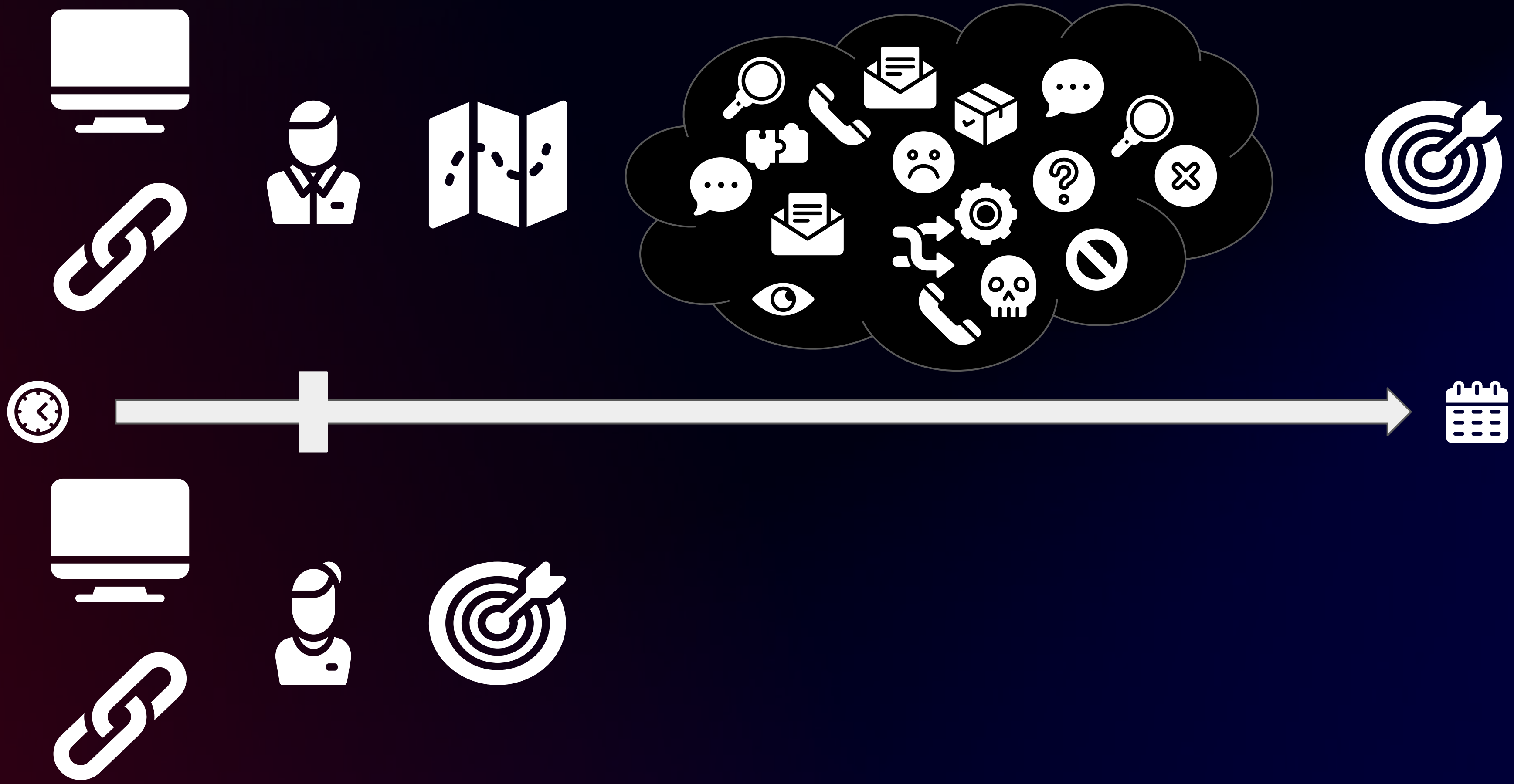
Cloud Development Environments are Strategic Assets

Tim Quinlan, Technical Marketer @ Coder
SCaLE 22x: March 6, 2025



Takeaways

- ✓ Enhance productivity
- ✓ Ease compliance & improve security
- ✓ Ship faster at scale!

- About Coder
- What is a CDE?
- Developer Experience
- Security & Compliance
- CDE Maturity & The Golden Path
- Resources
- Questions & Answers

Tim Quinlan, Technical Marketer
Coder

About Coder

What we do

Coder delivers secure cloud development environments consistently provisioned as code and pre-configured for developer activity on day zero.

Why we do it

We believe innovation starts with developers. Our mission is to keep them in flow, focusing on meaningful problem-solving instead of frustrating, repetitive toil.

Coder at a glance

- → Founded in 2017
- → Remote first, global workforce
- → Series B2
- → $80M+ total funding raised from:

Georgian

Notable.

