vmware® TECHNOLOGY FORUM

Accelerate

Your Modern Apps To Production

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Why You Want To Accelerate Your Apps To Production ?

Apps are Everywhere

The “Why”

Website Tablet Phone Car House










needs to be a custom

Every Company ~~is a~~ Software Company

^










McKinsey, Dec. 2022: https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/every-company-is-a-software-company-six-must-dos-to-succeed

Good Software Drives Business Outcomes

Top performers compared to peers

The Why

Increased Revenue Growth

Higher Shareholder Returns

Higher Operating Margins

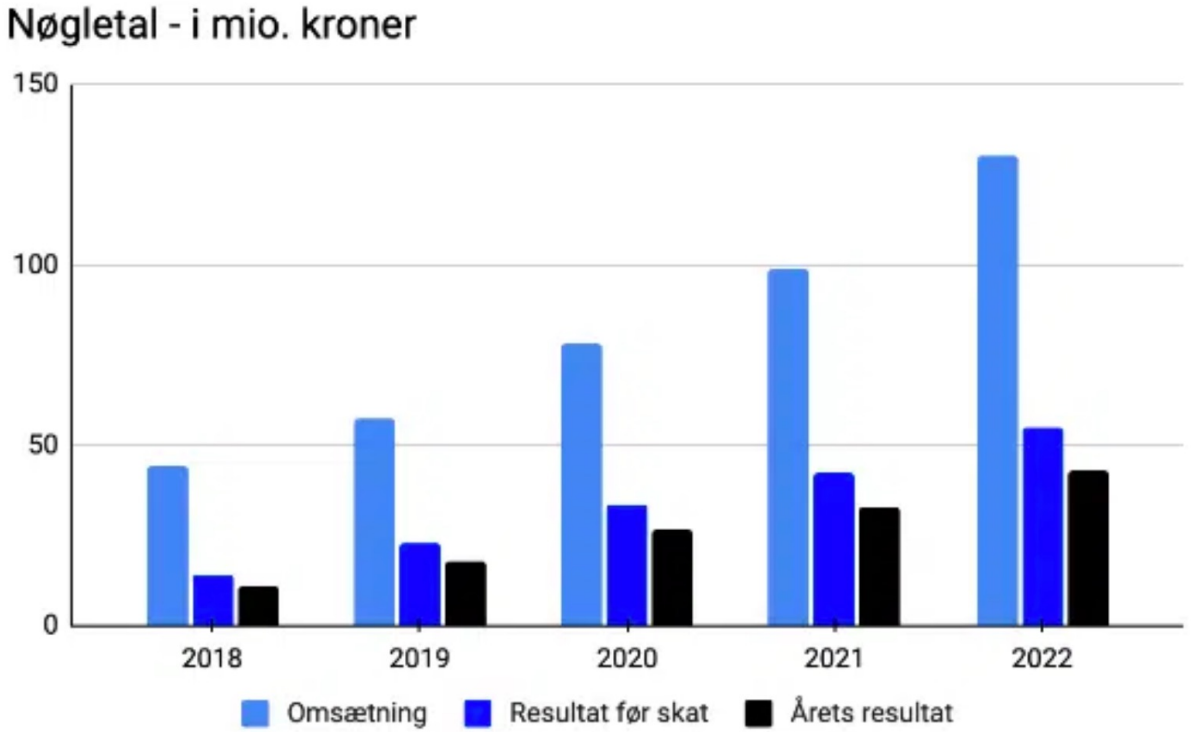
Increased Innovation

Higher Retention Rates

McKinsey, April 2022: https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/developer-velocity-how-software-excellence-fuels-business-performance

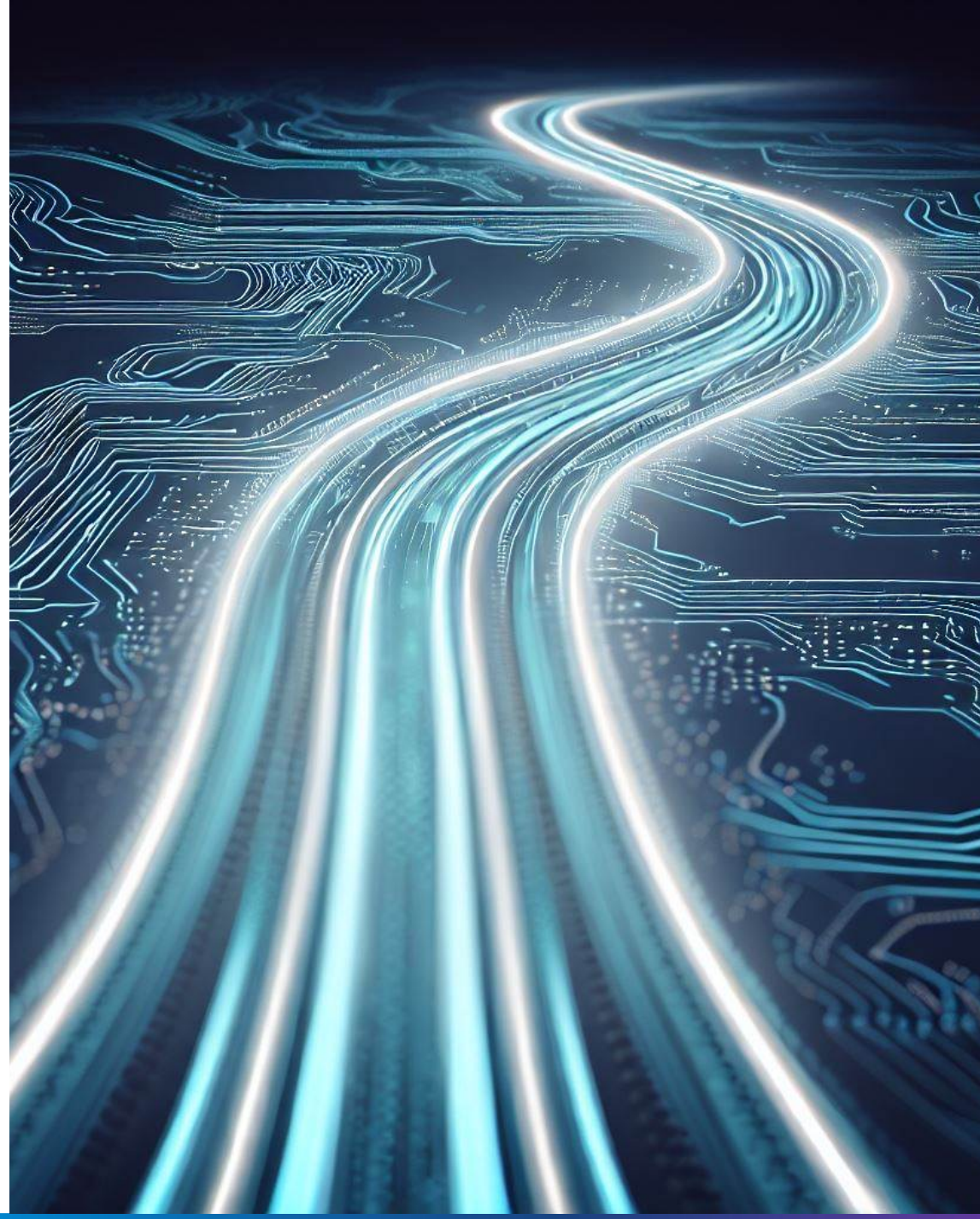
Not just for the Netflix and Spotifys of the world

Dinero.dk



Reference

How do you get there ?



Supply-chain Levels for Software Artifacts, or SLSA ("salsa").

It’s a security framework, a checklist of standards and controls to prevent tampering, improve integrity, and secure packages and infrastructure. It’s how you get from "safe enough" to being as resilient as possible, at any link in the chain.

SLSA Levels

Level	Description	Example
1	Documentation of the build process	Unsigned provenance
2	Tamper resistance of the build service	Hosted source/build, signed provenance
3	Extra resistance to specific threats	Security controls on host, non-falsifiable provenance
4	Highest levels of confidence and trust	Two-party review + hermetic builds

