CI/CD ON

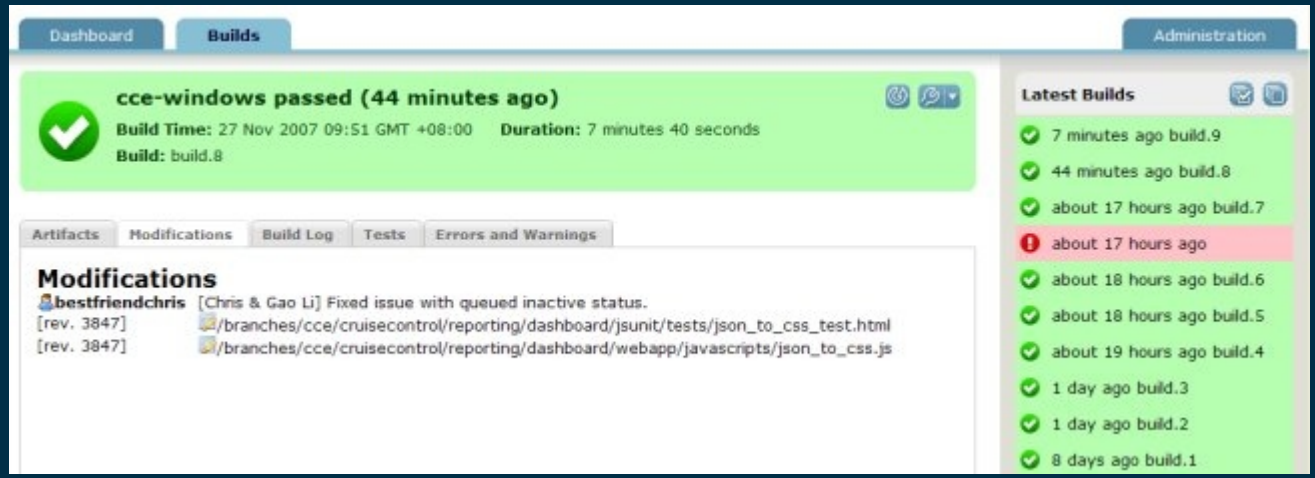
Once upon a time...

«Integration Hell» und «Works on My Machine»

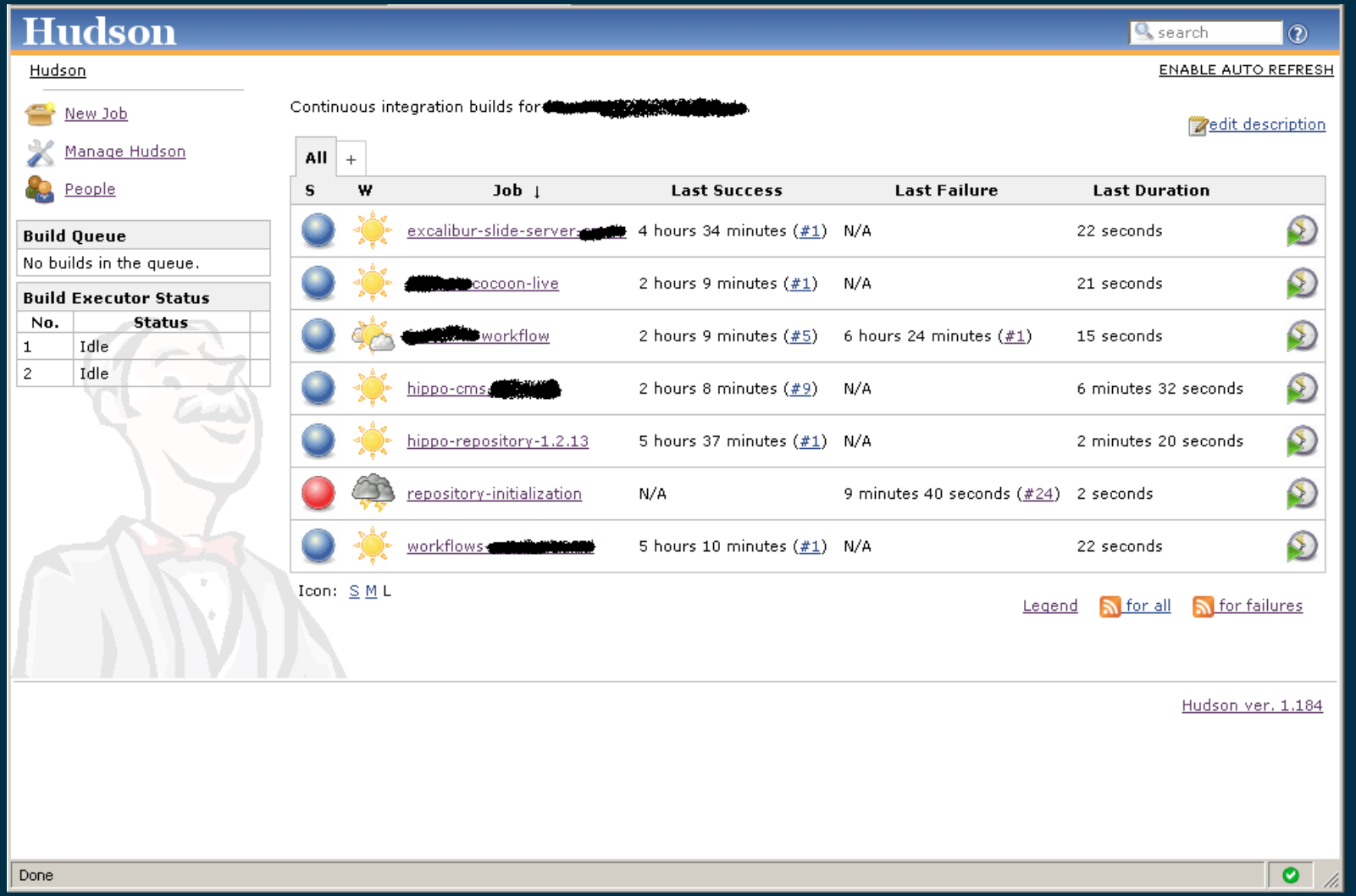
1991: Object Oriented Design: With Applications, Grady Booch

