

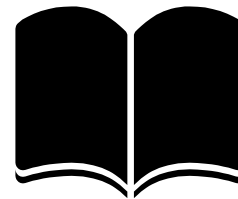
Remote Development Environment

on Viettel Cloud



Pham Hong Thanh

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Introduction

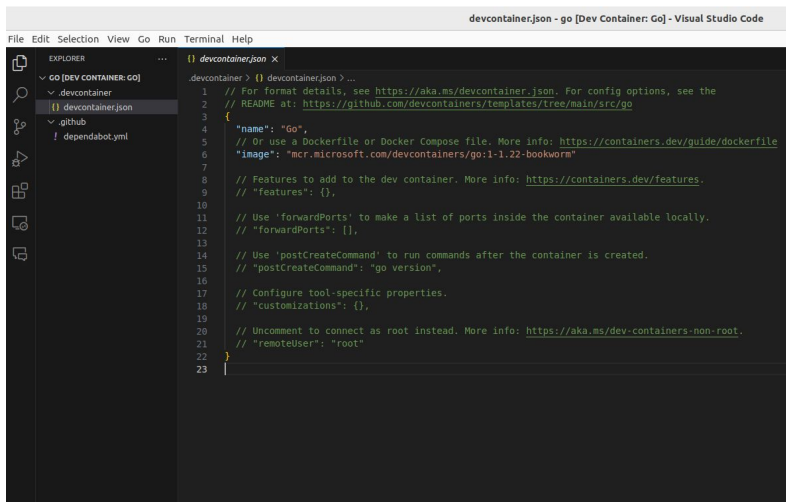
Remote Development Environment

Benefits:

- Remote IDE
- Contains basic development tools such as IDE, dependencies, git, etc.
- Useful for developers work in enterprises or open-source contributor
- Time saving
- Standardisation
- Outsourcing computing-intensive resources
- Productivity
- Security of source code and data