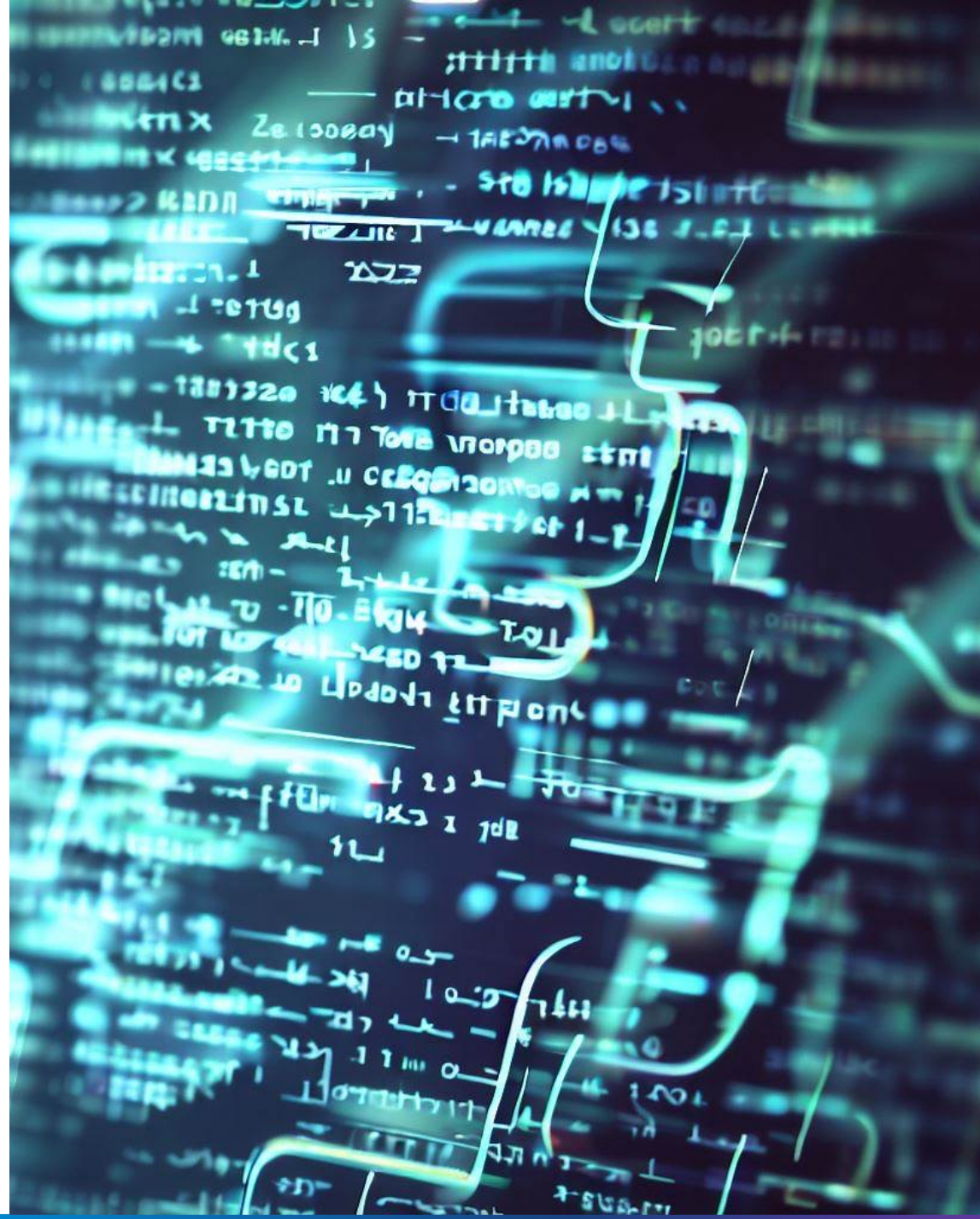
https://slsa.dev/spec/v0.1/levels

Level Requirements

Requirement	SLSA 1	SLSA 2	SLSA 3	SLSA 4
Source - **Version controlled**		✓	✓	✓
Source - **Verified history**			✓	✓
Source - **Retained indefinitely**			18 mo.	✓
Source - **Two-person reviewed**				✓
Build - **Scripted build**	✓	✓	✓	✓
Build - **Build service**		✓	✓	✓
Build - **Build as code**			✓	✓
Build - **Ephemeral environment**			✓	✓
Build - **Isolated**			✓	✓
Build - **Parameterless**				✓
Build - **Hermetic**				✓
Build - **Reproducible**				○

https://slsa.dev/spec/v0.1/requirements

Scripted Builds



What Tools To Use ?

Remember “As Code” & “Idempotence”

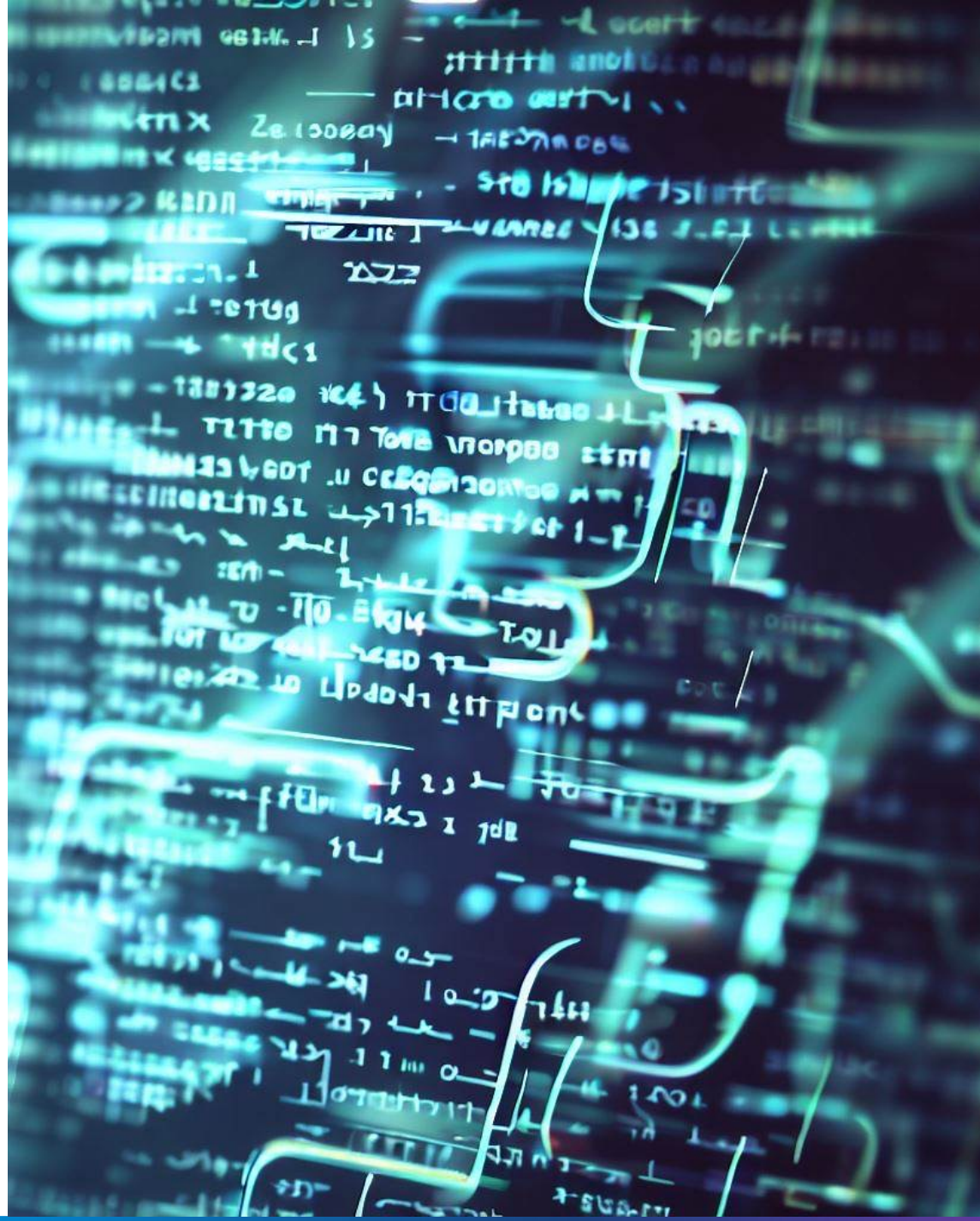
- Terraform
- Ansible
- Bash
- Puppet
- SaltStack (Salt)
- Powershell
- Python
- Golang
- Others ?

Idempotence

Get the same result every time

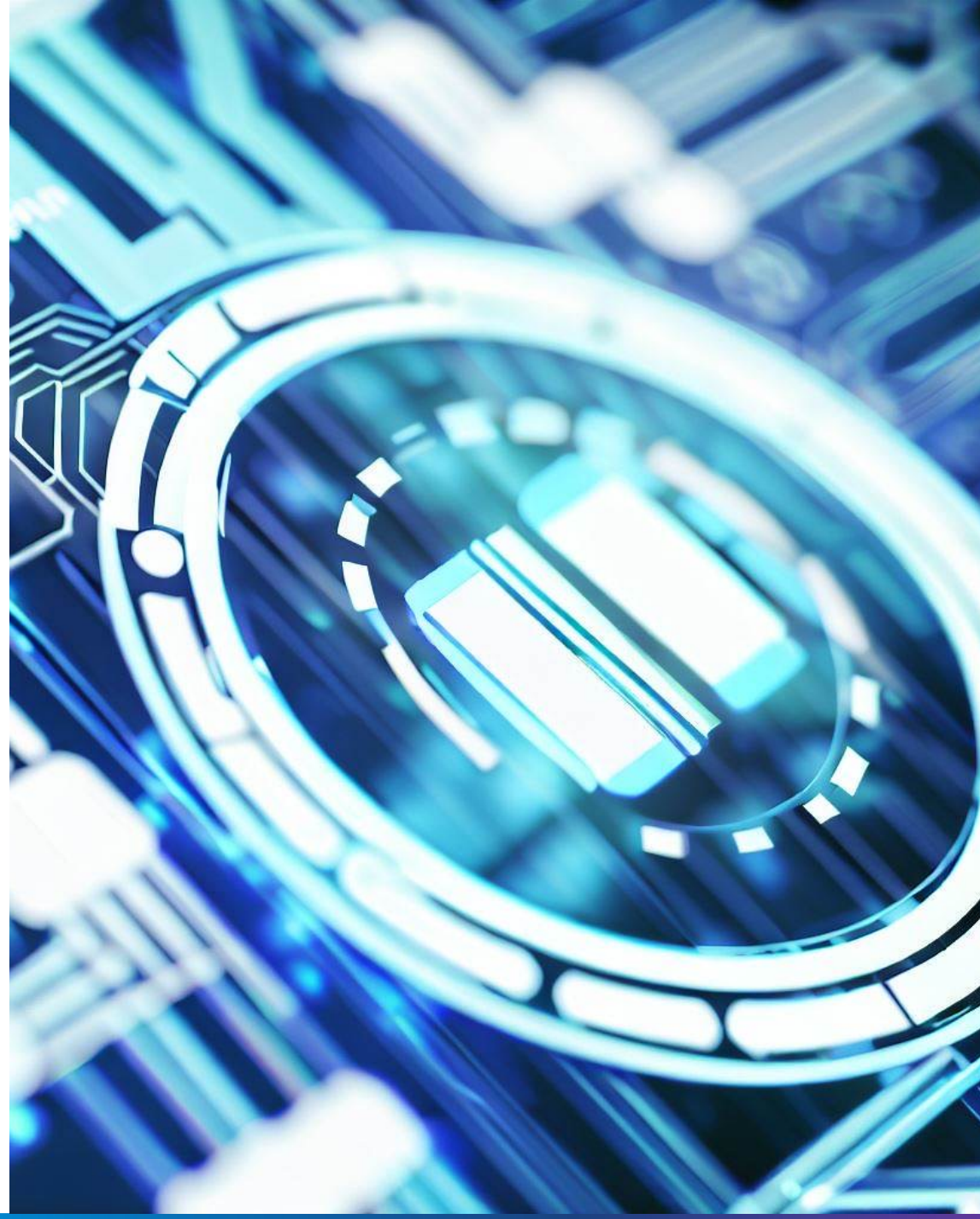

```
Dockerfile U
Dockerfile > ...
1   FROM ubuntu:jammy-20230425
2   RUN apt update && apt install apache2=2.4.52-1ubuntu4.5 -y
3   COPY . .
4   CMD [main.go]
```