Redpoint

FOUNDERS FUND

CAPITAL FACTORY

Uncork CAPITAL

Serving the open source development community

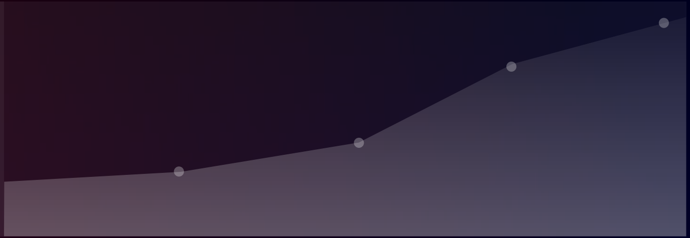
github.com/coder at a glance

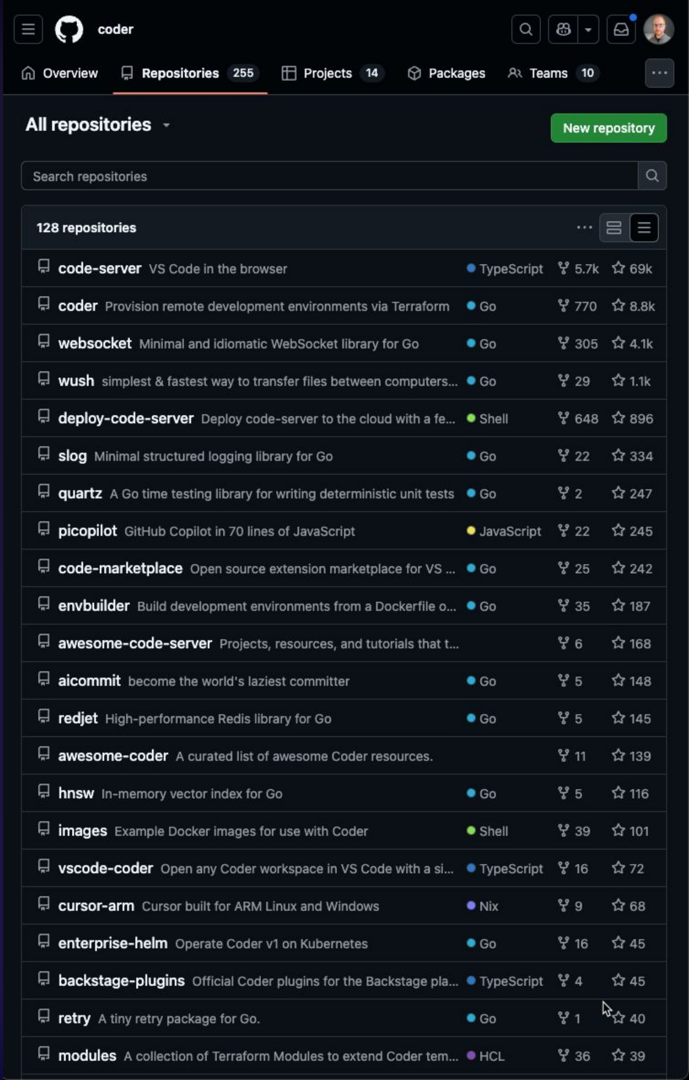
Stars	Projects	First Commit
95K+	125+	2017

coder.com/chat community server

Members

3.2K+





128 repositories

code-server	VS Code in the browser	TypeScript	5.7k	69k
coder	Provision remote development environments via Terraform	Go	770	8.8k
websocket	Minimal and idiomatic WebSocket library for Go	Go	305	4.1k
wush	simplest & fastest way to transfer files between computers...	Go	29	1.1k
deploy-code-server	Deploy code-server to the cloud with a fe...	Shell	648	896
slog	Minimal structured logging library for Go	Go	22	334
quartz	A Go time testing library for writing deterministic unit tests	Go	2	247
picopilot	GitHub Copilot in 70 lines of JavaScript	JavaScript	22	245
code-marketplace	Open source extension marketplace for VS ...	Go	25	242
envbuilder	Build development environments from a Dockerfile o...	Go	35	187
awesome-code-server	Projects, resources, and tutorials that t...		6	168
aicommit	become the world's laziest committer	Go	5	148
redjet	High-performance Redis library for Go	Go	5	145
awesome-coder	A curated list of awesome Coder resources.		11	139
hnsw	In-memory vector index for Go	Go	5	116
images	Example Docker images for use with Coder	Shell	39	101
vscode-coder	Open any Coder workspace in VS Code with a si...	TypeScript	16	72
cursor-arm	Cursor built for ARM Linux and Windows	Nix	9	68
enterprise-helm	Operate Coder v1 on Kubernetes	Go	16	45
backstage-plugins	Official Coder plugins for the Backstage pla...	TypeScript	4	45
retry	A tiny retry package for Go.	Go	1	40
modules	A collection of Terraform Modules to extend Coder tem...	HCL	36	39

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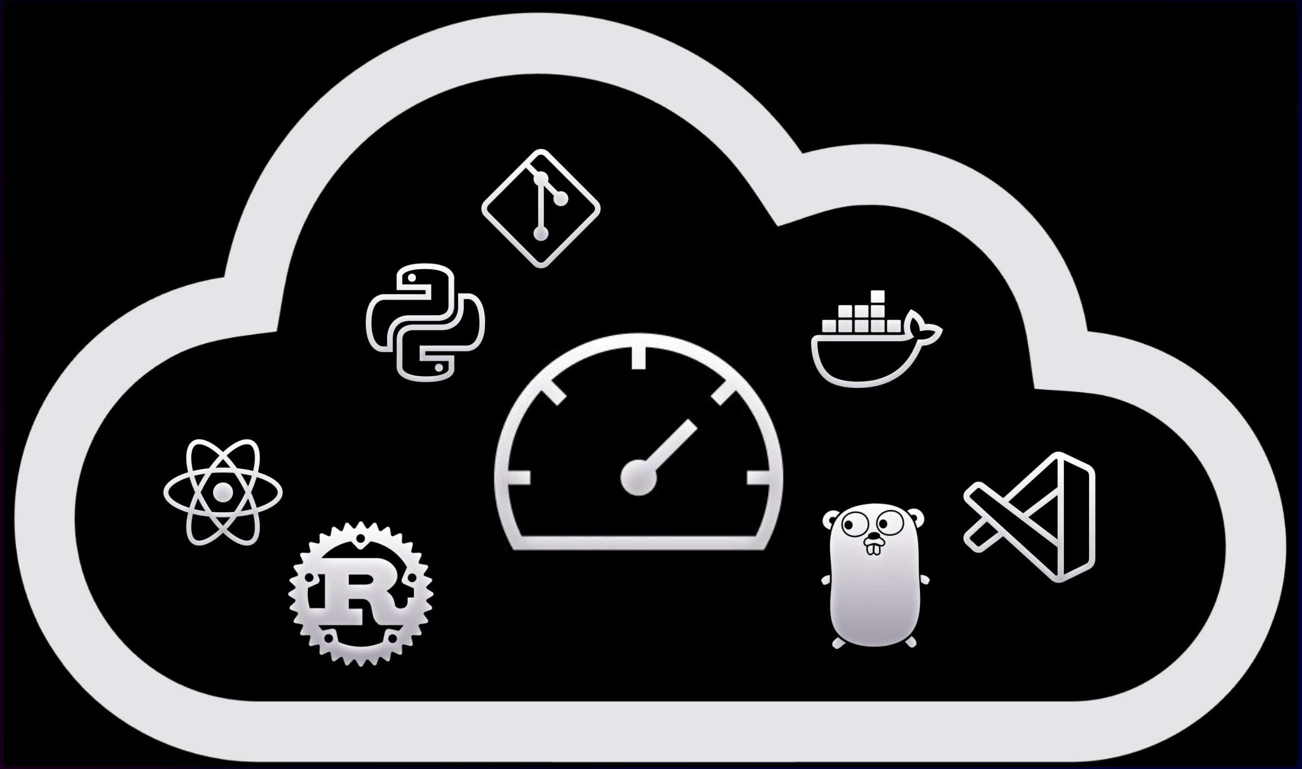
What is a CDE?