1997: Extreme Programming Explained

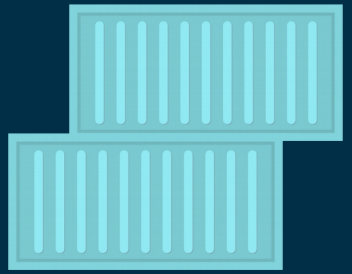
2001
CruiseControl



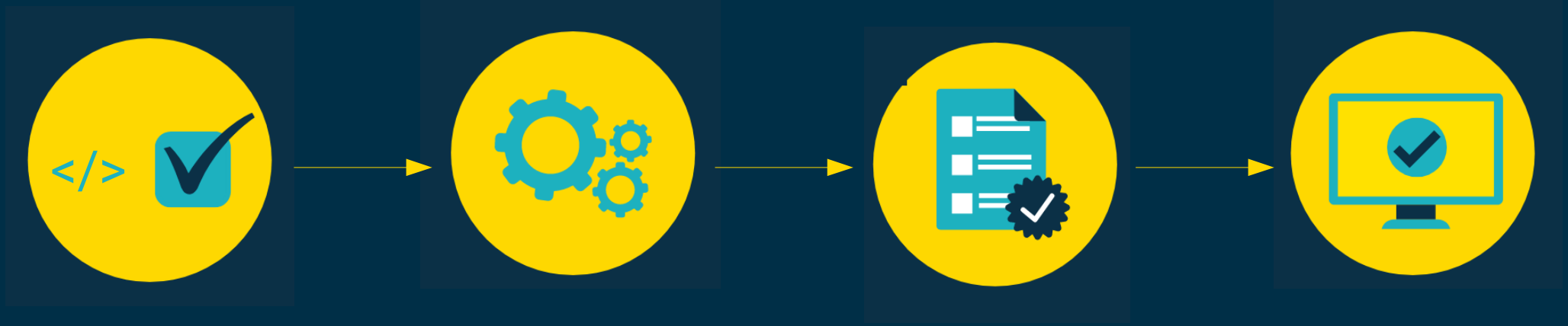
2005 Hudson


Hudson
search
Hudson
ENABLE AUTO REFRESH
New Job
Manage Hudson
People
Continuous integration builds for [redacted]
edit description
Build Queue
No builds in the queue.
Build Executor Status
No. Status
1 Idle
2 Idle
All +
S W Job ↓ Last Success Last Failure Last Duration
excalibur-slide-server-[redacted] 4 hours 34 minutes (#1) N/A 22 seconds
[redacted]cocoon-live 2 hours 9 minutes (#1) N/A 21 seconds
[redacted]workflow 2 hours 9 minutes (#5) 6 hours 24 minutes (#1) 15 seconds
hippo-cms[redacted] 2 hours 8 minutes (#9) N/A 6 minutes 32 seconds
hippo-repository-1.2.13 5 hours 37 minutes (#1) N/A 2 minutes 20 seconds
repository-initialization N/A 9 minutes 40 seconds (#24) 2 seconds
workflows[redacted] 5 hours 10 minutes (#1) N/A 22 seconds
Icon: S M L
Legend for all for failures
Hudson ver. 1.184
Done

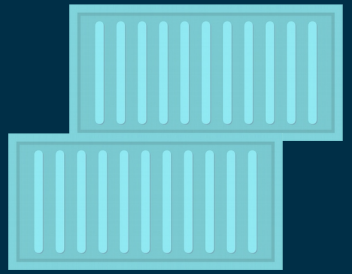
1



Continuous Integration


einchecken
automatisches testen
Reporting / Codeanalyse
Deployment

2



Continuous Delivery

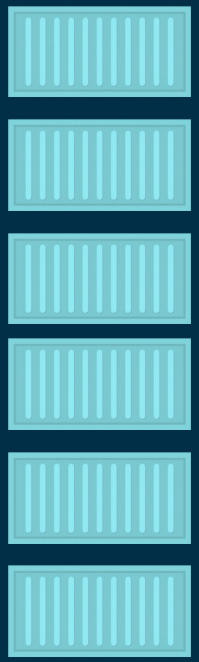
«It aims at building, testing, and releasing software faster and more frequently.»

Continuous Integration

schnell & oft released

auf Knopfdruck

Entwicklungsprozess



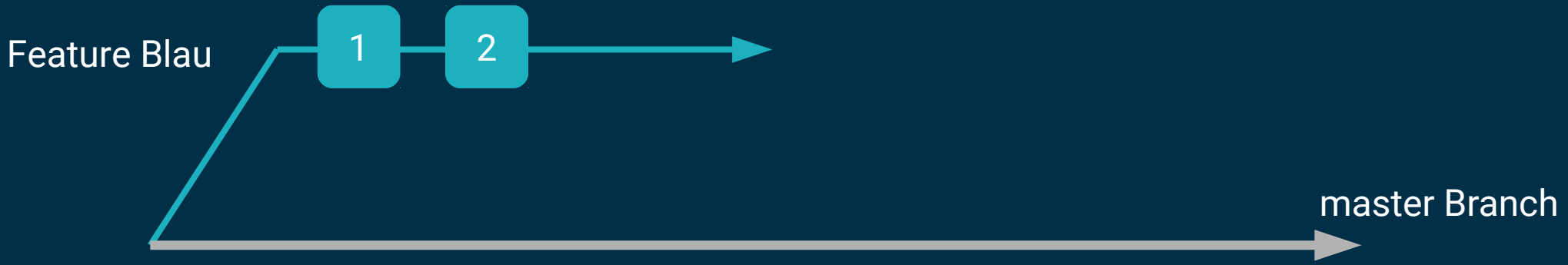
- Kleine und kurze Entwicklungszyklen
- Agiles Vorgehen
- Voll automatisierte Acceptance Tests
- Sehr hohe Testabdeckung
- Feature Toggles
- Big Scary Merge