Version Controlled



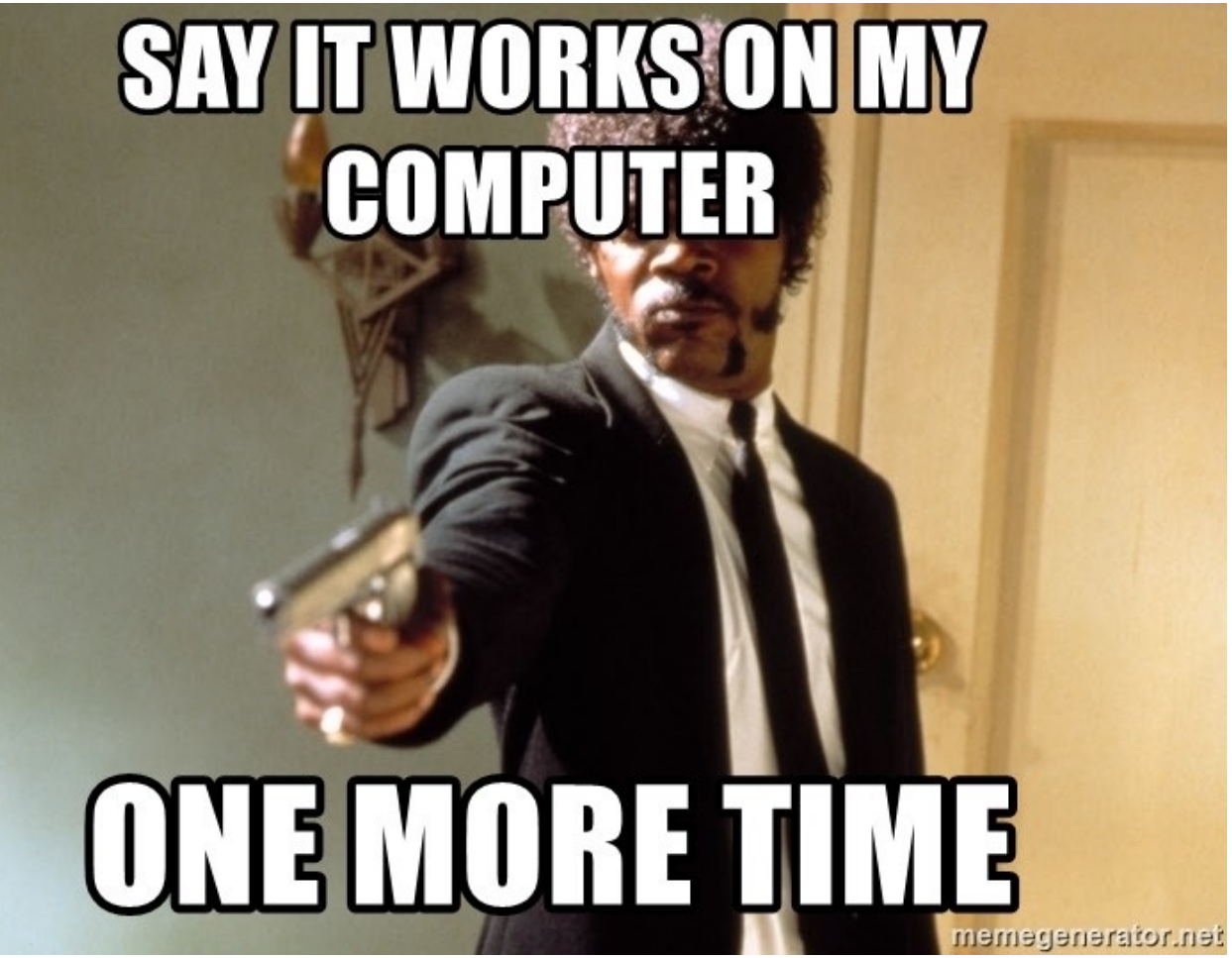
The power of Git

Build Service



Build Service

Which one to use ?

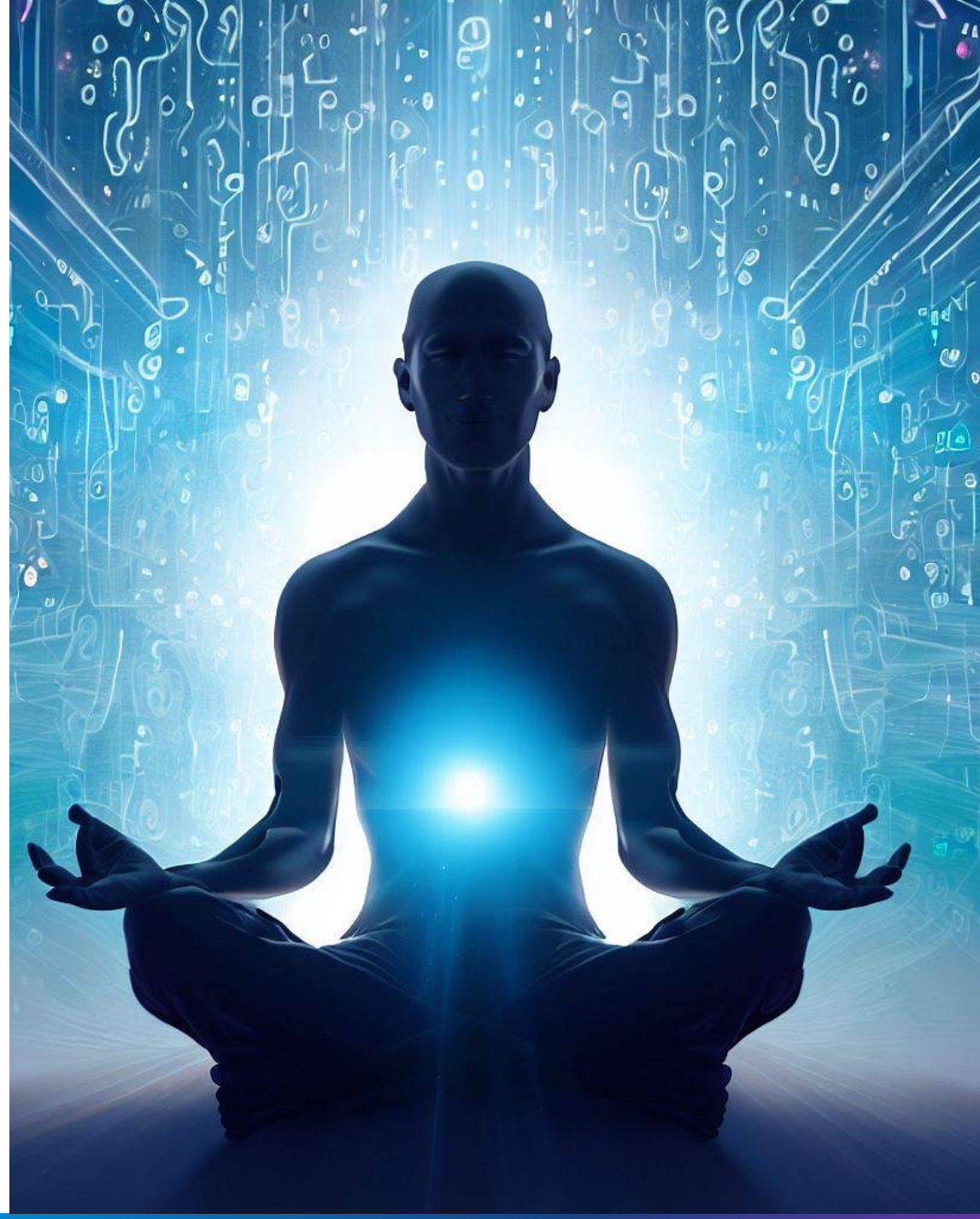


- Github Action
- Jenkins
- Travis CI
- Aria Pipelines
- Others

Simple Github Actions example of building code, at every push.

```yaml
name: Go
on:
  push:
    branches: [ "main" ]
jobs:
  build:
    runs-on: ubuntu-22.04
    steps:
    - uses: actions/checkout@v3
    - name: Set up Go
      uses: actions/setup-go@v3
      with:
        go-version: 1.19
    - name: Build
      run: go build -v ./...
    - name: Test
      run: go test -v ./...
```

What is the/one solution ?



