/ CfgMgmtCamp 2025

Comparing Ansible Development Environments

SVA System Vertrieb Alexander GmbH

/ What can we expect today

Agenda

1

Introduction & Motivation

2

Different Solutions and Demos

3

Comparison of Development Environments

4

Closing thoughts

Whoami

Niklas Werker (he/him)

- 📍 Cologne, Germany
- 🏢 SVA System Vertrieb Alexander GmbH
  - 👋 say hi at our booth
- 👨🏻‍💻 DevOps: Infrastructure Automation

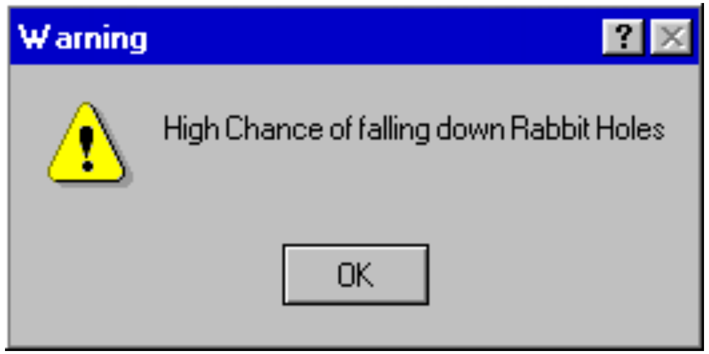
- 3 years Automotive Engineering Background: Systems Engineering (Embedded Systems)
- 7 years IT Background

- nwerker @ ANSIBLE

About this talk

- Applies to all Development Environment needs but today we'll focus on Ansible
- Hard to decontextualize from Platform Engineering
  - DevEx = Developer Experience
  - Bigger picture & integration possibilities

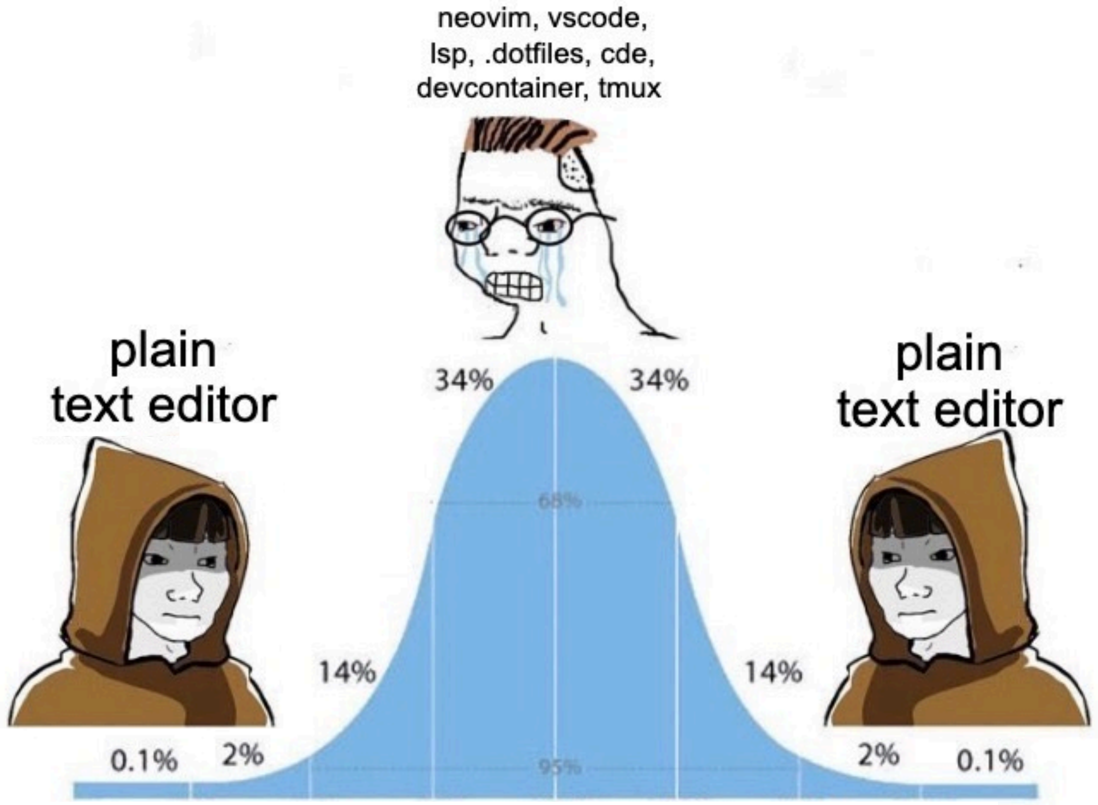
- Reason: X Tools trying to solve X Problems



