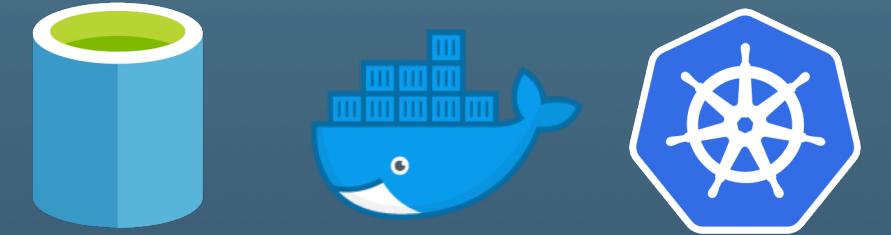


DBA MASTERY



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

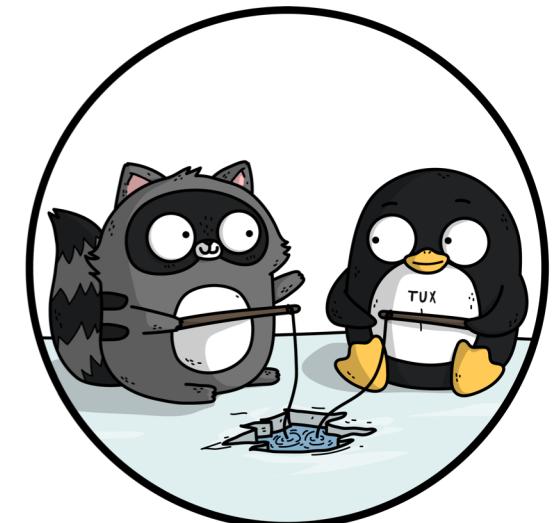
AGENDA

- 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

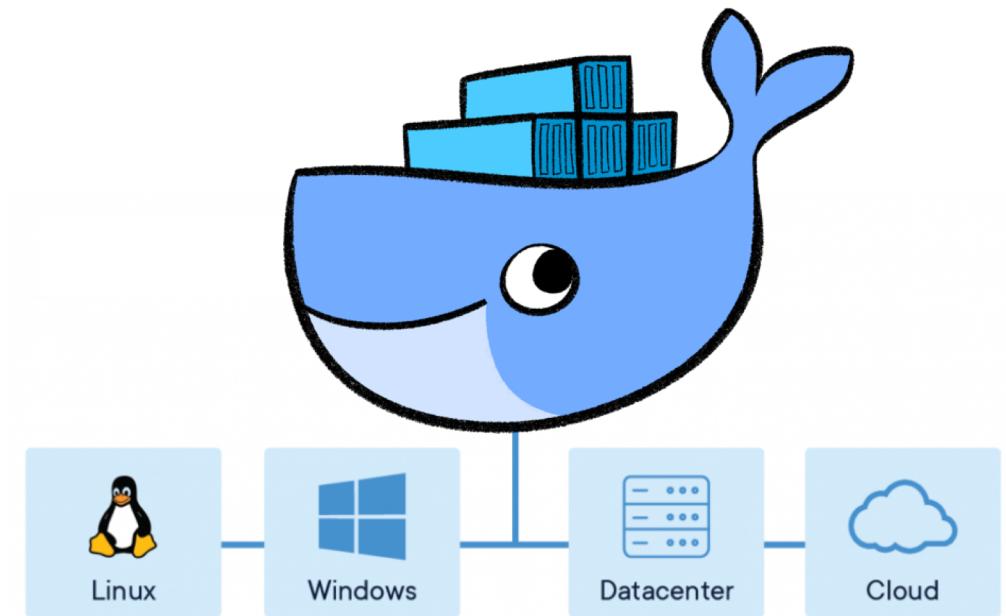


Containers, what and why?