Backstage

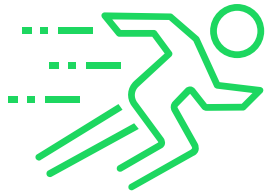
Backstage

«Happy developers make happy code»

The Spotify Journey

.. back in 2016

hyper-growth mode



speed-to-market

developer effectiveness

Spotify®

Backstage is an open platform for building developer portals.

Created at

2016

Donated to

CLOUD NATIVE
COMPUTING FOUNDATION

2020

Attributes Of Developer Portal

Lowers **cognitive load** for developers and boosts Developer Productivity by creating

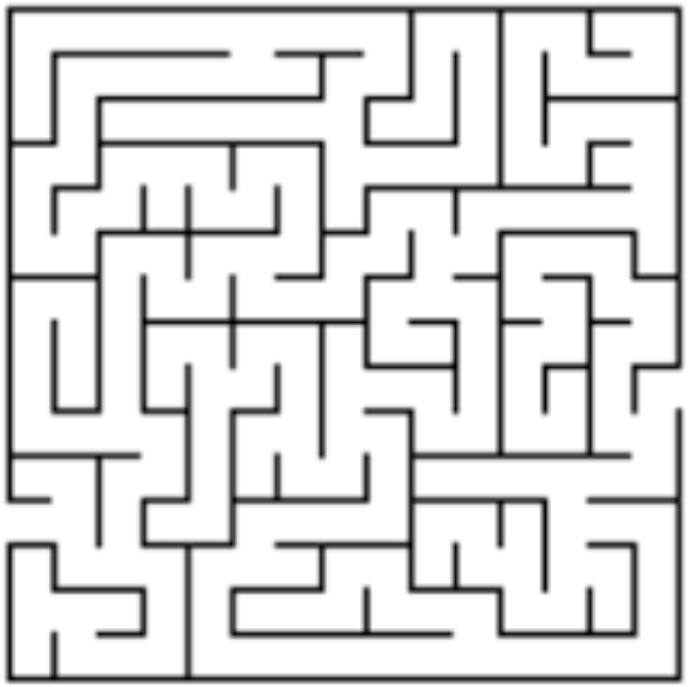
Provides a developer centric view

Abstracts away underlying technology

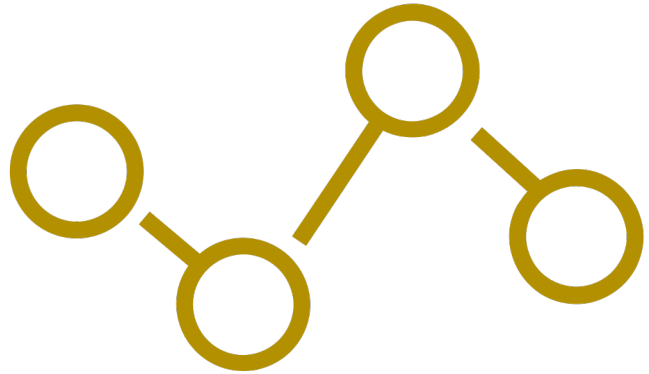
Provides a pluggable framework

Maximizes Time to Value

Finding the golden path | path to production



This is the way



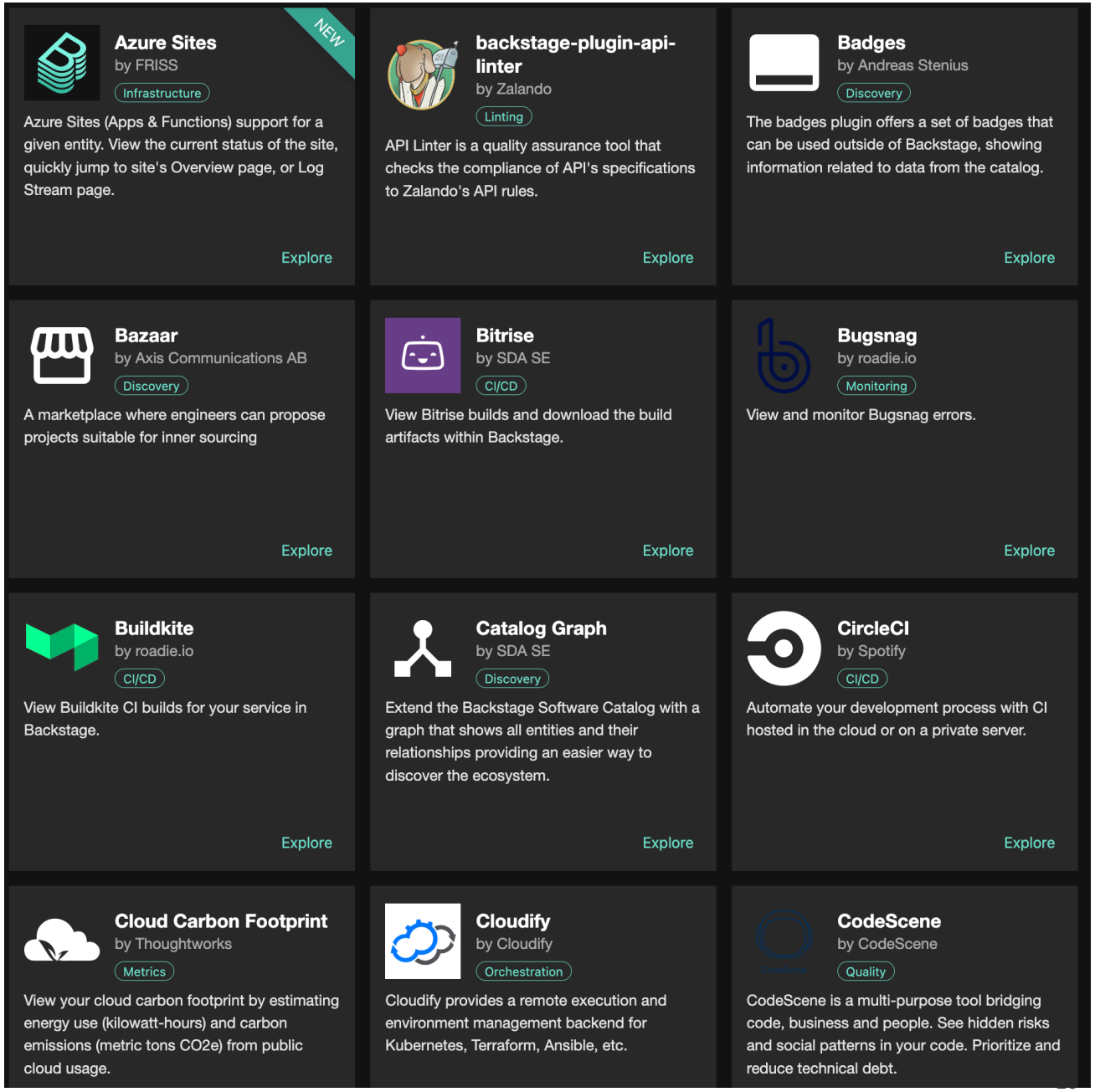
Golden Path

https://engineering.atspotify.com/2020/08/how-we-use-golden-paths-to-solve-fragmentation-in-our-software-ecosystem/

Backstage plugin ecosystem

Customizable and extensible plugin architecture

- Built with modern technologies and common frameworks
- Makes it easy to develop for and contribute to your dev portal
- Cloud-agnostic and vendor-neutral



