Microsoft

Rust Meetup Munich

February 2018

@claus__m

Microsoft

Schedule

6:30pm ~ 7pm: Me talking

7pm ~ 9pm: Eat, drink, build

Microsoft

Rust on VSTS

Claus Matzinger (@claus__m)

Building with Cargo

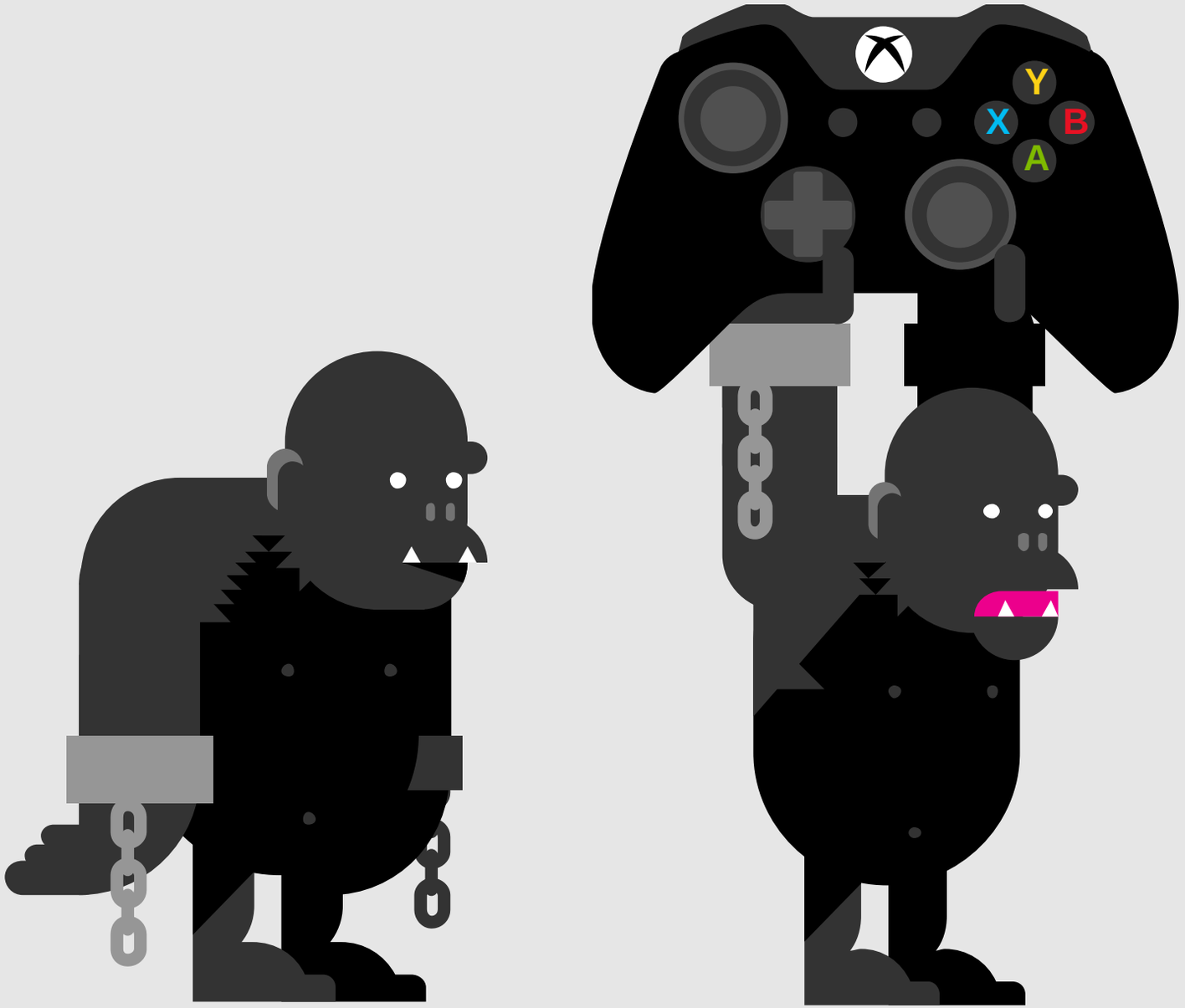
```
cargo build
cargo test
cargo bench
cargo run


cargo clippy
cargo fmt
rustfix 😅
```

Why am I here?

You like being

- Lazy
- Consistent
- Right
- Quick
- Curious

(like me?)