Feature Toggles

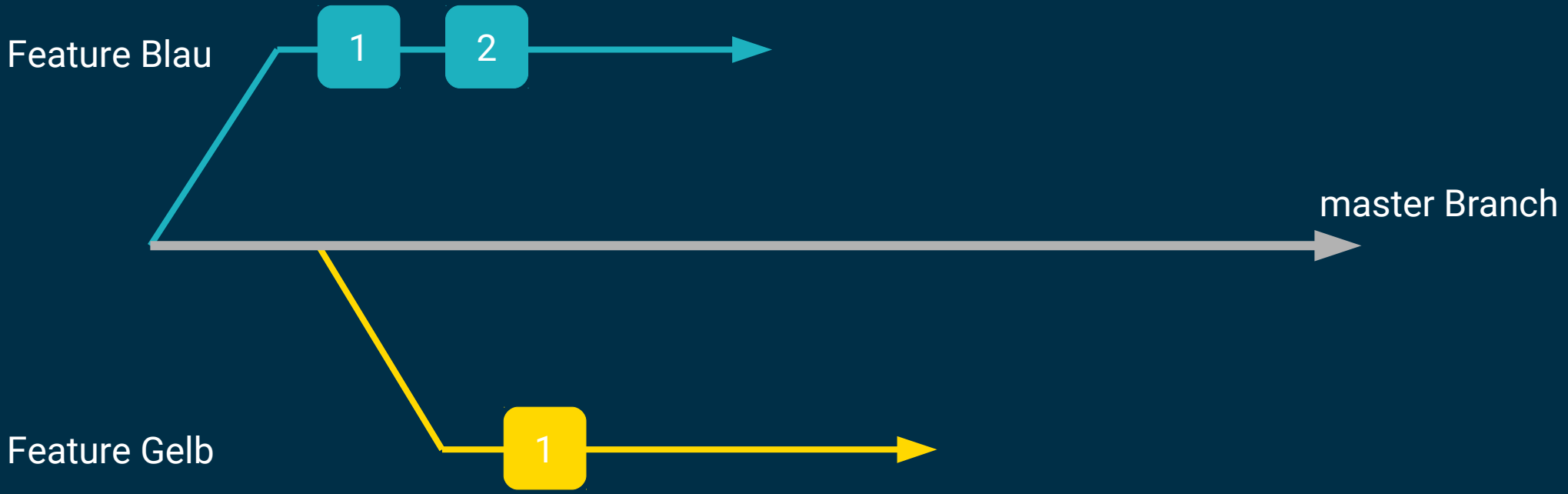
```
...

public void sendOrderNotification(Order order) {

    // send default OrderNotification
    mailService.sendOrderNotificationMessage(order);

    if(featureService.isEnabled(SEND_ORDER_NOTIFICATION_AS_SMS)){
        smsService.sendOrderNotificationMessage(order);
    }
}
...
```

