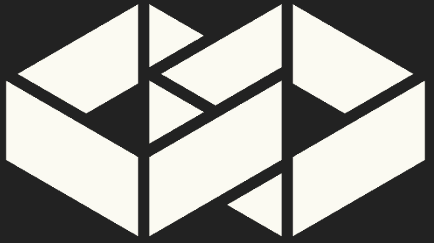


Transforming to DevOps, CJ/CD: Continuous Journey Continuous Disaster?



promicro

Tonie Huizer

DevOps consultant

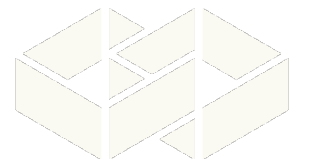
Promicro



Database DevOps – the challenge



#sqlsat #sqlsatoregon



Tonie Huizer



DevOps consultant
Promicro

 linkedin.com/in/toniehuizer

 [@promicroNL](https://twitter.com/promicroNL)

 github.com/promicroNL

 www.promicro.nl

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

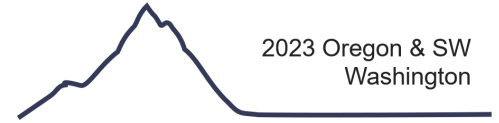
The fun I experience in my job is the combination of people and technology.

Focus areas in my working life:

- Software development
- (Database) DevOps
- Whisky



Thank You Sponsors!

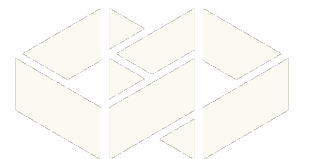


Our sponsors make this event possible. Please thank and support them.

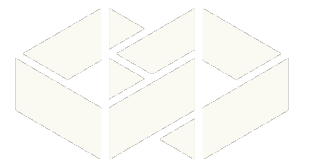
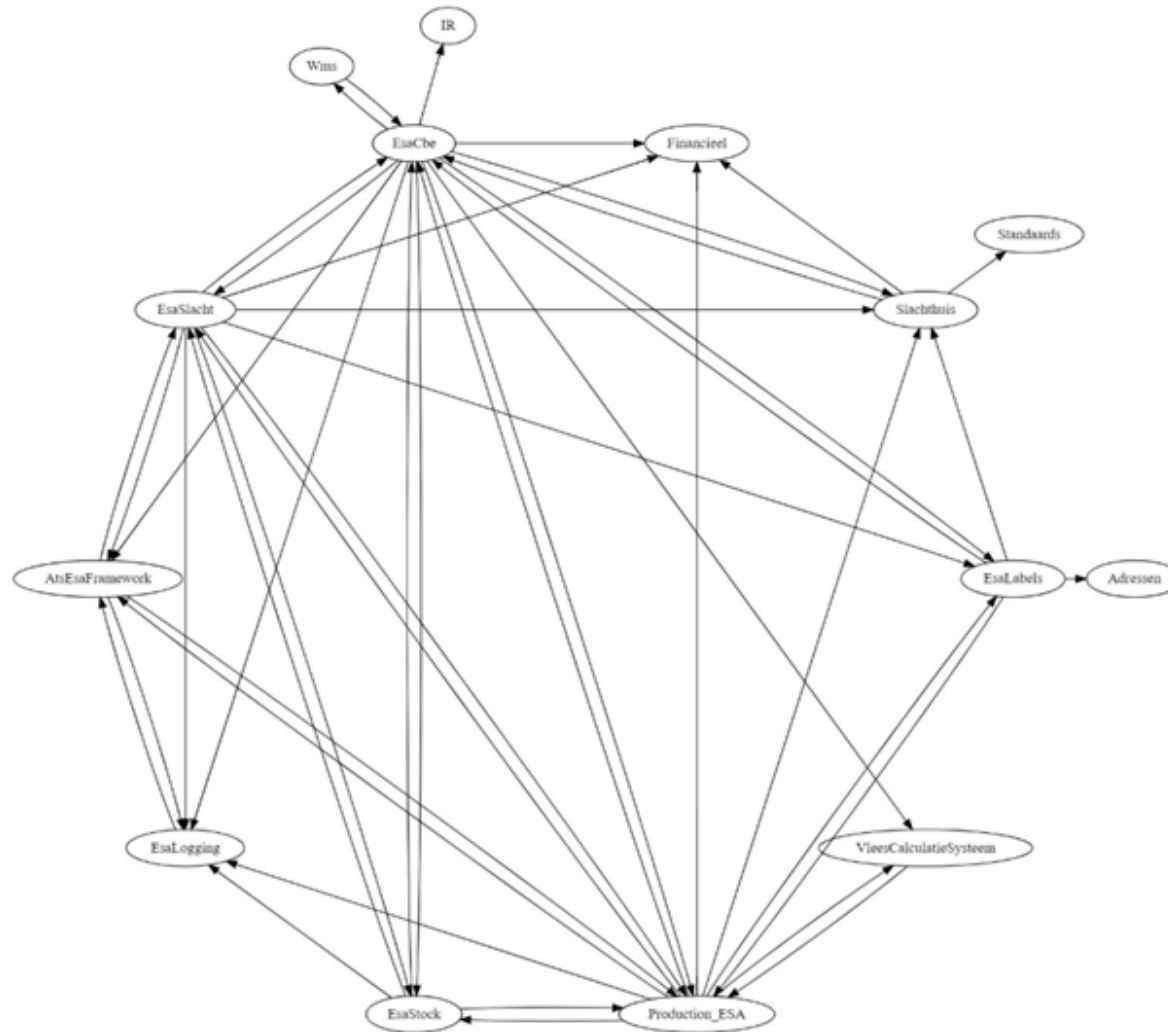


What to expect of today's session

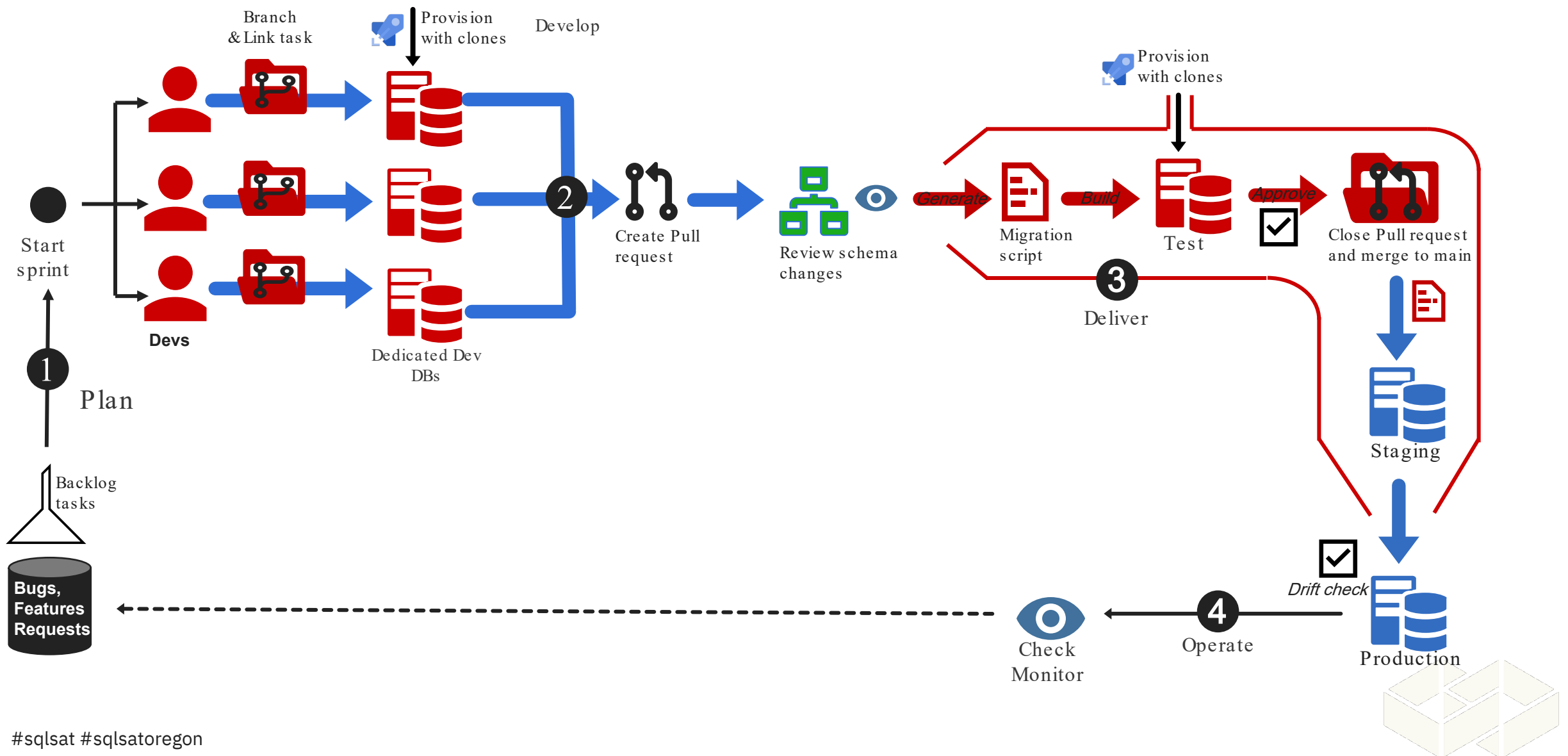
- Transforming to DevOps, CJ/CD?
- The 4 DevOps phases walk through
- Demo's
- Room for discussion & questions