Pre-defined, decoupled workspaces

Comprehensive, consistent tooling

High performance resources



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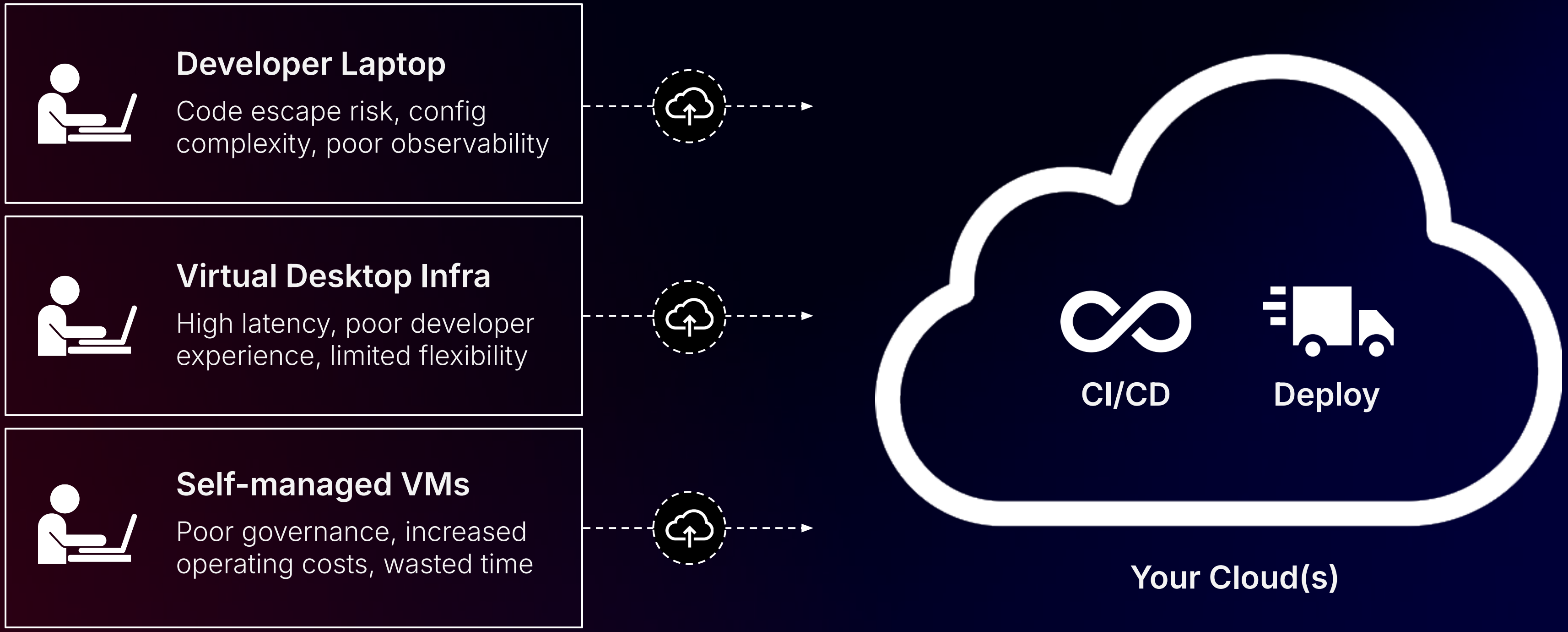
How developers code today



Developer Laptop

Code escape risk, config complexity, poor observability

Virtual Desktop Infra

High latency, poor developer experience, limited flexibility

Self-managed VMs

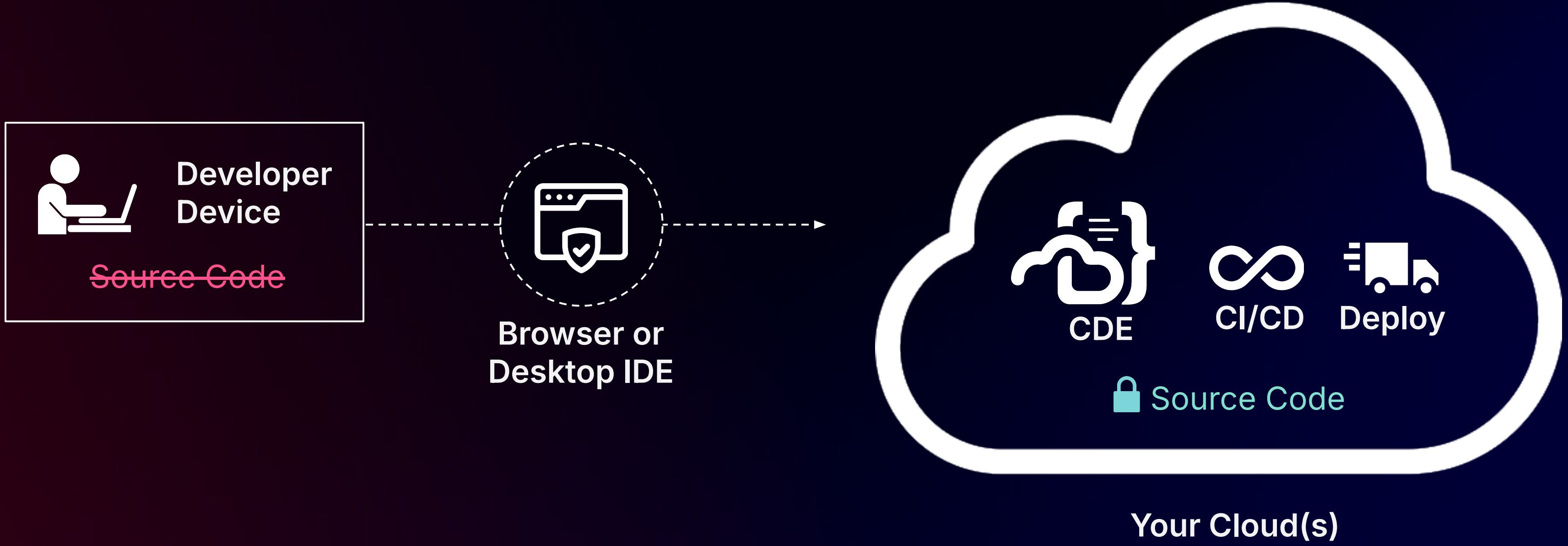
Poor governance, increased operating costs, wasted time

CI/CD

Deploy

Your Cloud(s)

How developers code with a CDE



Developer Device

~~Source Code~~

Browser or Desktop IDE

CDE

CI/CD

Deploy

Source Code

Your Cloud(s)

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An Ideal CDE

- ✓ Standardized & reproducible
- ✓ Secure, Scalable & Stable
- ✓ Open standards & enterprise integration

Developer Experience

Dev environments ready on day 0

1

Pre-Configured

Declarative templates define underlying infrastructure and tooling available to developers

