CI/CD with Containers & Azure DevOps

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DATABASE CONTROL

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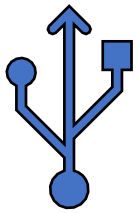
What we'll be doing today

- Azure Repo
- Containers
- Azure Container Registry
- Azure DevOps Pipelines
  - Build
  - Release
- Kubernetes

Not on the Agenda

- DevOps Practices

Session Aim



Insight into Azure DevOps workflow and Container Integration

Learn by example

- Demo’s
- My Mistakes

Enough of a taste to get the Container and Azure DevOps bug and start experimenting!

Azure DevOps Components

Azure Boards

Plan, track, and discuss work across teams, deliver value to your users faster.

Azure Repos

Unlimited cloud-hosted private Git repos. Collaborative pull requests, advanced file management, and more.

Azure Pipelines

CI/CD that works with any language, platform, and cloud. Connect to GitHub or any Git provider and deploy continuously to any cloud.

Azure Test Plans

The test management and exploratory testing toolkit that lets you ship with confidence.

Azure Artifacts

Create, host, and share packages. Easily add artifacts to CI/CD pipelines.

What are Containers

- Next evolution in virtualisation
- Lightweight, stand alone, executable package of a piece of software
  - Separation of applications or services on the same container host
  - Isolated, resource controlled, and portable operating environment
  - Containerized software will always run the same, regardless of the environment
- Enables true independence between applications / infrastructure / developers / IT ops

"Basically, a container is an isolated place where an application can run without affecting the rest of the system, and without the system affecting the application."

https://docs.microsoft.com/en-us/virtualization/windowscontainers/quick-start/

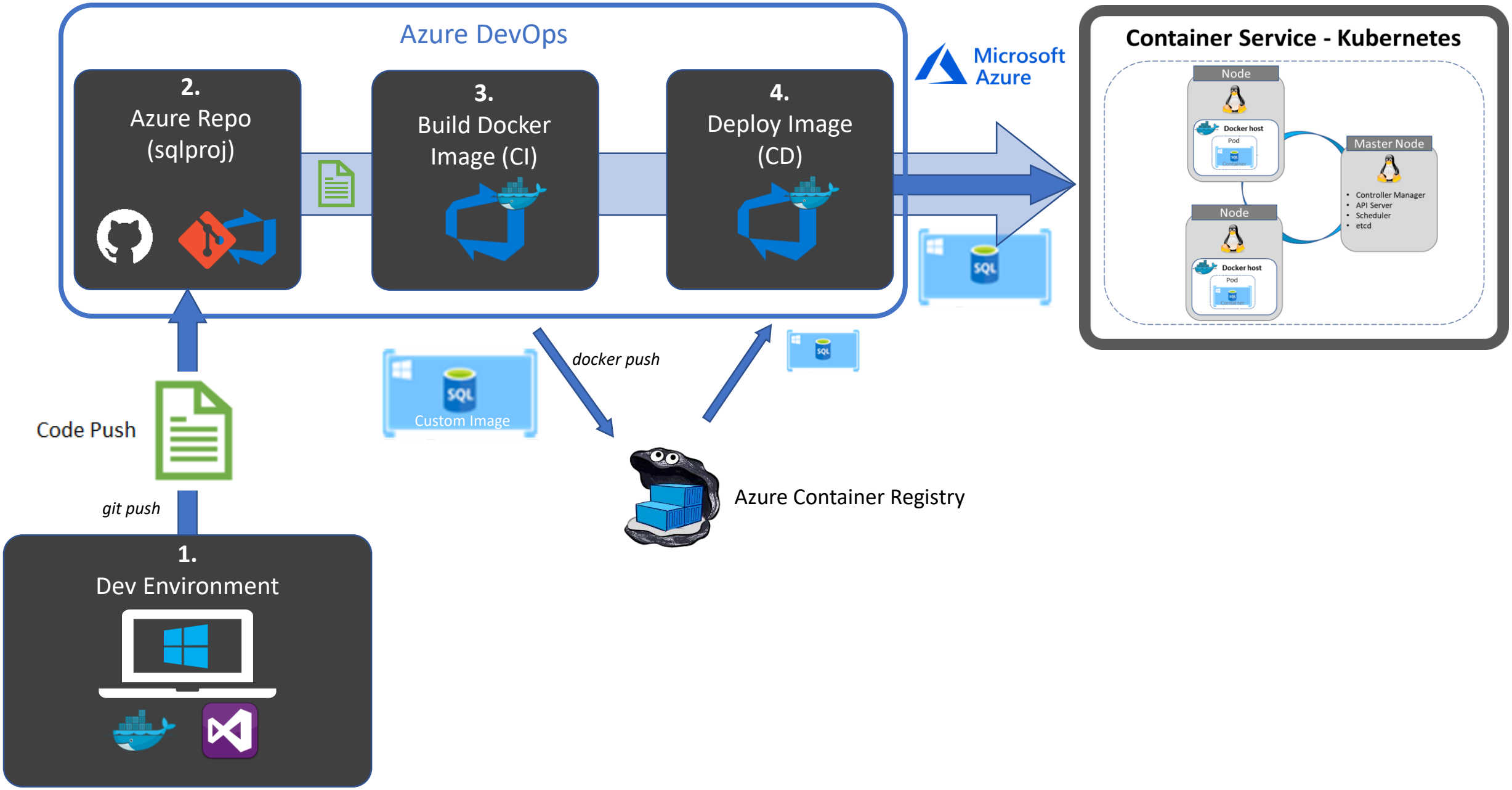
Stateless or Stateful?