Backstage in open source

CLOUD NATIVE
COMPUTING FOUNDATION

1,500+
contributors

3,200+
project forks

400+
adopters

7,300+
members

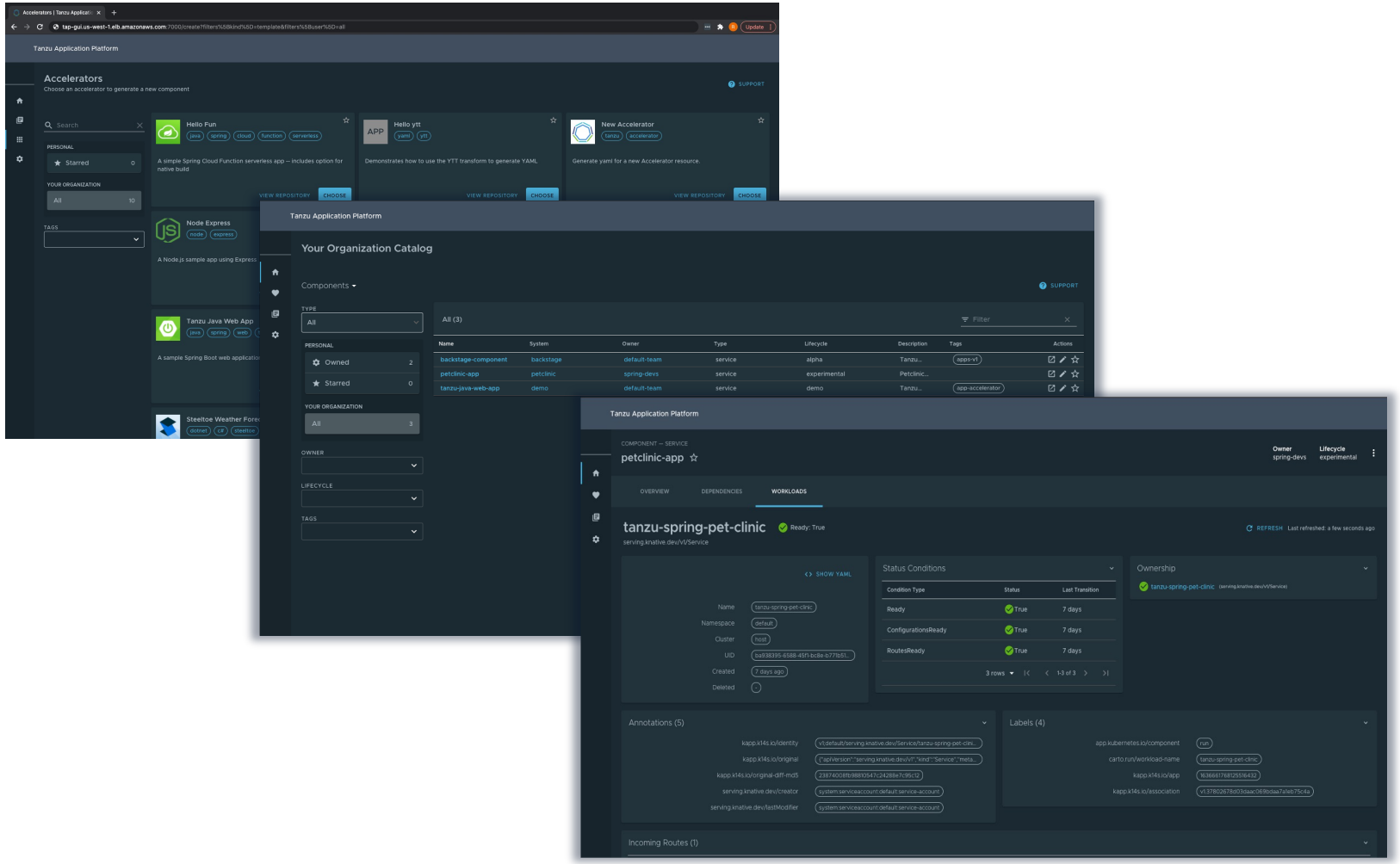
13,000+
contributions

Backstage is building a proven track record across industries


Currently ~~75 224~~ 241 public adopters
https://github.com/backstage/backstage/blob/master/ADOPTERS.md

Tanzu Application Platform (TAP)

Based on Backstage, but with it's own opinions (and focus)