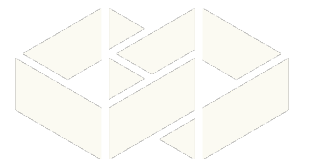
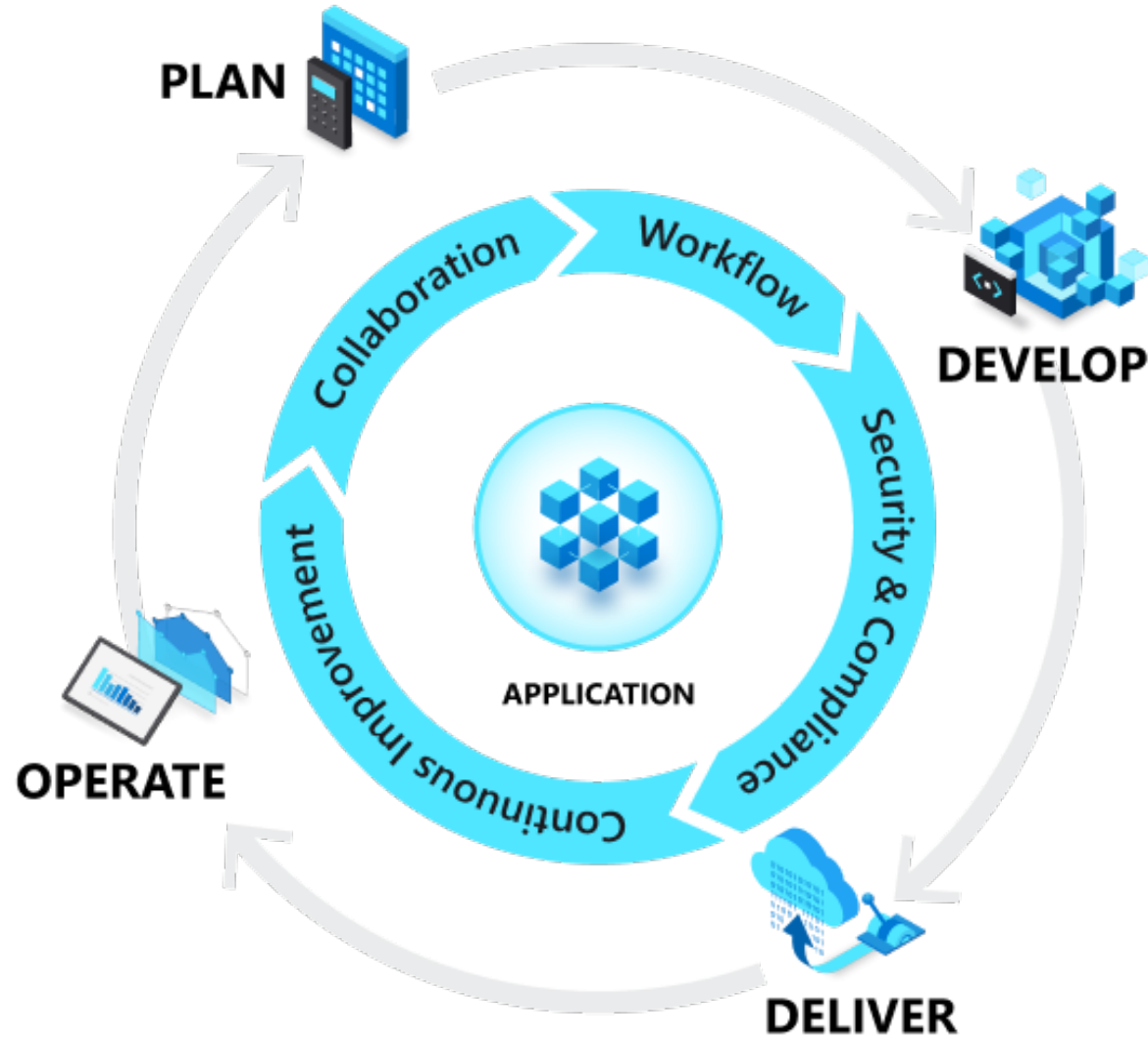
Database DevOps – the challenge



The result: Database DevOps

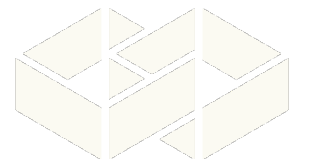


DevOps

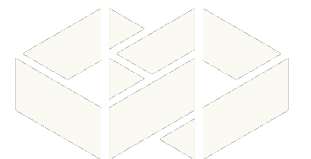
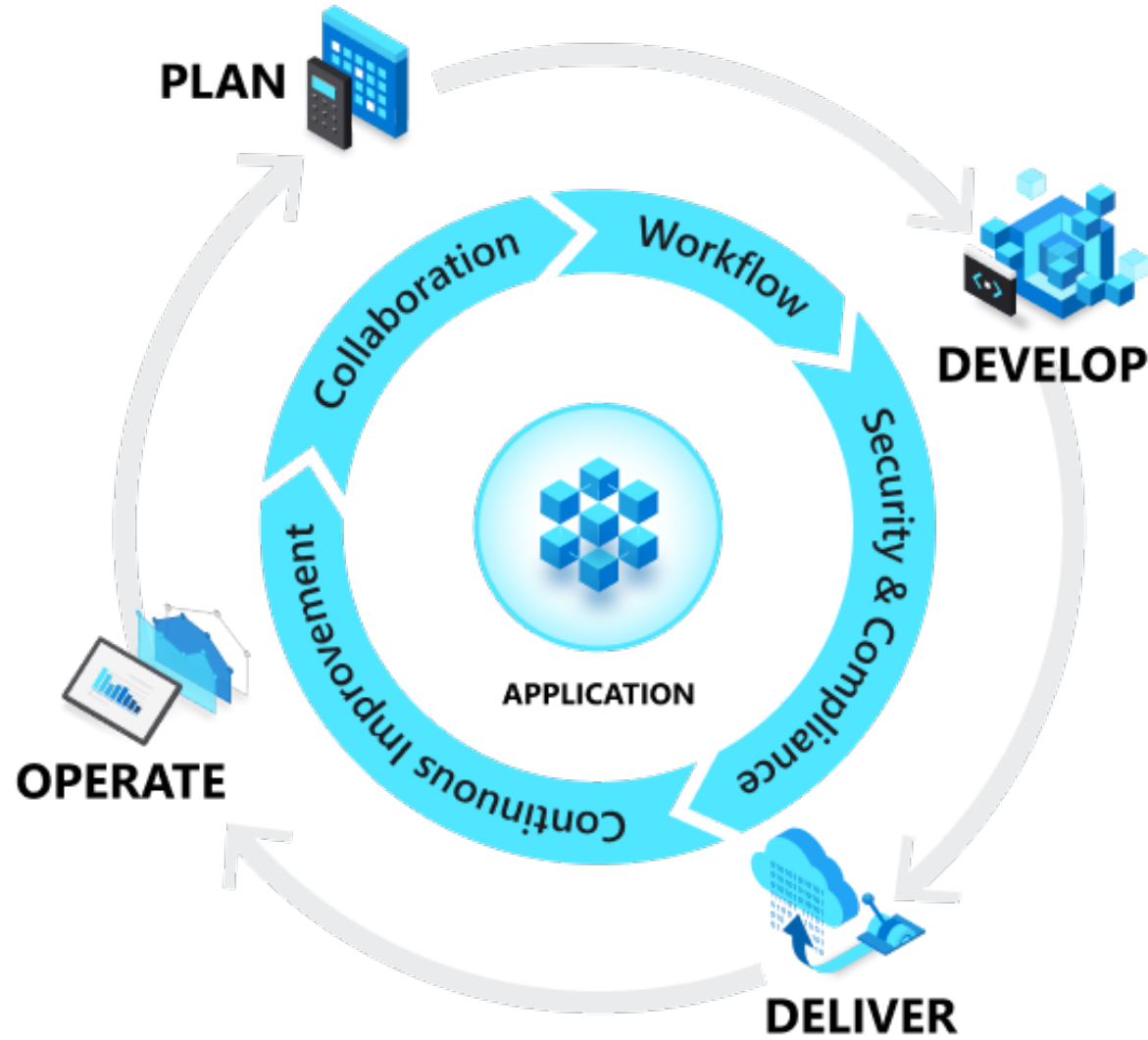


“DevOps is the union of people, process, and products to enable continuous delivery of value to our end users.”