2

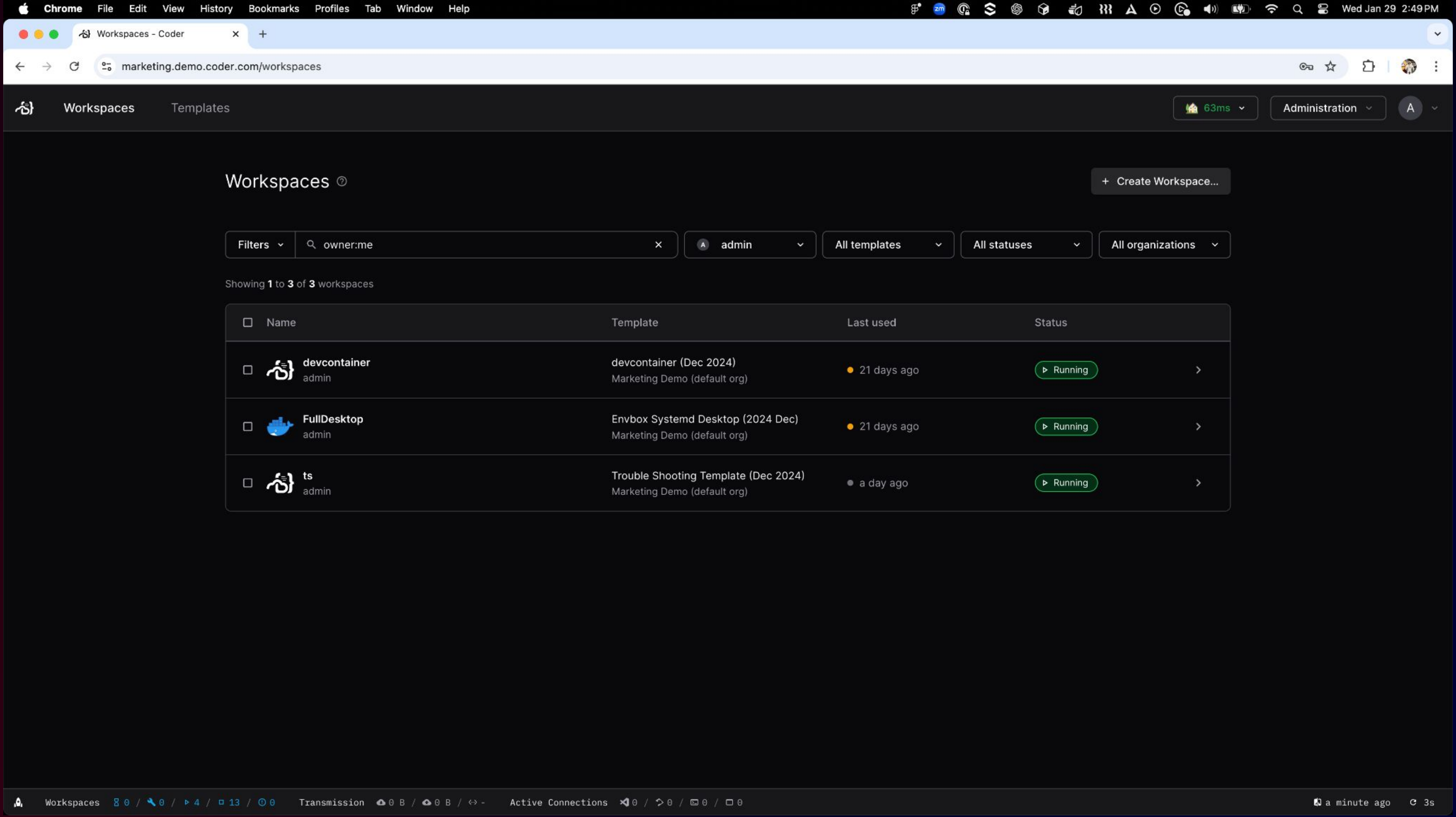
Connect

Developers provision their own Workspaces based on the Templates they have access to

3

Code

Developers can begin coding in their new environment in minutes, using their favorite IDE



Chrome File Edit View History Bookmarks Profiles Tab Window Help
Wed Jan 29 2:49 PM
Workspaces - Coder
marketing.demo.coder.com/workspaces
Workspaces
Templates
63ms
Administration
A

Workspaces

+ Create Workspace...
Filters

owner:me

admin
All templates
All statuses
All organizations

Showing **1** to **3** of **3** workspaces

□	Name	Template	Last used	Status
□	devcontainer admin	devcontainer (Dec 2024) Marketing Demo (default org)	● 21 days ago	▶ Running
□	FullDesktop admin	Envbox Systemd Desktop (2024 Dec) Marketing Demo (default org)	● 21 days ago	▶ Running
□	ts admin	Trouble Shooting Template (Dec 2024) Marketing Demo (default org)	● a day ago	▶ Running

Workspaces 0 / 0 / 4 / 13 / 0
Transmission 0 B / 0 B / -
Active Connections 0 / 0 / 0 / 0
a minute ago
3s

