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# **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](https://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