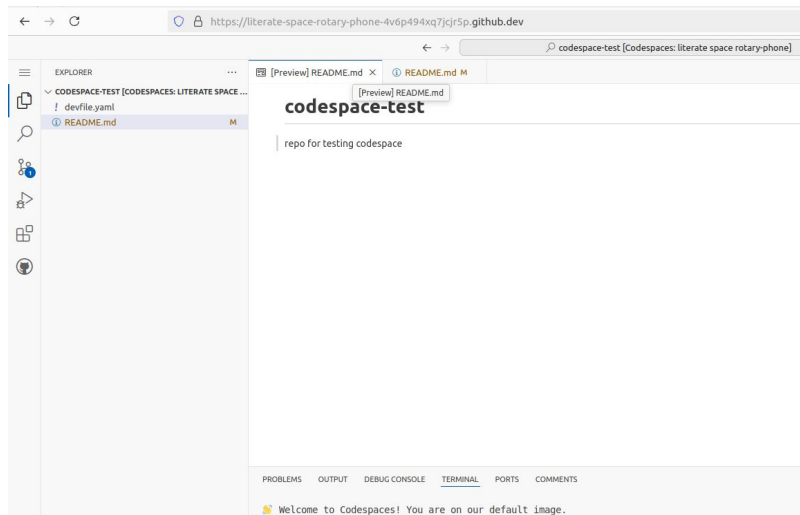
Introduction

Remote Development Environment



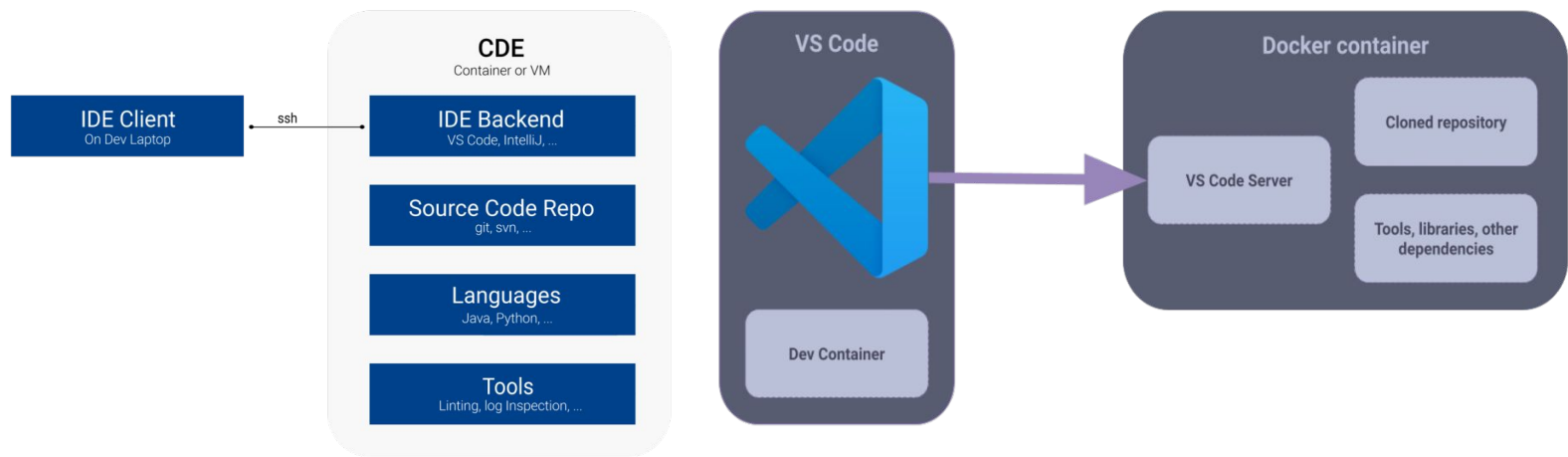
The screenshot shows the Visual Studio Code interface with the `devcontainer.json` file open. The file is located in the `.devcontainer` folder of a project named `GO [DEV CONTAINER: GO]`. The file contains the following JSON configuration:

```
1 // For format details, see https://aka.ms/devcontainer.json. For config options, see the
2 // README at: https://github.com/devcontainers/templates/tree/main/src/go
3 {
4   "name": "Go",
5   // Or use a Dockerfile or Docker Compose file. More info: https://containers.dev/guide/dockerfile
6   "image": "mcr.microsoft.com/devcontainers/go:1.22-bookworm"
7
8   // Features to add to the dev container. More info: https://containers.dev/features.
9   // "features": {},
10
11   // Use "forwardPorts" to make a list of ports inside the container available locally.
12   // "forwardPorts": [],
13
14   // Use "postCreateCommand" to run commands after the container is created.
15   // "postCreateCommand": "go version",
16
17   // Configure tool-specific properties.
18   // "customizations": {},
19
20   // Uncomment to connect as root instead. More info: https://aka.ms/dev-containers-non-root.
21   // "remoteUser": "root"
22 }
23
```



