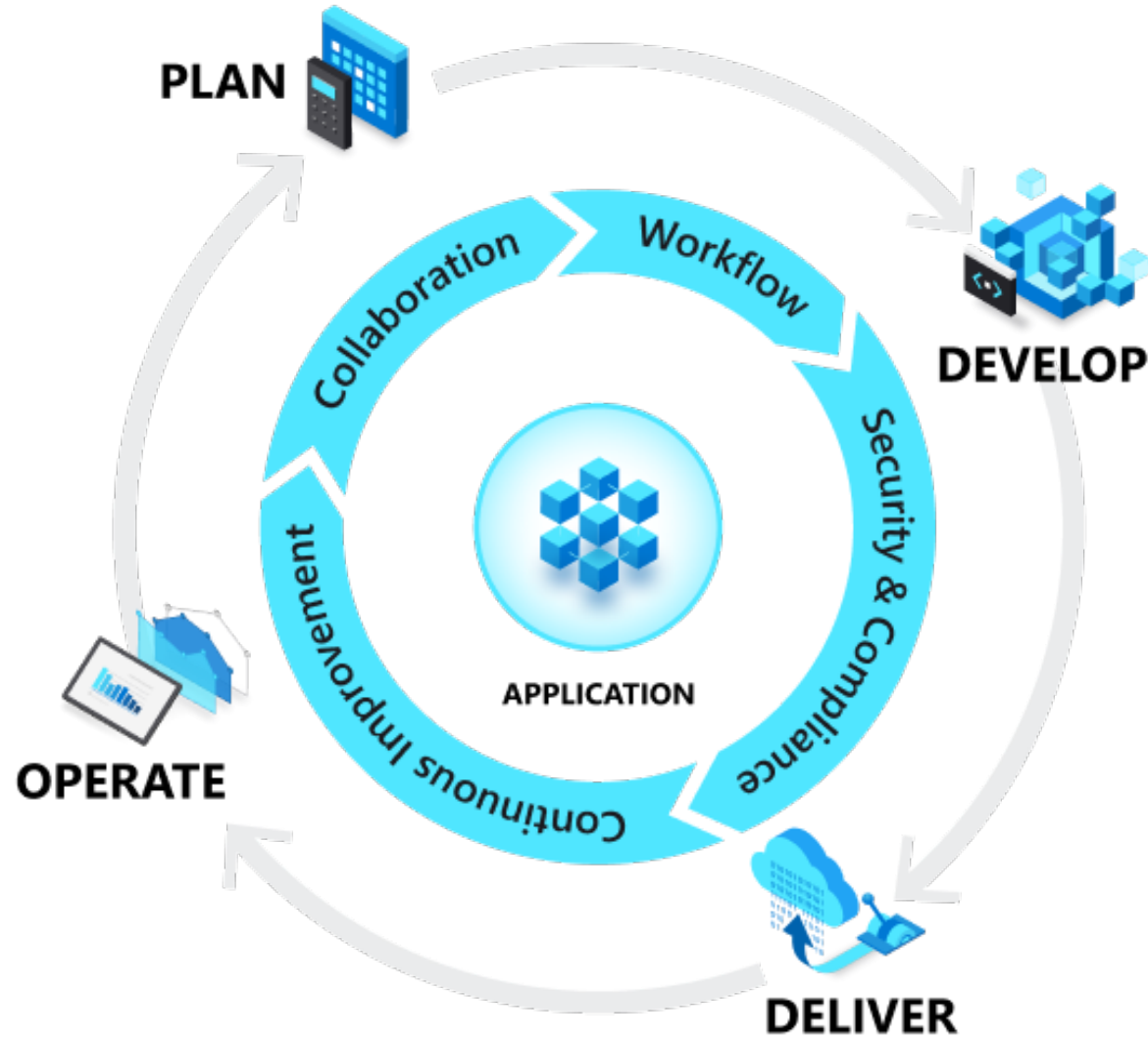


# Deliver DevOps practices

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



# DevOps



# Operate DevOps practices

- Monitor & troubleshoot
- Securing knowledge





# Troubleshoot

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

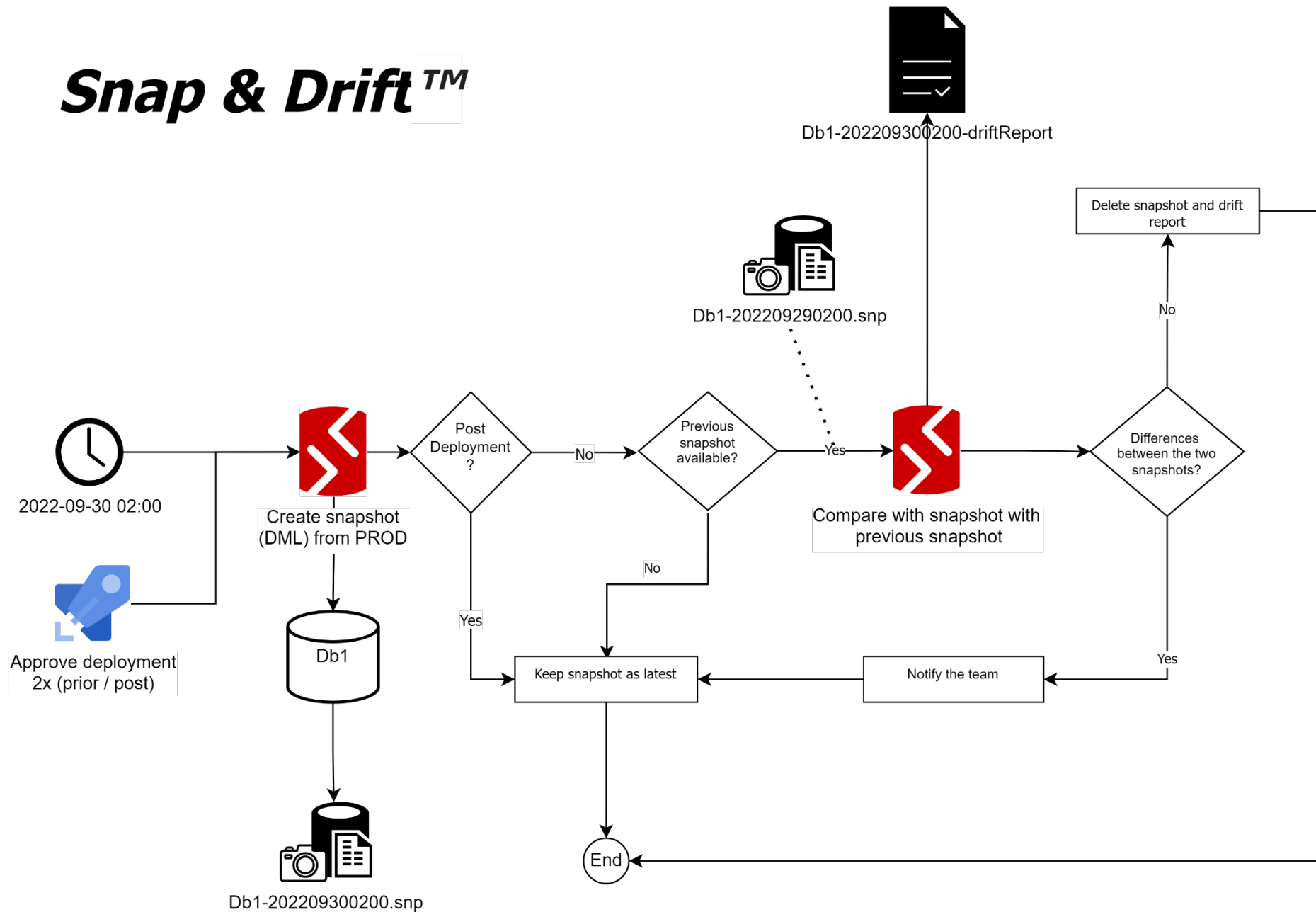


# Monitor production databases

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



# Snap & Drift™



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Demo # 5



# Troubleshoot

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



# 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



# Key take aways

- People, process and tools (in that order)
- First do DevOps
- Only then Database DevOps can happen



# Questions?



# Session evaluation

Your feedback is important to us



# Thank you

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