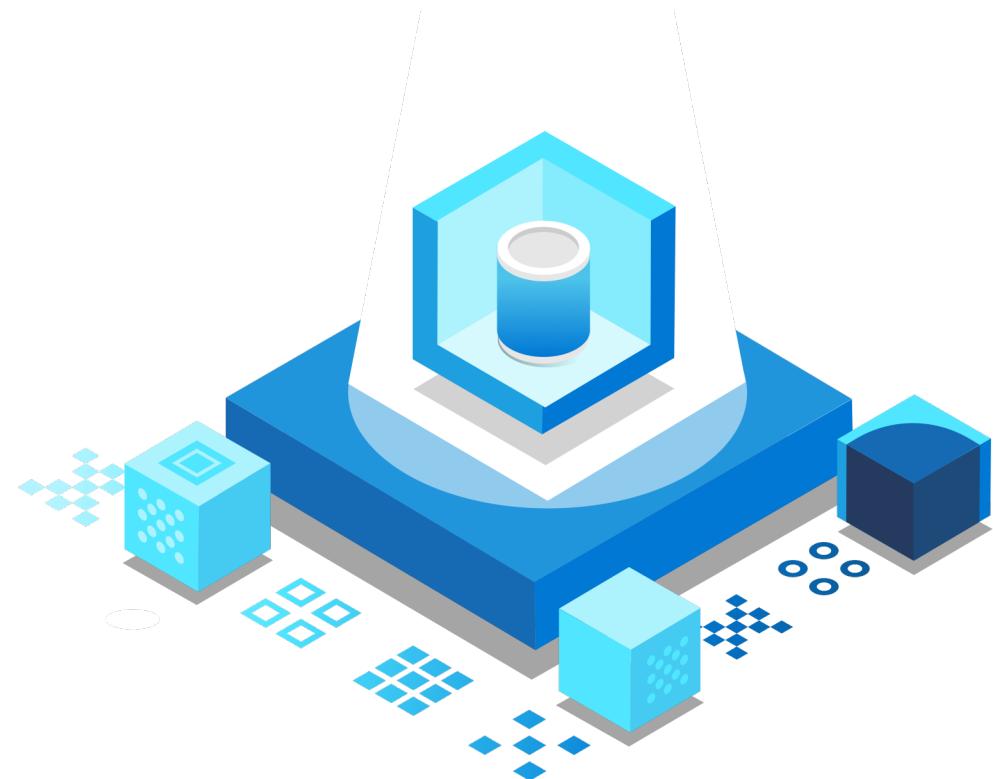
WHAT ARE CONTAINERS?

- Standard
- Lightweight
- Cross platform



WHY CONTAINERS?