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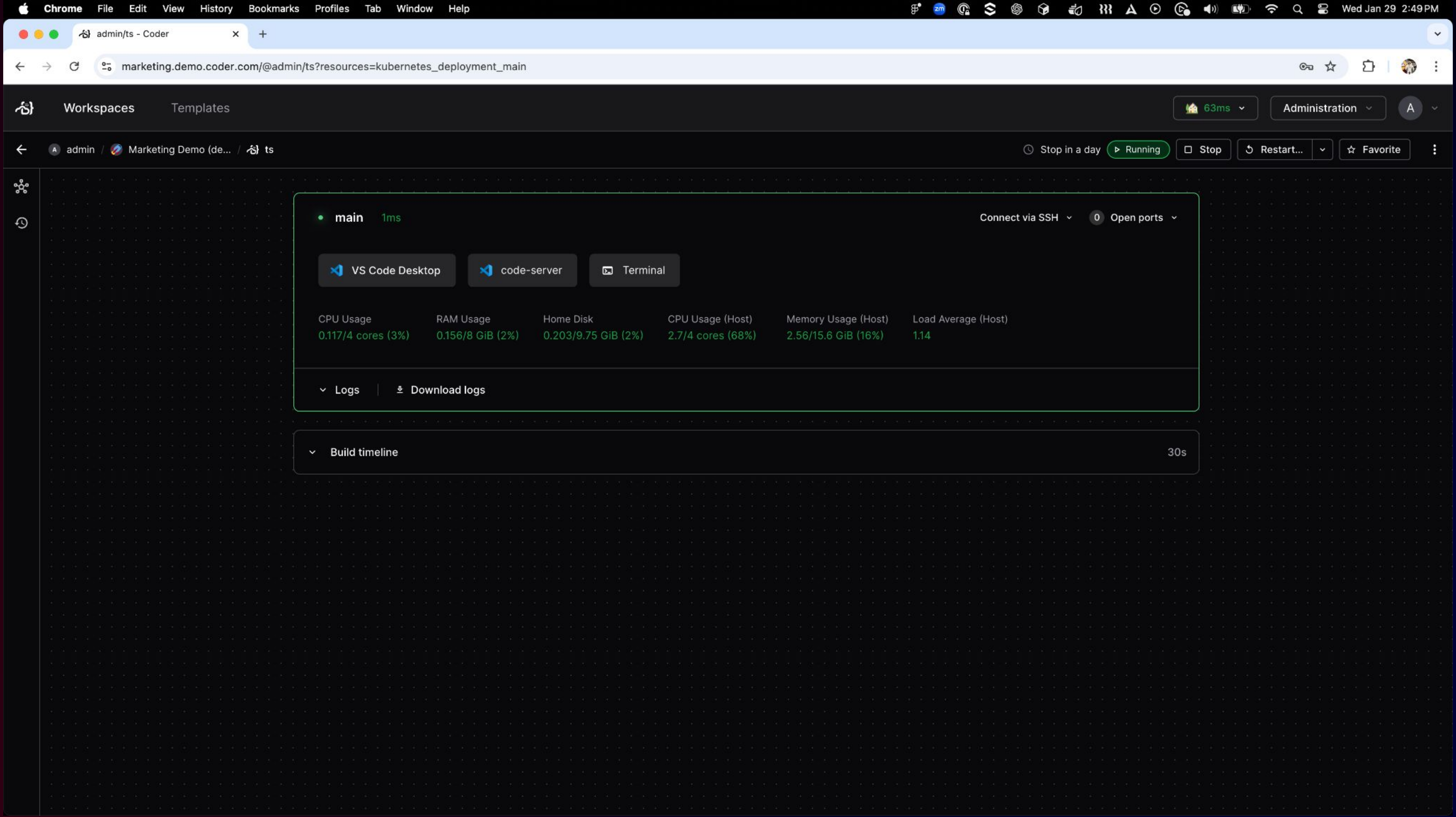
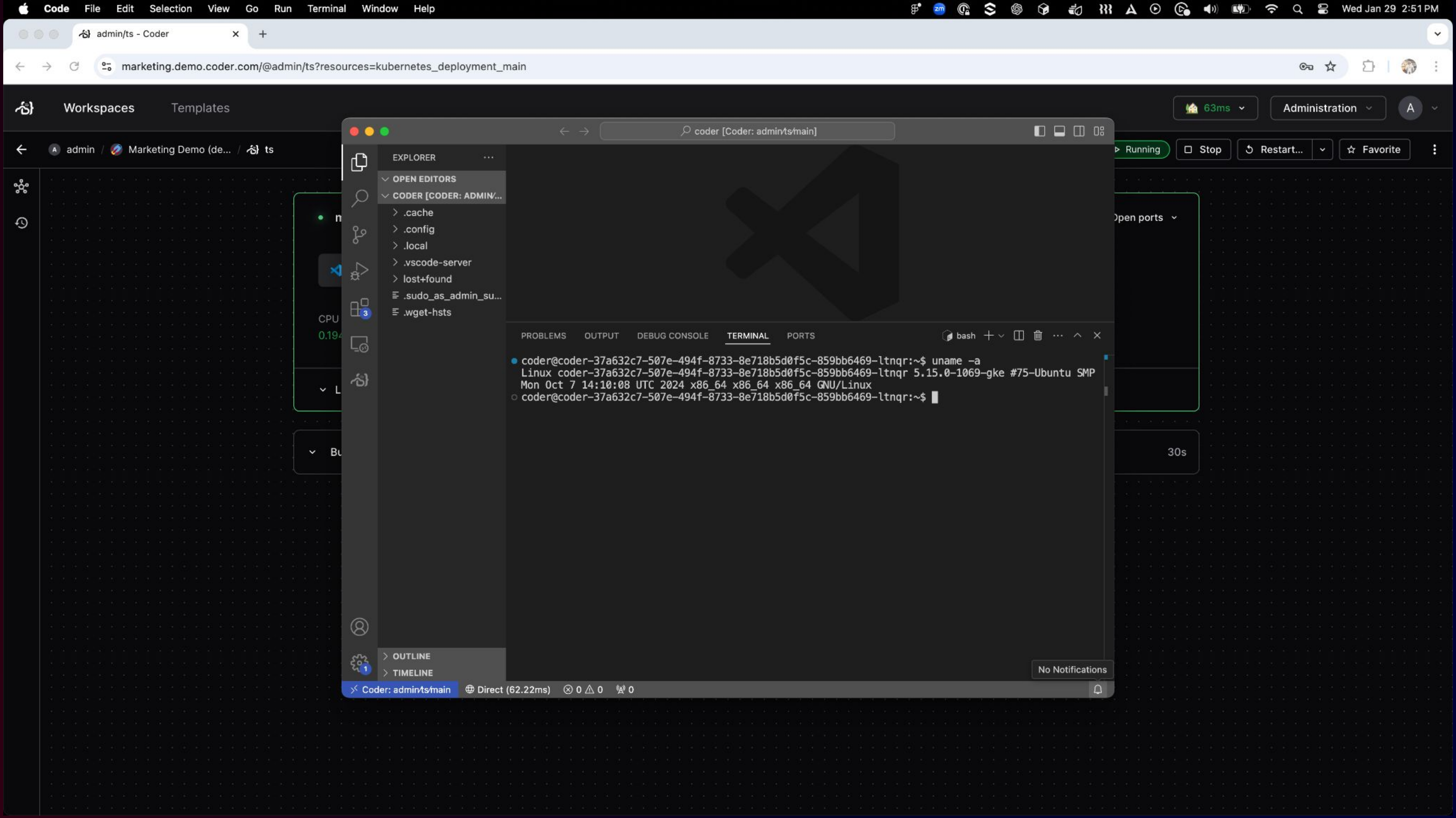


marketing.demo.coder.com/@admin/ts?resources=kubernetes_deployment_main

main 1ms

CPU Usage	RAM Usage	Home Disk	CPU Usage (Host)	Memory Usage (Host)	Load Average (Host)
0.117/4 cores (3%)	0.156/8 GiB (2%)	0.203/9.75 GiB (2%)	2.7/4 cores (68%)	2.56/15.6 GiB (16%)	1.14