Continuous Integration / Delivery

Consistent collaboration

1-button build, release & deploy

Traceability

Faster

Centralized code status

Secrets management

Production, staging, testing can all be the same

Using Continuous Integration / Delivery

Building Rust

Rebuilding Rust

Cross Compilation

Auto deployment :)

Building Rust

Epochs

Nightlies

Tooling (rustfmt, rustfix, clippy, …)

Documentation

Binary downloads (e.g. for containers)

Rebuilding Rust

Dependency updates!

- Deprecations
- Staleness
- Immature crates

Epoch safety

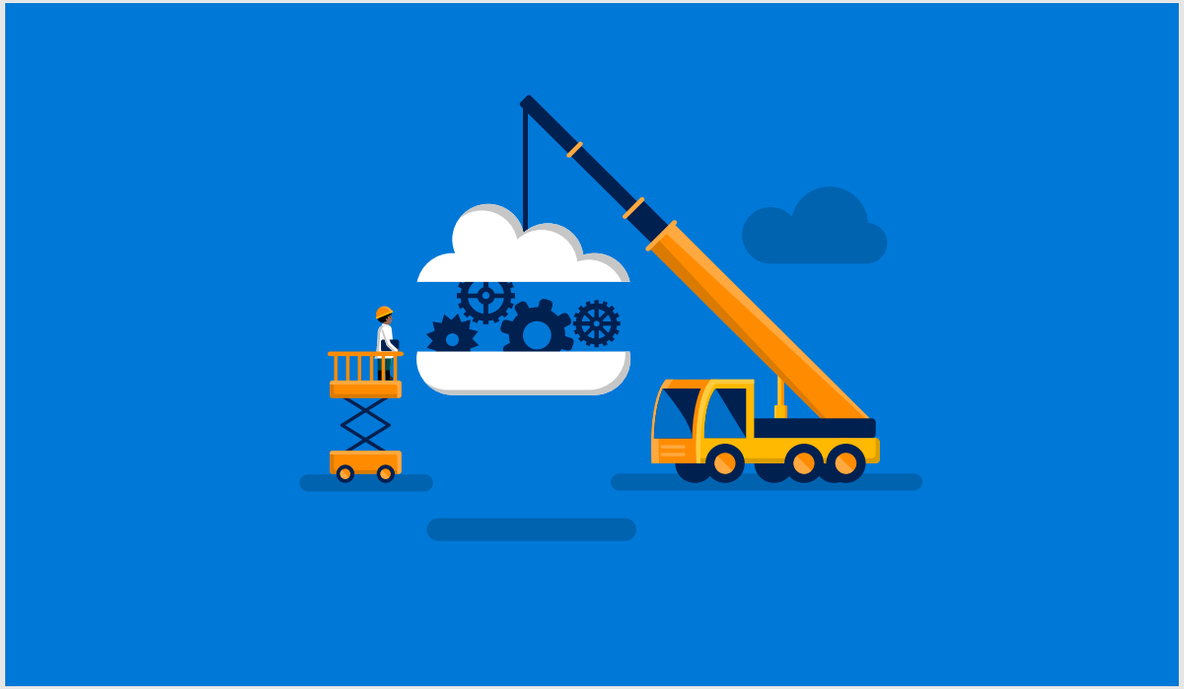
Check how out of date your crate is 😅

https://deps.rs

Cross Compilation

Install & maintain:

- Toolchains (e.g. musl for Alpine containers)
- Dependencies
- Platforms



Auto Deployment

Deployment environments

Run all tests

Roll back bad deployments

Blue/Green strategy

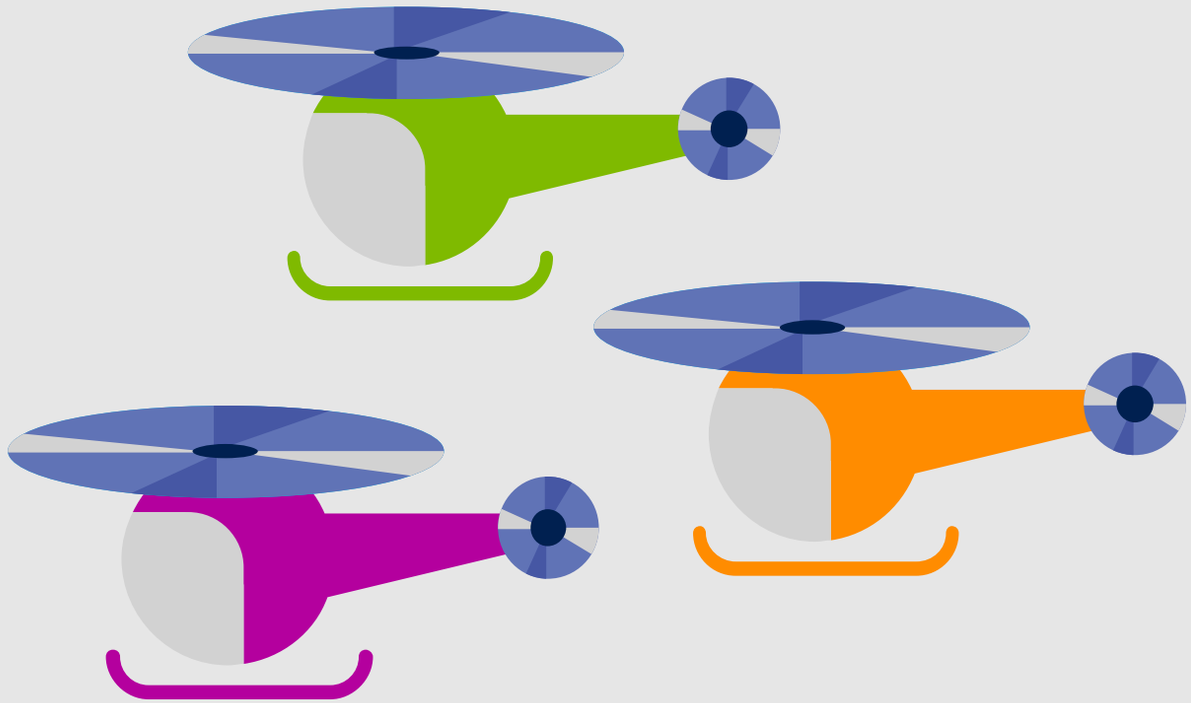
Use orchestrators

Prior Work

Travis

CircleCI

Jenkins



Amazing GitHub template to get started:
https://github.com/japaric/trust

Another way: Visual Studio Team Services

Deploy to Azure cloud
Private pipeline
RBAC access control
Any Git/SVN repository

(also, it's free for 240min/month)

Visual Studio Team Services

Project management (Kanban, Scrum)
Source code management
Access control
Load testing
Build & release

Issue management, queries, links, etc.

Visual Studio Team Services Vocabulary

Task: Atomic unit of doing stuff

Phase: Sequence of tasks

Queue: Phases to be run on agents

Agent: A host running a service

Building Rust Projects

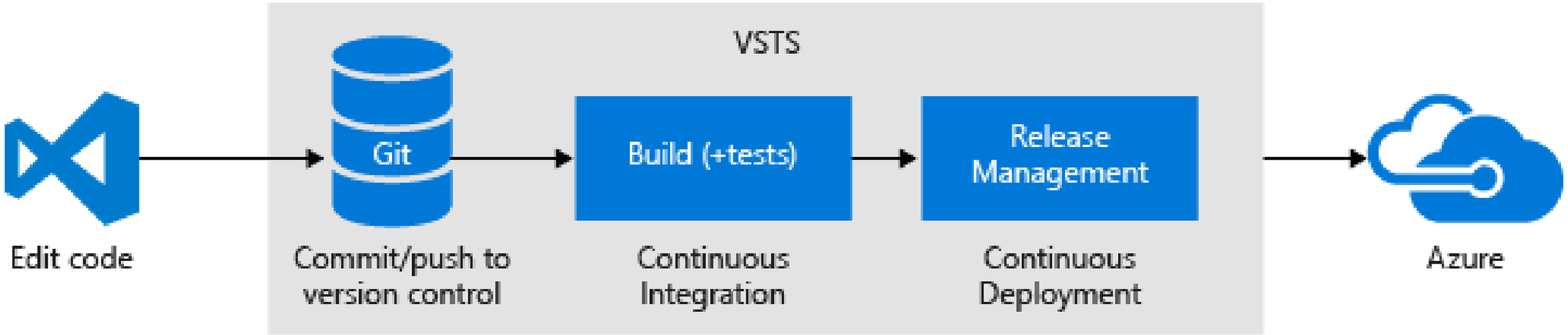
Powershell/Bash: Install rustup, install toolchain, build

Docker container:

- rust:1.23.0
- dlecan/rust-crosscompiler-arm
- custom, based on those

Steven's work: https://stevenmurawski.com/2017/10/how-to-build-rust-with-vsts/index.html