Stateless

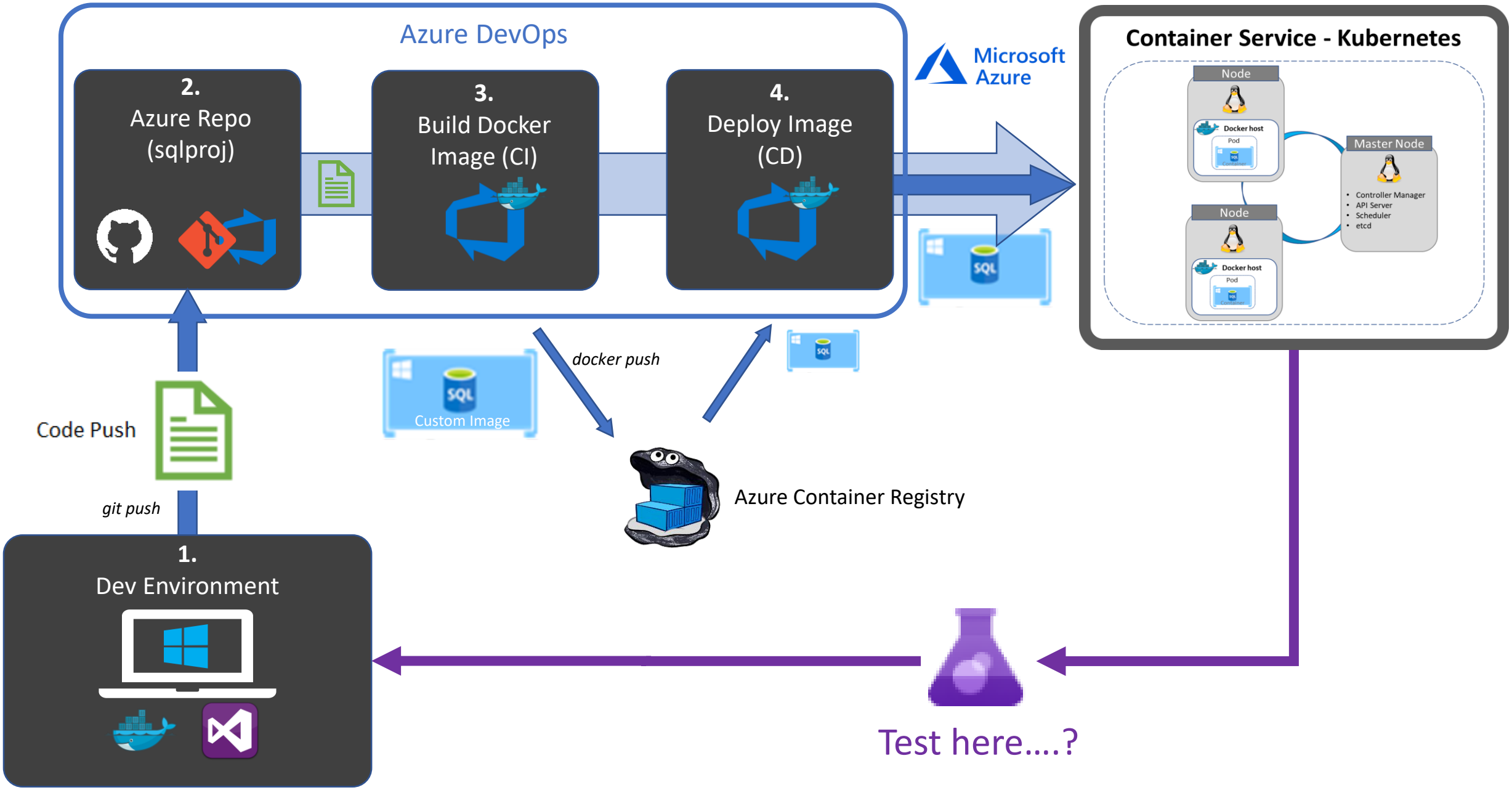
- Simple
- Definition of what a Container is