- Agile development
- Easy and simple
- Packaging



DEMO

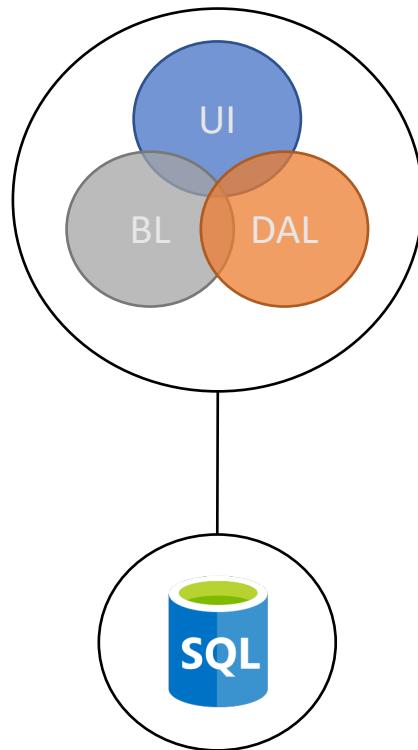
Custom container



SQL Server as an application component



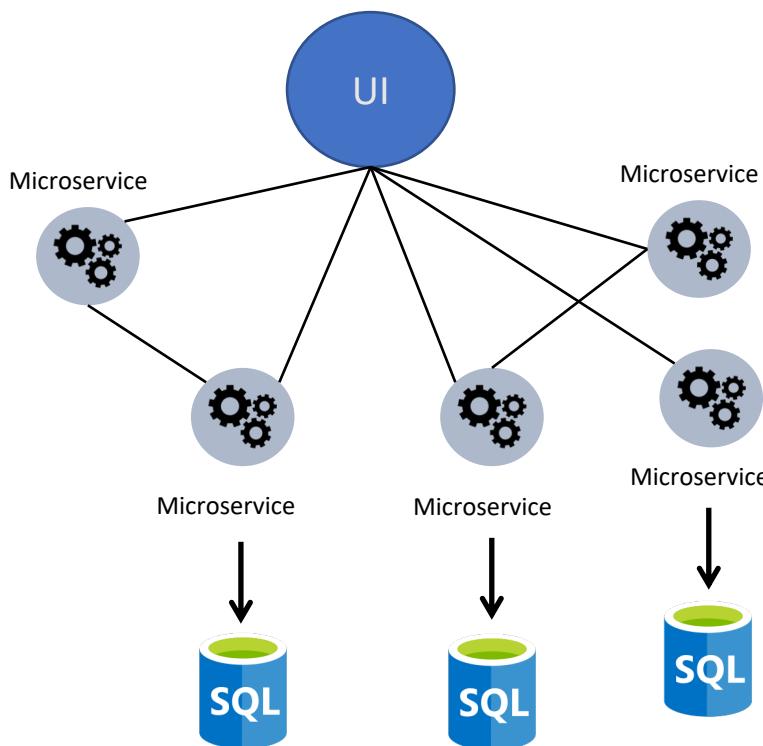
TRADITIONAL PRACTICES



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



CONTEMPORARY PRACTICES

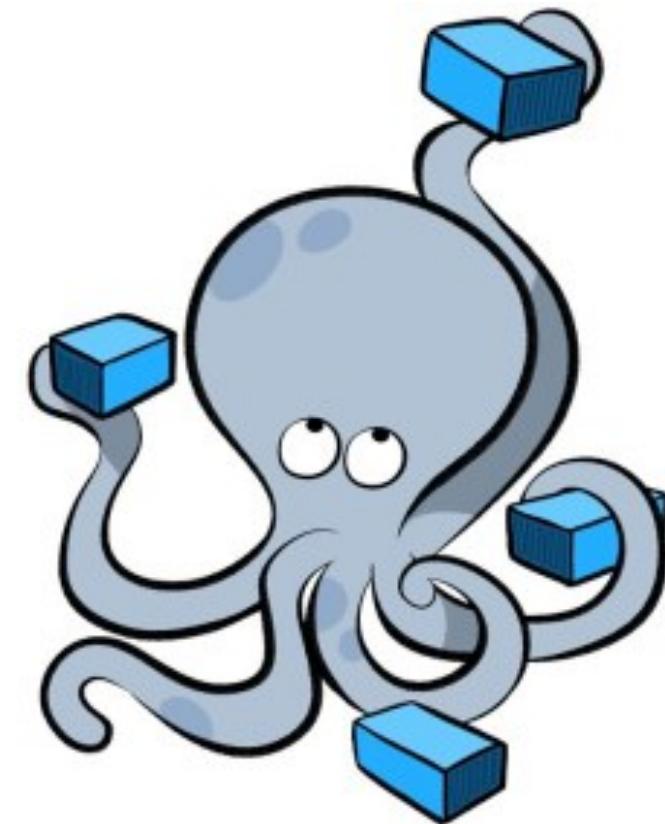


- **Pros**
 - Scalability
 - Reliability / flexible
 - Easy adoption of new tech
- **Cons**
 - Difficult integration / testing
 - Operational complexity
 - Skill demanding