Build timeline 30s

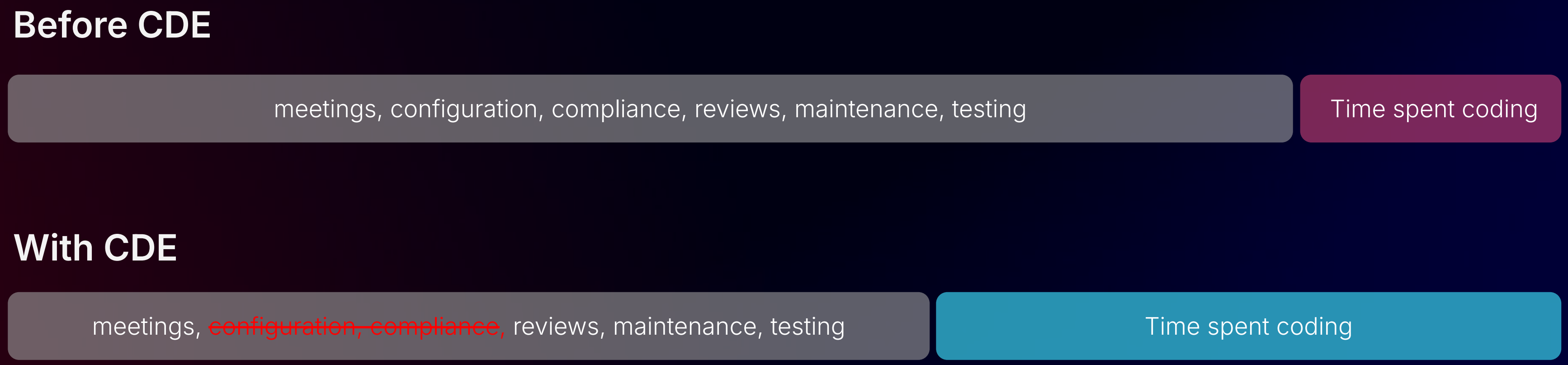


```
coder@coder-37a632c7-507e-494f-8733-8e718b5d0f5c-859bb6469-ltnqr:~$ uname -a
Linux coder-37a632c7-507e-494f-8733-8e718b5d0f5c-859bb6469-ltnqr 5.15.0-1069-gke #75-Ubuntu SMP
Mon Oct 7 14:10:08 UTC 2024 x86_64 x86_64 x86_64 GNU/Linux
coder@coder-37a632c7-507e-494f-8733-8e718b5d0f5c-859bb6469-ltnqr:~$
```

Improve DevEx & Productivity

1. Access from anywhere & any device
2. Code commits on day 0
3. Consistent pre-configured cenvironments

More time in the optimal “flow state”



Before CDE

meetings, configuration, compliance, reviews, maintenance, testing

Time spent coding

With CDE

meetings, ~~configuration, compliance,~~ reviews, maintenance, testing

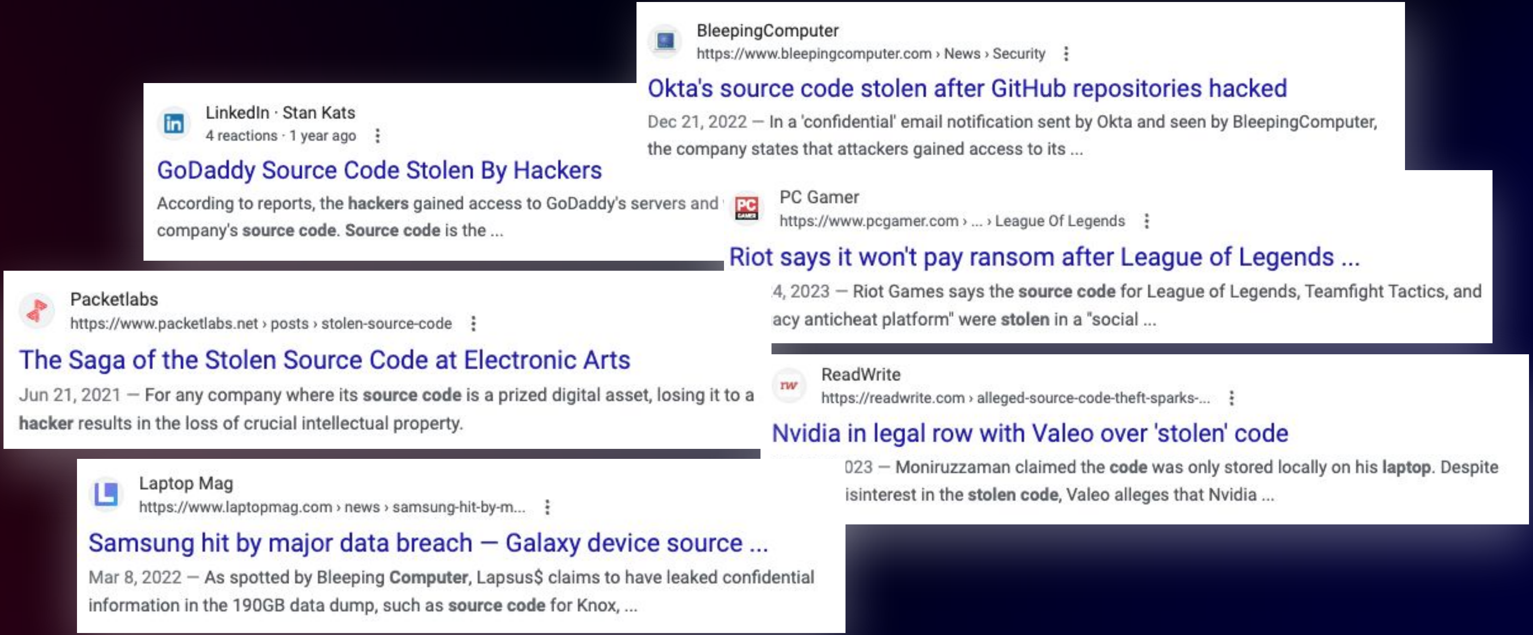
Time spent coding

DevEx Bottom Line

- ✓ More time to code!
- ✓ Reduce attrition
- ✓ Accelerate time to market

Security & Compliance

Lost productivity isn't the only risk



BleepingComputer
https://www.bleepingcomputer.com › News › Security

Okta's source code stolen after GitHub repositories hacked

Dec 21, 2022 — In a 'confidential' email notification sent by Okta and seen by BleepingComputer, the company states that attackers gained access to its ...