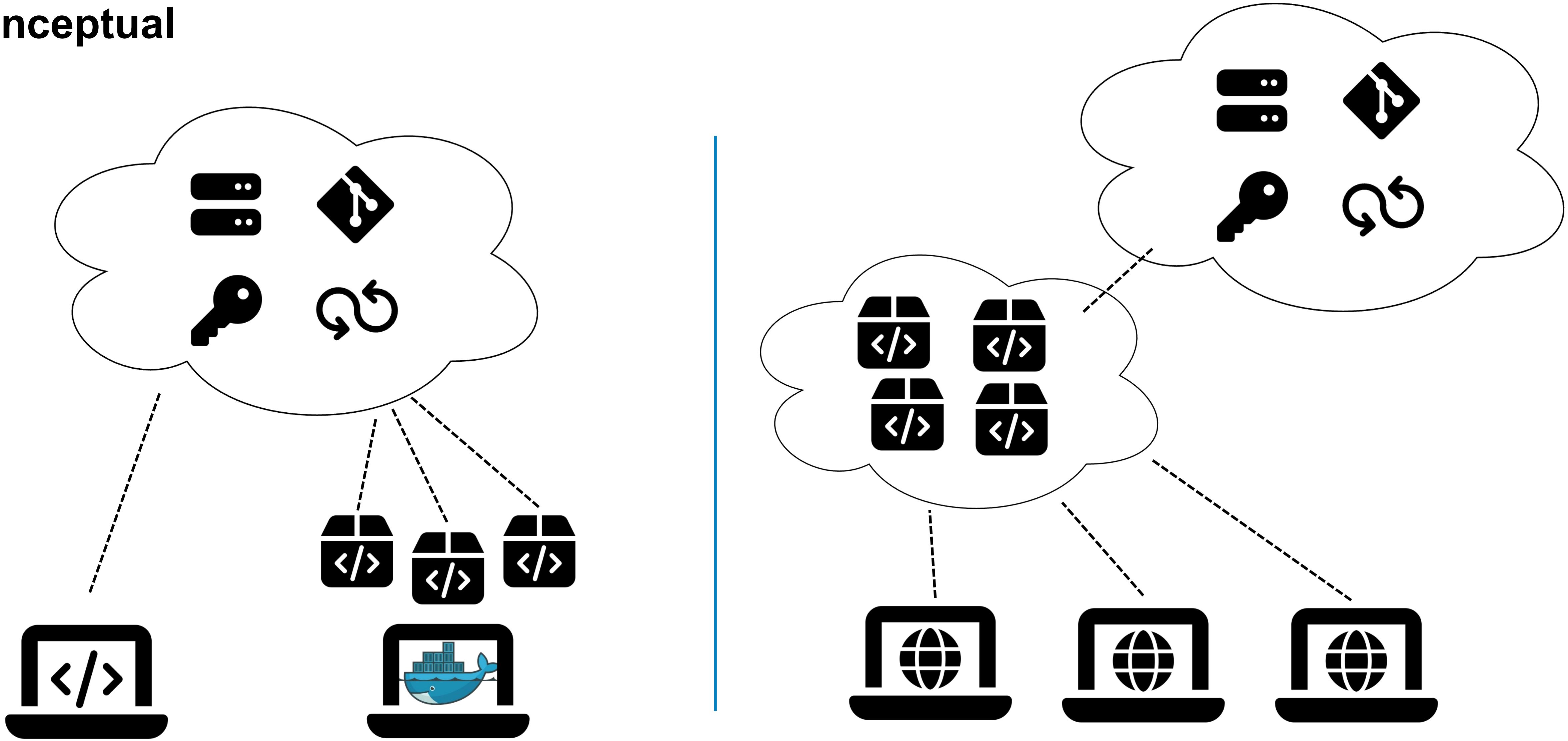
High Chance of falling down Rabbit Holes

Keep it simple

- Take what you need, leave the rest
- Your mileage may vary
- The Idea is not new:
  - .dotfiles
  - Coder Server
  - etc.



Conceptual



Classic Approach

Local Development Environment

Remote / Cloud Development Environment

But why?!

- Reproducible
- Standardization
- Governance: Development Environment as Code
- Faster Onboarding on new Projects
- Lifecycle Challenges:
  - Align Dev Dependencies with Team and Infrastructure
- Security

- Develop on prod-like infrastructure / dependencies
  - e.g. Containerized Network Appliances
  - e.g. against systems like HashiCorp Vault, Netbox

Anatomy of a Ansible Development Environment

Ansible Content Developer

- Integrated Development Environment (IDE)
- Ansible Development Tools (ADT)
  - Including: ansible-core, ansible-lint, molecule etc.
- Ansible Language Server (LSP)
  - Syntax highlighting, validation, linting, auto-completion, doc reference
- Collections (for collection specific syntax highlighting & linting)

Optional:
Test Driven Development Capabilities
Collection Dependencies (python, bindep etc.)

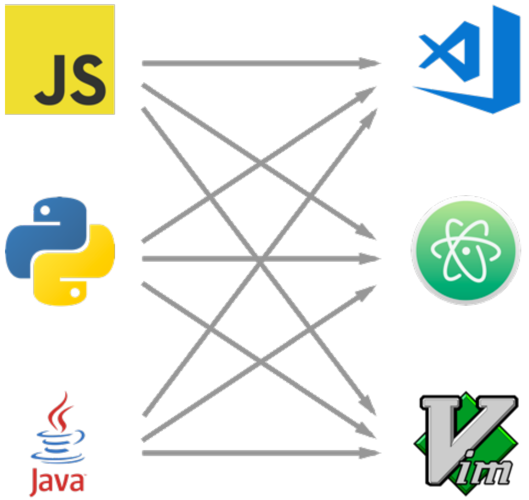
Language Server Protocol (LSP)

- Development started 2016
- Involved:
  - Microsoft
  - Codenvy / Red Hat

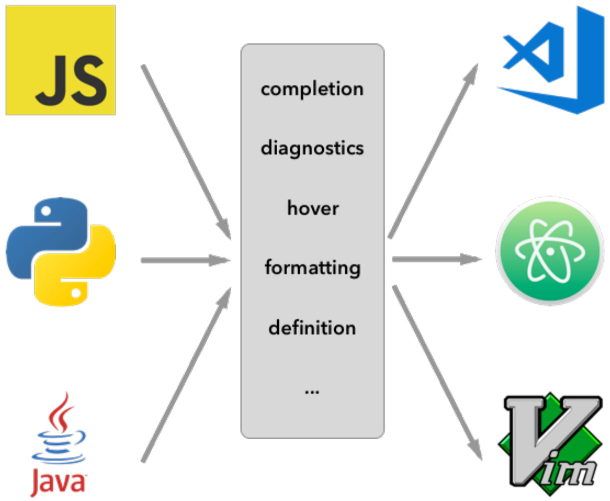
- Todays standard in Language Intelligence Tooling

- Features: Syntax highlighting, validation, linting integration, auto-completion, doc reference etc.