Big Scary Merge bei Feature Branches

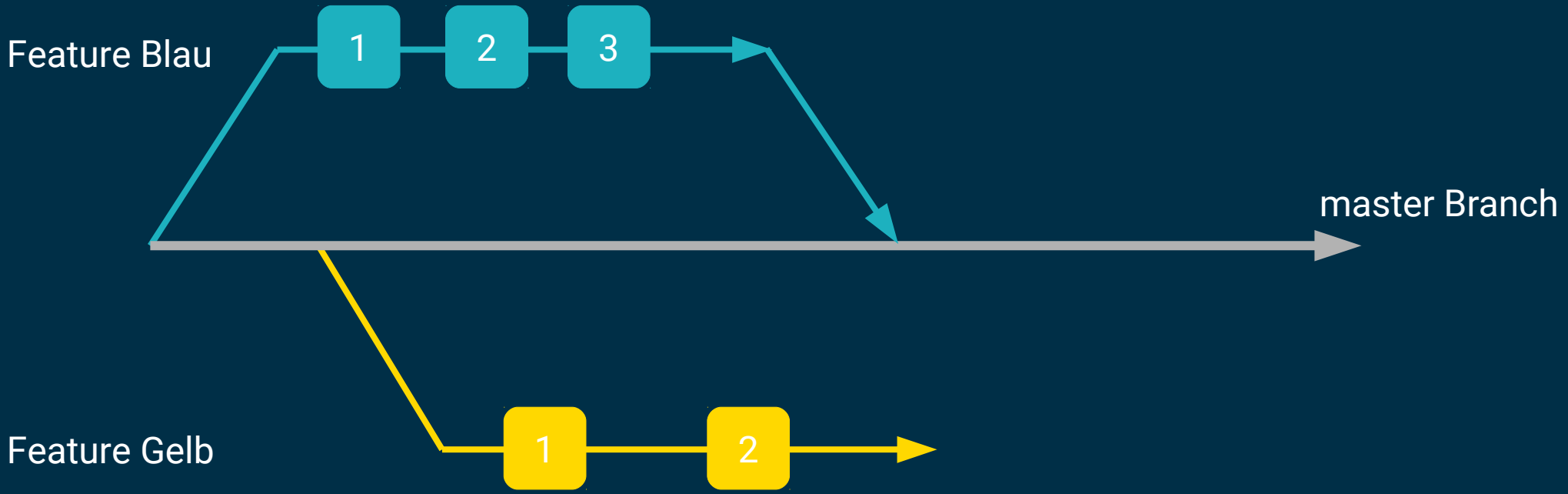
Big Scary Merge bei Feature Branches



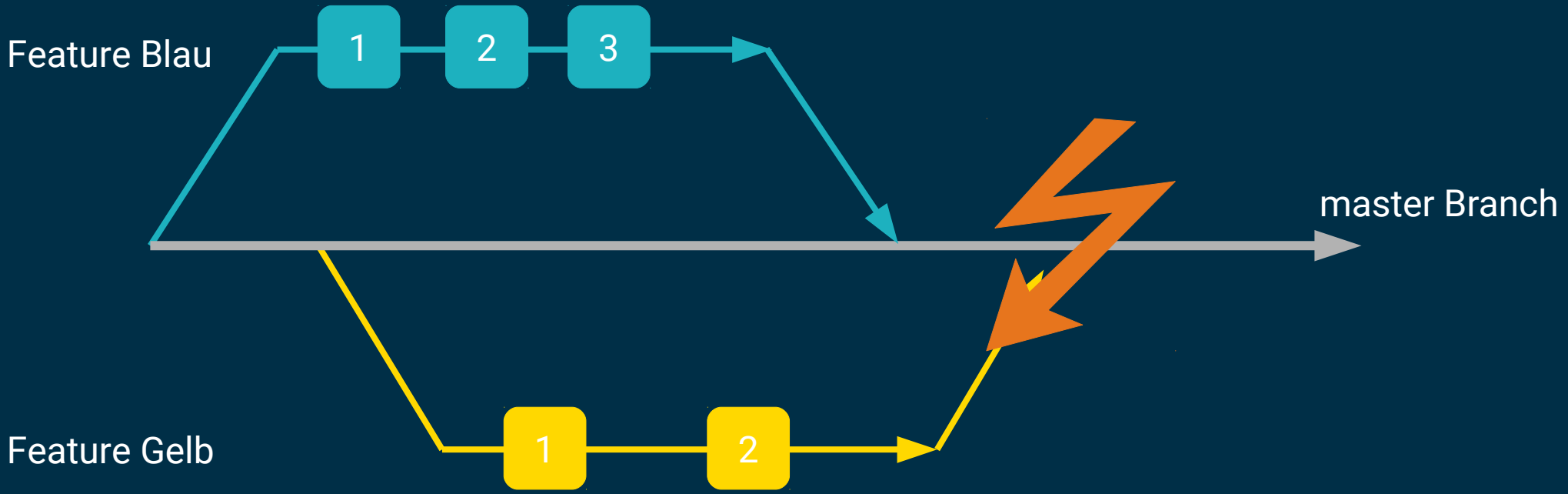
Big Scary Merge bei Feature Branches



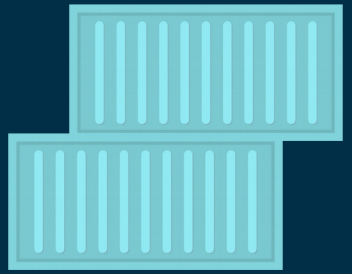
Big Scary Merge bei Feature Branches



Big Scary Merge bei Feature Branches



3



Continuous Deployment

Continuous Deployment

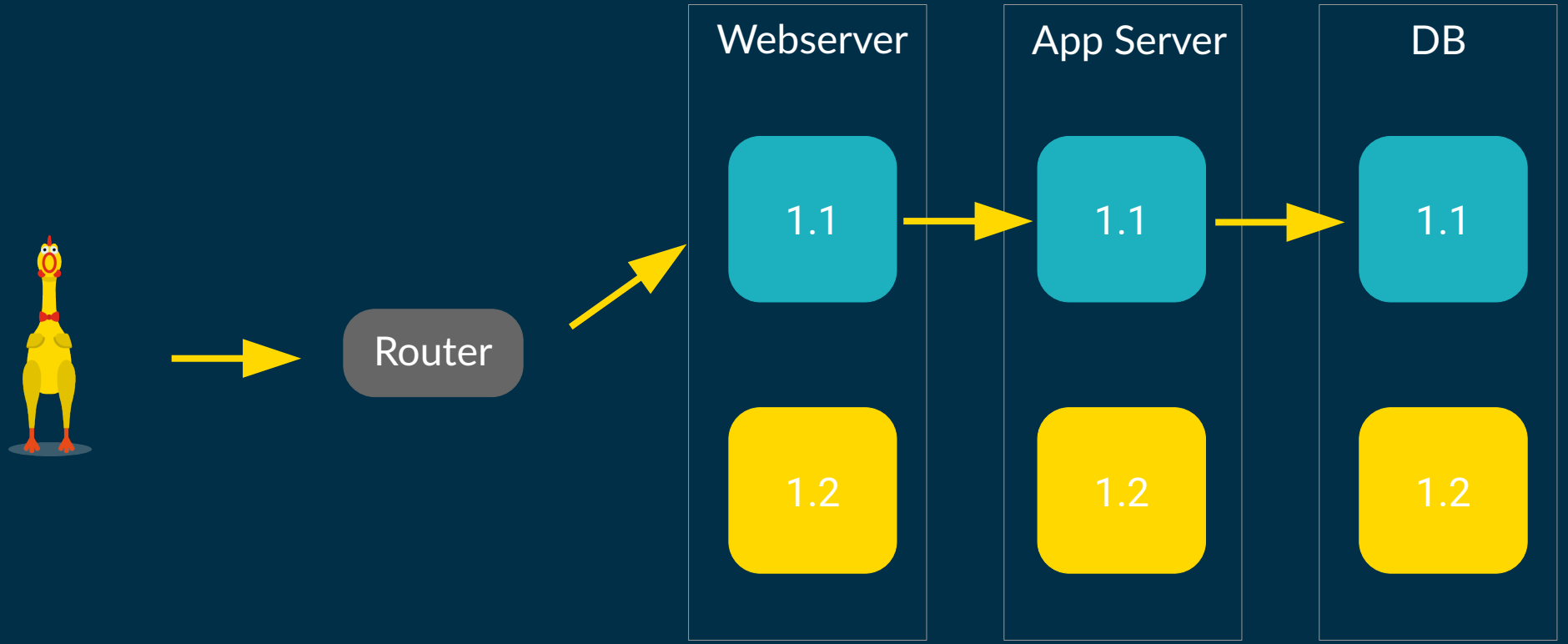
Jedes Release wird automatisch in Produktion deployed