- Donovan Brown, Microsoft

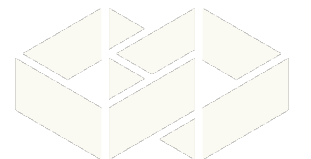


DevOps



Plan DevOps practices

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

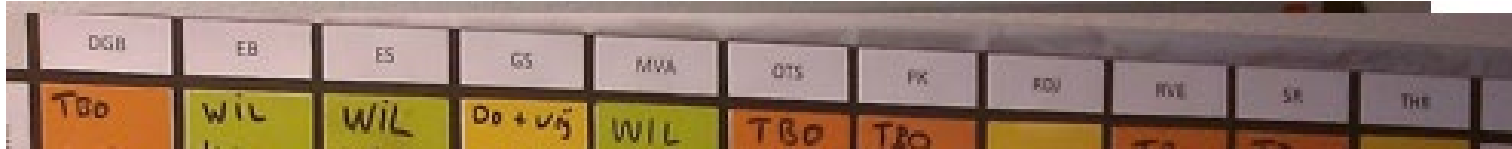


To do

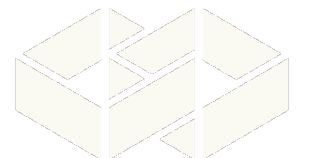
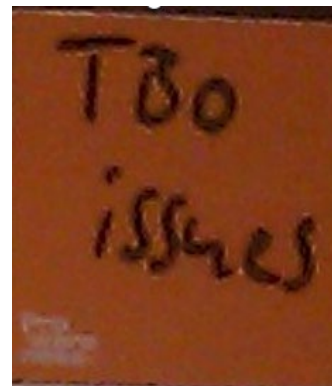
MPE - Mail	MPE - Mail
CHR Wild	Error handling
MPE - Mail	MPE - Mail
HACCP	Neuere Infos
MPE - Mail	MPE - Mail
Printer Pallet label	Neuere order
MPE - Versand	MPE - Versand
Vorder- und Info	Pallet #verbleiben
MPE - Versand	MPE - Versand
Calli Update	instand + konfigurieren

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



+ New item



134457 Refinements s127

Niels Timmers

Parent

Iteration Path Sprint 126

Created Date 08/11/2023

Priority 2

ESA mms6956

134458 Refinements s128

Niels Timmers

Parent

Iteration Path Sprint 127

Created Date 08/11/2023

Priority 2

ESA mms6956

134459 Refinements s129

Niels Timmers

Parent

Iteration Path Sprint 128

Created Date 08/11/2023

Priority 2

ESA mms6956

134460 Refinements s130

Niels Timmers

ERP

Maintenance

130937 Data Herstel Haaktag dubbel gebruikt

Unassigned

Parent

Iteration Path

Created Date 10/08/2023

Priority 2

#INC-4147 ESA mms25496

126933 WIP/HOLD Testkoppels in mes-mom

Niels Timmers

Parent

Testkoppels in mes-mom

Iteration Path

Created Date 09/05/2023

Priority 4

#INC-3197 ESA mms25337 SQL

124309 Stacking production messages (general solution)

Tonie Huizer

Parent

Iteration Path Sprint 109

Created Date 02/03/2023

Priority 2

ESA mms25211

Doing

130841 2de keer geen dubbele doodmelding

Niels Timmers

Parent

Iteration Path

Created Date 09/08/2023

Priority 2

ESA mms25494

133953 OneForAll - Direct printing with JSON (s125)

Niels Timmers

Parent

B.O. Labels printen met...

Iteration Path Sprint 129

Created Date 24/10/2023

Priority 4

#INC-2461 ESA mms25245 SQL

133896 HOLD Afkeurdata VWA fatsoeneren

Niels Timmers

Parent

Afkeurdata fatsoeneren

Iteration Path

Created Date 23/10/2023

Priority 2

#INC-4955 ESA HOLD mms25593

Done

Doing

134468 Weegschaal logging M (s126)

Niels Timmers

Parent

Weegschaal logging M

Iteration Path Sprint 126

Created Date 08/11/2023

Priority 2

ESA mms25569

133260 HOLD Add Slachtlabel-

Niels Timmers

Parent

Foto's oorlab

Iteration Path

Created Date 09/10/2023

Priority 2

#INC-4482 ESA HOLD mms25569

132961 Uitfaseren Haaktag log

Niels Timmers

Parent

Uitfaseren Haaktag log

Iteration Path Sprint 124

Created Date 03/10/2023

Priority 4

Development

+ Add link

  Zagen and Tags

Created Thursday, Active

  38f48a2f #134533, mms25422: reversed zagen check (added ...

Created Thursday

  ac865b52 #134533, mms25422: fixed merge conflicts

Created Thursday

  c317e1bf #134533, mms25422: fix merge conflicts

Created Thursday

 1 comment

ESA X

mms25422 X

MOW X

SQL X

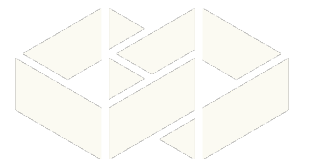
+



This time it worked

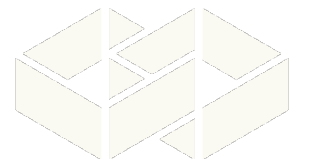
For 126 sprints in a row (and counting)

- ✓ 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

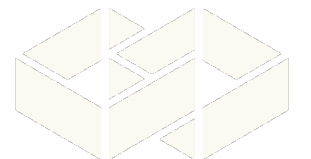
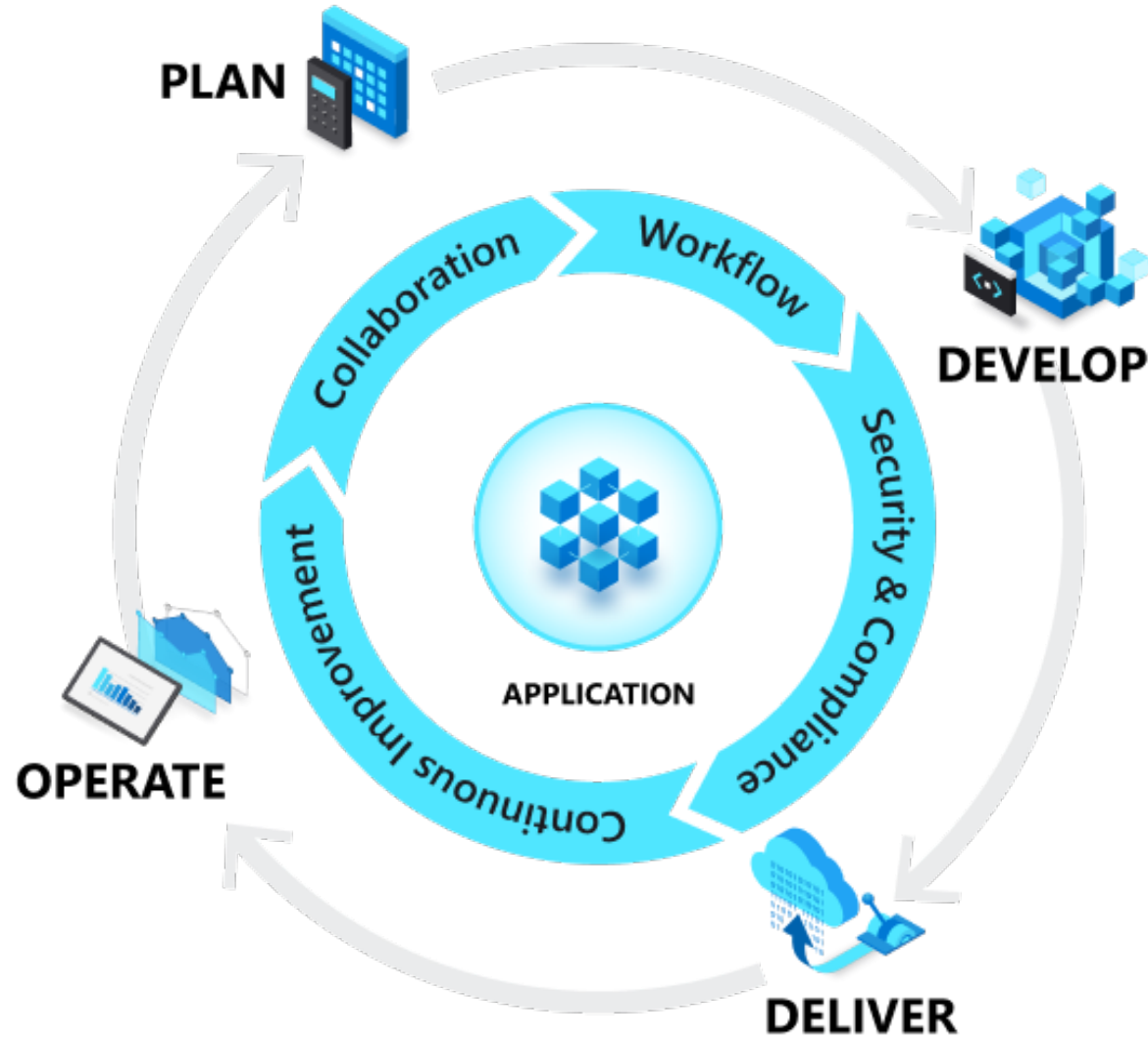