NO LSP



LSP



completion

diagnostics

hover

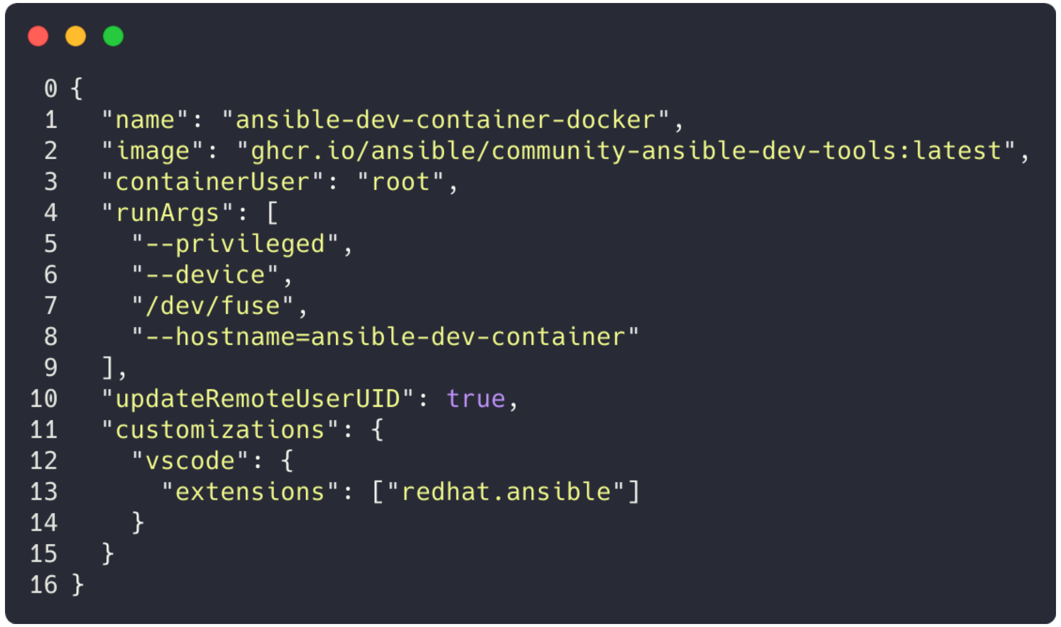
formatting

definition

...

Development Containers (devcontainer)

- Specification / Standard
- Declarative definition of
  - Software Dependencies (Containerfile, Compose, Image etc.)
  - IDE Dependencies (Extensions & Settings)
  - Runtime Dependencies
- A lot of different tooling:
  - Integration in Visual Studio (+Code), Jetbrains IDEs, CLI etc.
  - Tools Building on Spec: DevPod, GitPod Flex etc.
- SaaS Solution from Microsoft: GitHub Codespaces

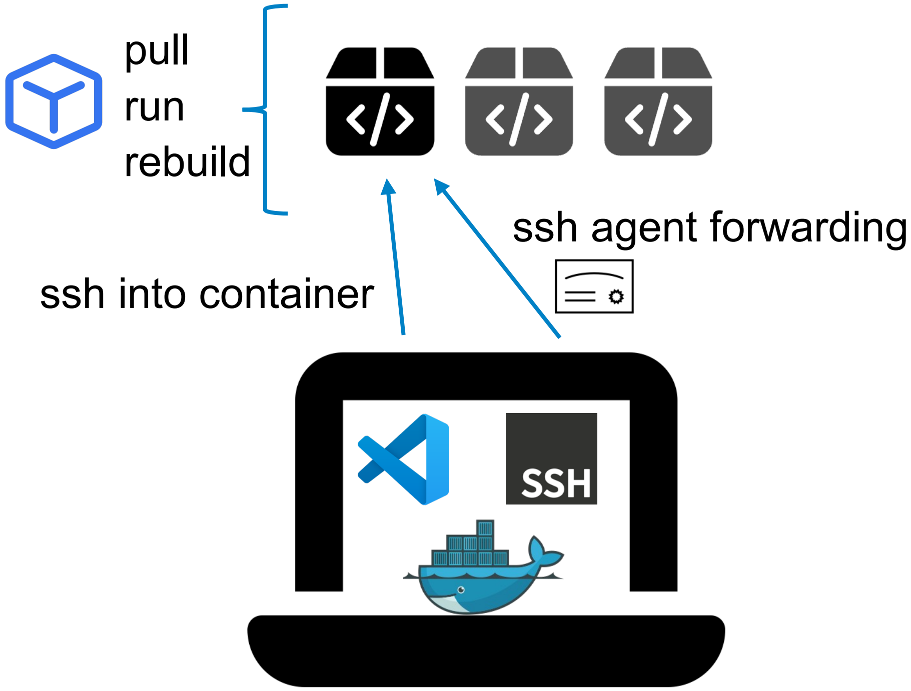


```
{
  "name": "ansible-dev-container-docker",
  "image": "ghcr.io/ansible/community-ansible-dev-tools:latest",
  "containerUser": "root",
  "runArgs": [
    "--privileged",
    "--device",
    "/dev/fuse",
    "--hostname=ansible-dev-container"
  ],
  "updateRemoteUserUID": true,
  "customizations": {
    "vscode": {
      "extensions": ["redhat.ansible"]
    }
  }
}
```

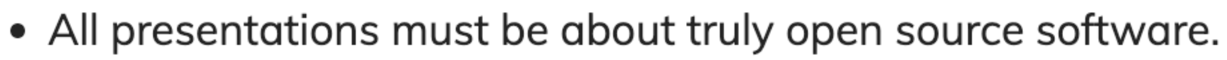
A more detailed view

- VS Code Devcontainer takes care about the container lifecycle
- Create one or more containers
- Editor uses SSH to connect do Development Container
- SSH Agent and Git Credential Helper are getting forwarded

