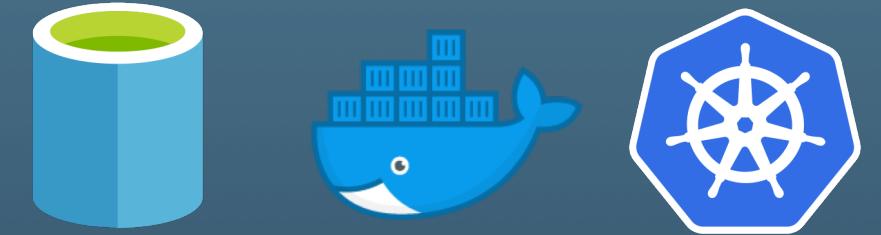


# DBA MASTERY



Database DevOps  
with SQL containers





# Carlos Robles

Principal Consultant, DBA Mastery



/croblesdba



@dbamastery



crobles@dbamastery.com

## Experience

Microsoft Data Platform MVP

Friend of Redgate

+10 years of experience multi-platform  
Solutions architect

## Community

GTSSUG – Community Leader

Speaker, author, blogger, mentor

Simple Talk, SQL Server Central & MSSQL Tips

## DBA Mastery

Tips, scripts, best practices & more



MAXDOP Calculator

Azure Data Studio wait stats widget

Azure Data Studio notebooks

PerfMon for DBAs - PowerShell

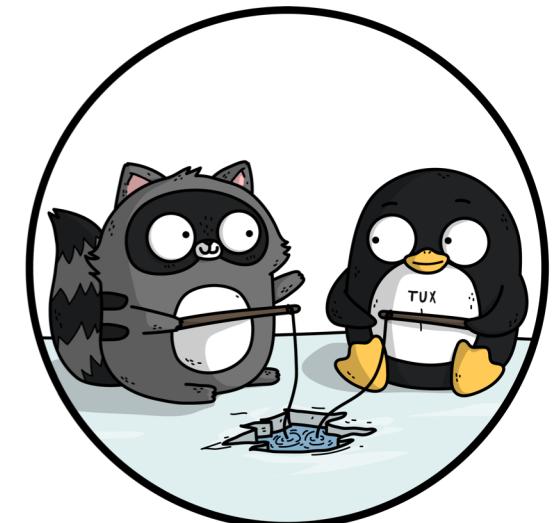
# AGENDA

- Containers, what and why ?
- SQL Server as an application component
- SQL Server containers in CI/CD pipelines



# PREREQUISITES

- Familiarity with infrastructure and development concepts
- Basic experience with Linux and containers
- Hands-on experience with databases
- Coding and scripting experience

