



Working with SQL Server Containers

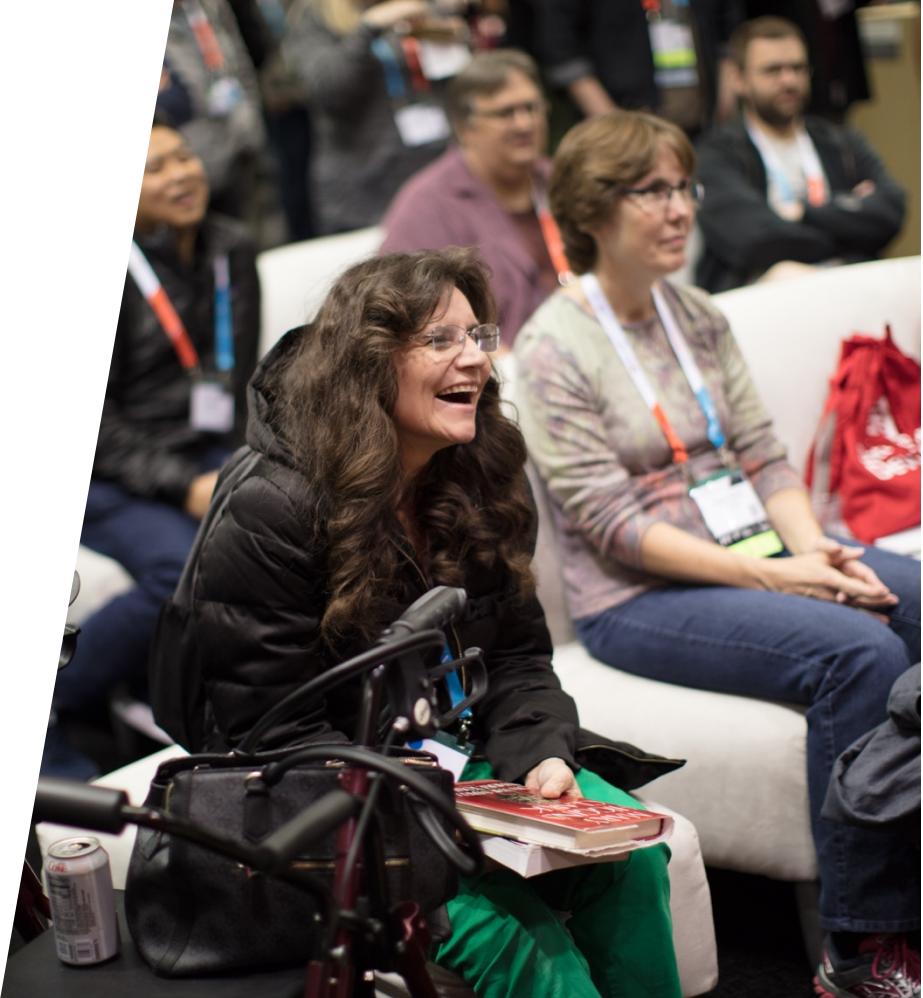
To build database solutions

Carlos Robles, DBA Mastery





Please silence cell phones



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 /croblesdba

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Multi-platform DBA
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Agenda

1. Containers, what and why?
2. SQL Server as an application component
3. SQL Server containers in CI / CD pipelines

Prerequisites

- Basic experience with Linux
- Basic experience with Docker containers
- Basic familiarity with Cloud computing
- Basic familiarity with Shell scripting
- DBA / database developer experience with SQL Server

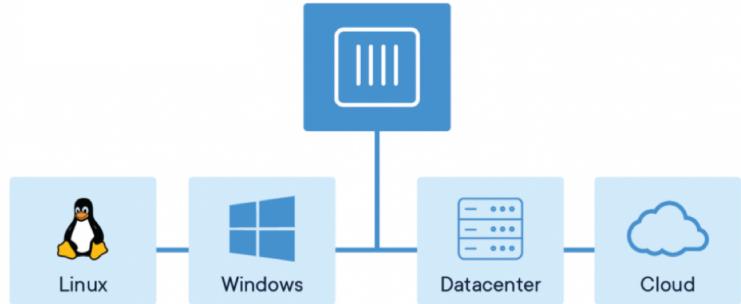


Containers, what and why?