Unterbruchsfreihe Deployments nötig

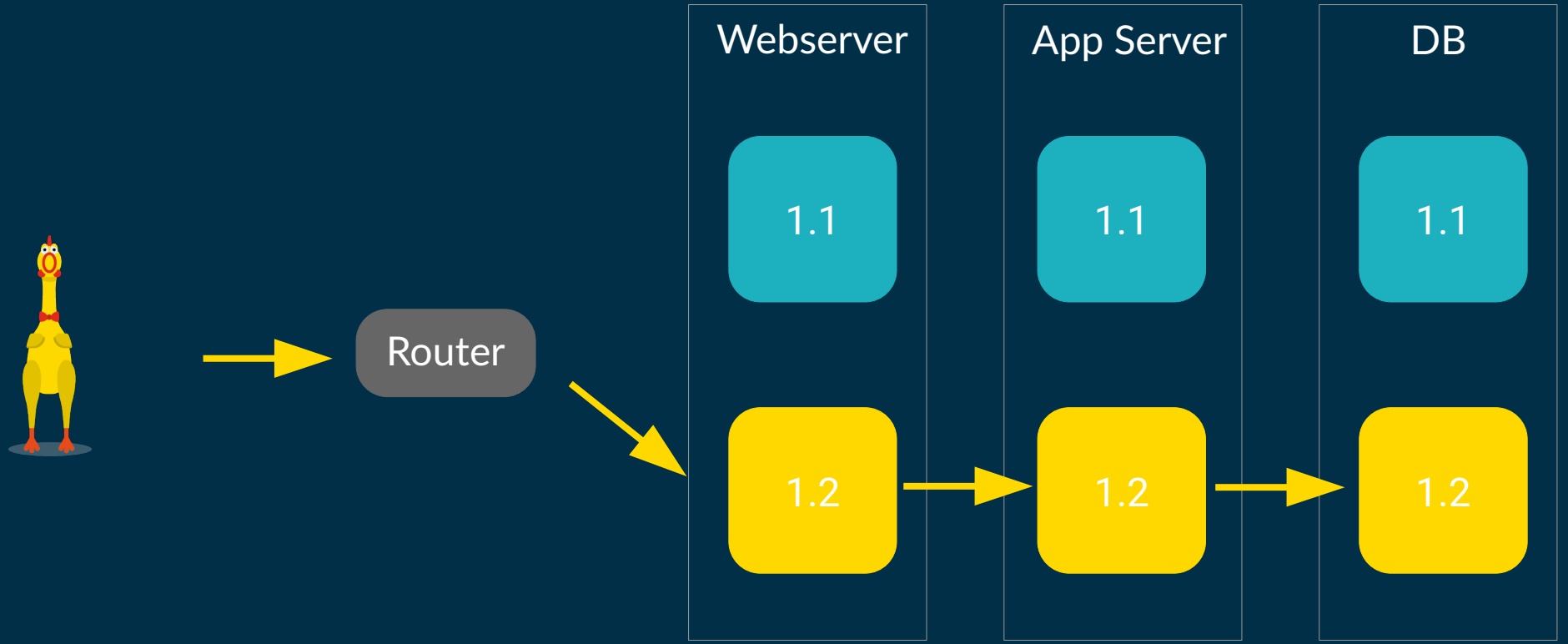
Blau - Gelb Deployments

Canary releasing

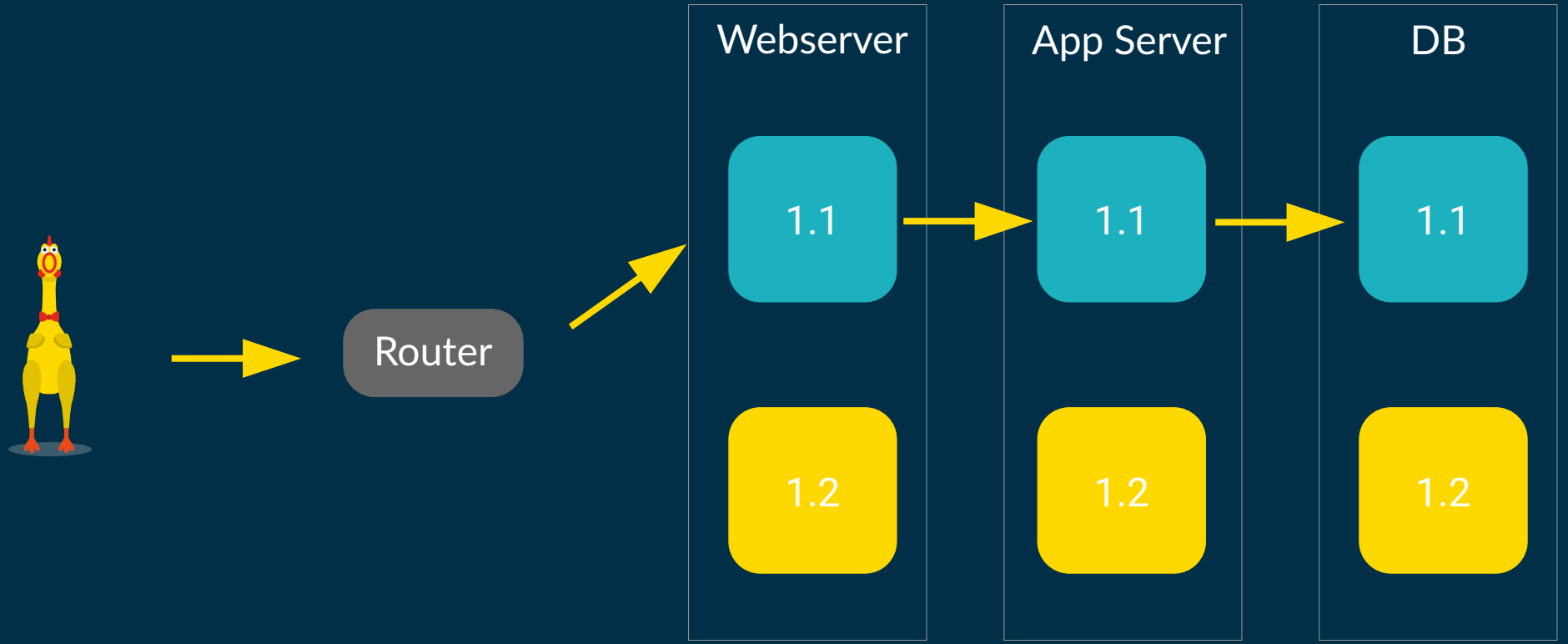
Blau – Gelb Deployments



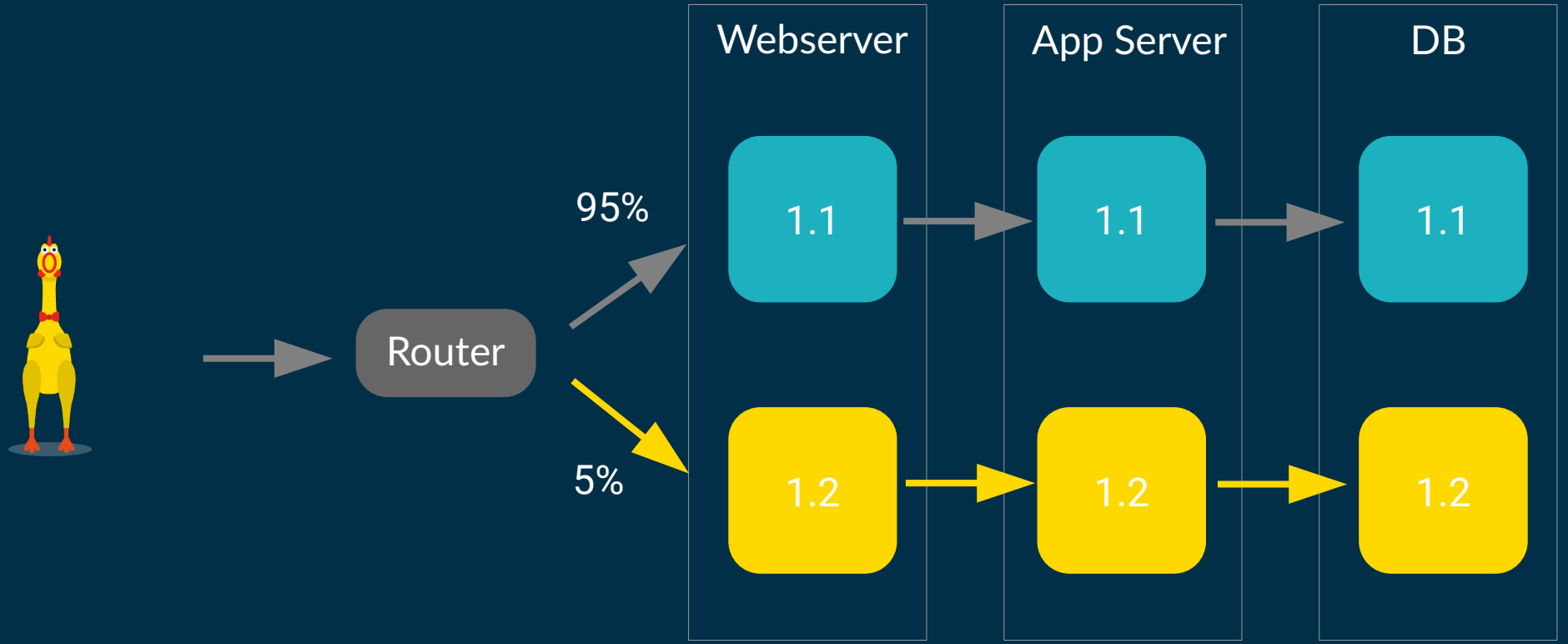
Blau – Gelb Deployments



Canary Releasing

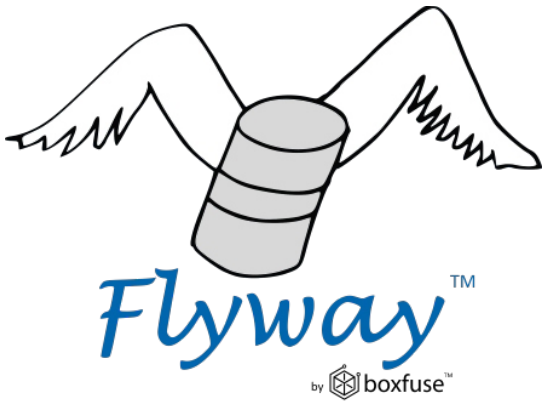


Canary Releasing