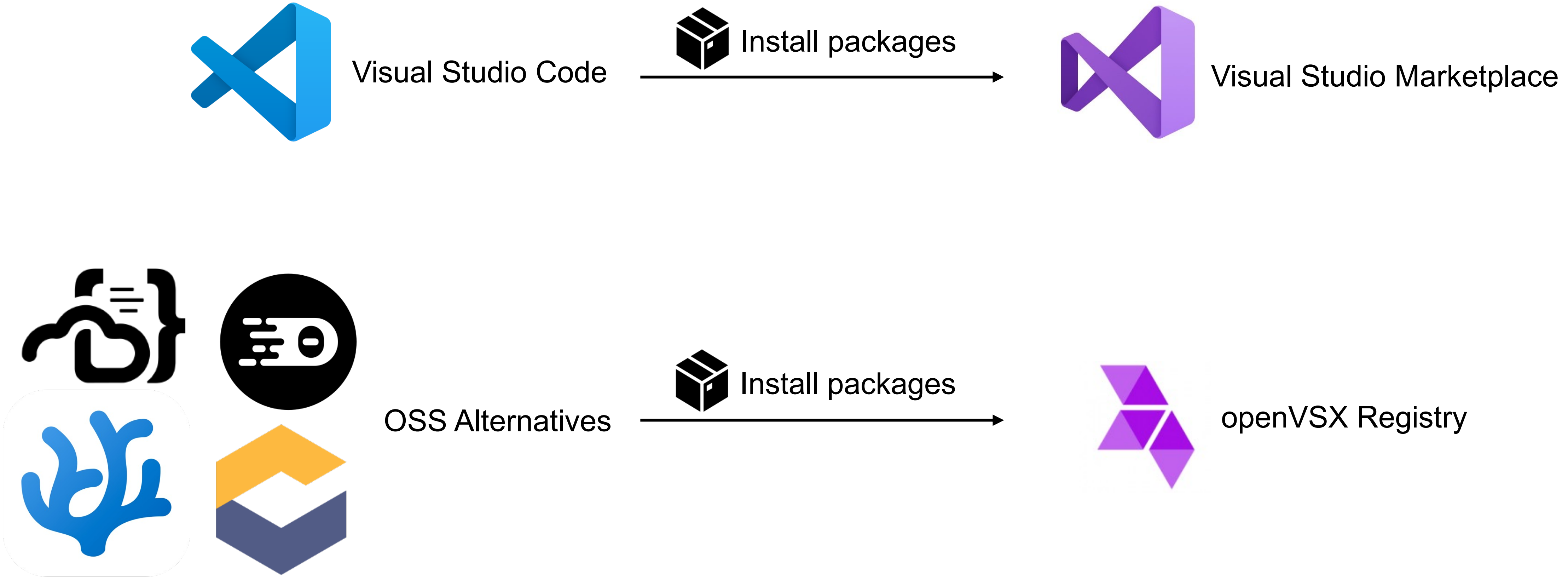
- Advanced features like:
  - Templates (to bootstrap projects)
  - Features (share devcontainer code)



OpenSource Controversy



- All presentations must be about truly open source software.



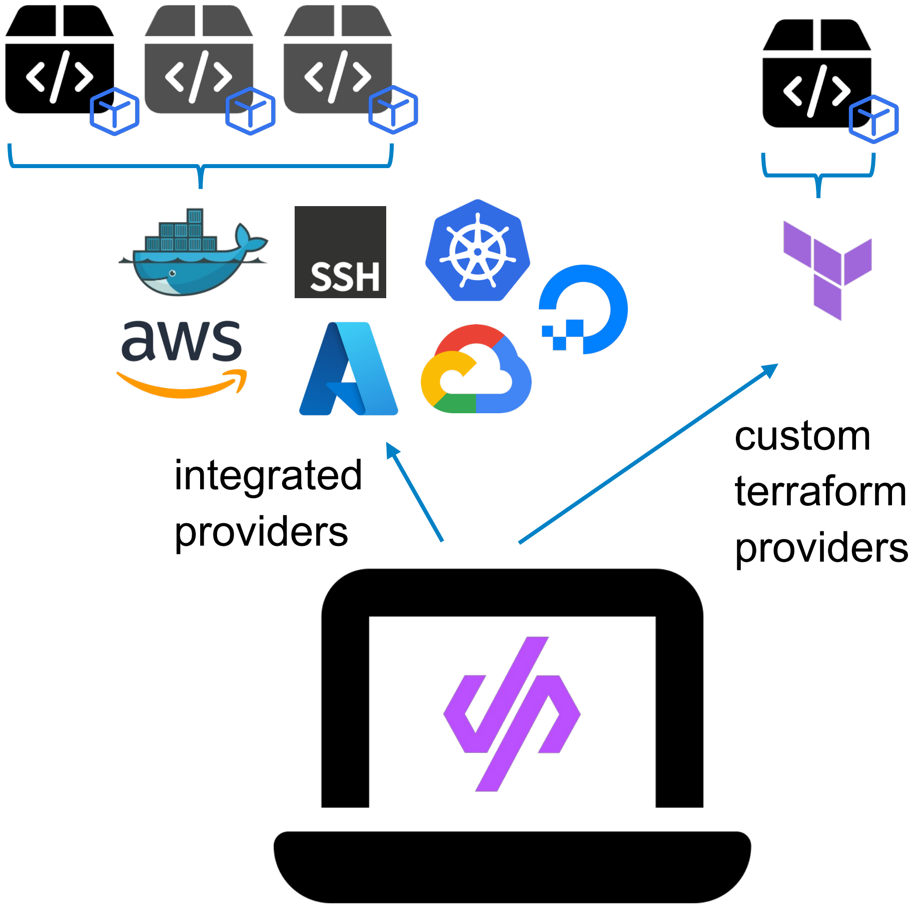
Visual Studio Code → Install packages → Visual Studio Marketplace

OSS Alternatives → Install packages → openVSX Registry

- VSCode: Built on OSS, proprietary Microsoft license and telemetry
- Licenses and agreements permits certain usage
- Remote Management and Development Extensions not available OSS