Plan DevOps practices

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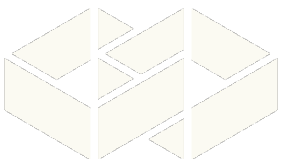


DevOps

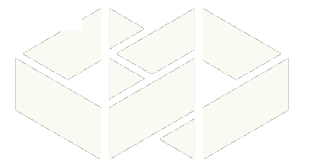
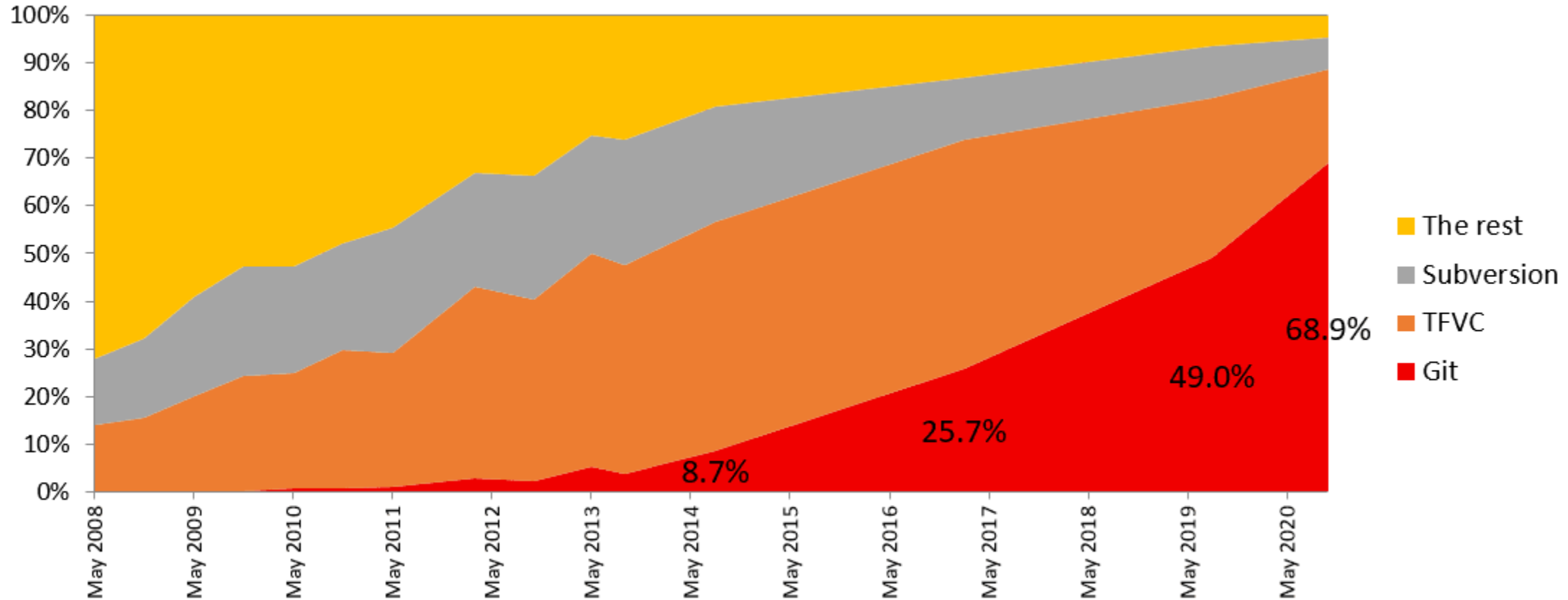


Develop DevOps practices

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

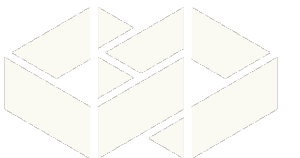


SVN and TFVC didn't do the job



Switching to git

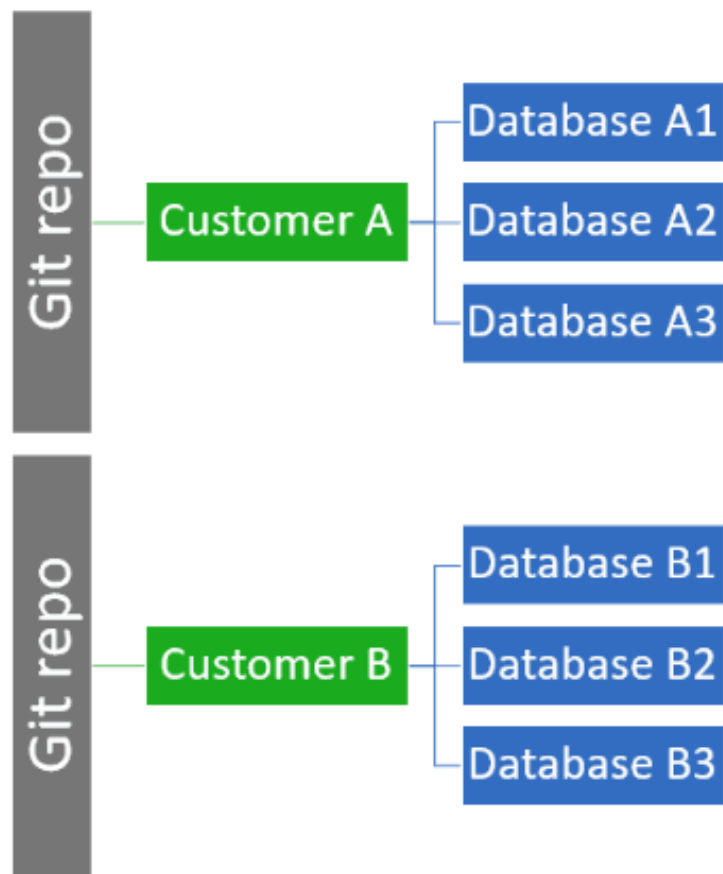
- Migrate a VCS
- Adopt a branching strategy
- Create a branch naming convention