Stateful

- More work
  - Persistent Storage
  - State Management System



https://docs.microsoft.com/en-us/dotnet/standard/containerized-lifecycle-architecture/docker-devops-workflow/create-ci-cd-pipelines-azure-devops-services-aspnetcore-kubernetes



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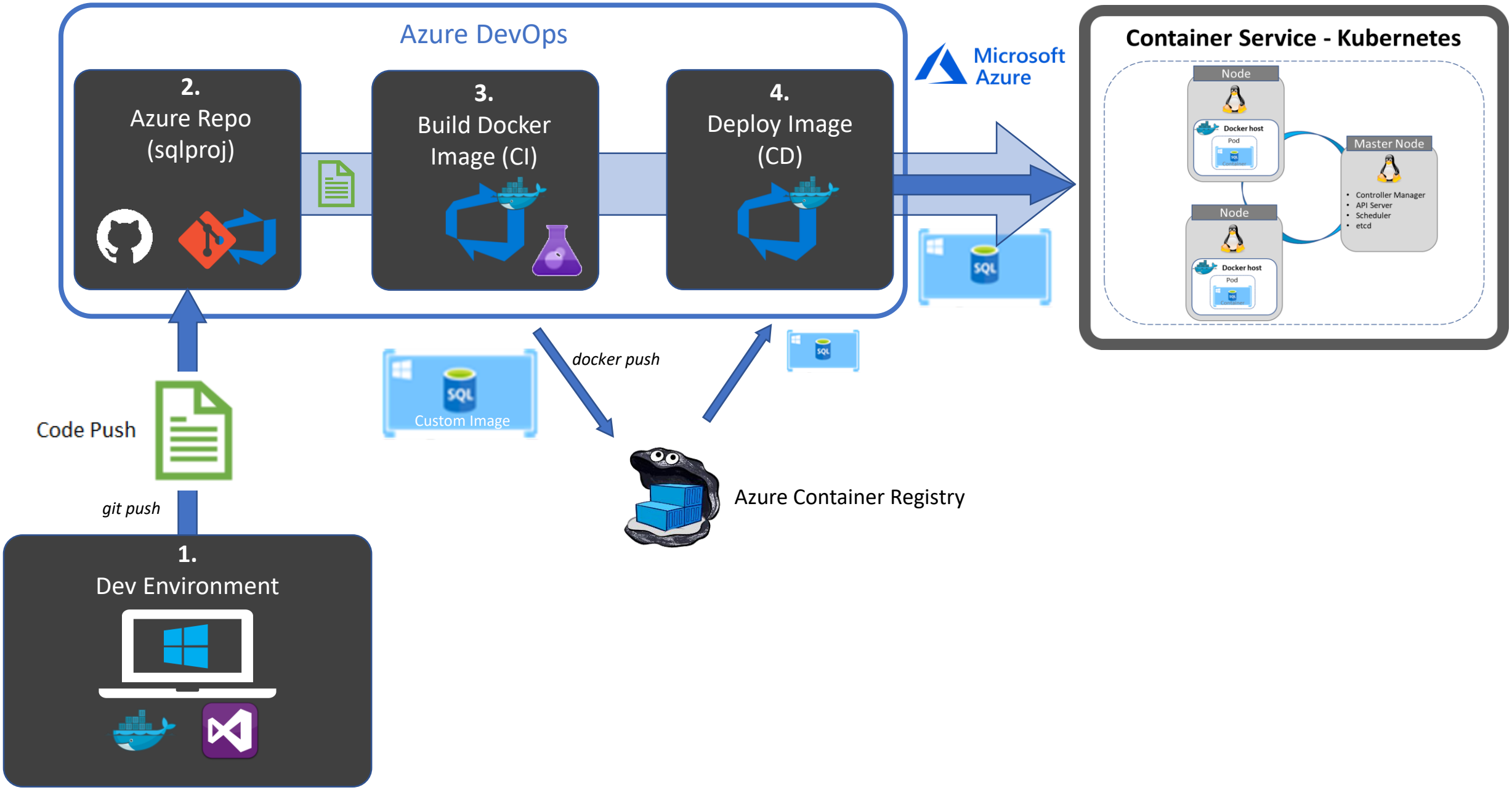