DevPod

- Desktop Client for managing Development Environments anywhere
- Supports
  - devcontainer Spec
  - Terraform provisioning
- Combining local and remote dev environments and different editors
- Enterprise Version in development: DevPod .Pro
- .dotfiles Integration
- Community Codium Plugin, to allow “VSCode like” feel with DevPod



integrated providers

custom terraform providers

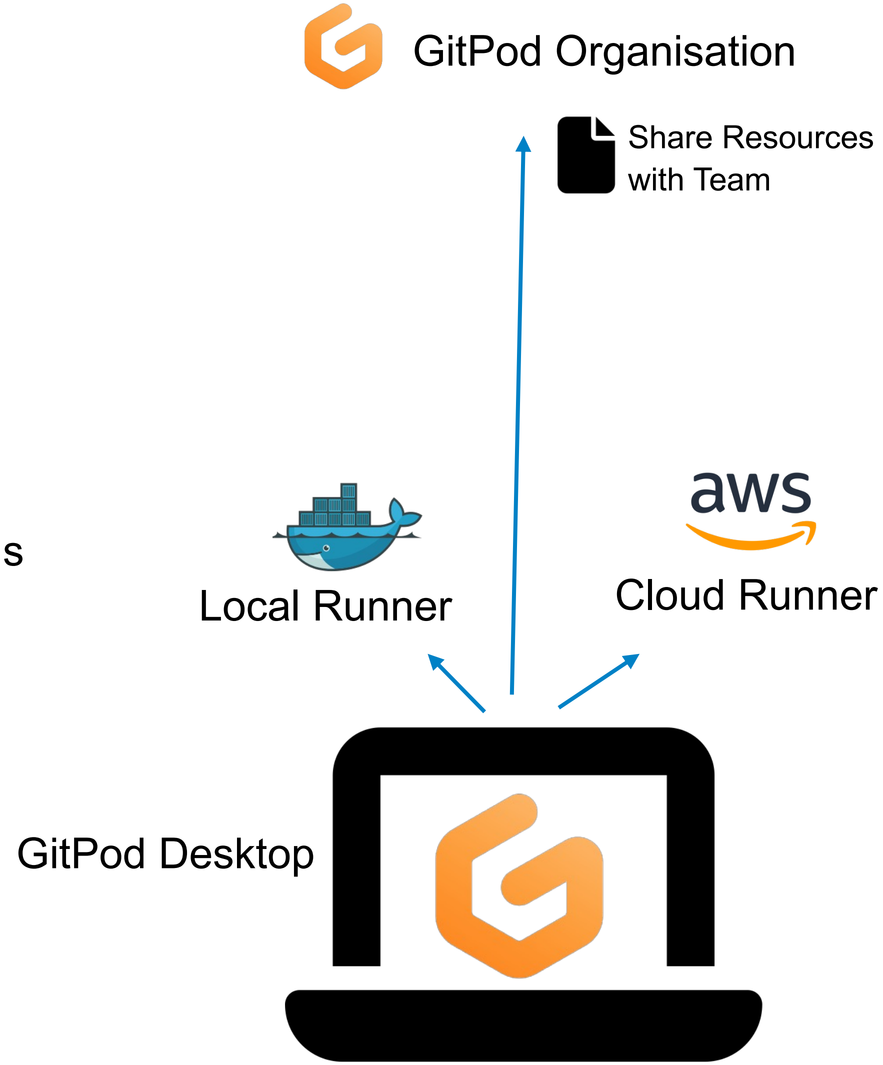
GitPod

2 different products:

- GitPod Classic (EOL 04/25)
  - SaaS Including alternative Spec to
- GitPod Free, Flex (early access), Enterprise
  - Implementing Devcontainers
  - Local Environment & Self Hosted in Cloud
  - Management Plane on GitPod infrastructure

- Early Access of GitPod Flex came with some flaws
  - e.g. Performance / Rosetta Virtualization and missing VSCode Extensions

- Adds Features like “Automations” & sharing Projects with teams
  - More to come



Coder

- Makers of “code-server”
- Selfhost management plane and provisioning of CDEs

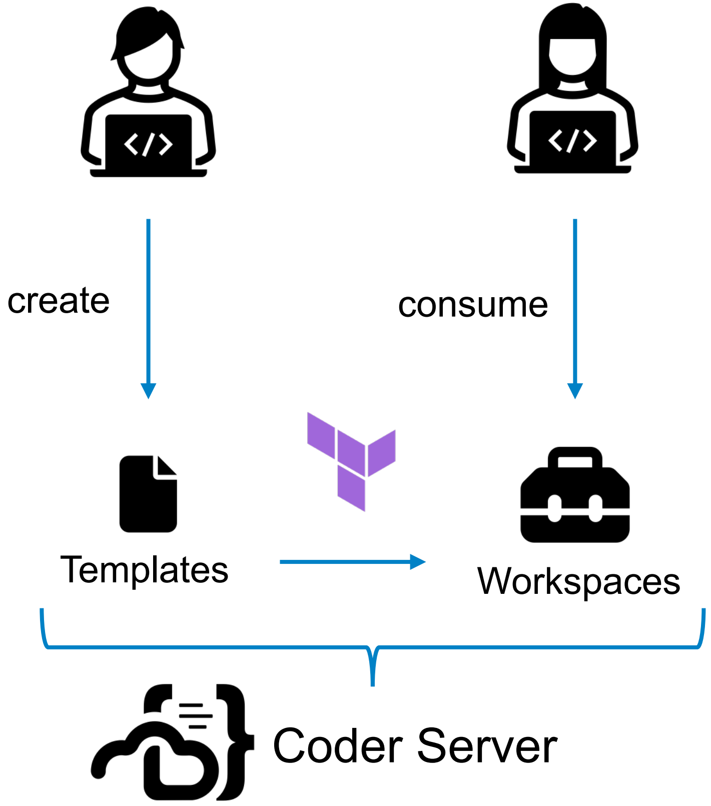
- Terraform driven templates
  - VMs, Pods, Containers etc.