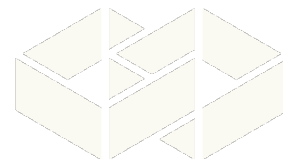


Application source code

#sqlsat #sqlsatoregon

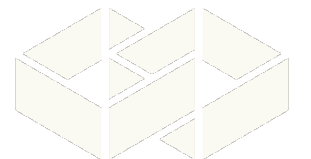


Database source code

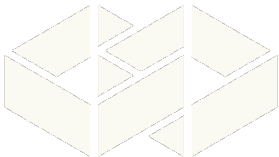
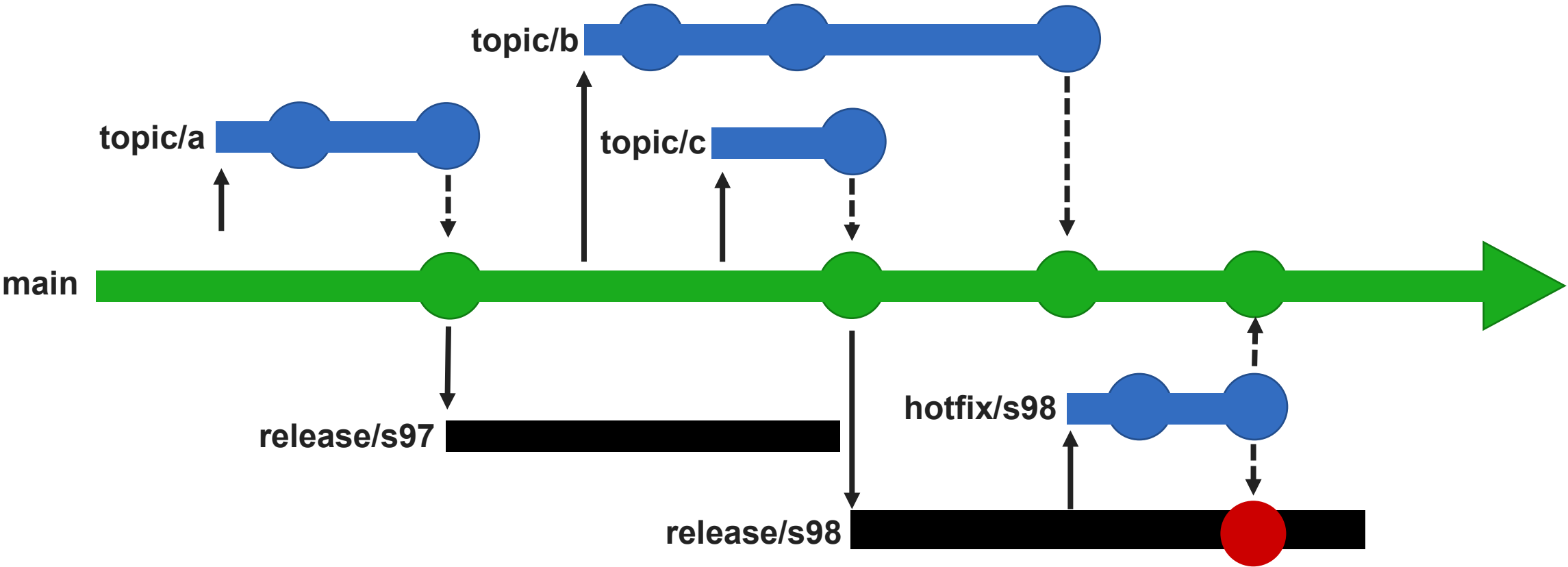


Branching strategy

- 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

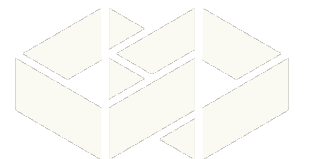
<branch category>/<hot fixed release - >bug<TicketId>-PascalCasingDescription

hotfix/s100-mms12220-FireFighting
topic/mms12345-MyDescription

Release branch

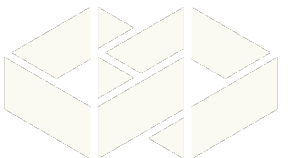
<branch category>/<unique identification>

release/s100



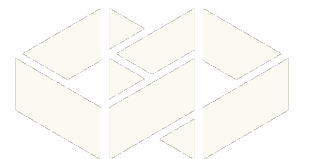
Git compared to SVN / TFVC

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

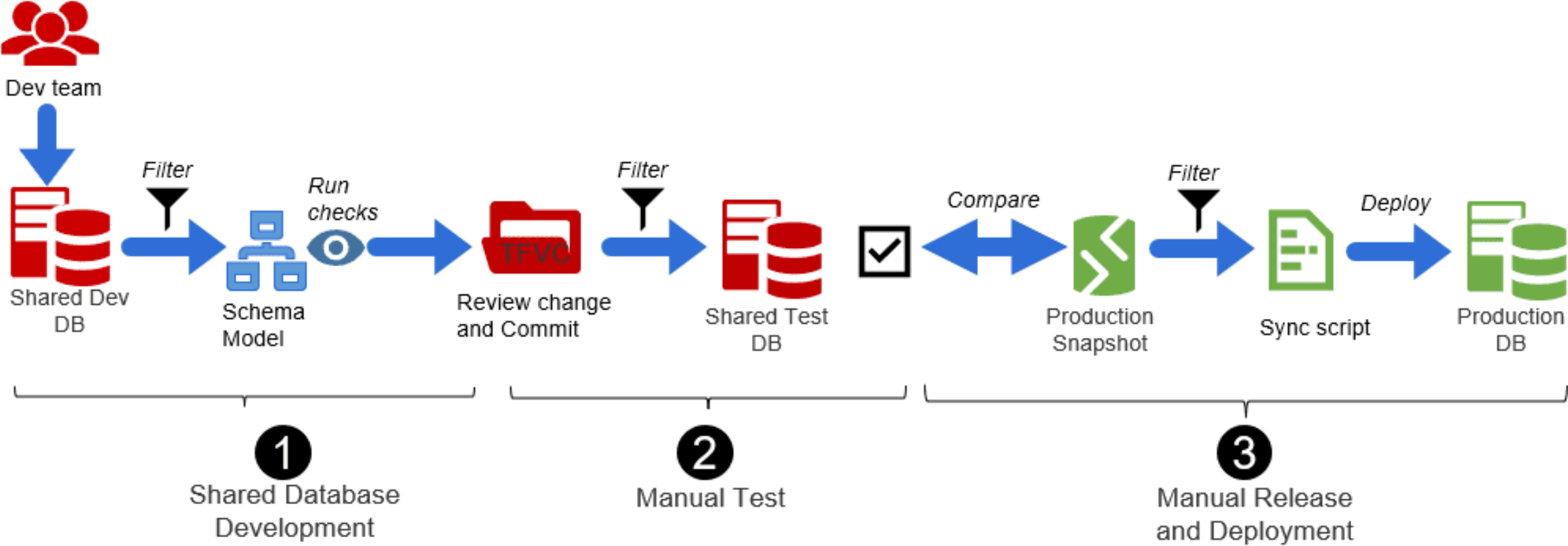


Develop DevOps practices

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

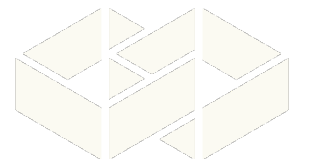


Manual, repetitive tasks



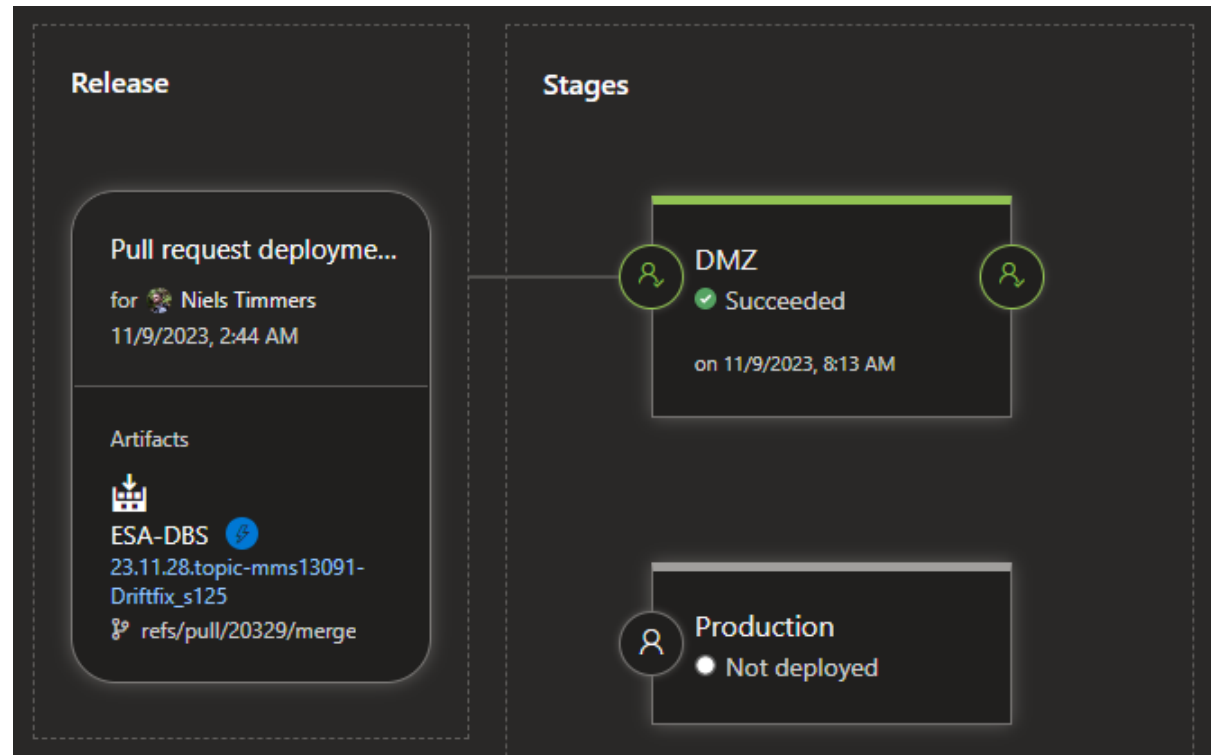
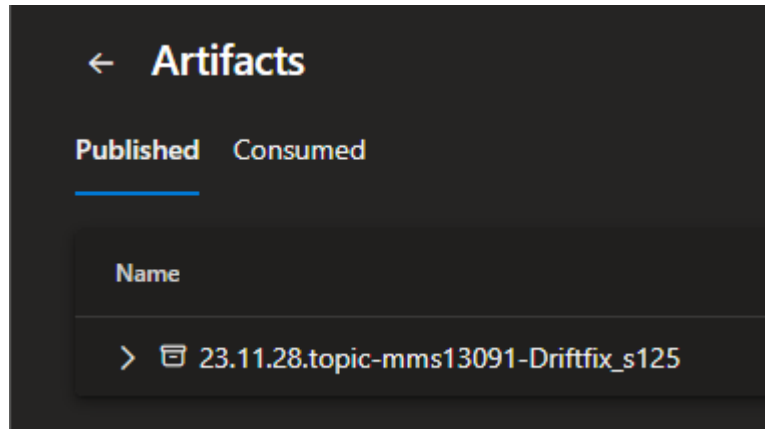
Automate repetitive tasks