Introduction

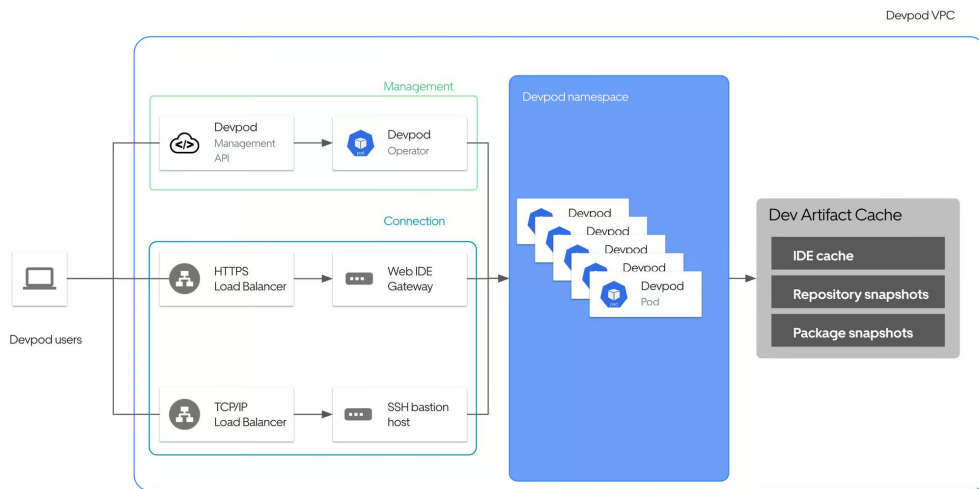
RDE in Container



<https://cloudomation.com/cloudomation-blog/how-cdes-work/>

Introduction

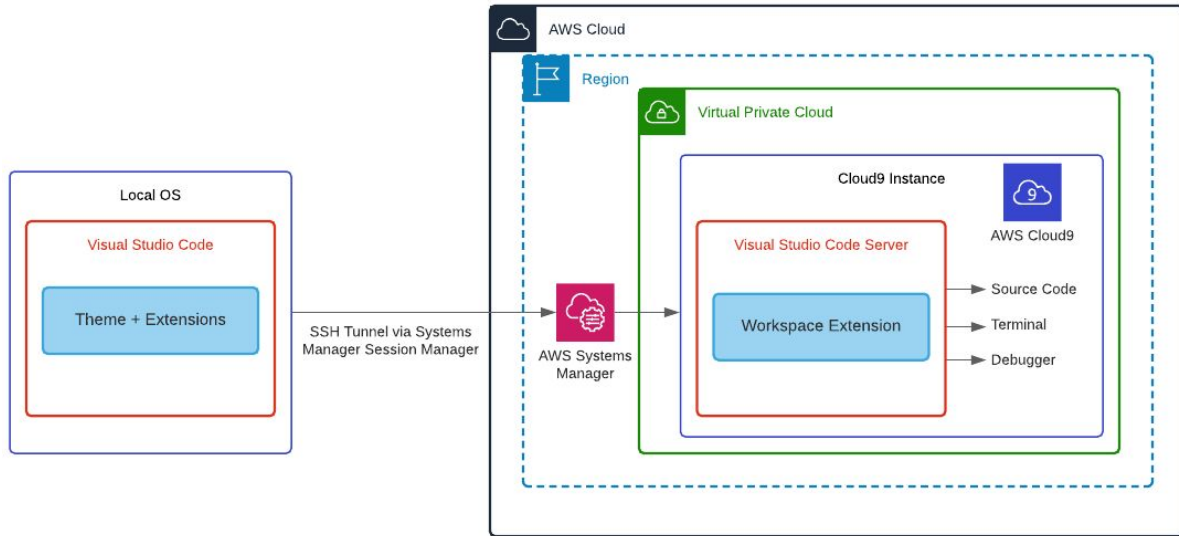
RDE in Kubernetes



<https://www.uber.com/blog/devpod-improving-developer-productivity-at-uber/>

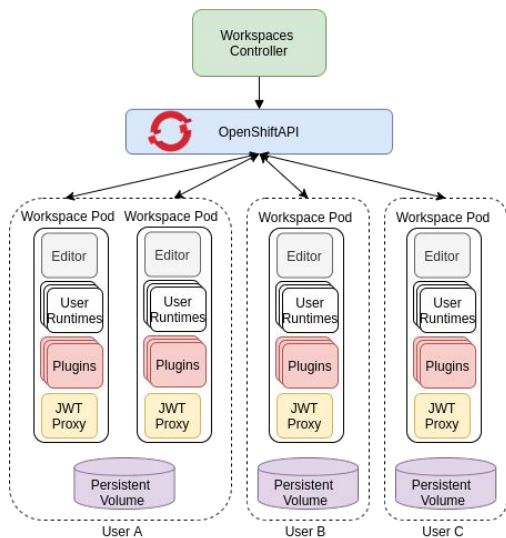
BigTech Solution

RDE with container

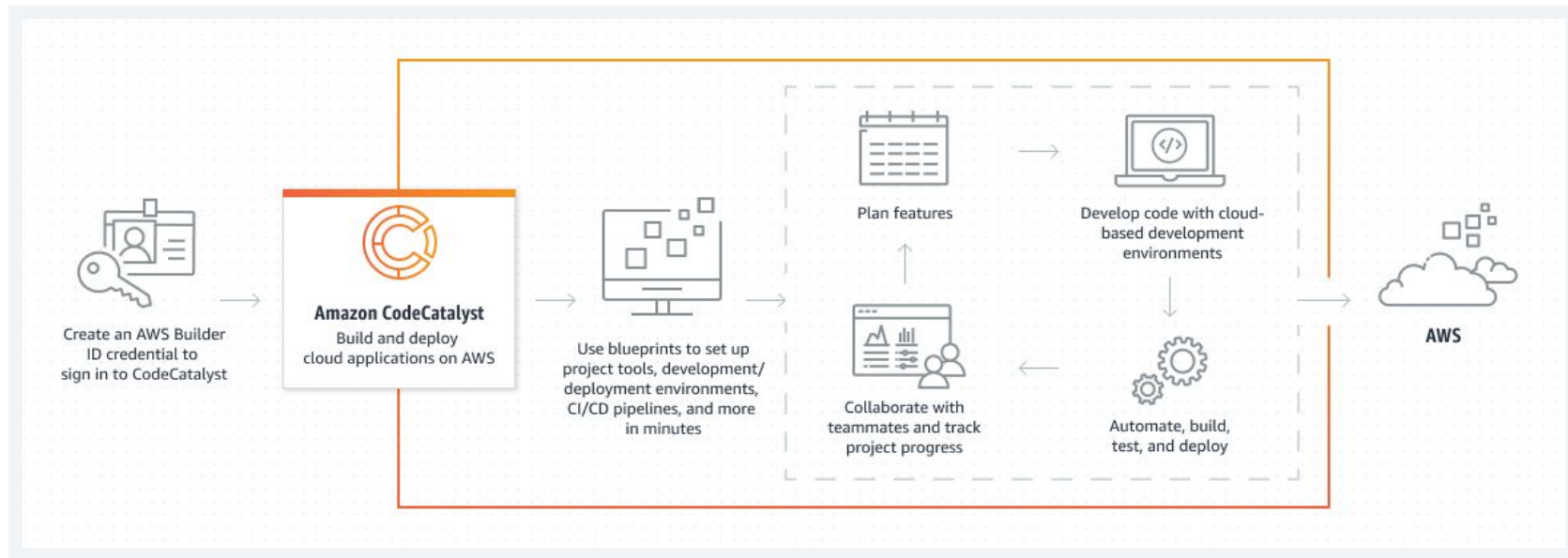


BigTech Solution

RDE in Kubernetes



AWS Product



AWS Billing

	Free	Standard	Enterprise
Cost per month	\$0 per Space	\$4 per active user ⓘ	\$20 per user ⓘ
Custom blueprints	⊗ No	⊗ No	✓ Yes
Teams	✓ Yes	✓ Yes	✓ Yes
Single sign-on (SSO)	✓ Yes	✓ Yes	✓ Yes
AWS VPC	✓ Yes	✓ Yes	✓ Yes
Pre-provisioned compute	⊗ No	✓ Yes	✓ Yes
Compute minutes	2,000 minutes*	3,000 minutes*	15,000 minutes* ⓘ
Dev Environment hours	60 hours	200 hours	1,600 hours ⓘ
Aggregate Dev Environments storage	64 GB	128 GB	640 GB ⓘ

Github Codespace

Monthly included storage and core hours for personal accounts [↗](#)

The following storage and core hours of usage are included, free of charge, for personal accounts:

Account plan	Storage per month	Core hours per month
GitHub Free for personal accounts	15 GB-month	120
GitHub Pro	20 GB-month	180

Github Codespace

Component	Machine type	Unit of measure	Included usage multiplier	Price
Codespaces compute	2 core	1 hour	2	\$0.18
Codespaces compute	4 core	1 hour	4	\$0.36
Codespaces compute	8 core	1 hour	8	\$0.72
Codespaces compute	16 core	1 hour	16	\$1.44
Codespaces compute	32 core	1 hour	32	\$2.88
Codespaces storage	Storage	1 GB-month	Not applicable	\$0.07