ENTER DOCKER COMPOSE

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



DEMO

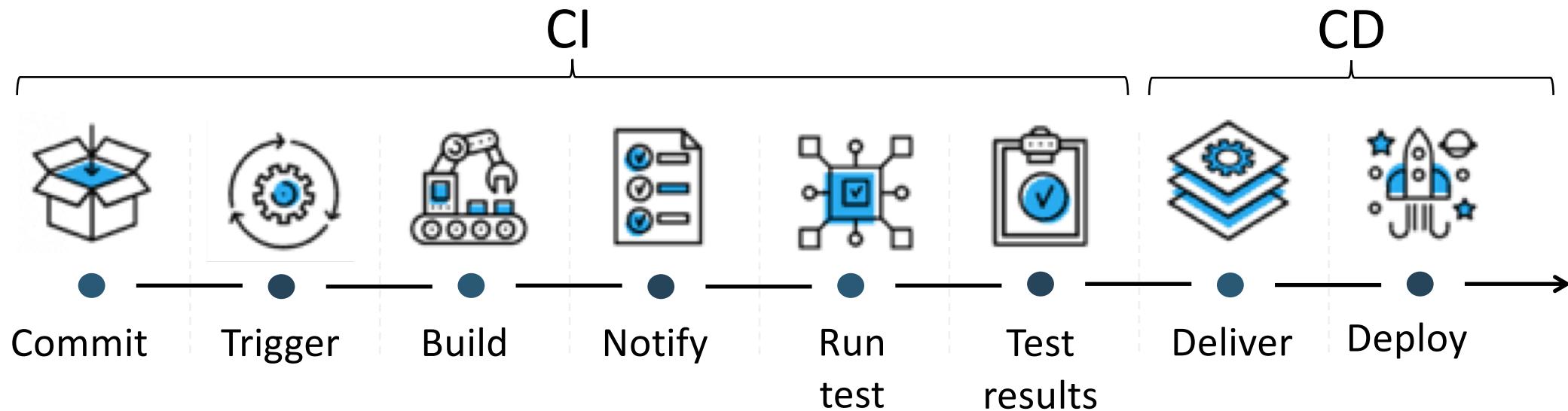
Manual integration



SQL Server containers in CI/CD pipelines

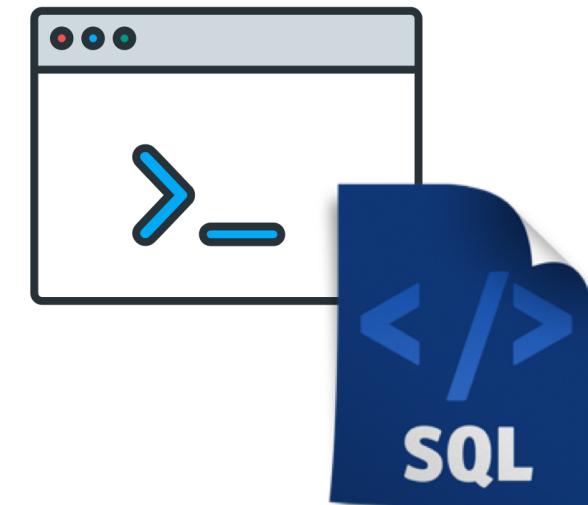


CI / CD PIPELINES



CI/CD FOR DATABASES

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

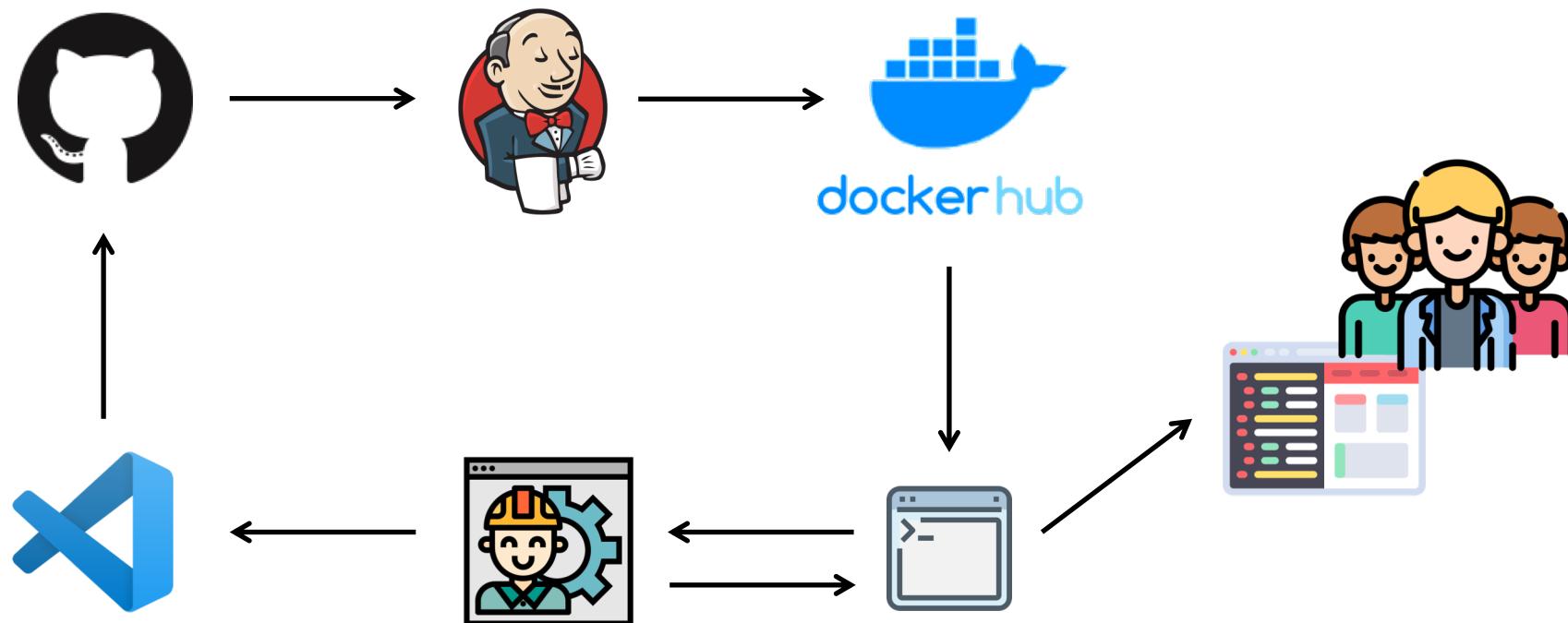