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



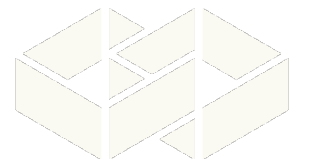
Build artifact & automate repetitive tasks

- ✓ Pipeline to generate immutable artifact
- ✓ Apply same artifact to all environments

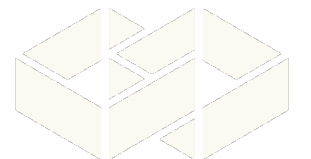
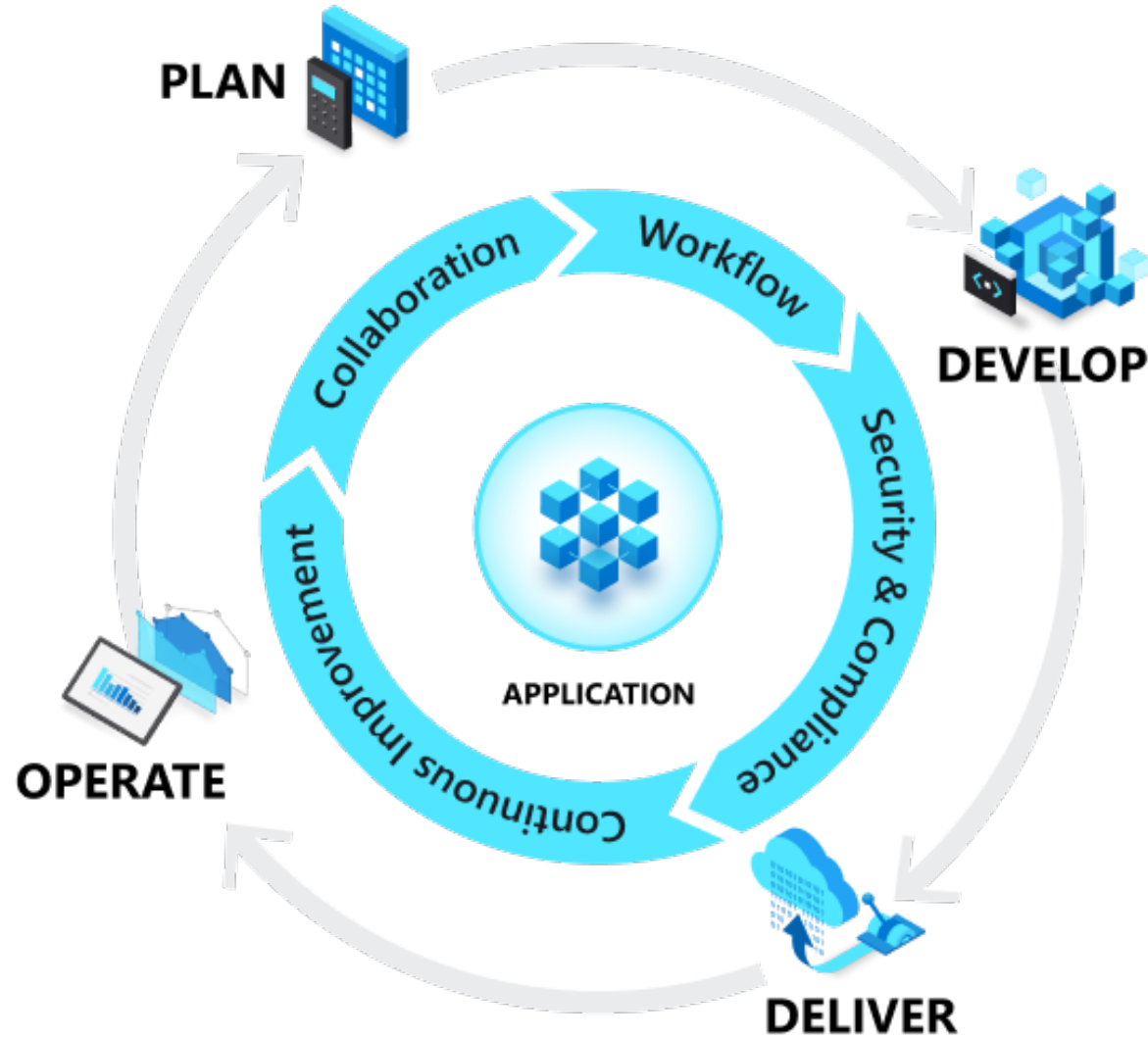


Develop DevOps practices

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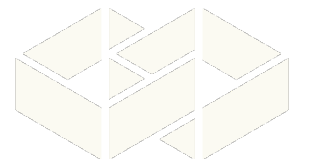


DevOps



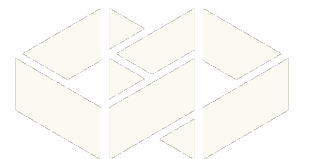
Deliver DevOps practices

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



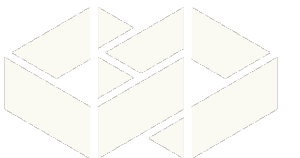
Previous deliver workflow

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



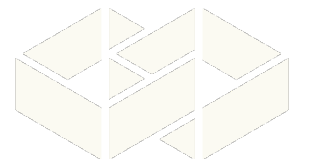
Deliver workflow improvements

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



Introduction of database clones

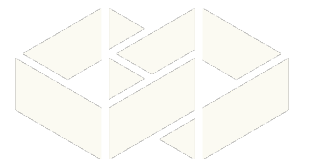
- Using cloning technology is smart
- Automating this usage is even smarter
 - The creation, use but also the house keeping