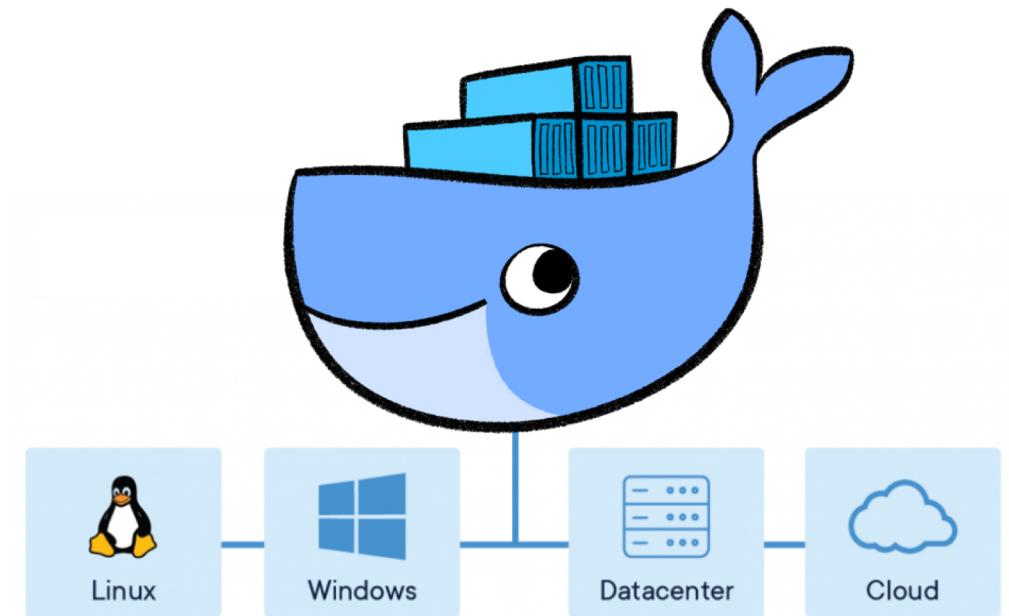


# Containers, what and why?



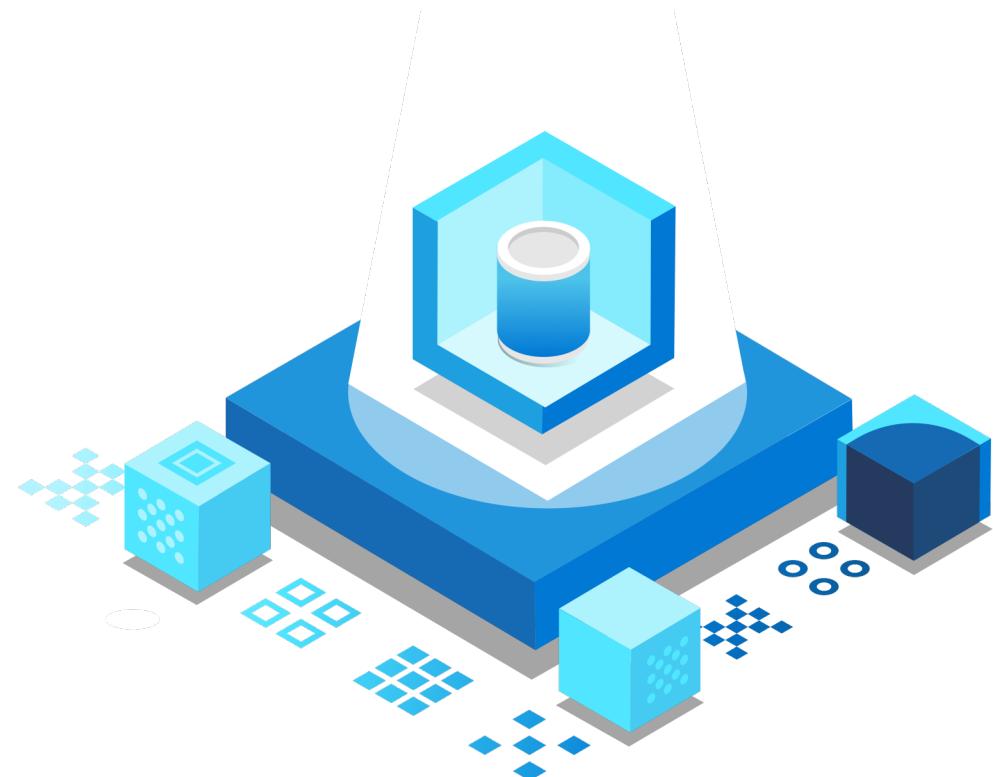
# WHAT ARE CONTAINERS?