ENTER JENKINS

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



PIPELINE - DEV



DEMO

CI with Jenkins

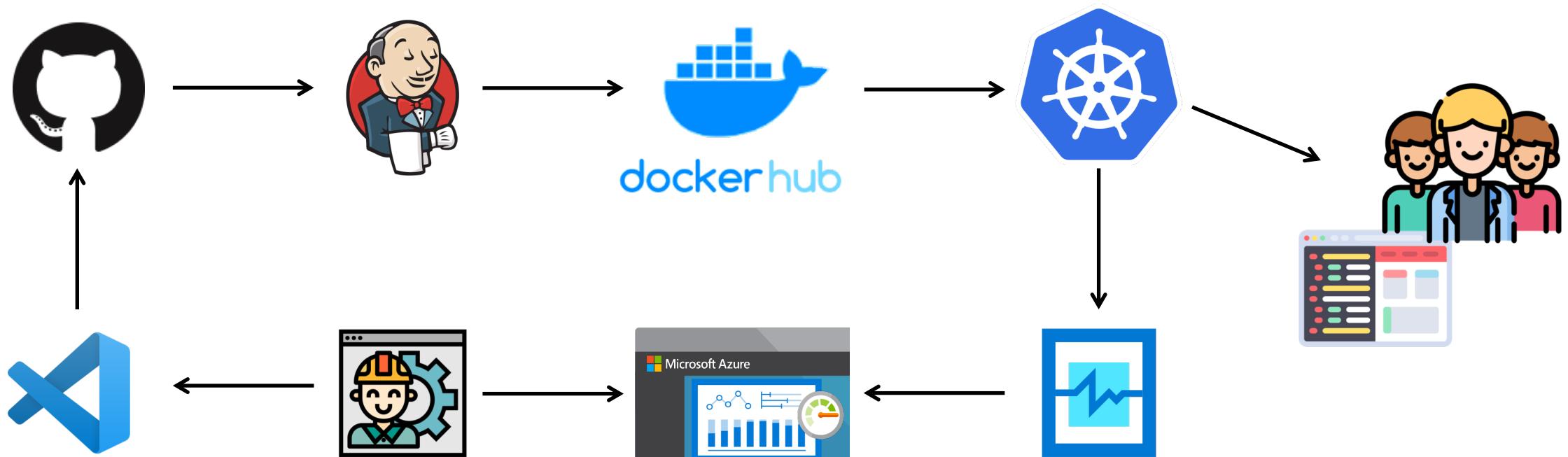


ENTER KUBERNETES

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

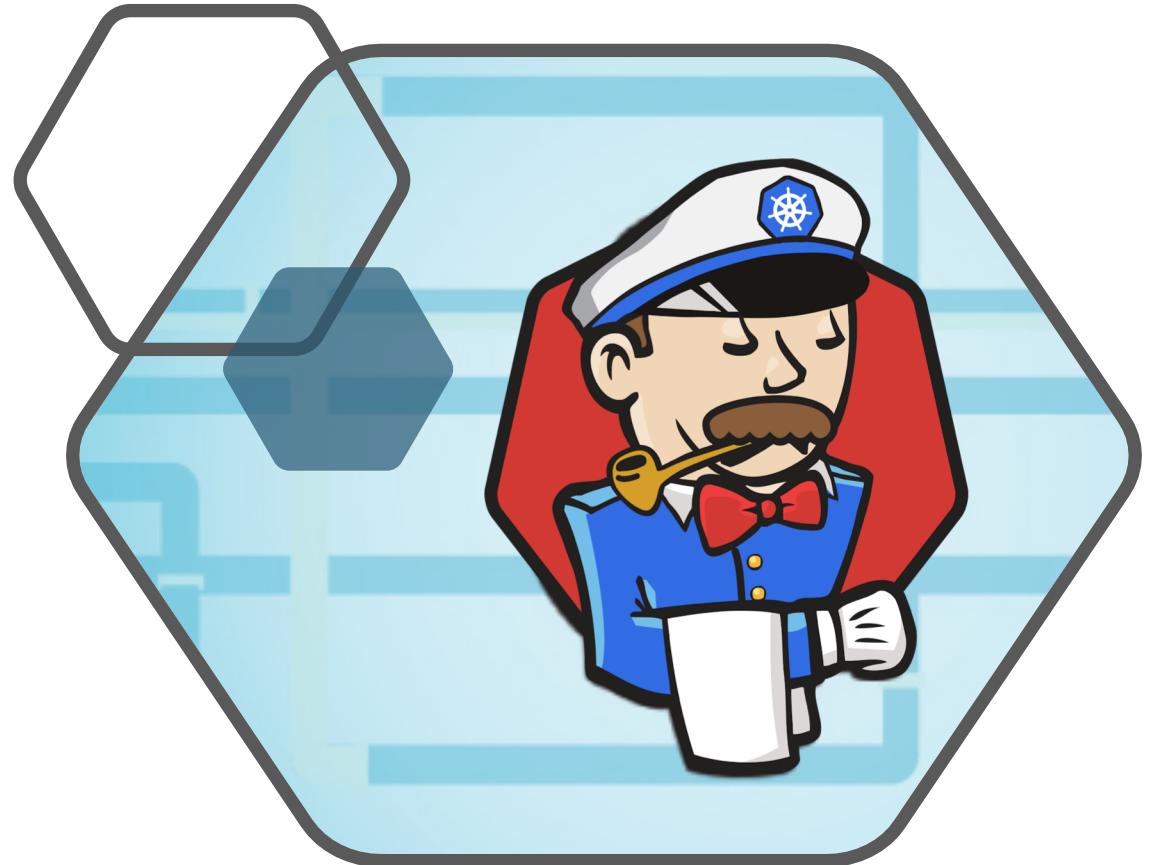


PIPELINE - STAGE



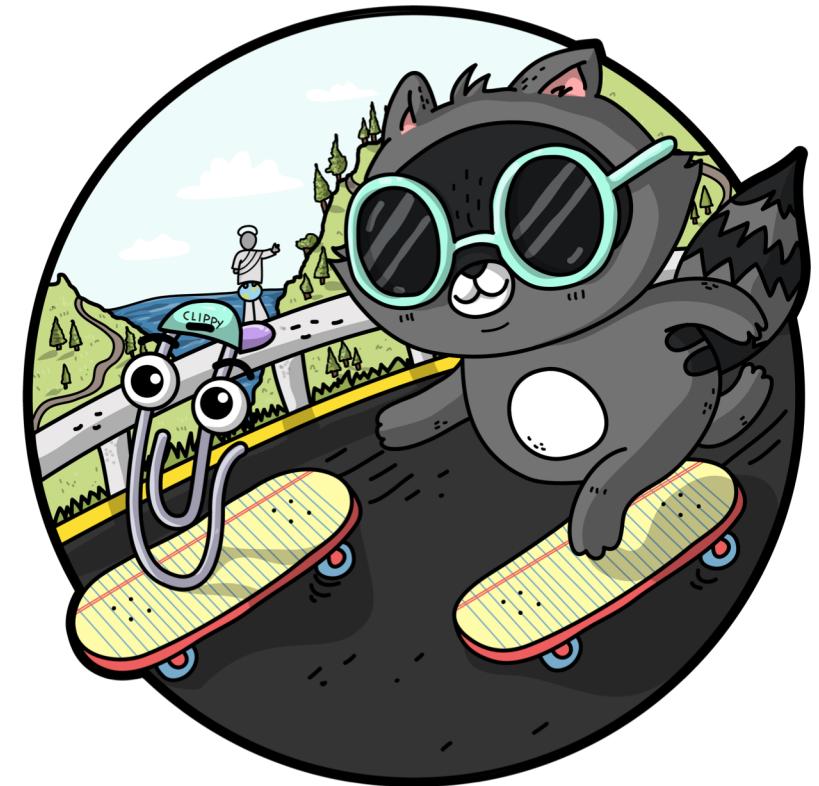
DEMO

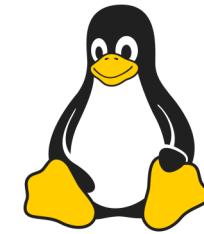
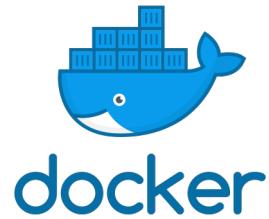
CI/CD with Jenkins & Kubernetes



REVIEW

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





Questions?



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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](#)





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crobles@dbamastery.com



croblesdba

Thanks!