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DEMO

Demo ReCap….

Pro's

- Everything a container should be
  - Portable
  - Dev's can pull and run
- Image Build fails if tests fail
  - *Others may disagree*

Con's

- Database within container (think VLDB)
- Requires self-hosted agent(s) to persist data

Conclusion

Good

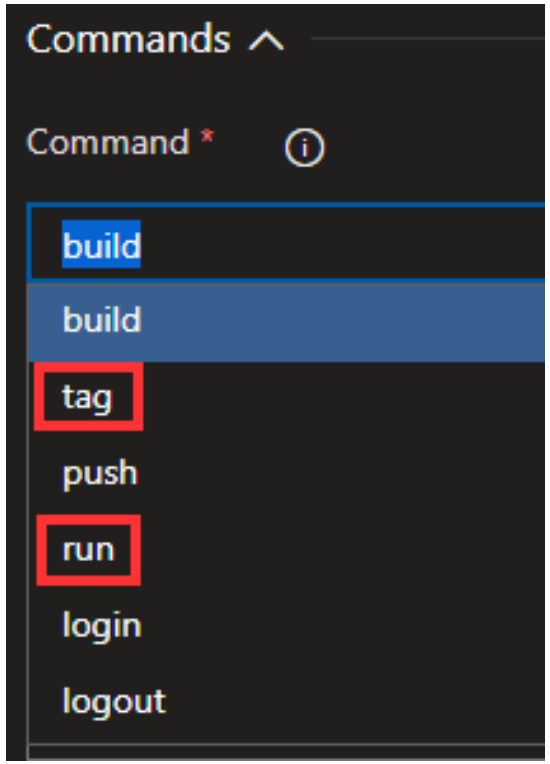
- Quick and easy to get started
- Never build a docker image manually again!
- Could take it further to build k8s cluster also

Not so good

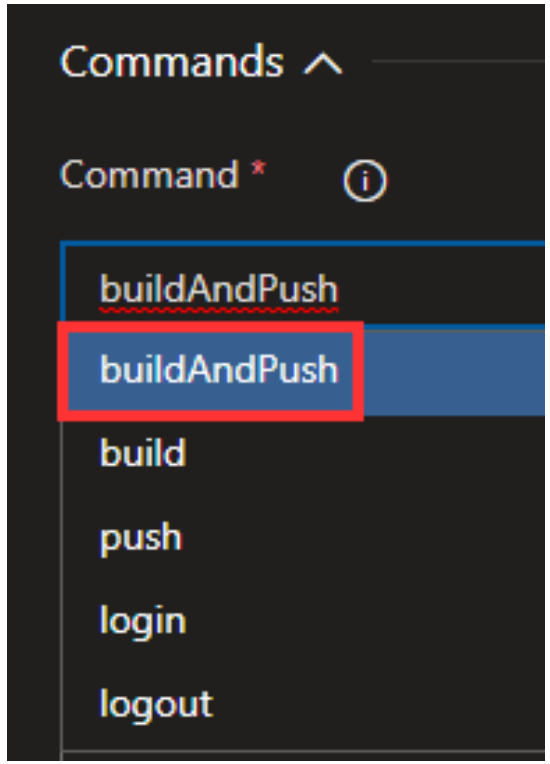
- tSQLt integration
- YAML reverse engineer
- Constantly changing!!!

Example Changes

v1 Docker Task Commands



v2 Docker Task Commands



Issue Raised: https://github.com/MicrosoftDocs/vsts-docs/issues/4039

Summary

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Session Feedback Day 1 (not optional!)

http://bit.ly/DataGrillen2019Day1

Event Feedback (not optional!)

http://bit.ly/DataGrillen2019Event

Questions?