- Standard
- Lightweight
- Cross platform



# WHY CONTAINERS?

- Agile development
- Easy and simple
- Packaging



# DEMO

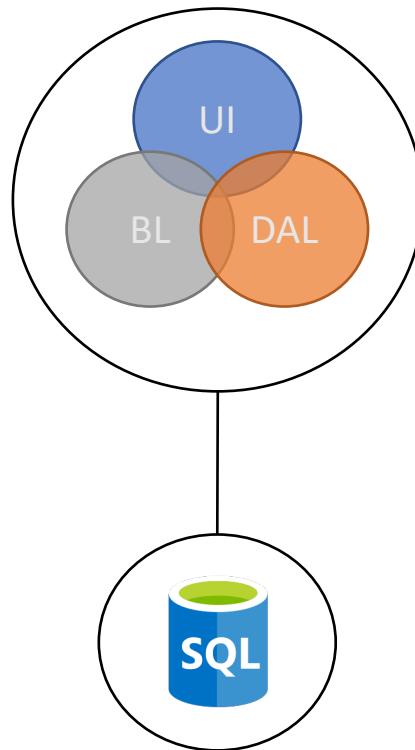
Custom container



# SQL Server as an application component



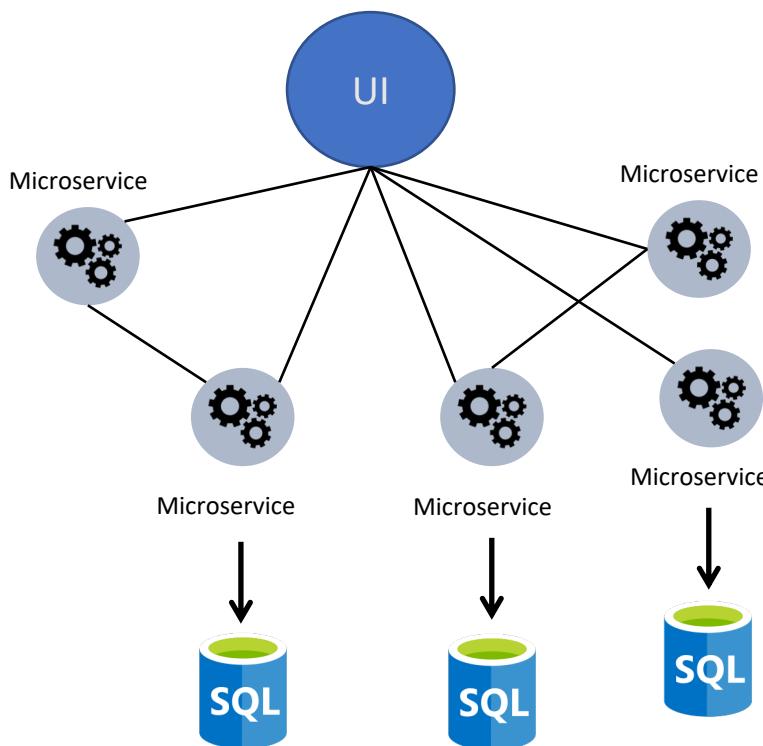
# TRADITIONAL PRACTICES



- **Pros**
  - Simple development
  - Simple deployment
  - Simple testing / sharing
- **Cons**
  - Difficult to understand / change
  - Slowness / limited agility
  - Poor reliability



# CONTEMPORARY PRACTICES

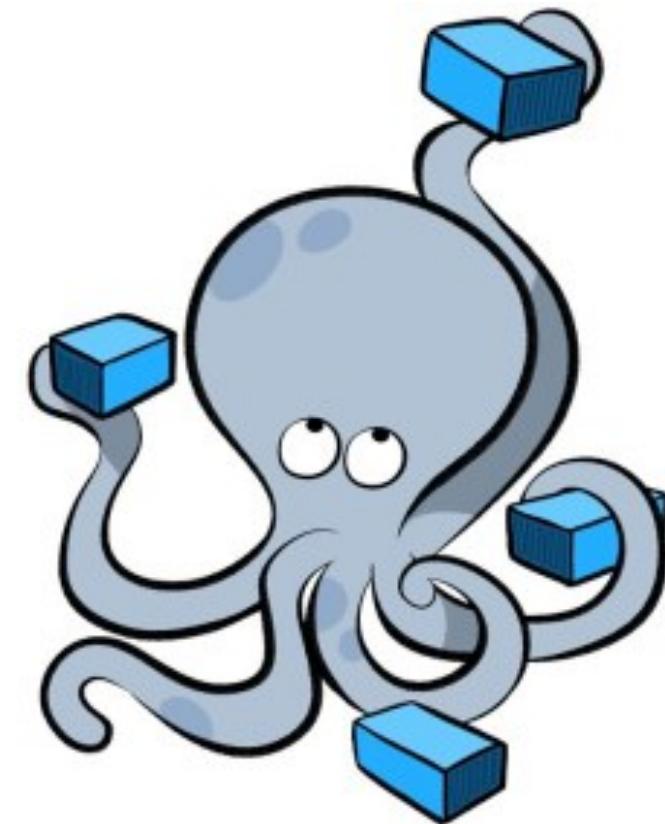


- **Pros**
  - Scalability
  - Reliability / flexible
  - Easy adoption of new tech
- **Cons**
  - Difficult integration / testing
  - Operational complexity
  - Skill demanding