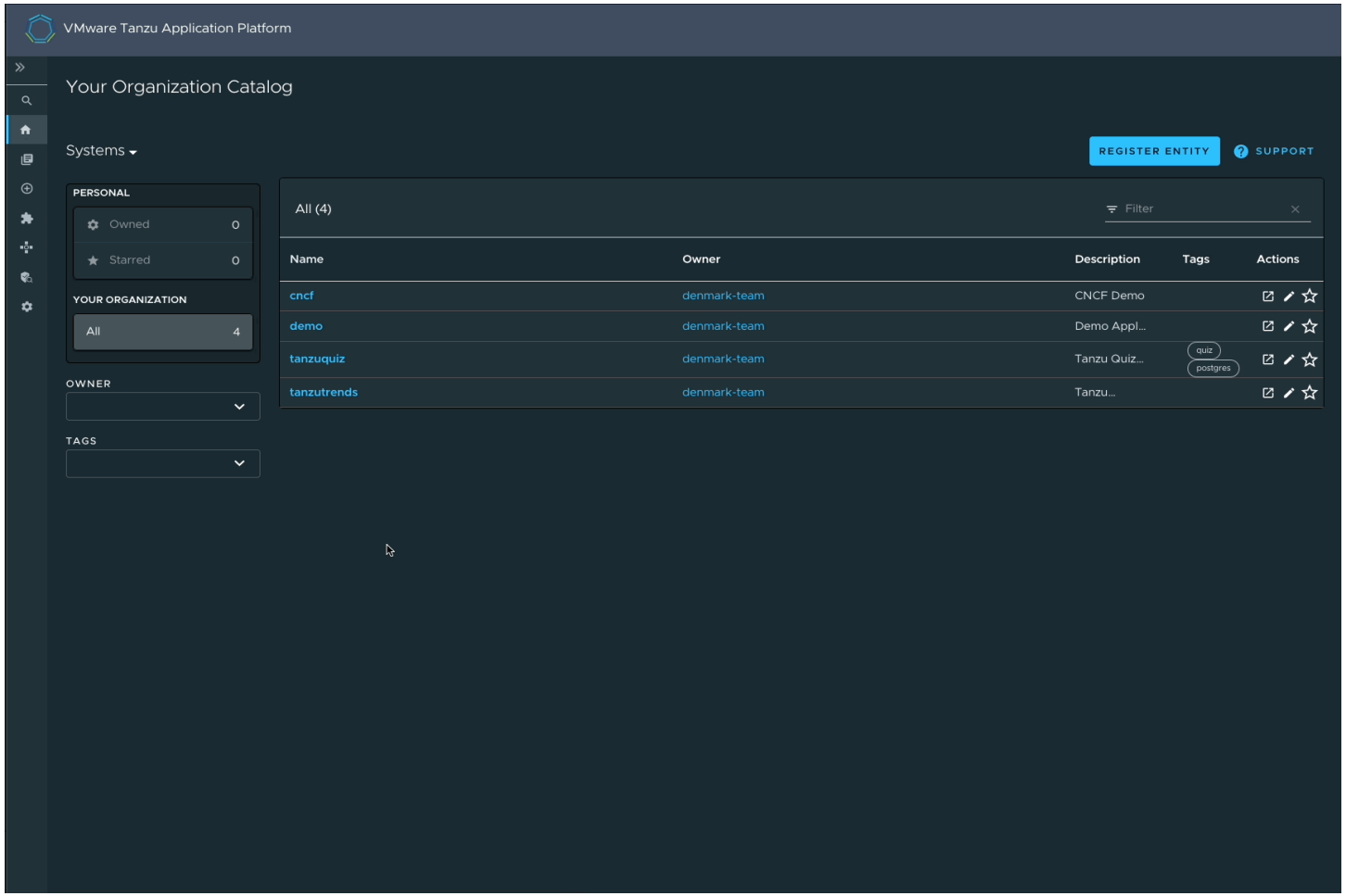
Backstage

Pre installed with

- Docs
- Accelerators
- API's
- Supply Chain
- Security Analytics

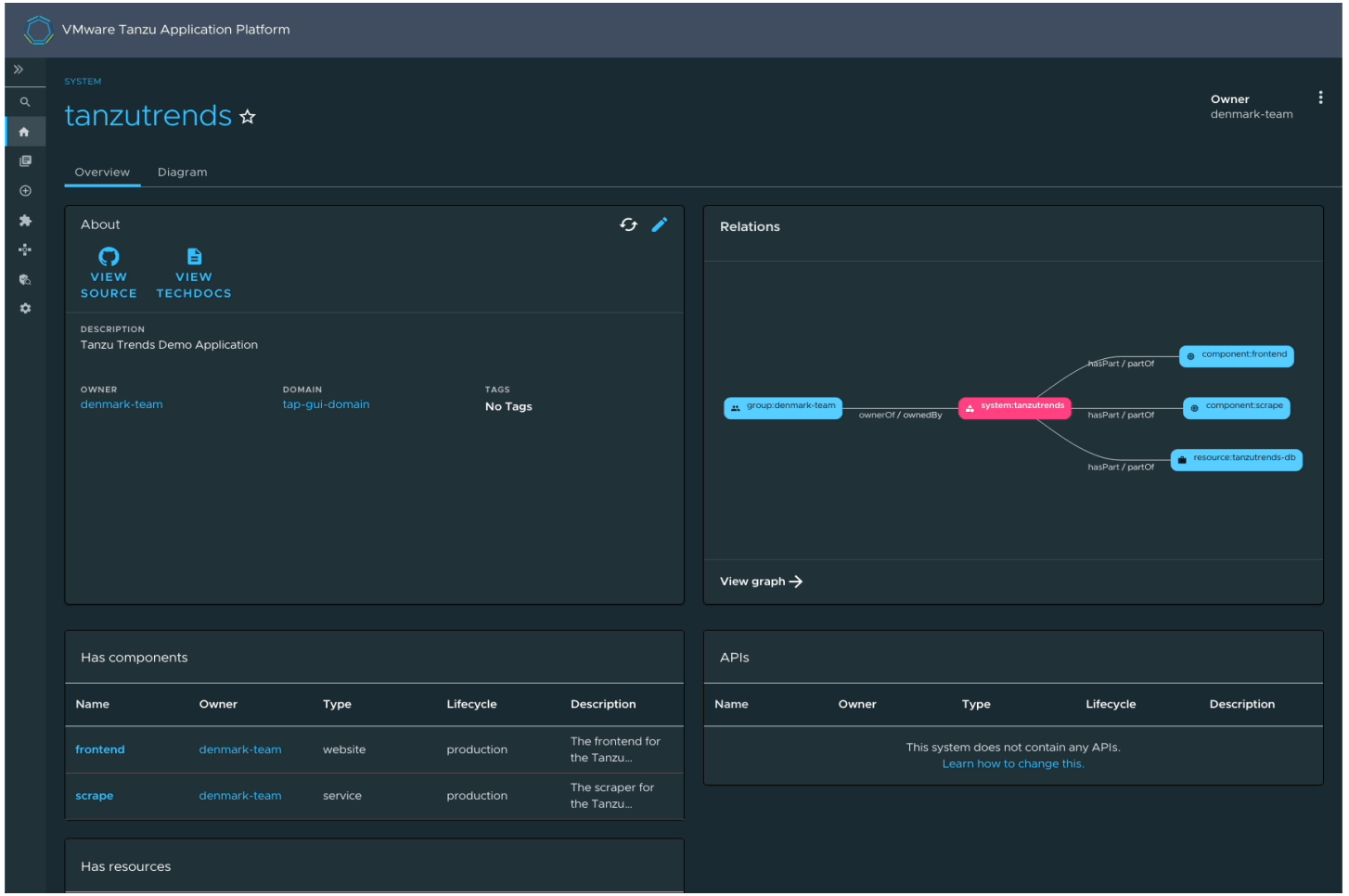
Only runs on K8S

Overview



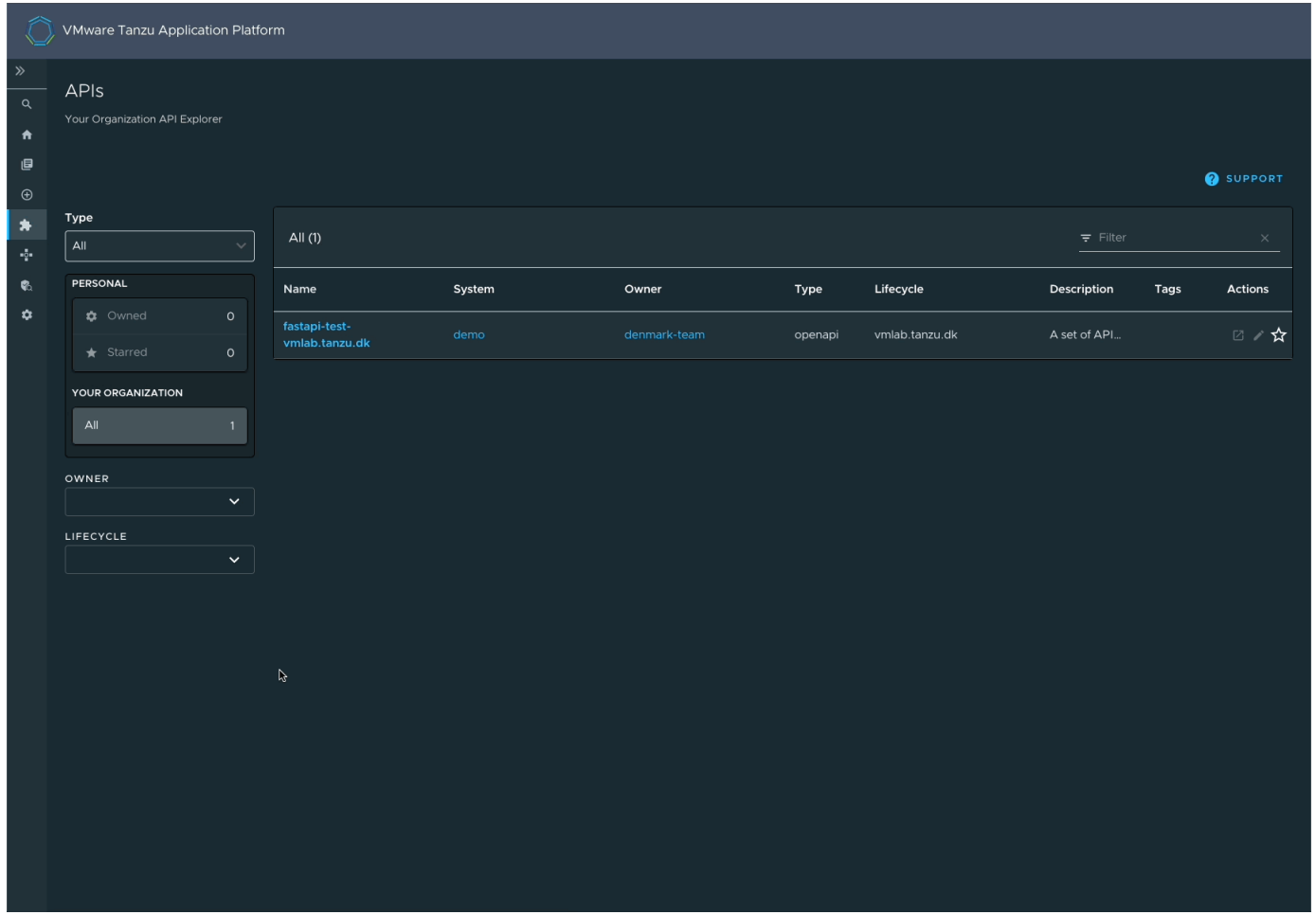
- Owners
- Systems
- Groups
- Dependencies
- Resources

Documentation



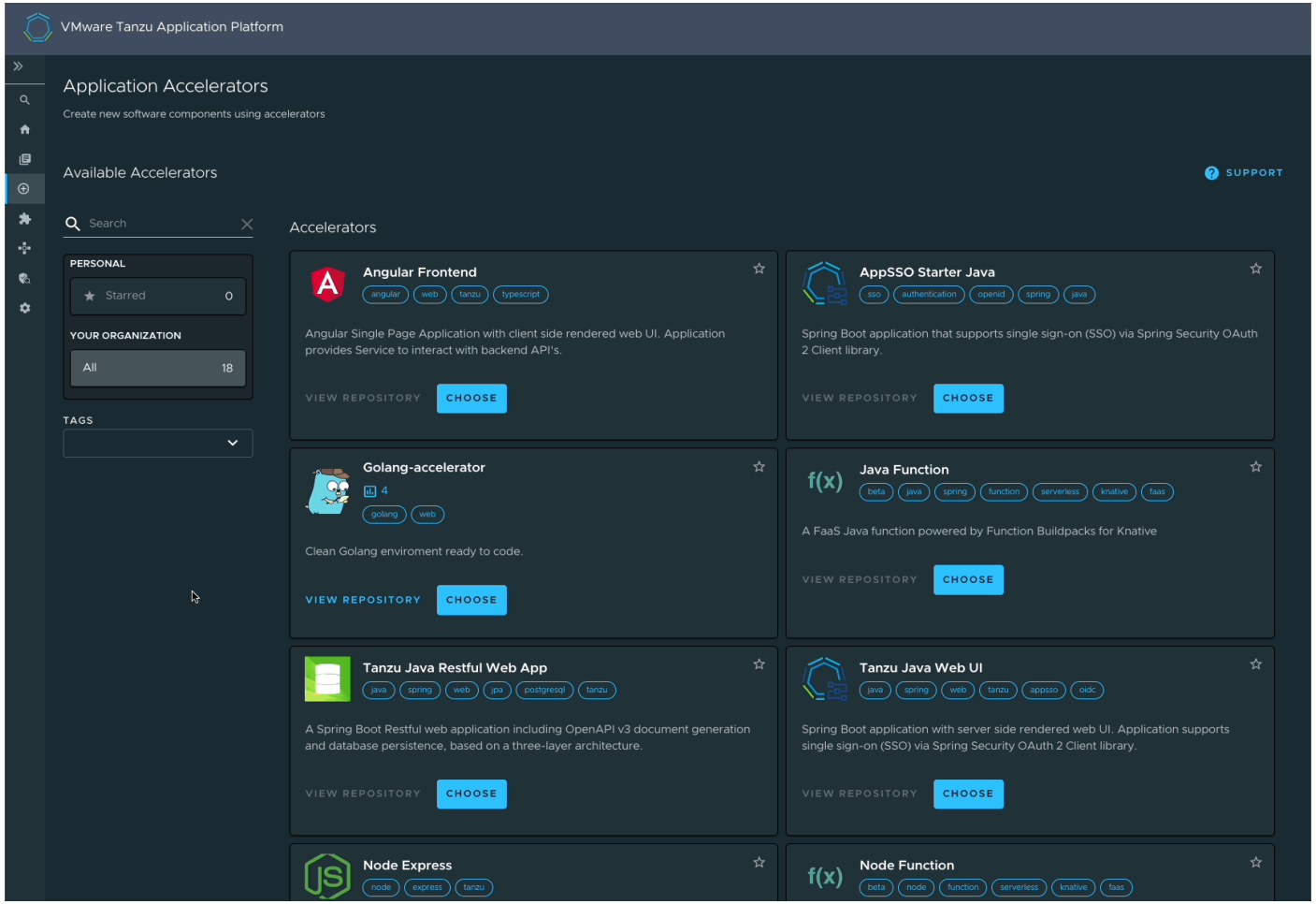
- Based on Mkdocs
- Written in markdown
- Documentation & Code in same repo.
- Build when you push