LinkedIn · Stan Kats
4 reactions · 1 year ago

GoDaddy Source Code Stolen By Hackers

According to reports, the **hackers** gained access to GoDaddy's servers and company's **source code**. **Source code** is the ...

PC Gamer
https://www.pcgamer.com › ... › League Of Legends

Riot says it won't pay ransom after League of Legends ...

4, 2023 — Riot Games says the **source code** for League of Legends, Teamfight Tactics, and acy anticheat platform" were **stolen** in a "social ...

Packetlabs
https://www.packetlabs.net › posts › stolen-source-code

The Saga of the Stolen Source Code at Electronic Arts

Jun 21, 2021 — For any company where its **source code** is a prized digital asset, losing it to a **hacker** results in the loss of crucial intellectual property.

ReadWrite
https://readwrite.com › alleged-source-code-theft-sparks-...

Nvidia in legal row with Valeo over 'stolen' code

023 — Moniruzzaman claimed the **code** was only stored locally on his **laptop**. Despite isinterest in the **stolen code**, Valeo alleges that Nvidia ...

Laptop Mag
https://www.laptopmag.com › news › samsung-hit-by-m...

Samsung hit by major data breach — Galaxy device source ...

Mar 8, 2022 — As spotted by Bleeping **Computer**, Lapsus$ claims to have leaked confidential information in the 190GB data dump, such as **source code** for Knox, ...

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Security Advantages

1 **Eliminate local vulnerabilities**
Prevent physical loss & misconfigurations

2 **Enterprise auth & secrets**
Centralized ID providers, least privilege, vaults

3 **Secure supply chain**
Vetted repos, images, etc.

Platform Considerations

1 **Distribution model**
Open source vs proprietary, Self-hosted vs SaaS

2 **Hosting and system management**
Public, hybrid, private, air-gapped, self or vendor maintained

3 **Platform and Tools**
New vs. *already vetted platforms and tools*

Security & Compliance Bottom Line

- ✓ Centrally manage, govern, and secure dev environments
- ✓ Minimize the threat of software supply chain attacks
- ✓ Safe onboarding *and* offboarding

CDE Maturity & The Golden Path

The Golden Path

1 **Best practices, tools & processes**
Guide developers efficiently & effectively

2 **Curated & opinionated**
Minimize friction with a clear & consistent workflow

3 **Continuously refined**
Robust & low-friction

CDE Maturity Model

1 **Five stages of maturity**
Ad-hoc, Foundational, Defined, Refined, Optimized

2 **Predicable deployment**
Each stage introduces additional refinement, automation, and self-service

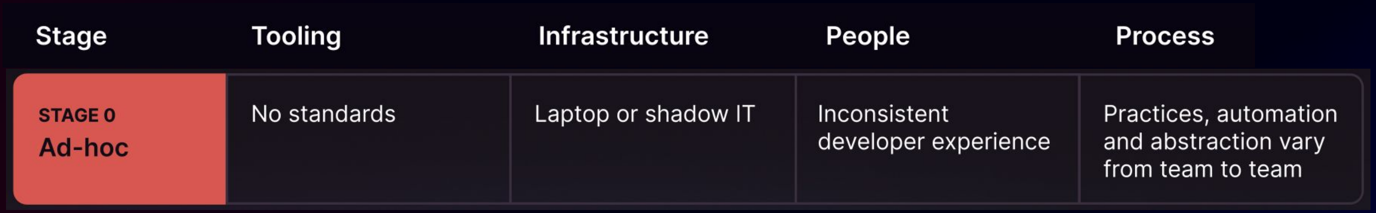
3 **CDE maturity & a scalable Golden Path are intertwined**
The Golden Path defines each stage & each stage enables the Golden Path

Stage	Tooling	Infrastructure	People	Process
STAGE 4 Optimized	Development teams build and maintain their own templates	Infrastructure chosen by developer and additional platform teams	Local development is now an edge case, teams using templates to build out development infrastructure	Platform engineering provides pipeline for templates, infrastructure, and maintains enterprise integrations
STAGE 3 Refined	Development teams fulfill own requirements, additional use cases added	Tiered, multi-cloud, multi-platform infrastructure controlled by Platform Engineering Team	CDE only teams approaching the majority	Platform engineering still maintains use cases, but focuses on scalability
STAGE 2 Defined	Standardized CDE conversion patterns emerge. Platform team maintains developer requirements.	Software defined, scalable cloud. Integrated with enterprise IDP, monitoring, security.	Multiple teams CDE only	Production grade CDE deployed and managed by enterprise platform engineering
STAGE 1 Foundational	Pilot use cases enabled on CDE	Minimally viable, supported infrastructure	Pilot group CDE only	Deploy and govern a pilot CDE, iterate and refine.
STAGE 0 Ad-hoc	No standards	Laptop or shadow IT	Inconsistent developer experience	Practices, automation and abstraction vary from team to team

Pre-Stage Considerations

1. Understand current state
2. Align tech, DevEx & processes
3. Define incremental milestones

Stage 0 Ad-hoc



Stage	Tooling	Infrastructure	People	Process
STAGE 0 Ad-hoc	No standards	Laptop or shadow IT	Inconsistent developer experience	Practices, automation and abstraction vary from team to team

Current State:

- ✓ No standards
- ✓ Inconsistent
- ✓ Friction at every step

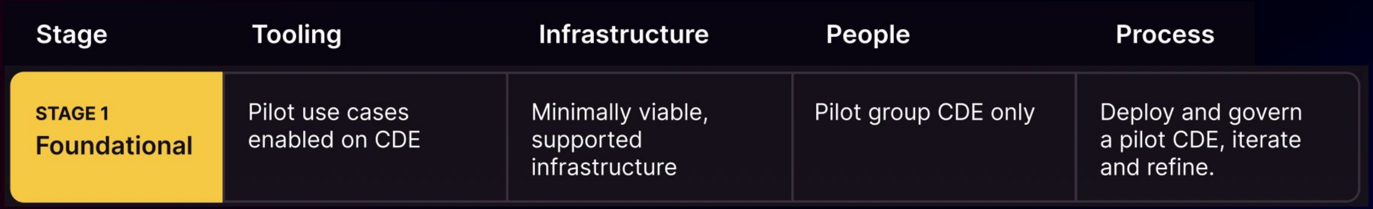
Golden Path:

- ✓ Non-existent
- ✓ Risky
- ✓ Expensive

Stage 0 Goals

- ✓ Inventory & Assess
- ✓ Select pilot team
- ✓ Realize division between workflow & technical debt

Stage 1 Foundational



Stage	Tooling	Infrastructure	People	Process
STAGE 1 **Foundational**	Pilot use cases enabled on CDE	Minimally viable, supported infrastructure	Pilot group CDE only	Deploy and govern a pilot CDE, iterate and refine.