# ENTER DOCKER COMPOSE

- Define services
- Multiple containers
- Declarative language
- Dockerfile (YAML)
- Latest version 3.7



# DEMO

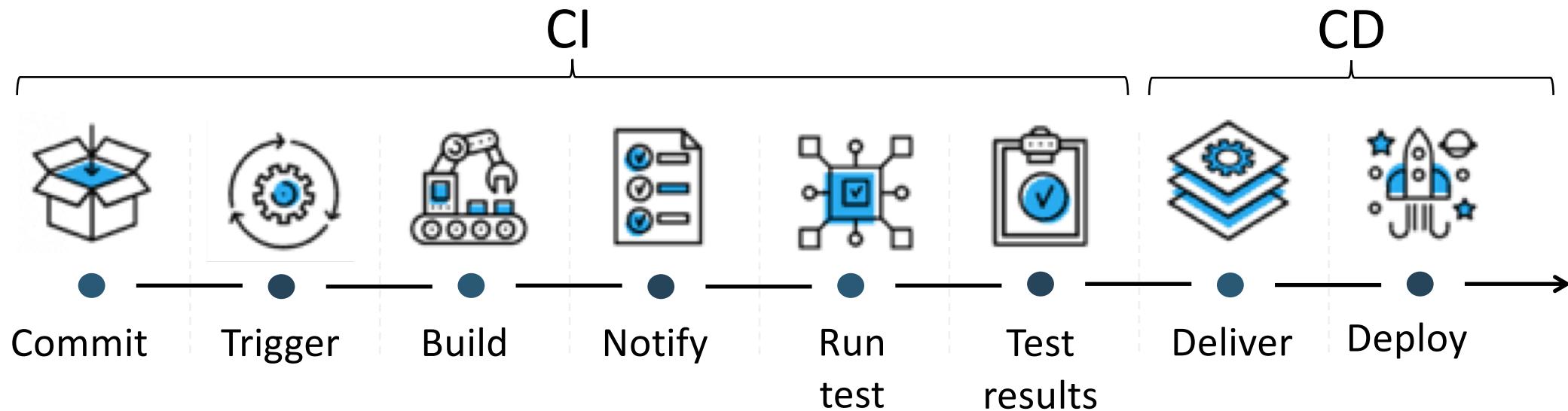
Manual integration



# SQL Server containers in CI/CD pipelines

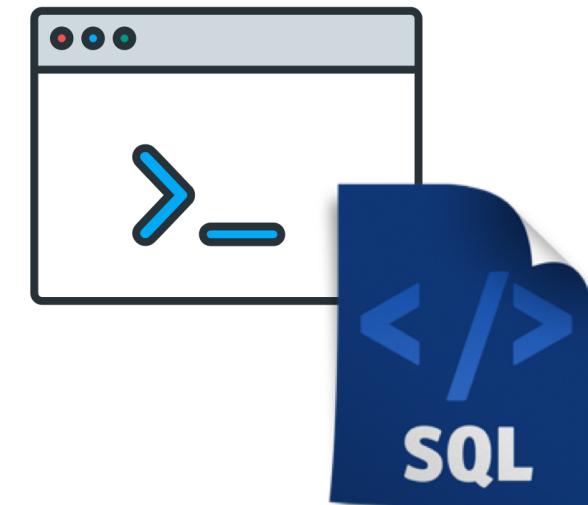


# CI / CD PIPELINES



# CI/CD FOR DATABASES

- Dockerfile / entrypoint
- sqlcmd, SqlPackage, ADS, SSMS
- EF/ Sequelize / Django
- Flyway