- Coder Application Single Go Binary (Server + Client) + PSQL

- Consume Workspaces via. IDE, Web IDE or Web SSH Terminal

- Enterprise:
  - HA / Scalability
  - Advanced Networking and Security Features
  - Lifecycle Features

- Integration into Secret Management (HashiCorp Vault) or Artifactories

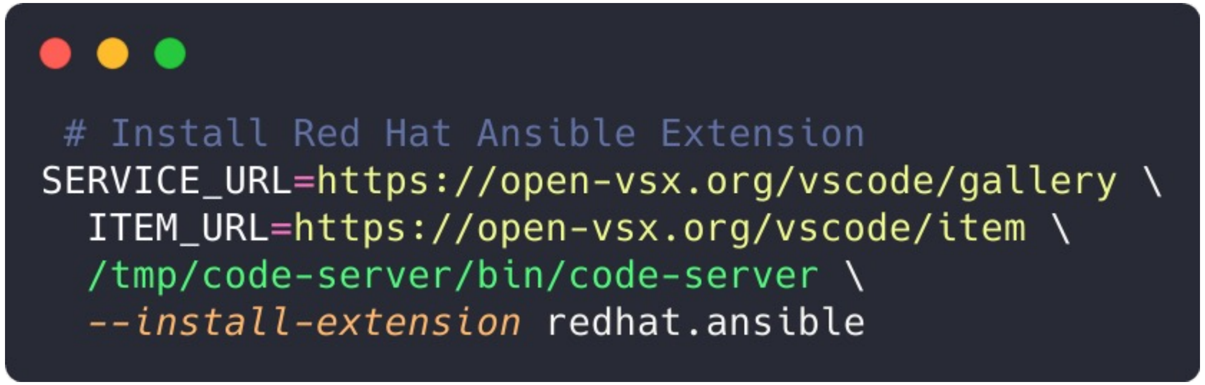


Coder

- Devcontainer Support via.: Coder Envbuilder
  - Abstraction of Devcontainer Lifecycle Stages
  - Builds Devcontainer and Image to Coder Specific Image

- No integration to automatically install ide extensions
  - Can be installed in Client IDE or via. Coder Script in Coder Server Workspace Instance

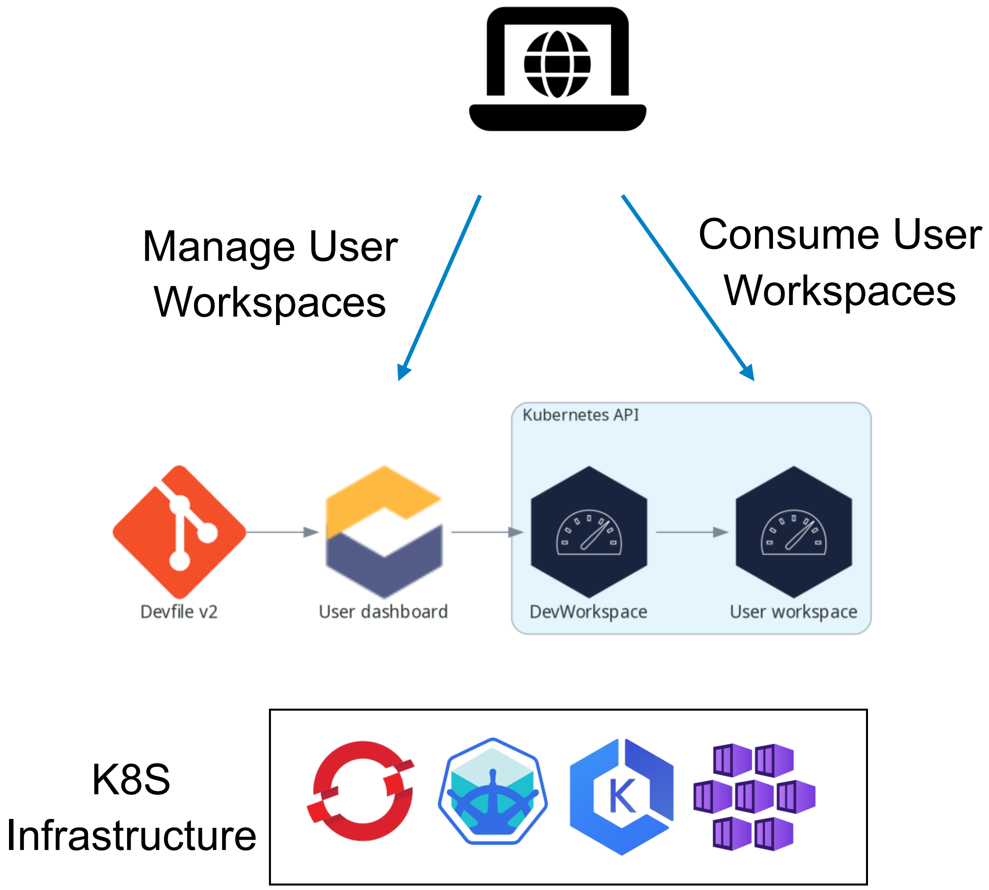
- Traditionally Coder Templates are completely defined within Terraform and ”Coder Agent Scripts”



```
 # Install Red Hat Ansible Extension
SERVICE_URL=https://open-vsx.org/vscode/gallery \
  ITEM_URL=https://open-vsx.org/vscode/item \
  /tmp/code-server/bin/code-server \
  --install-extension redhat.ansible
```

Eclipse Che

- Kubernetes based Cloud Development Environments
- Based on Devfile Spec
- User consumes IDE, Project and Kubernetes Namespace
- Tailored to Cloud Native Development
  - Well suited for Test Driven Development (e.g. Molecule)
- Enterprise Version: Red Hat OpenShift Devspaces
  - fka: CodeReady Workspaces / Codenvy
  - Red Hat Developer Sandbox Account (Testing)