Automated Database Migration

Database Migration Scripts werden während dem Deployment einer neuen App Version ausgeführt.



LIQUIBASE

```
$ rake db:migrate
```

```
$ php bin/console doctrine:schema:update
```

Automated Database Migration

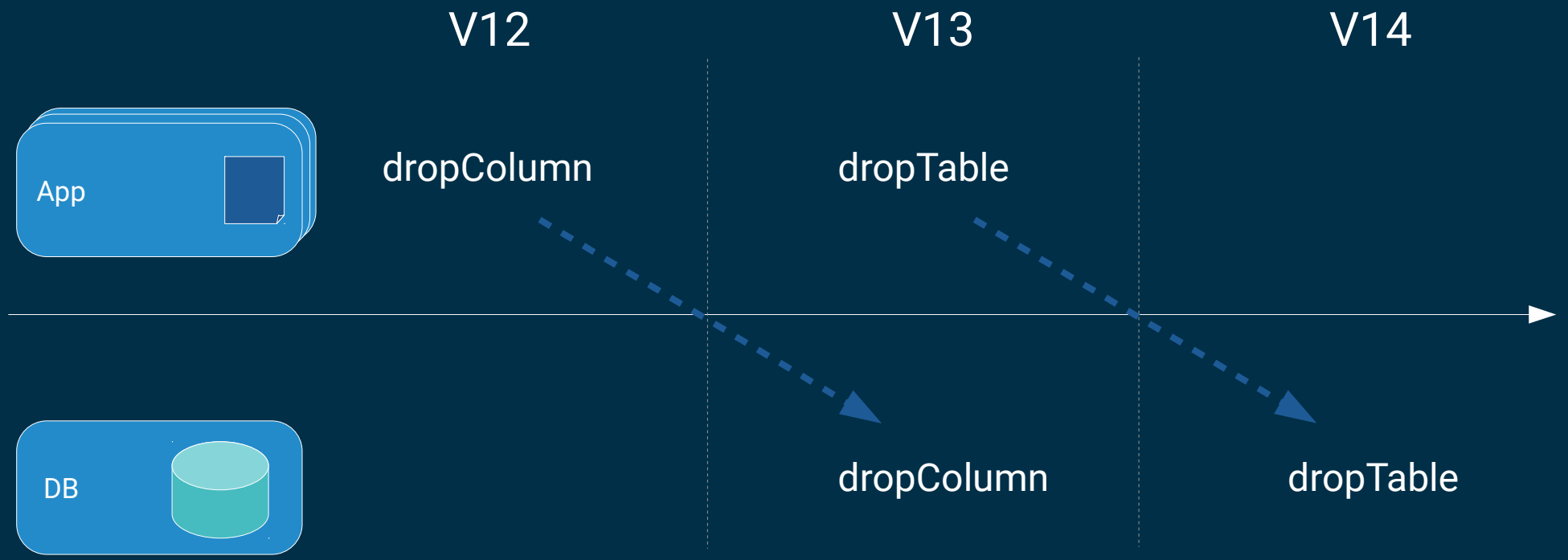
Die Datenbank kennt die aktuelle Schema Version.