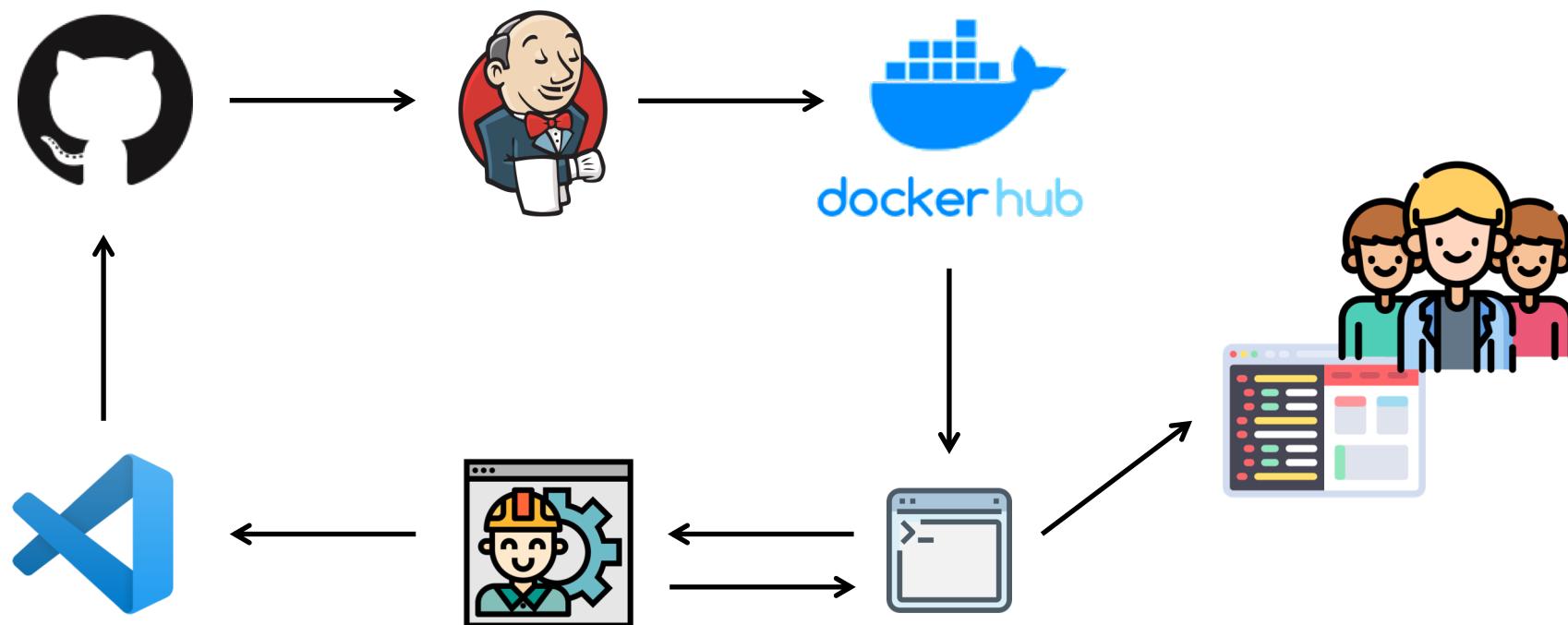


# ENTER JENKINS

- Open source
- Automation server
- Jobs / pipelines (Jenkinsfile)
- Extensible (master / agents)
- Plugins