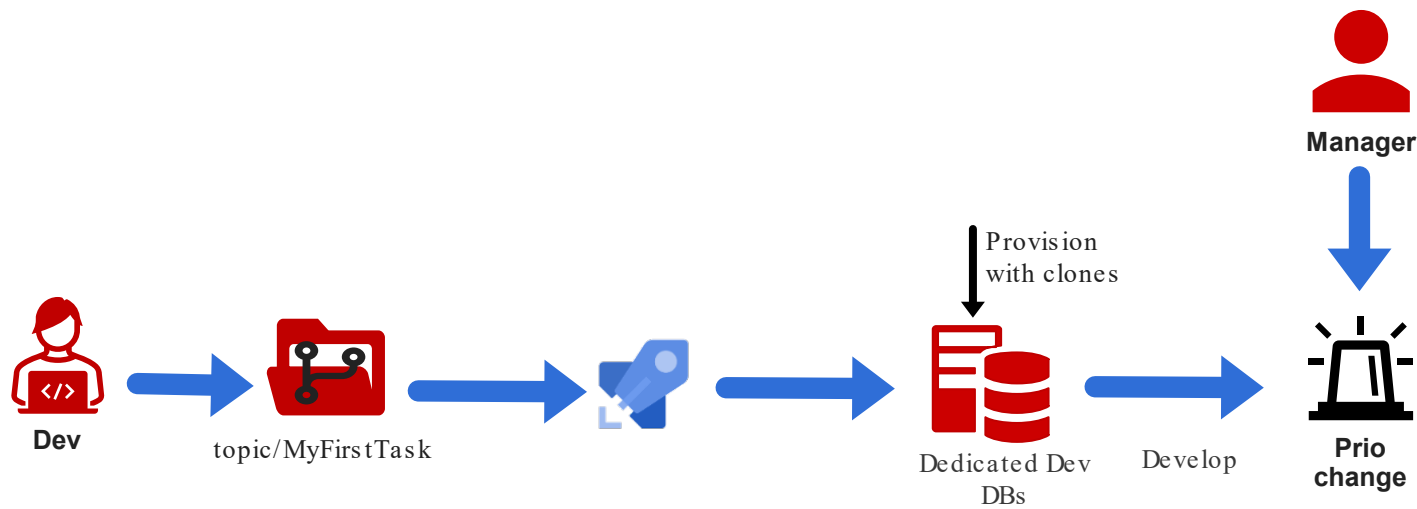


The concept of database stashing



- Changing priorities
- `git stash` but then for DBs
- Personal instance / environment
- Through AzDo not on your system





- + System Databases
- + Database Snapshots
- +
- + D365_MESMOM
- + D365_MESMOM_22.10.1.topic-mms24935-SystemTableMigration.r1
- + D365_MESMOM_22.10.2.topic-mms20115-AgeCategory.r1
- + D365_MESMOM_22.10.37.topic-mms10658-SQLCompare.r1
- + EsaCbe
- + EsaCbe_22.10.1.topic-mms24935-SystemTableMigration.r1
- + EsaCbe_22.10.2.topic-mms20115-AgeCategory.r1
- + EsaCbe_22.10.36.topic-mms13091-SQLCompare-S98.r1
- + EsaCbe_22.10.37.topic-mms10658-SQLCompare.r1

Database Properties - EsaCbe

Select a page

- General
- Files
- Filegroups
- Options
- Change Tracking
- Permissions
- Extended Properties
- Mirroring
- Transaction Log Shipping
- Query Store

Script ? Help

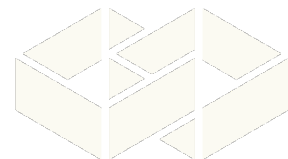
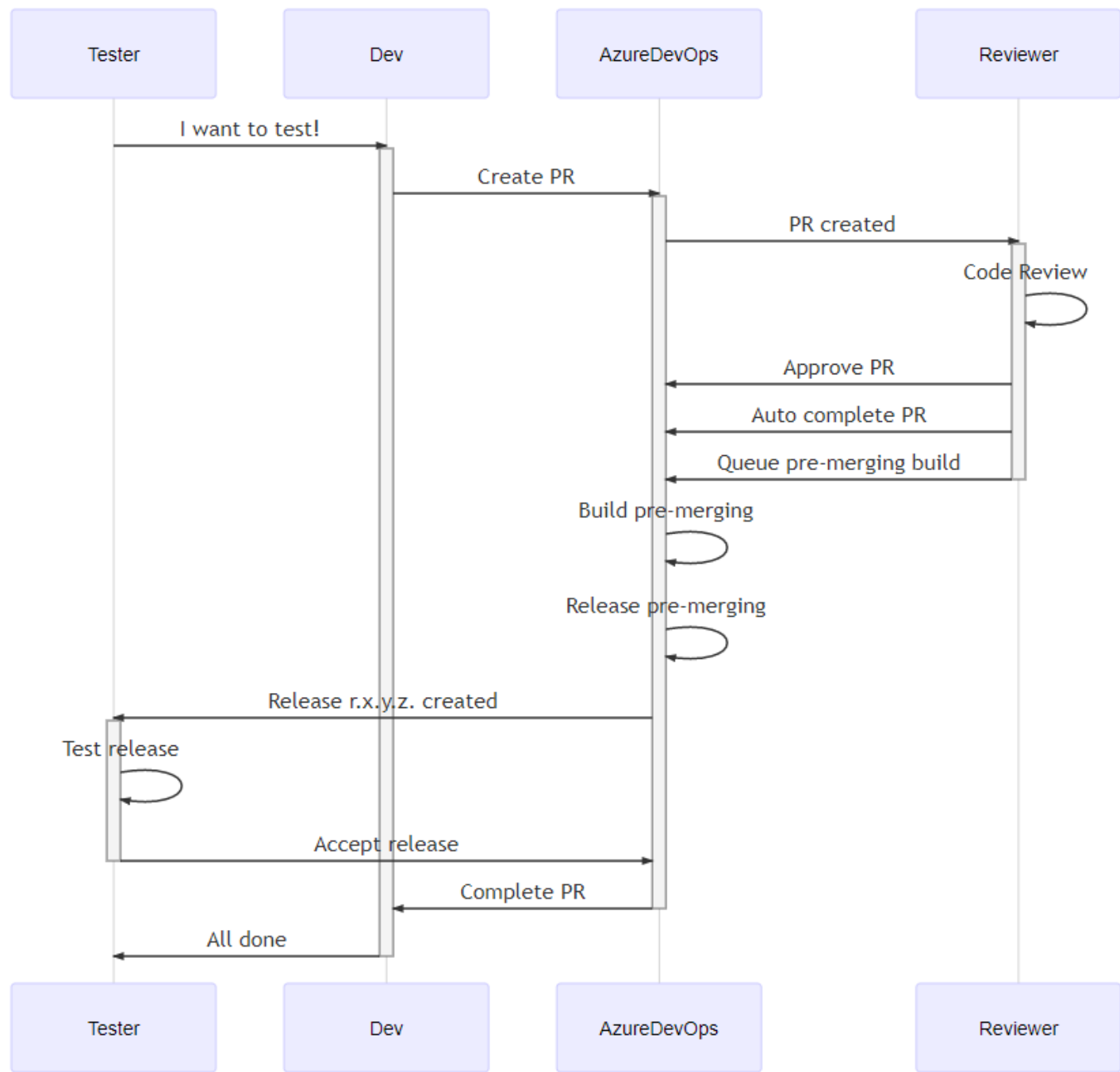
Database: EsaCbe

Collation: Latin1_General_CI_AS

Properties:

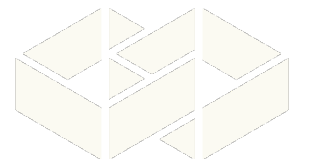
Name	Value
IsSQLCloneDatabase	1
SQLCloneDatabaseName	EsaCbe
SQLCloneReleaseName	22.10.35.topic-mms24847-RecoverHookData.r1
SQLSourceControl Databa...	3
SQLSourceControl Scripts ...	<?xml version="1.0" encoding="utf-16" standalone="yes"?><ISOCC...





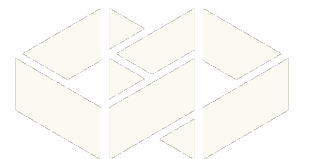
Manual vs Pull Request Release

- Release test are done on pre-merge build
 - More realistic testing
 - Prevent merge conflicts in master
 - Less manual, more automation
- But please still communicate!



