Uni Web Topics Themes

Notes on Cloud Native Development

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1 Introduction

1.1 Contributing

These study materials are heavily based on professor Heuzeroth's "Spezielle Themen für Web-Anwendungen" lecture at HdM Stuttgart.

Found an error or have a suggestion? Please open an issue on GitHub (github.com/pojntfx/uni-webtopics-notes):

Figure 1: QR code to source repository

If you like the study materials, a GitHub star is always appreciated :)

1.2 License

Figure 2: AGPL-3.0 license badge

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2 Overview

- What is DevOps?
- Which parts of the software lifecycle does it cover?
  - Development
  - Distribution (I will focus on this today)
  - Operation

3 Development

- GitPod
- Codespaces
- Coder
- pojde
- Waypipe
- USB forwarding
- Port forwarding

4 Distribution

4.1 Basic Distribution Principles

- Binaries
- GPG signing and Gridge
- Cosign
- Portability
- Reproducibility
- Why we need more than “just binaries”

4.2 Pipelines

- Bagop
- Hydrun
- GitHub Actions
- Semantic Release

4.3 Distribution to RedHat Linux

- RPM packages

4.4 Distribution to Debian GNU/Linux

- DEB package
- APT repository
- Yum repository

4.5 Distribution to Linux (universal)

- Flatpak
- Flatpak repository

4.6 Distribution to Android

- APK
- F-Droid repository

4.7 Distribution to Windows

- MSI package with auto-updates

4.8 Distribution to macOS

- DMG package with auto-updates

4.9 Distribution to Kubernetes/the Cloud

- Docker
- Kubernetes
- Helm
- Skaffold

4.10 Distribution to WebAssembly

- WASM-Binary
- WASI/wasm_exec equivalents

5 Operation

- Sentry
- OpenTelemetry
- Prometheus
- Grafana