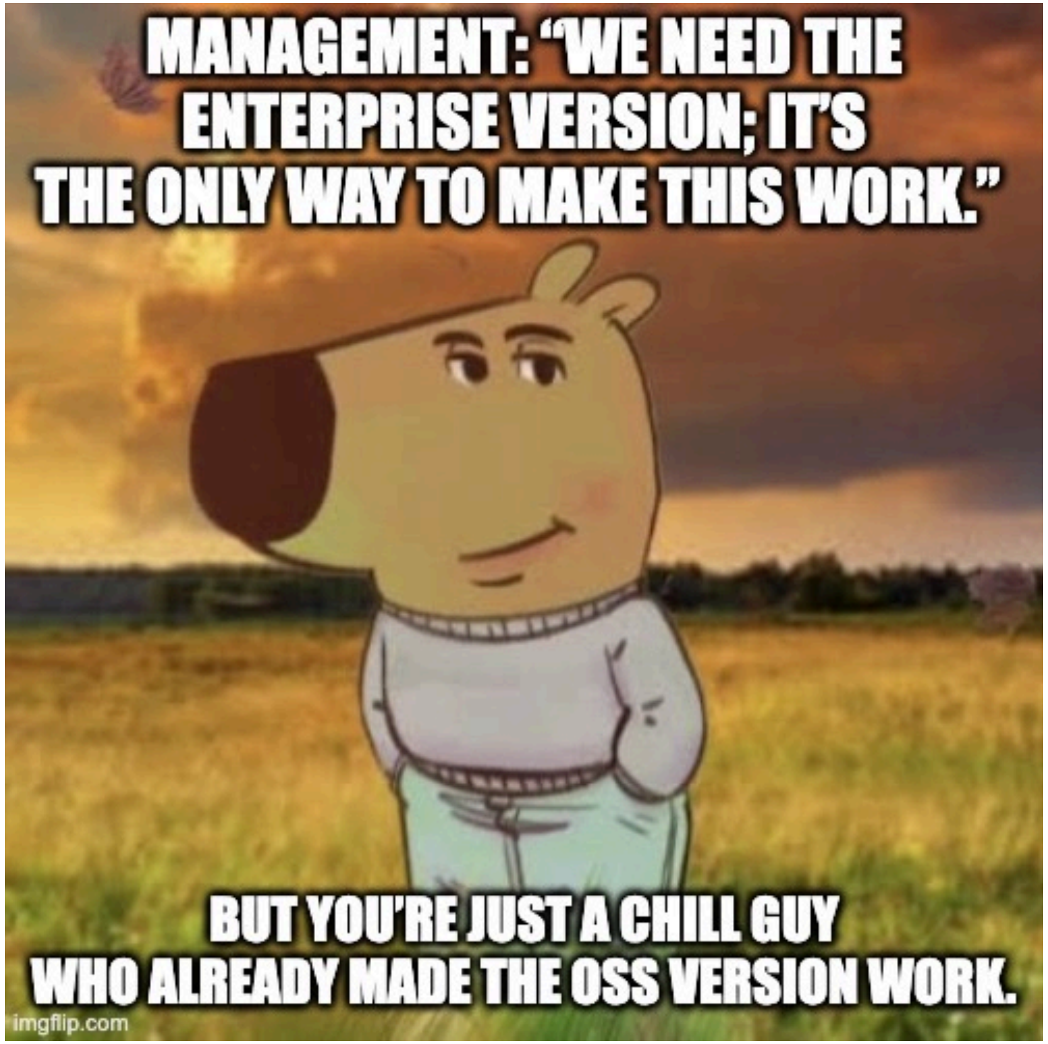
Manage User Workspaces

Consume User Workspaces

K8S Infrastructure

Common Enterprise Features

- Scalability and High Availability
- Pre Build Environments
- Scheduled Downtimes and Availability
- Lifecycle: Enforce certain template Versions
- Scheduled Uptime and Availability
- Metrics and Telemetry
- RBAC
- Onboard Contractors
- Cost Control
- Governance
- Support / SLAs etc.


MANAGEMENT: "WE NEED THE ENTERPRISE VERSION; IT'S THE ONLY WAY TO MAKE THIS WORK."
BUT YOU'RE JUST A CHILL GUY WHO ALREADY MADE THE OSS VERSION WORK.
imgflip.com

Entry points to interact with Development Environments

IDE

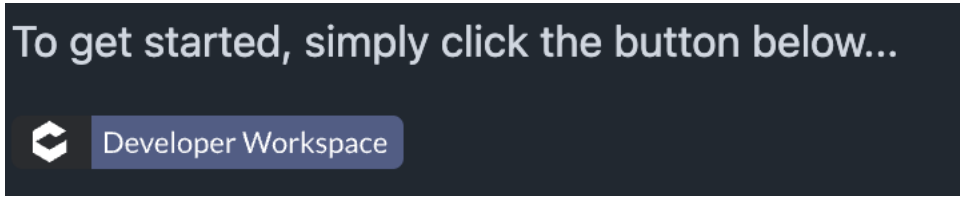
Web Portal

Gitpod

Browser Extention

Internal Developer Portal

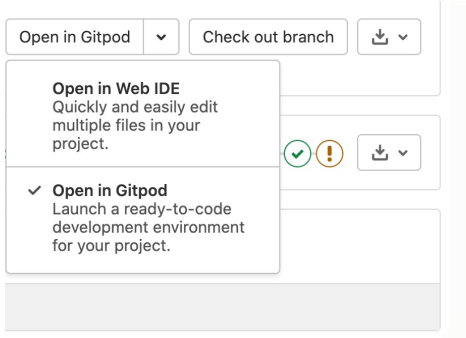
CLI



To get started, simply click the button below...