API



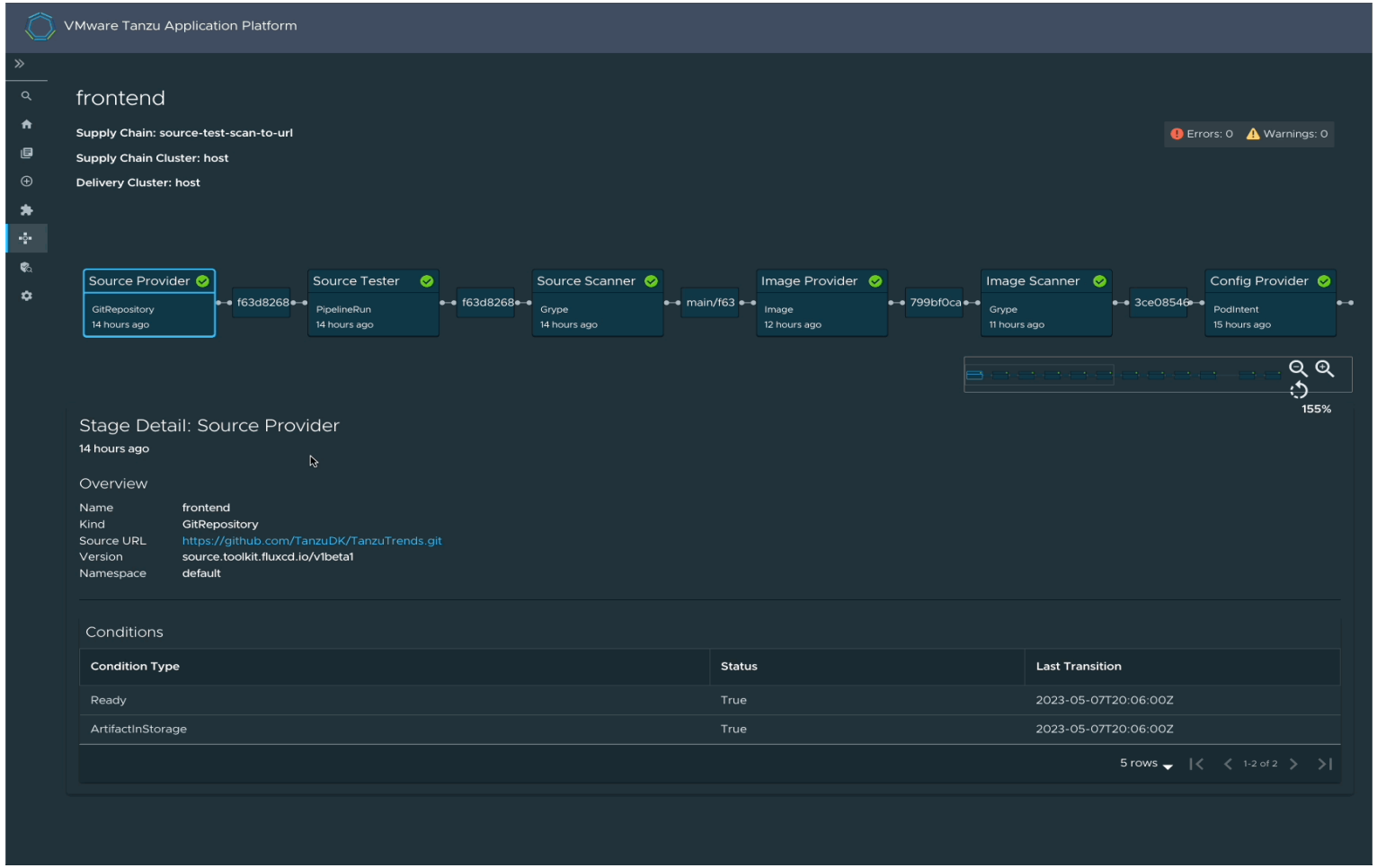
- Based on OpenAPI
- Auto updated with app
- Dependencies
- Internal / External Api's
- Swagger interface

Application Accelerators



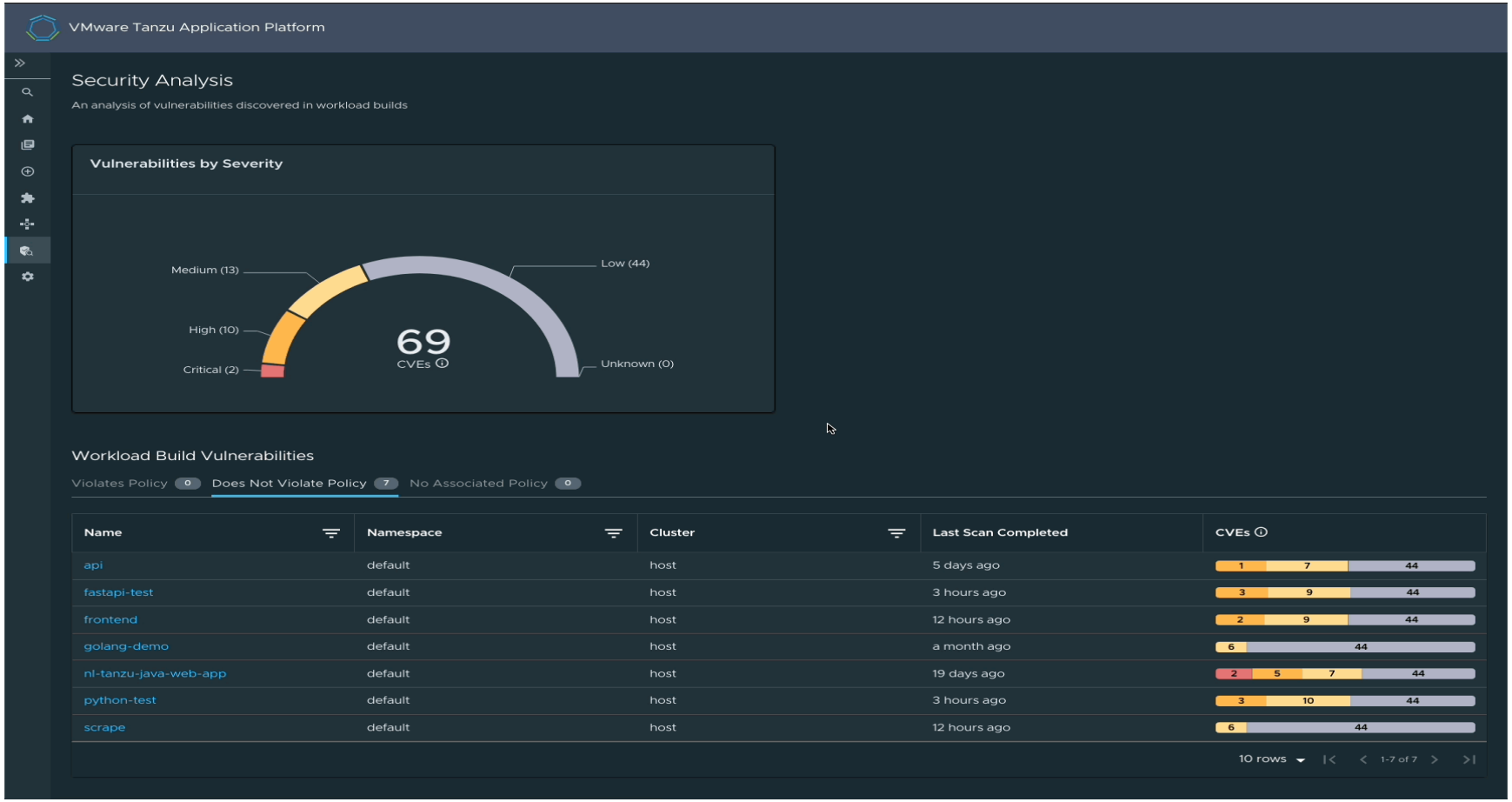
- Templates for Apps, Baselines etc.
- Can be ”anything”
- Takes input
- Customizable using Sed, YTT, etc.
- “Golden Path” build in.

Supply Chain



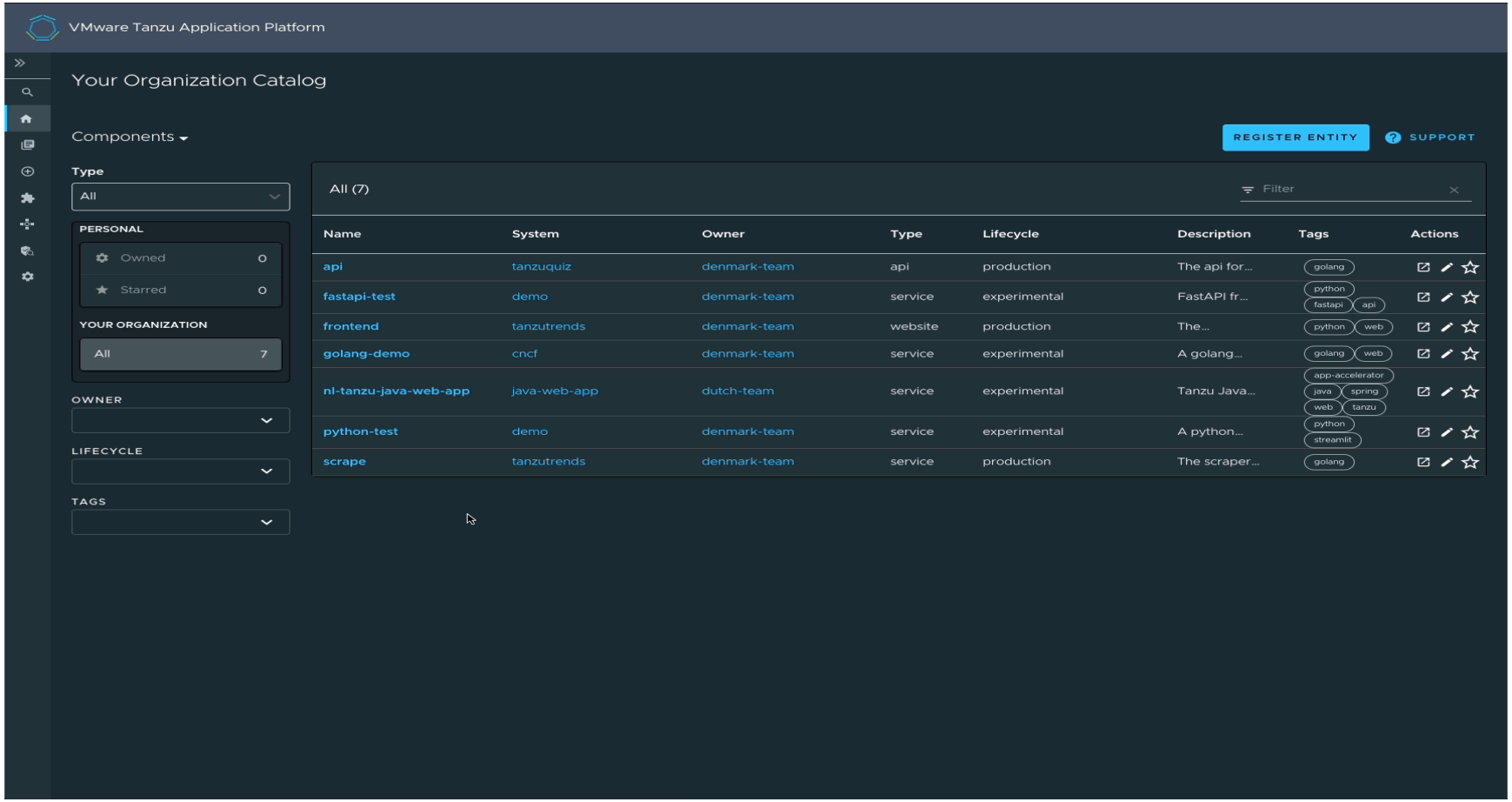
- Supply Chain UI
- CVE info
- Test info
- Overview