DB Migrationen werden während dem App Deployment ausgeführt.

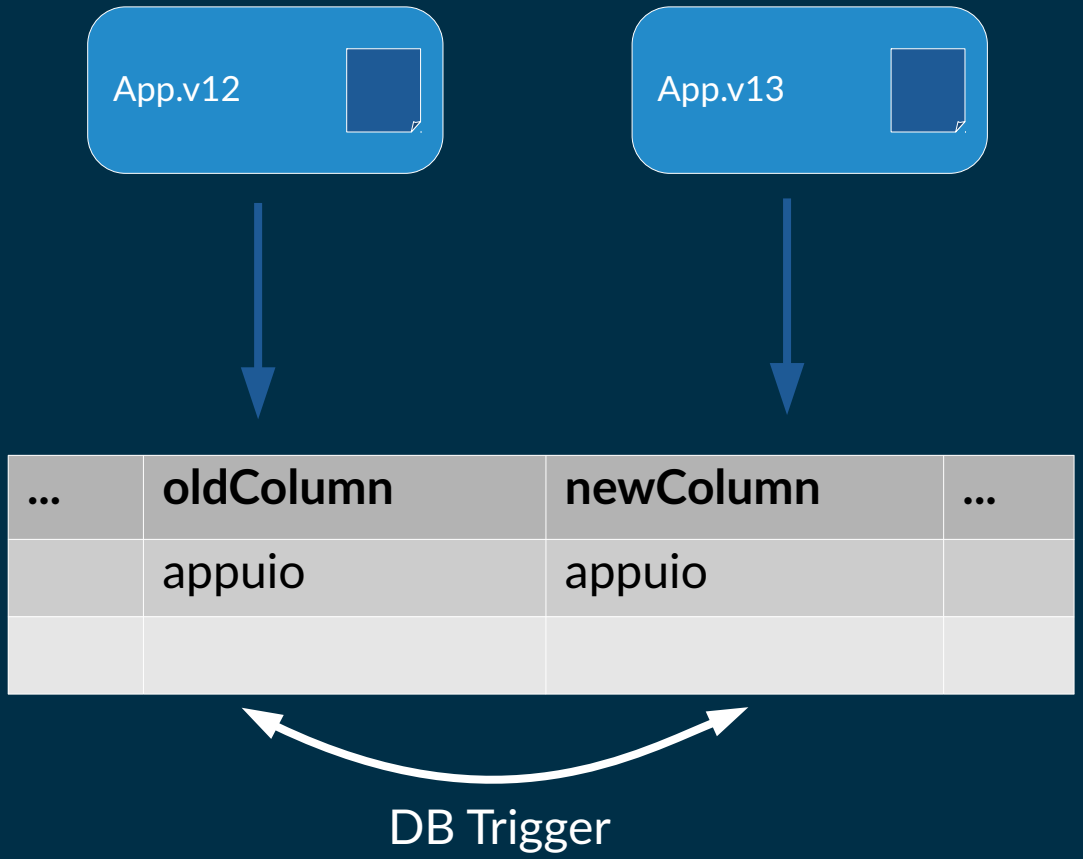
DB Migrationen werden analog Code getestet und durchlaufen die Pipeline