# PIPELINE - DEV



# DEMO

CI with Jenkins

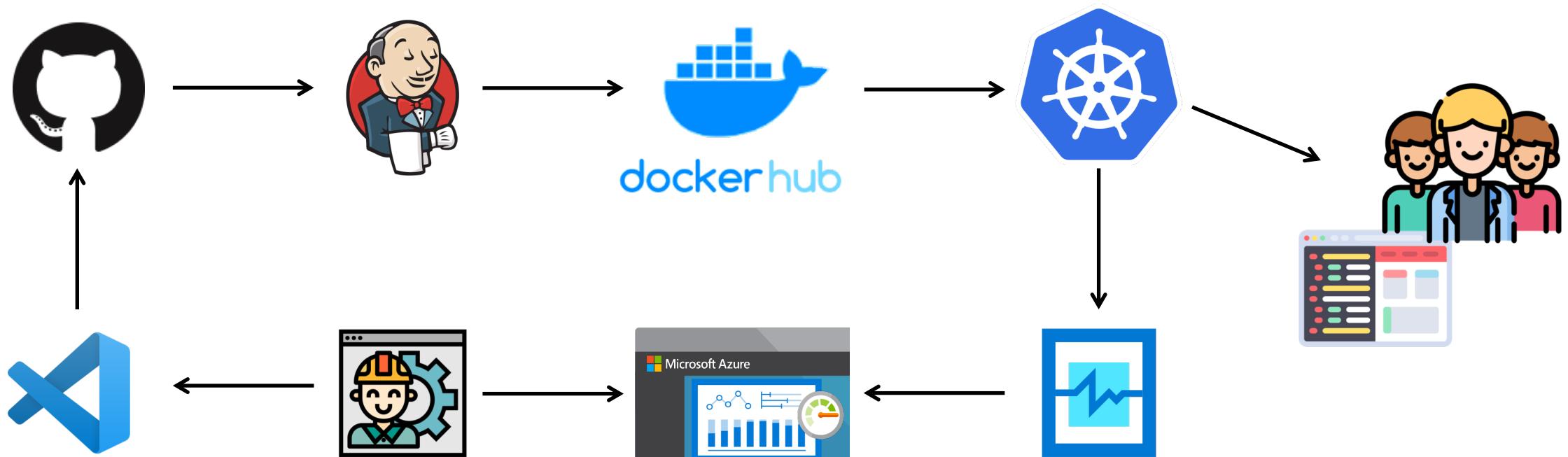


# ENTER KUBERNETES

- Open source
- Container orchestrator
- Declarative model
- Master / nodes
- Deployments / pods