Security Analysis



- Security overview

Run



- Run the app, on the TAP cluster (or a dedicated run cluster)

Built with an open source-first mindset

Innovative, interoperable, scalable and secure solutions

Tanzu Application Platform is backed by some of the most mature and popular open-source projects available today

In addition to Backstage

Garnering 200+ plugins Backstage has gained tremendous traction by helping organizations build self-service developer portals

Carvel

Developers build, deploy, and manage their own apps and package them so they are more easily distributable

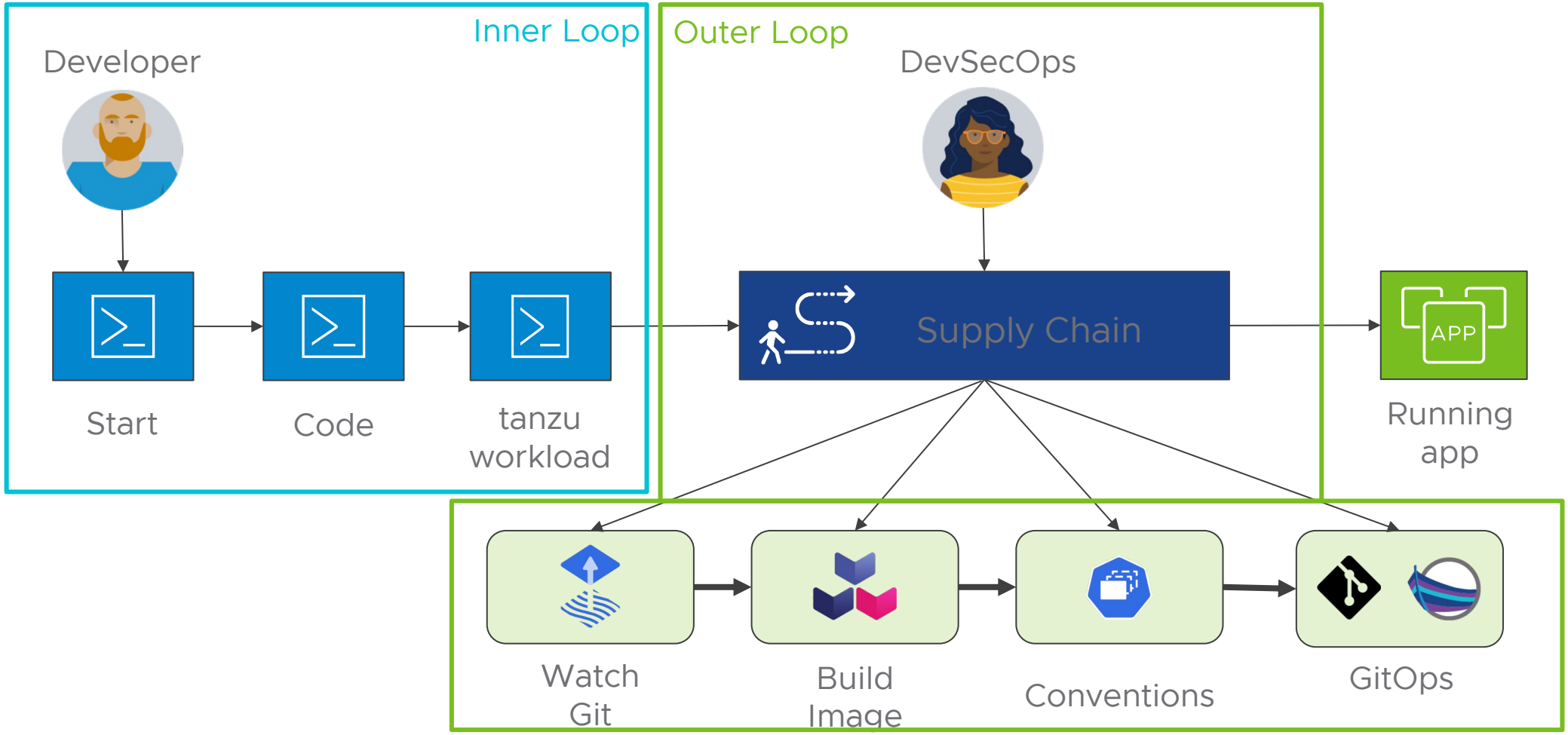
Cartographer

Operator teams create secure, reusable supply chains that define all of application CI and CD in one place

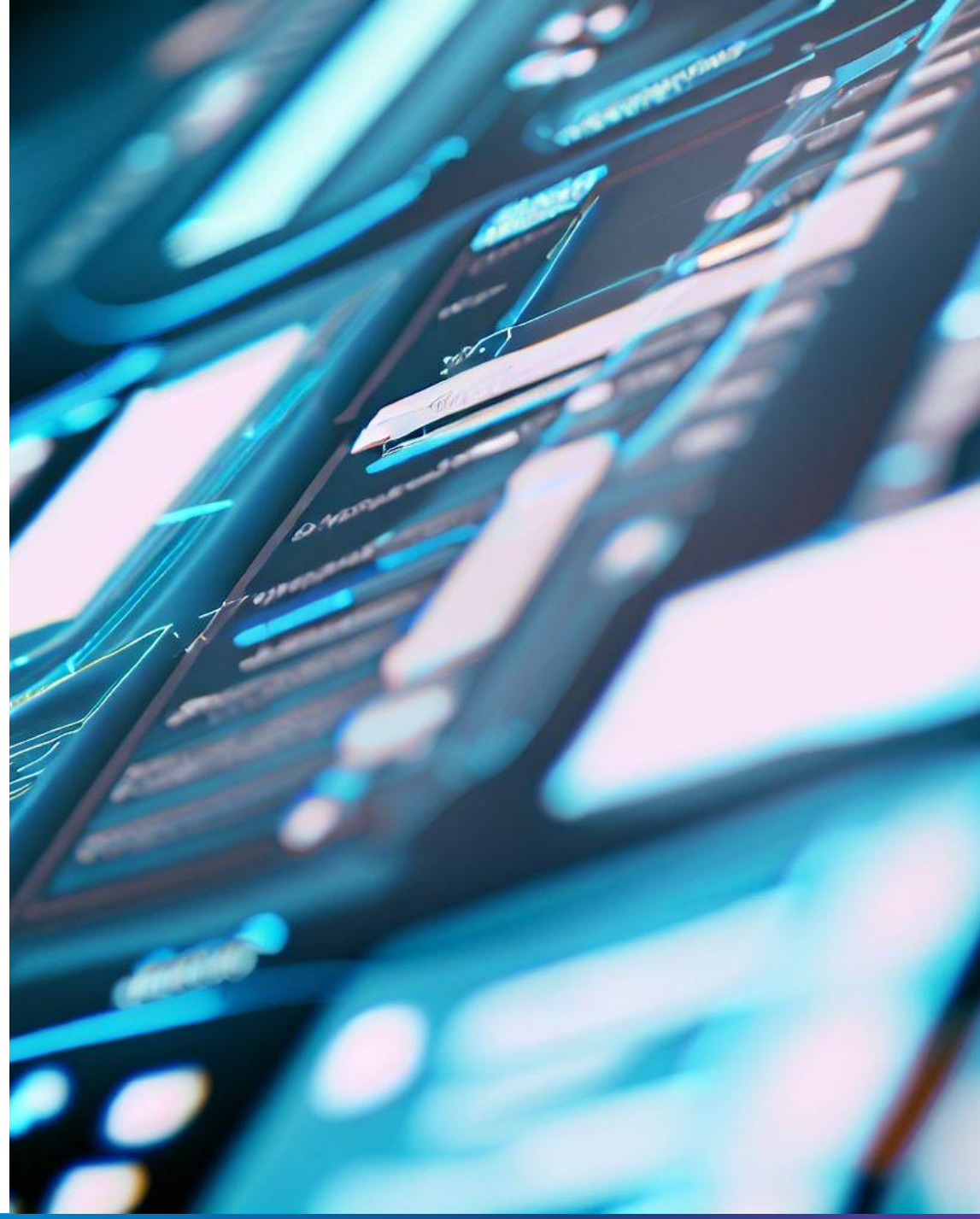
And many more….

Building open-source software and contributing to communities is at the core of VMware's engineering spirit

Deploying an App with Tanzu Application Platform



Come by the booth, for a “real” demo and a talk.



Thank You