Markdown Badges

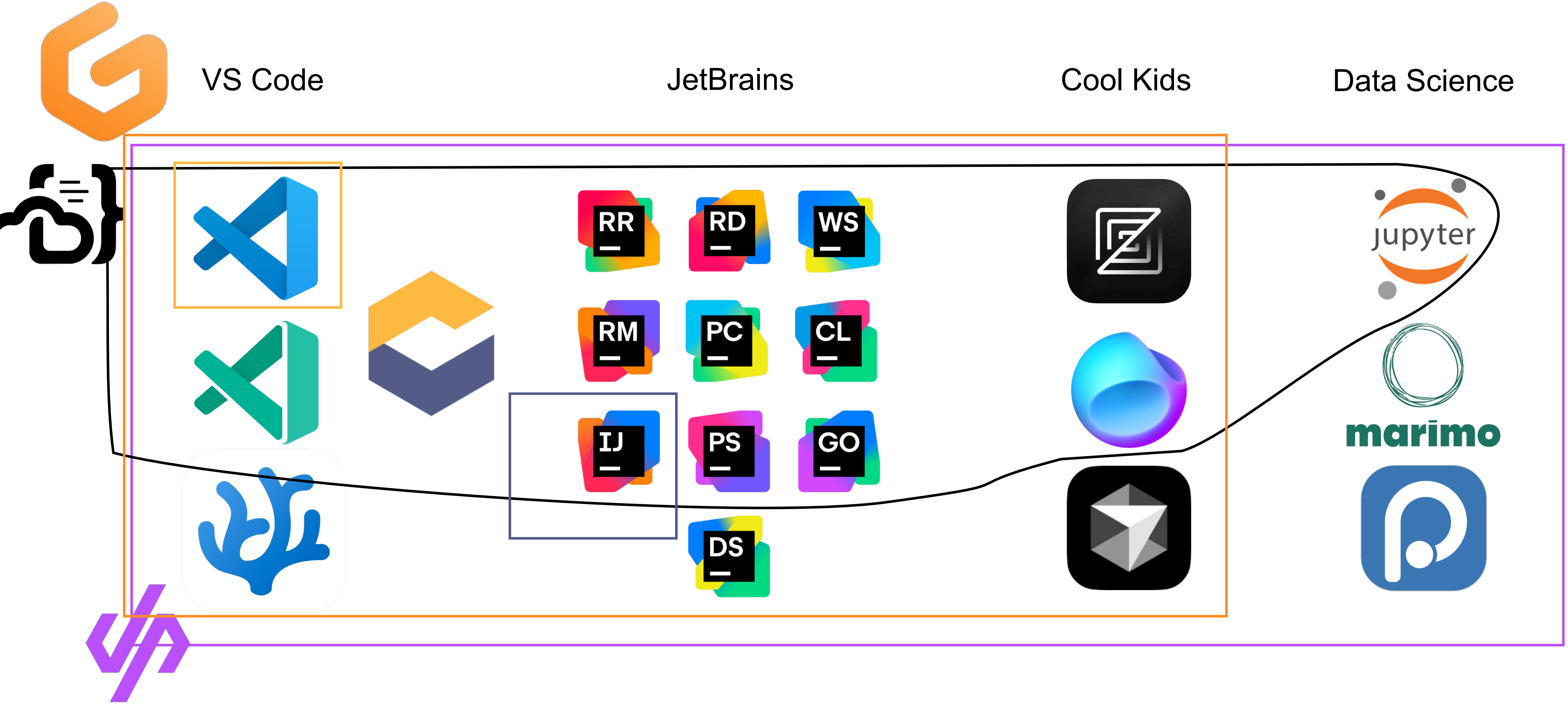
Desktop Client



Open in Gitpod
Check out branch
Open in Web IDE
Quickly and easily edit multiple files in your project.
✓ Open in Gitpod
Launch a ready-to-code development environment for your project.

Merge Request

Comparison of supported IDEs



VS Code

JetBrains

Cool Kids

Data Science

Infrastructure point of view

Development Containers: IDE Dependent, Environments on OCI Container Runtime

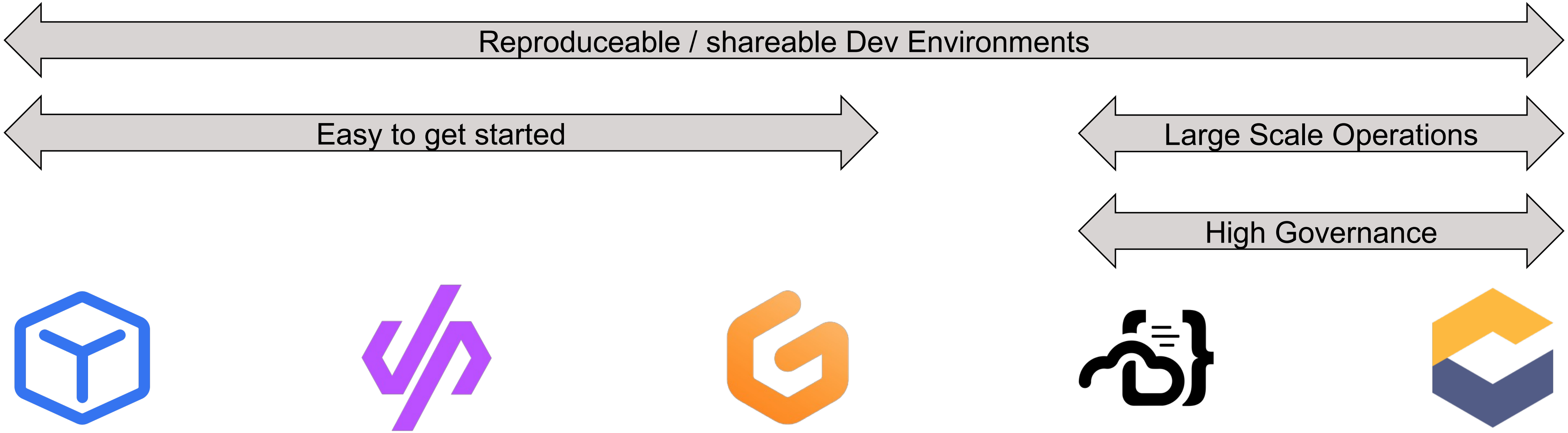
DevPod: Local Client, Environments Everywhere

GitPod: Management Plane in Cloud, Environments Locally and in Cloud

Coder: Coderserver Everywhere, Environments Everywhere

Eclipse Che: Both K8S

Sweet Spots



Reproduceable / shareable Dev Environments

Easy to get started

Large Scale Operations

High Governance

Where do we go from here?!

- Development Containers as a new standard defining Dependencies
  - For instance in a lot of OSS Communities & Repositories
- Ansible Dev Tools for the Go-To Repository / Entrypoint for Tools
- A lot of movement and innovation in terms of different CDE Tools + new IDEs (Zed, Cursor, Fleed etc.)
- Chance to deliver AI Coding Assistants for whole enterprises
- Uncertain: Central Development Environments in a world with faster and faster compute power on mobile computers

Don’t miss out on:

Today:

- 14:25 / Ganesh B Nalawade: Streamlining the Ansible creator experience with the new and improved Ansible Development tools
- 14:50 / Sorin Sbarnea: Beyond copy-paste: Using Ansible Development Tools for Robust Automation Content

Tuesday:

- 16:50 / Sorin Sbarnea: From Manual Testing to Continuous Validation: Taking the Quality of Ansible Content to the Next Level

Wednesday:

- 12:15 / Ansible Contributor Summit: Ansible Development Tools workshop