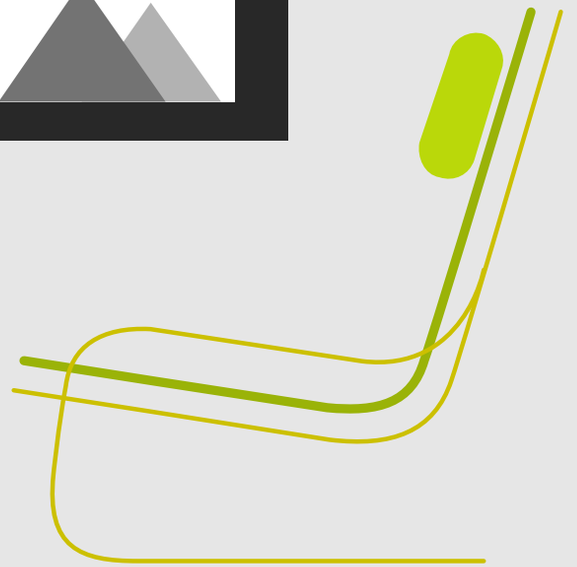
Demo: A Simple Rust Web App



Why Do Any Of That?

Quicker ARM builds (my reason for doing this 😊)
Automated container deployments
Learn more about DevOps
Reproducible builds
Link builds, work items, deployment infrastructure, etc.

Wrap Up



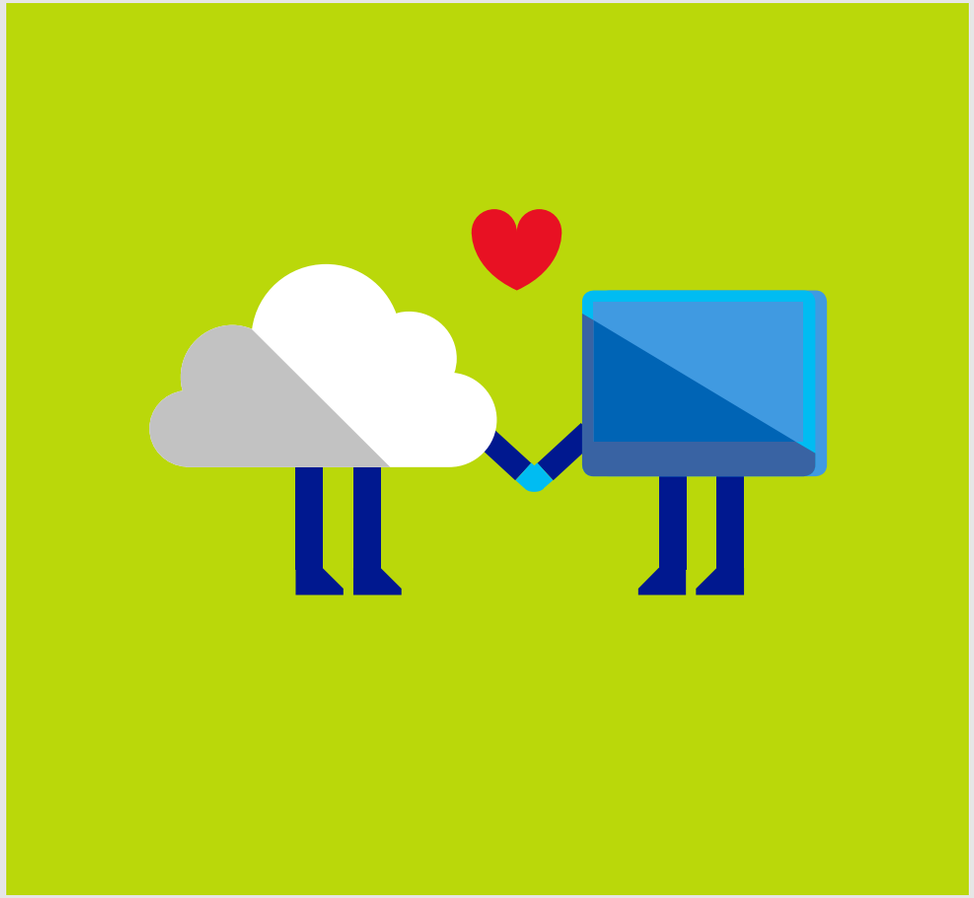
- Use CI/CD for your projects
- Build in/with containers
- Rust & containers can be tricky
- VSTS is a surprisingly good alternative to Travis et al (for me)
- Building Rust should also be boring (sorry)

https://visualstudio.com

https://docs.microsoft.com/en-us/vsts/

Claus Matzinger

Rust & Azure
CSE @Microsoft



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Thank you!

Microsoft

@claus__m

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Set up a VSTS pipeline

Use your (or any) Open Source Rust project

e.g. https://github.com/celaus/rust-hello-web

Create a build pipeline

- Run cargo test
- Run cargo build --release
- "Publish" results as a release

Run rustfmt, rustfix, clippy as tests

Create multi-architecture builds

Windows, Linux, ARM (Linux)

Build and deploy a container application from a release