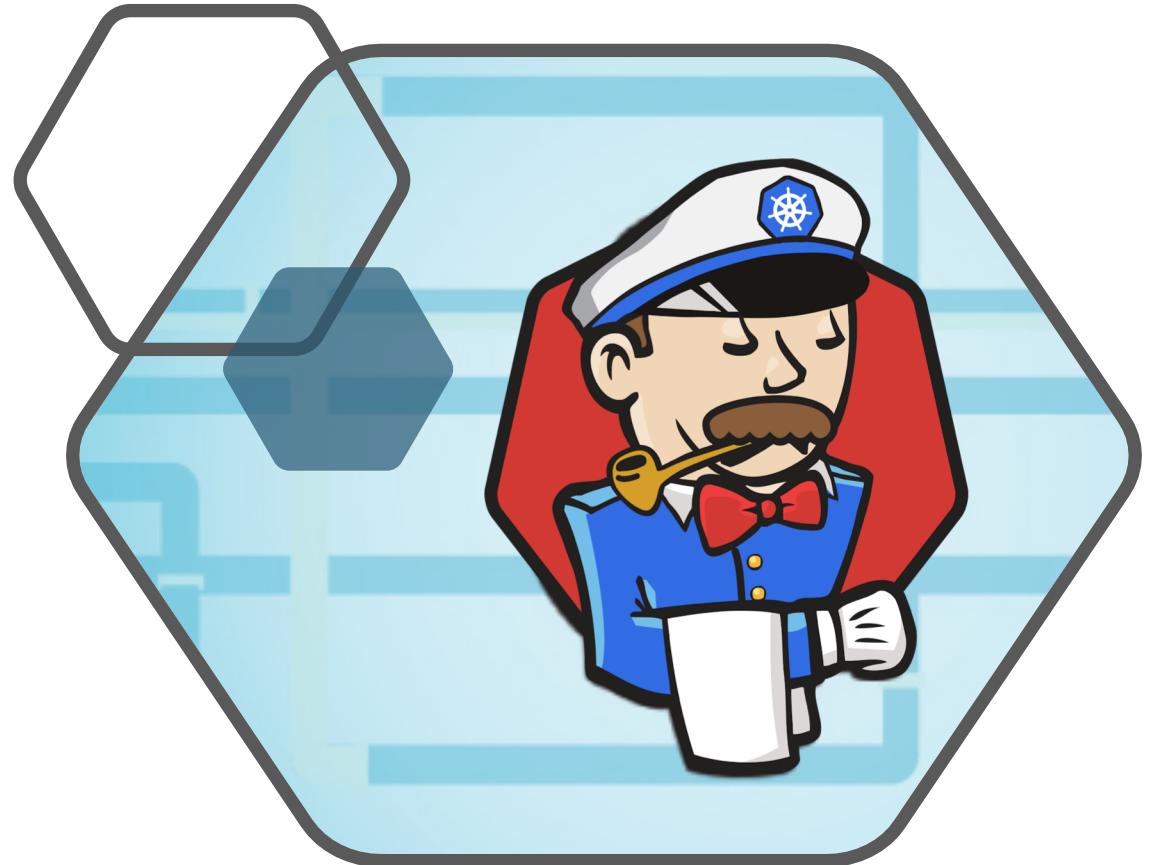


# PIPELINE - STAGE



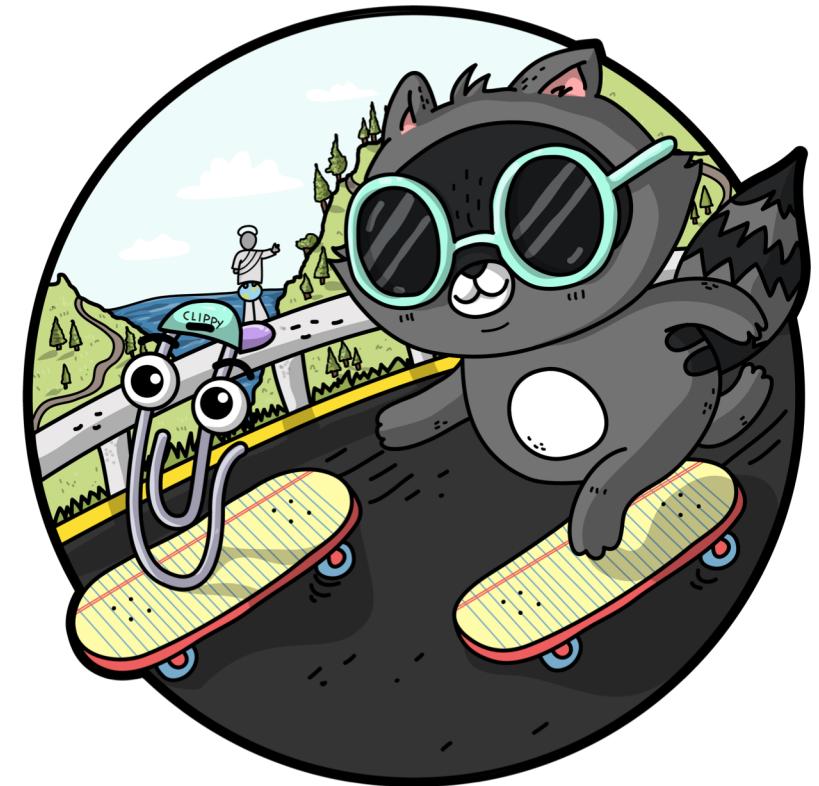
# DEMO

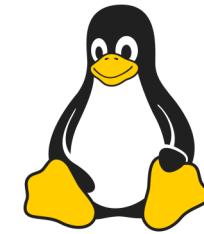
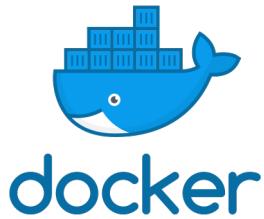
CI/CD with Jenkins & Kubernetes



# REVIEW

- Containers = multiplatform
- SQL Server = component
- Open source
- CI / CD
- DevOps





# Questions?



@dbamastery



@dbamaster



# REFERENCES

- **Official documentations**
  - [Docker Docs](#)
  - [Kubernetes Docs](#)
- **SQL Server**
  - [SQL Server workshops](#)
  - [SQL Server in Docker](#)
- **Books**
  - [The Phoenix / Unicorn Project](#)
  - [The DevOps Handbook](#)
  - [Kubernetes: Up and Running](#)
  - [Designing Distributed Systems](#)
  - [Pro SQL Server On Linux by Bob Ward](#)
- **Pluralsight**
  - [Getting Started with Docker](#)
  - [Docker Deep Dive](#)
  - [Docker and Kubernetes: The big picture](#)
  - [Kubernetes Installation and Configuration fundamentals](#)
- **Microsoft Learning**
  - [Kubernetes Learning Path](#)
  - [SQL Workshops](#)
- **Katacoda**
  - [Docker](#)
  - [Kubernetes](#)



# ARTICLES AND MORE

- **YouTube**
  - [SQL Containers on Docker & Kubernetes](#)
  - [SQL Server containers in Microsoft Azure](#)
- **Articles**
  - [Redgate - Simple Talk](#)
  - [SQL Server Central](#)
  - [MSQL Tips](#)





@dbamastery



@dbamaster



crobles@dbamastery.com



croblesdba

# Thanks!