2-core ▾

✓ **2-core**

8GB RAM • 32GB

4-core

16GB RAM • 32GB

8-core

32GB RAM • 64GB

16-core

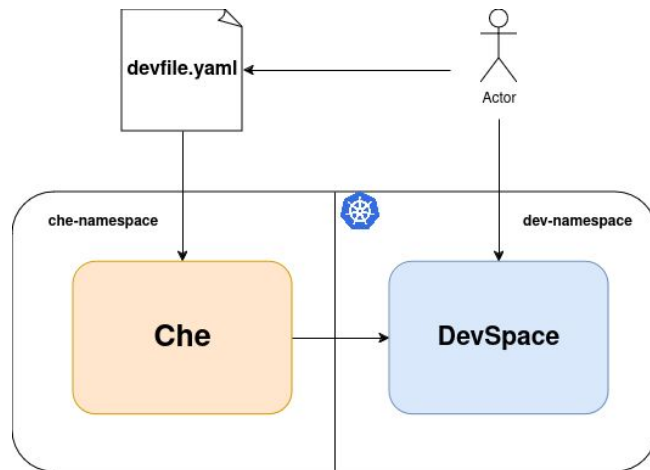
64GB RAM • 128GB

<https://github.com/pricing/calculator>

Eclipse Che

DevSpace

- DevSpace is a RDE on Kubernetes
- RedHat products with EPL 2.0 licence
- Dashboard, Server, Gateway, Operator, etc.
- Link: <https://github.com/eclipse-che>



Eclipse Che

DevSpace

Compare to RDE with container and VM

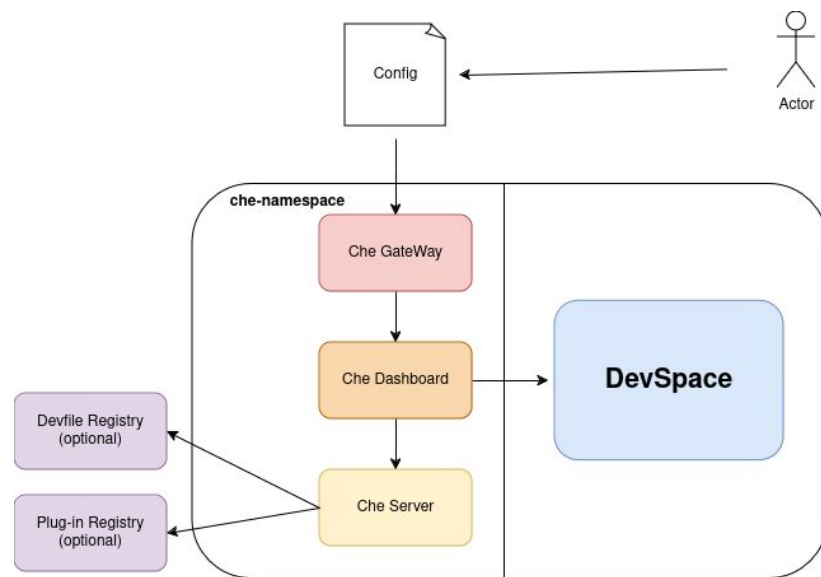
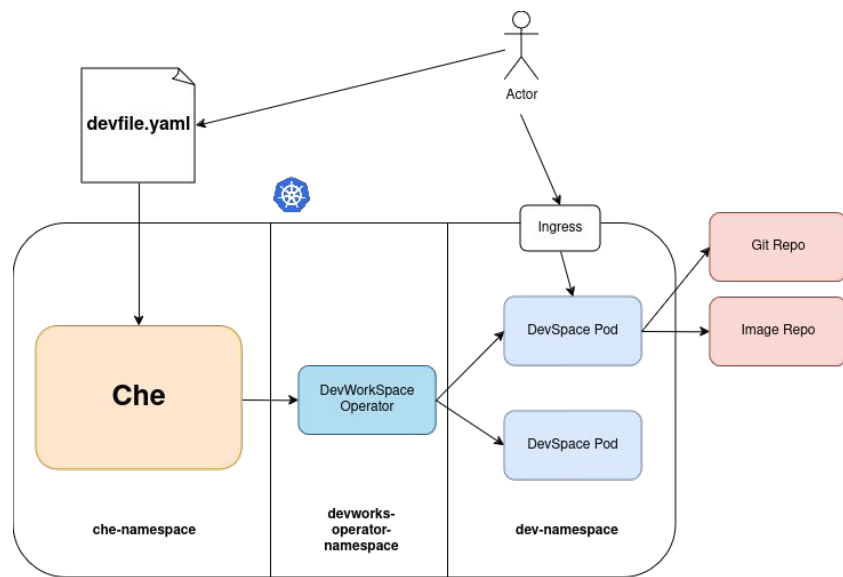
- Running as pod -> easy to turn on/off, auto scale down
- Multiple IDE plugin include VScode, JetBrains community IDE