Rolling Update: Datenbank muss **abwärtskompatibel** sein

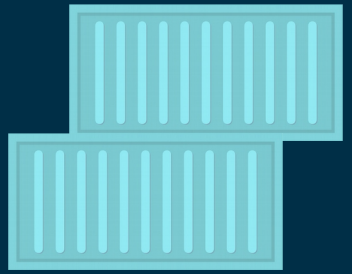
Konzept: Automated Database Migration



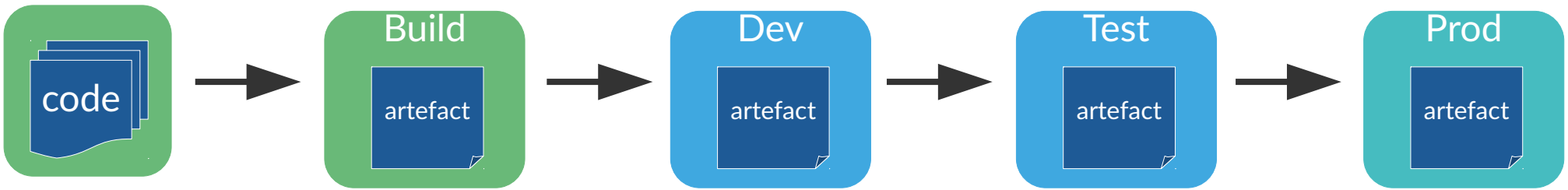
Konzept: Automated Database Migration



4

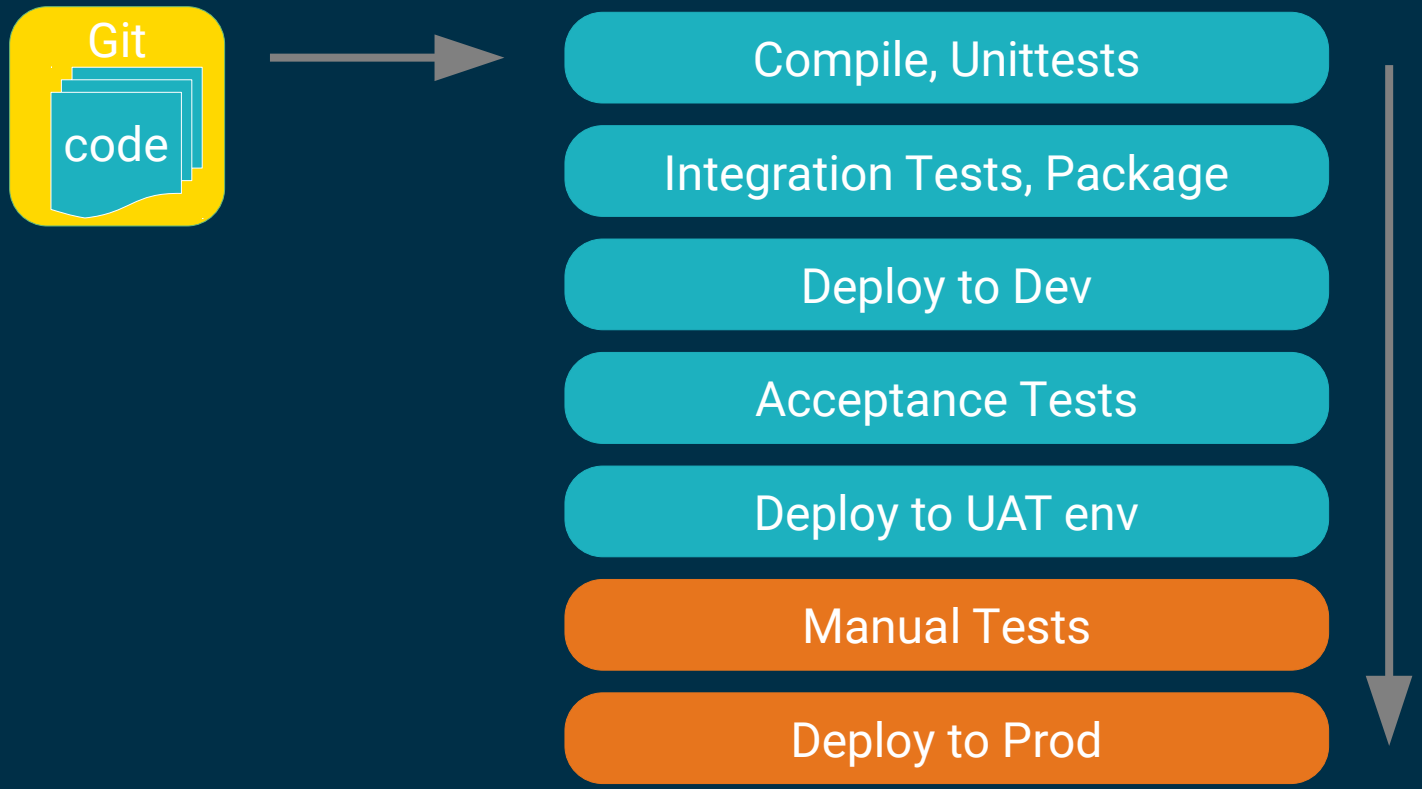
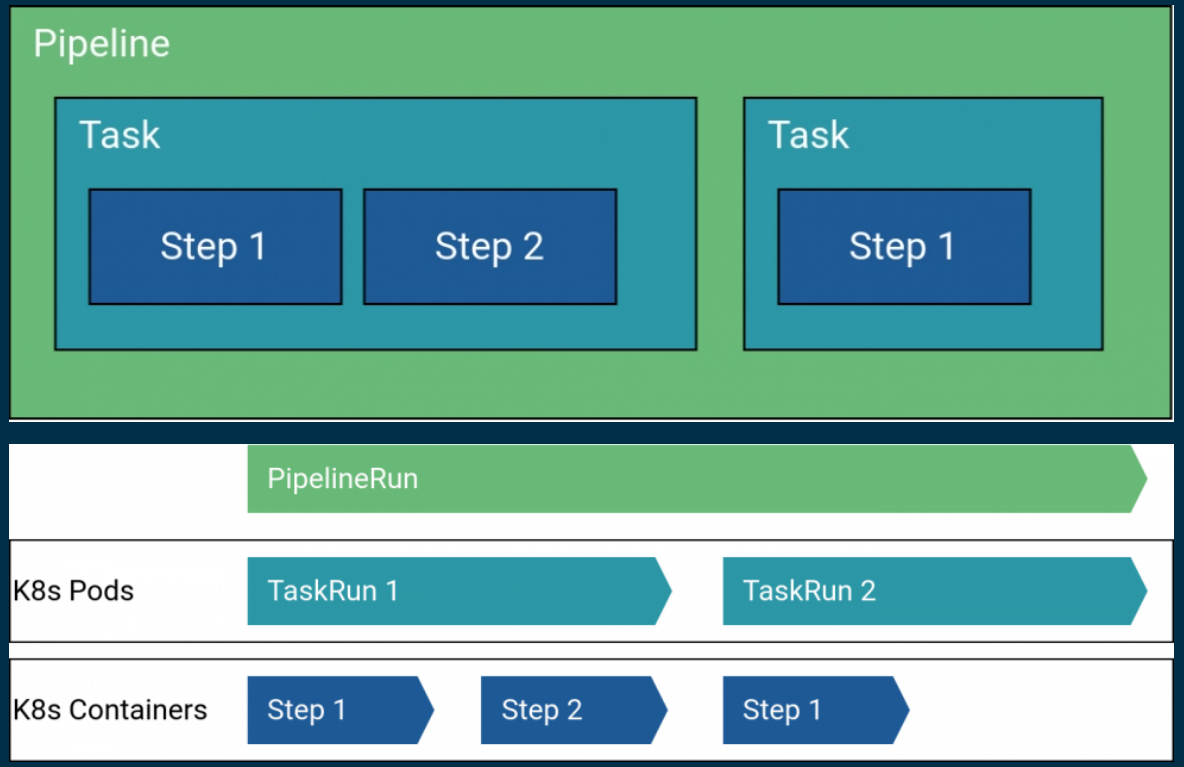


Continuous Delivery Pipeline



Das gleiche Artefakt durchläuft die gesamte Pipeline

Toplevel CI / CD Pipeline



Tekton – Cloud Native CI/CD-Pipeline