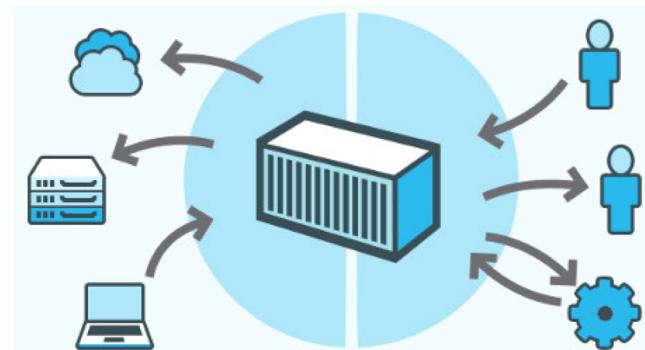
What are containers?

- Standard unit of software
- Lightweight
- Secure / Isolation
- Portable and cross platform



Why containers?

- Consistent and predictable environments
- Cloud focus
- Fast deployments / Automation
- Enables CI / CD
- Eliminates
 - Shared environments
 - Resource contention



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Custom container / image

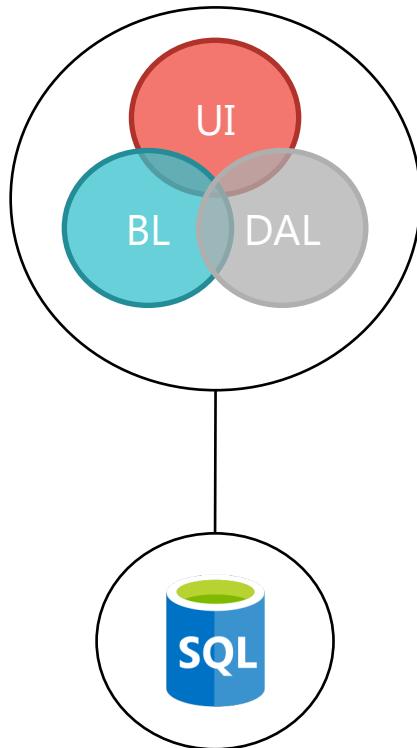




SQL Server as an application component

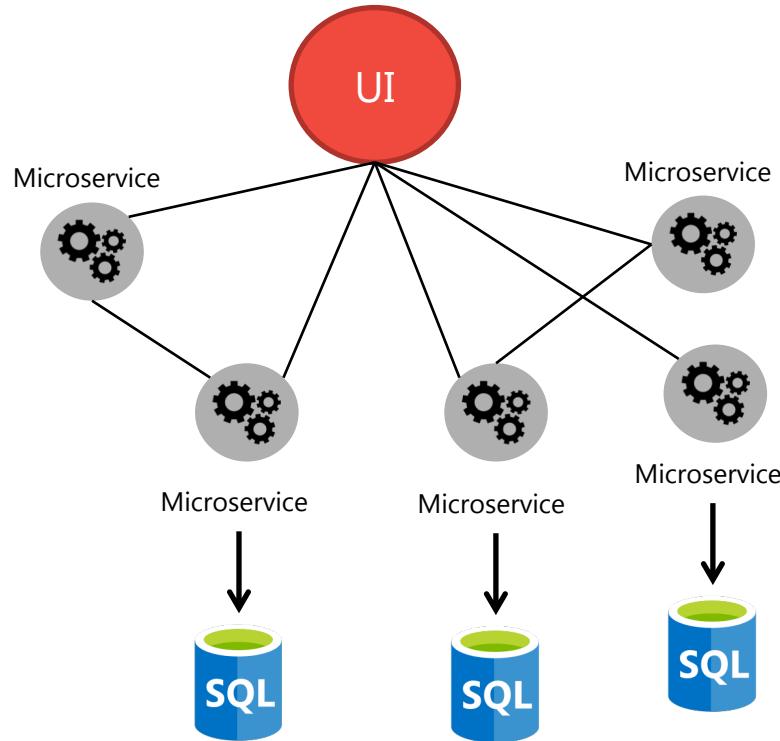


Traditional practice (Monolith)