Compare to OpenShift

- Provide product as a cloud provider
-> benefits from multi-cluster management

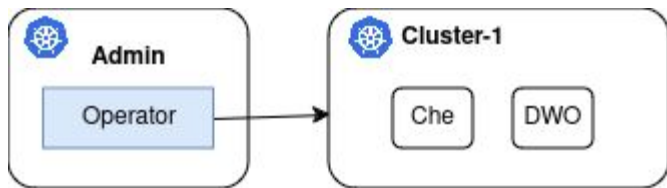
Eclipse Che

DevSpace



Integrate with Viettel Cloud

Che-Operator



Che Operator:
<https://github.com/eclipse-che/che-operator>

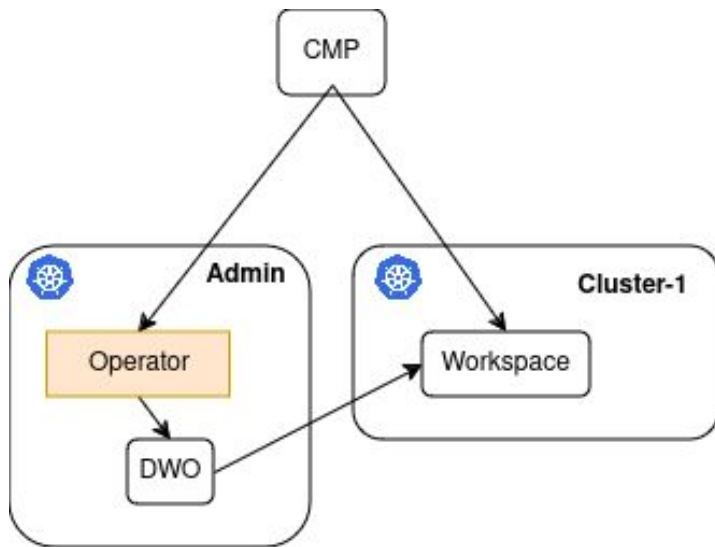
- Provision resources with che-operator
- User manage their own che cluster and dev workspace operator

Problems:

- Technology exposed
- High resource request
- Require additional setup for target cluster

Integrate with Viettel Cloud

Custom Operator



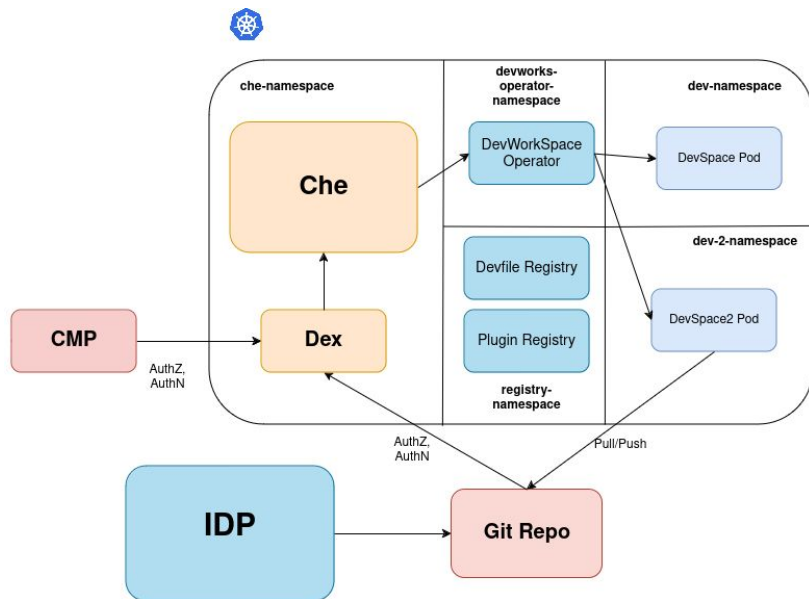
- Operator creates DWO CRDs and provisions additional resource(Ingress Controller, Authn Service)
- DWO provisions workspace and connect it with

Problems:

- Authentication flow
- Develop new operator
- Decouple DWO and Che

Integrate with Viettel Cloud

Free + Premium



	Free	Standard	Enterprise
Cost per month	\$0 per Space	\$4 per active user ⓘ	\$20 per user ⓘ
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Discussion

- VS code launcher from Eclipse Che is not compatible with containerd
- Authentication approach for DevWorkspace
- Discover private repo

Thank you for listening