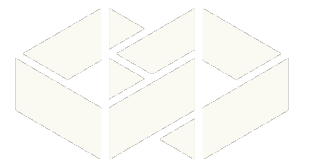
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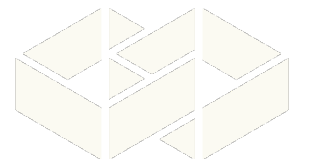
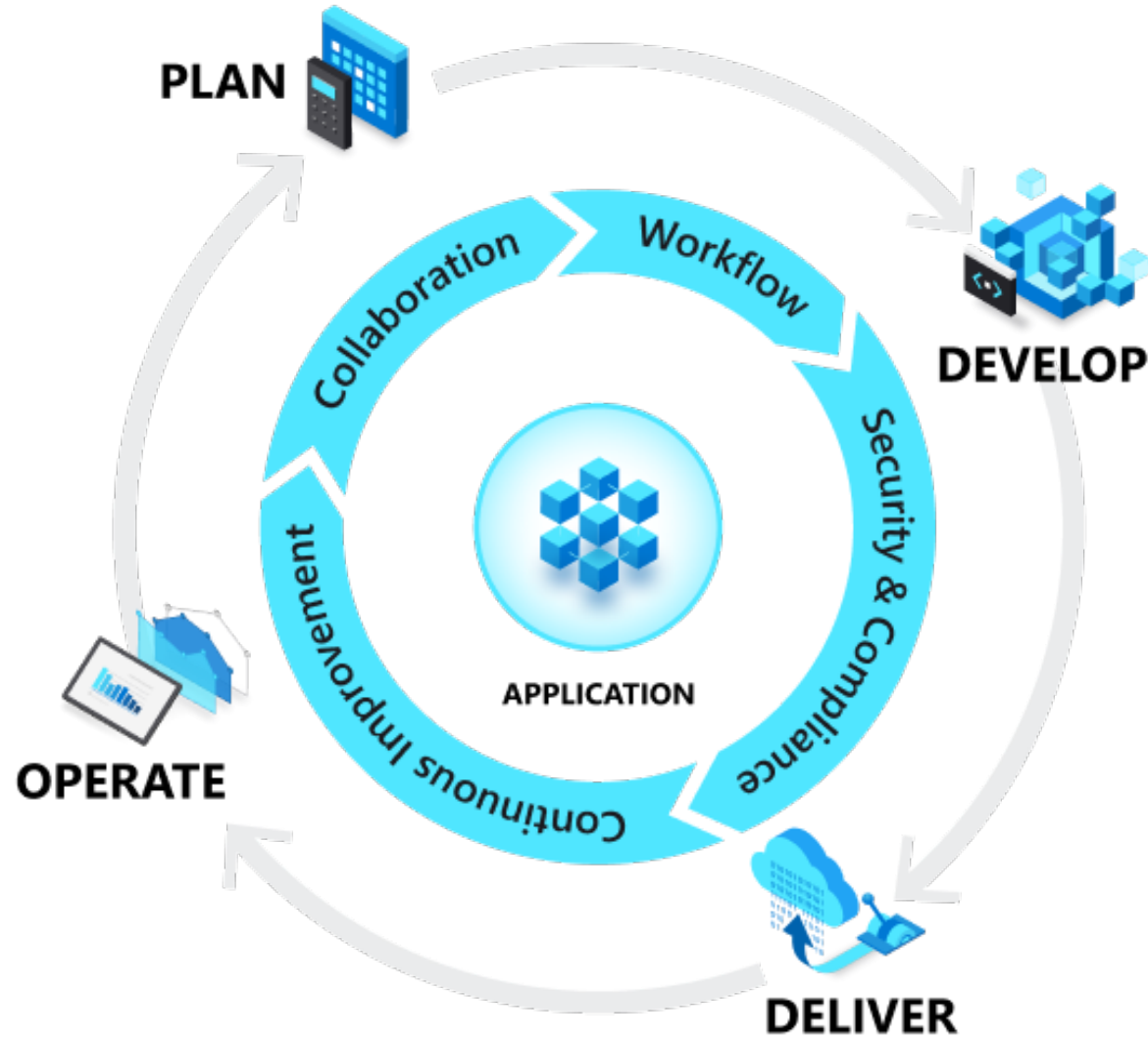


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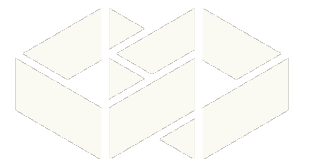


DevOps



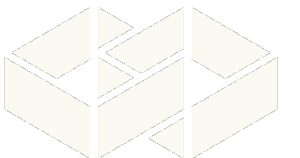
Operate DevOps practices

- Monitor & troubleshoot
- Securing knowledge



Troubleshoot

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

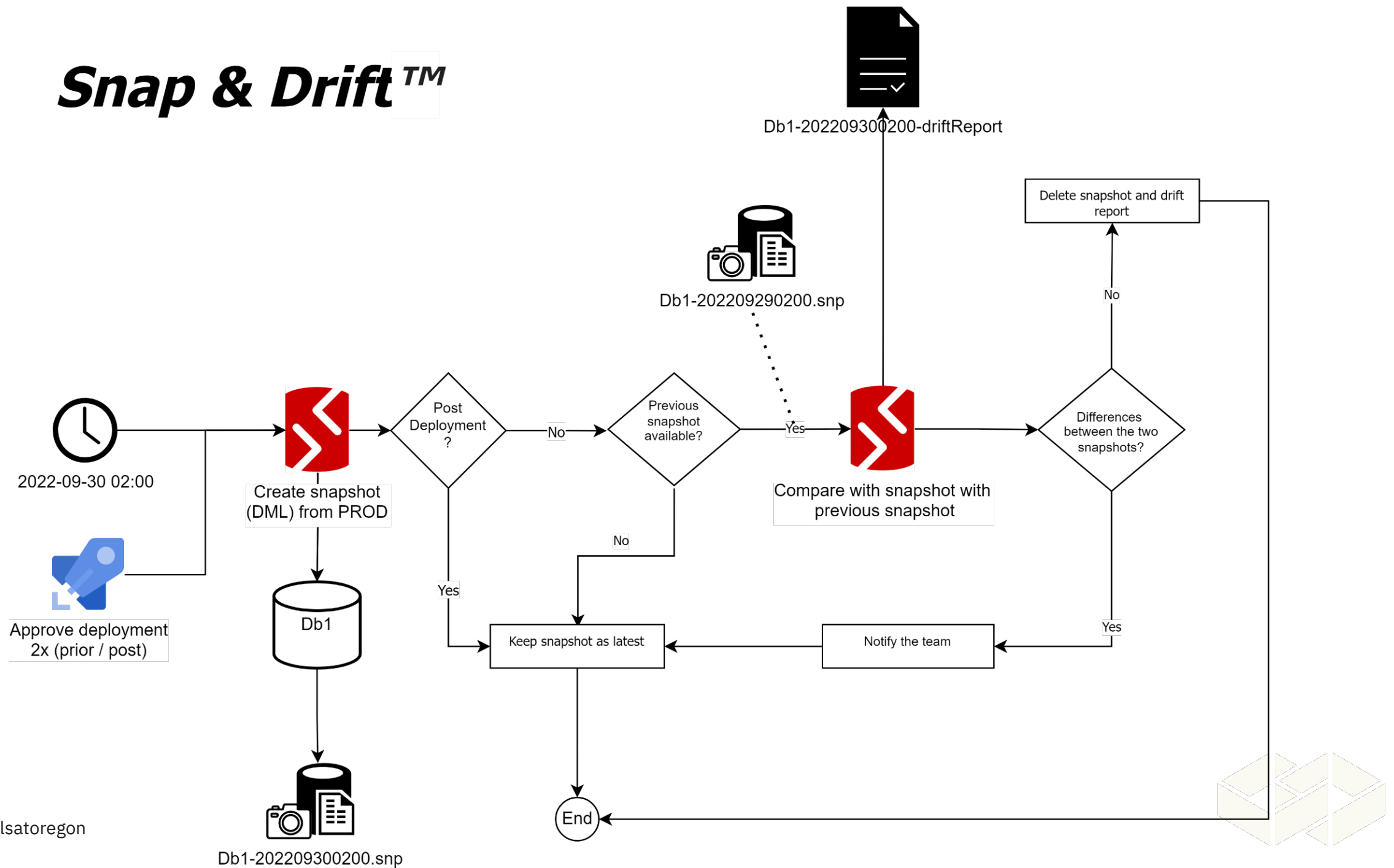


Monitor production databases

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

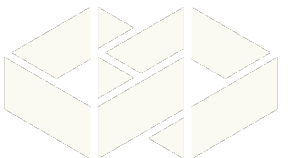


Snap & Drift™



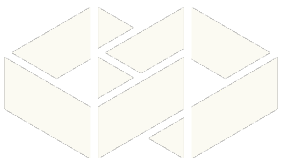
Operate DevOps practices

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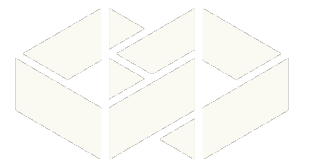
Share and securing knowledge

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



Operate DevOps practices

- ✓ Monitor & troubleshoot
- ✓ Securing knowledge



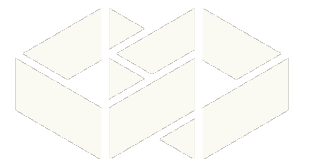


Demo Time



Key take aways

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



Questions?



Thank you

 linkedin.com/in/toniehuizer

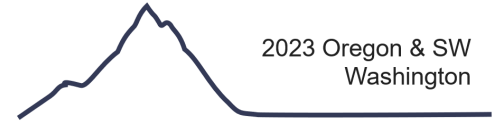
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