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

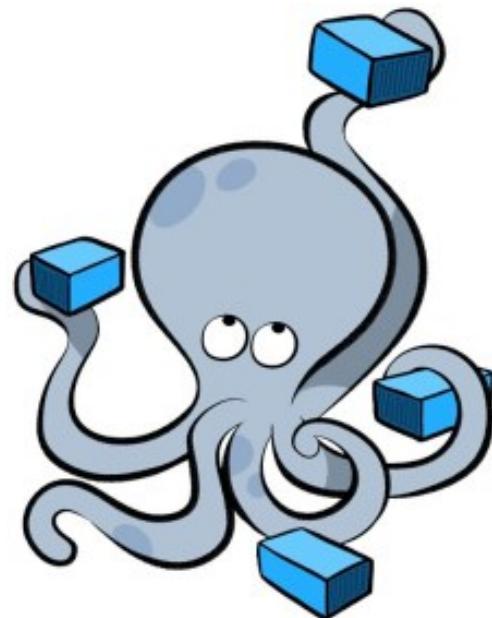
Contemporary practice (Microservices)



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

Enter Docker compose

- Define services
- Run multiple containers
- YAML file
- Dockerfile (optional)
- Version 3.7



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Manual integration

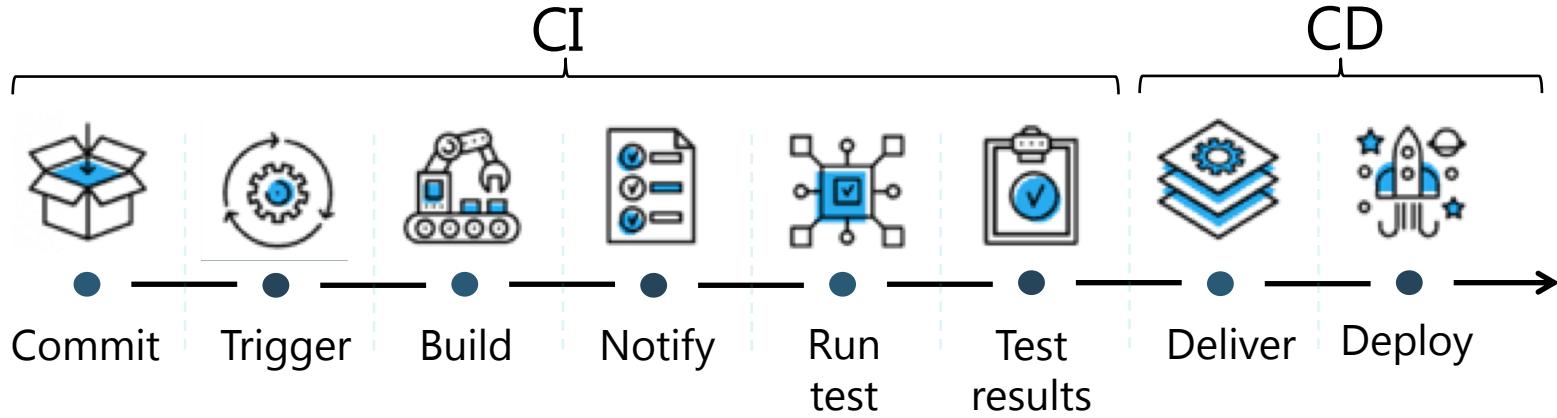




SQL Server containers in CI / CD pipelines



CI / CD pipeline

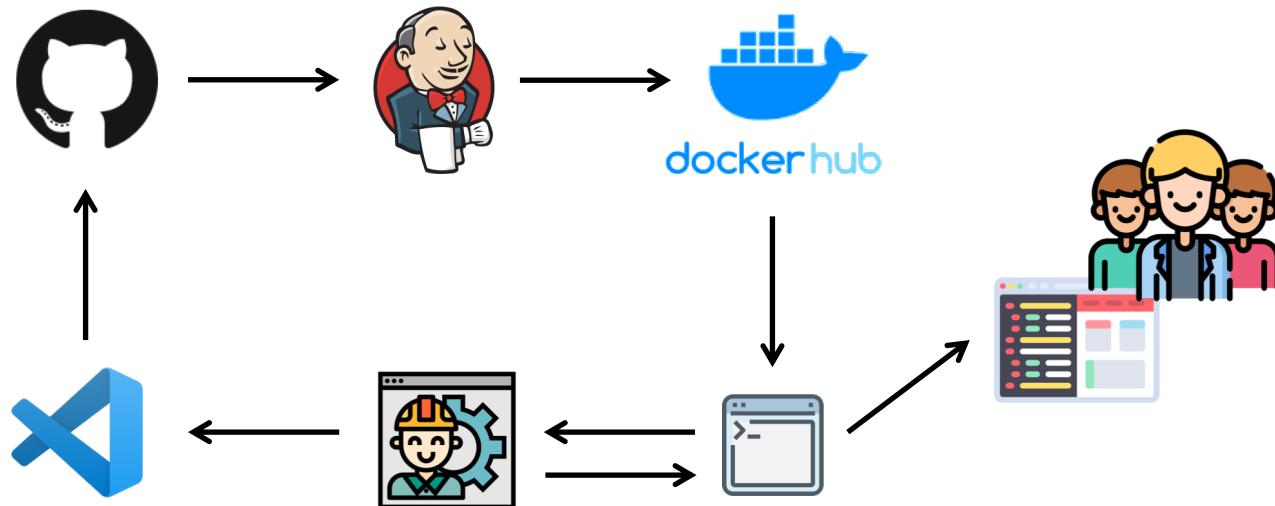


Enter Jenkins

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



Pipeline example (Dev / Test)

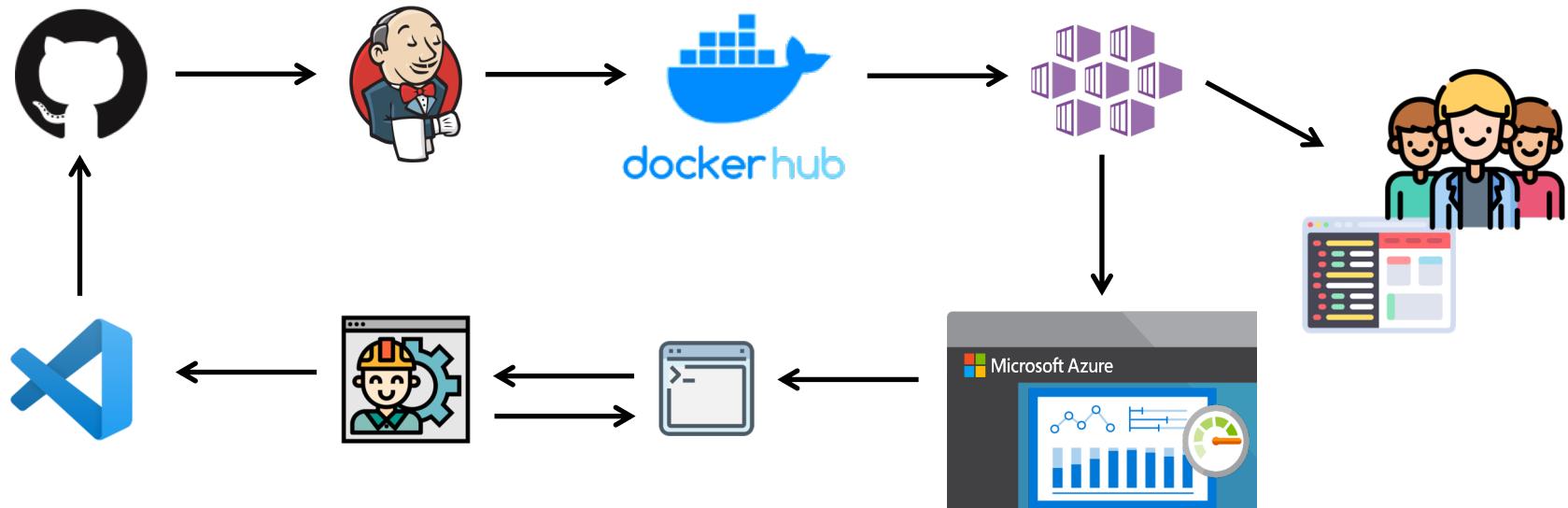


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CI / CD with Jenkins



Pipeline example (Stage / Production)



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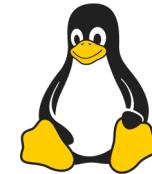
CI / CD with Jenkins and Kubernetes



Session takeaways

- Cross platform
- Standardization
- SQL Server is a component of your application
- Docker containers are great for DevOps
- Automation driven processes
- CI / CD
- Open source tools

Technologies



Articles and more

- Articles
 - Simple talk
 - SQL Server Central
 - MSSQL Tips
- Blog
 - <http://dbamastery.com>
- GitHub
 - <https://github.com/dbamaster>
- Demos
 - <https://git.io/JezgG>





Questions



Session Evaluations

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