Goals:

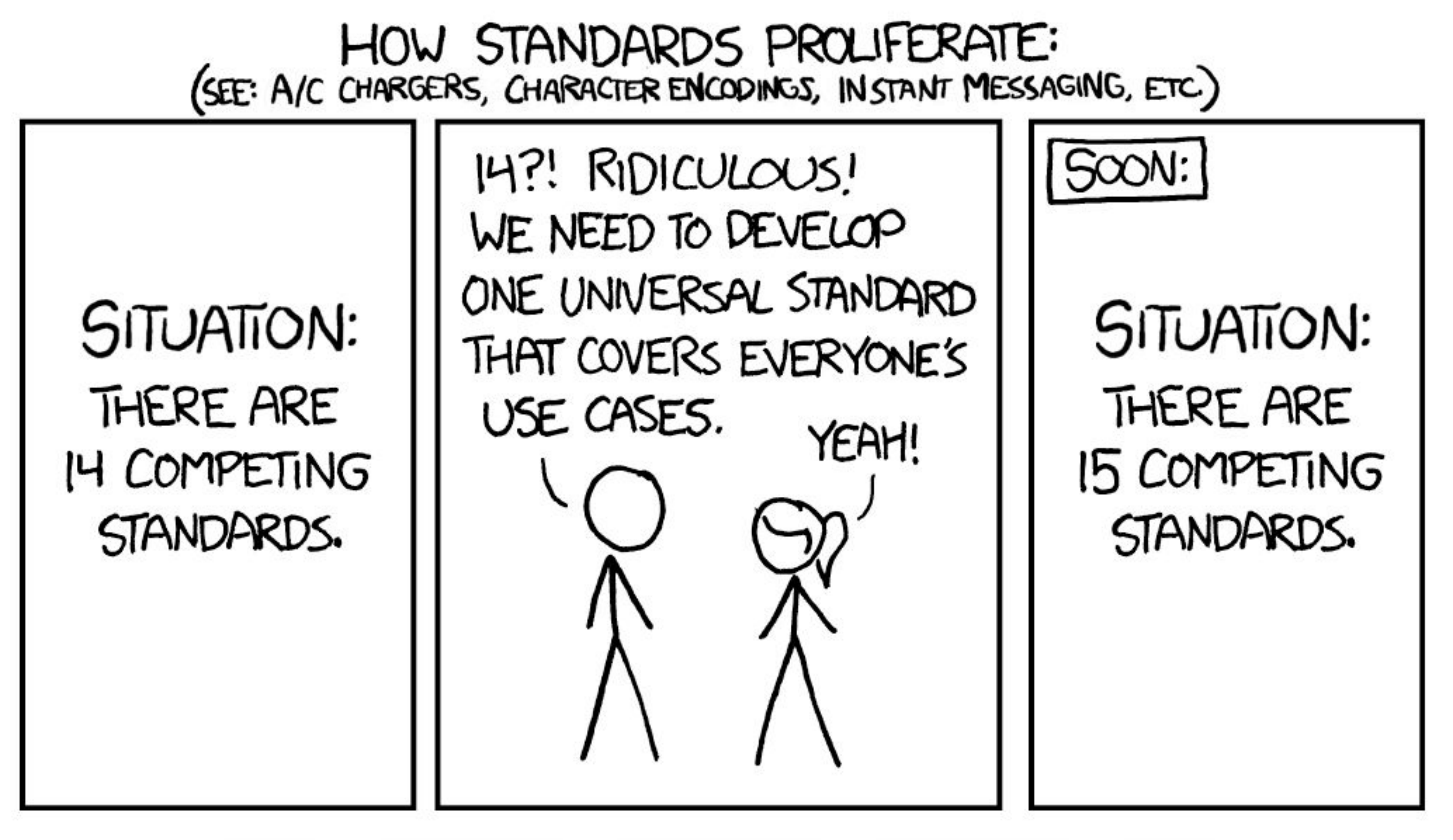
- ✓ POC/MVP
- ✓ Supportable infrastructure
- ✓ One project CDE only

Golden Path:

- ✓ Forming
- ✓ Iteration & scoring are key
- ✓ Standardization

Early stage risks

- ✓ Too fast: Scoring & onboarding not established
- ✓ Too fast: Technical debt
- ✓ Stagnation: Backsliding to Stage 0


HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)
SITUATION: THERE ARE 14 COMPETING STANDARDS.
14?! RIDICULOUS! WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE'S USE CASES.
YEAH!
SOON:
SITUATION: THERE ARE 15 COMPETING STANDARDS.

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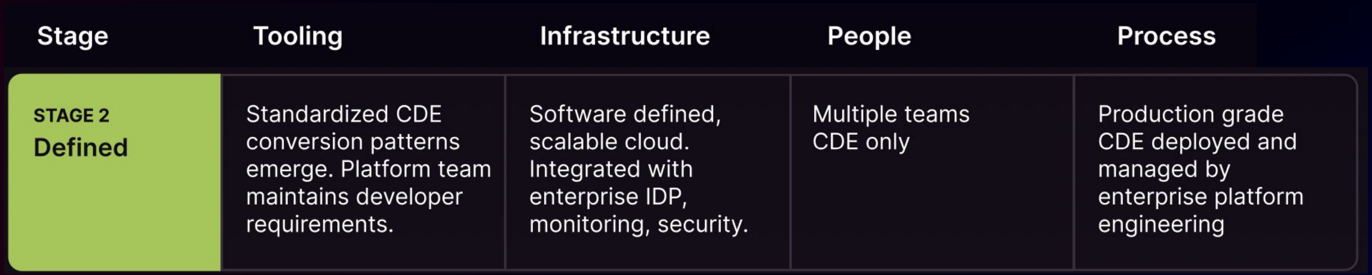
Stage 2 Defined



Stage	Tooling	Infrastructure	People	Process
STAGE 2 **Defined**	Standardized CDE conversion patterns emerge. Platform team maintains developer requirements.	Software defined, scalable cloud. Integrated with enterprise IDP, monitoring, security.	Multiple teams CDE only	Production grade CDE deployed and managed by enterprise platform engineering

Goals:

- ✓ Supported & integrated platform
- ✓ Conversion patterns
- ✓ Multiple projects, options for alternative use cases

Golden Path:

- ✓ Guided self service
- ✓ DevEx scoring established
- ✓ Milestone: zero setup for devs

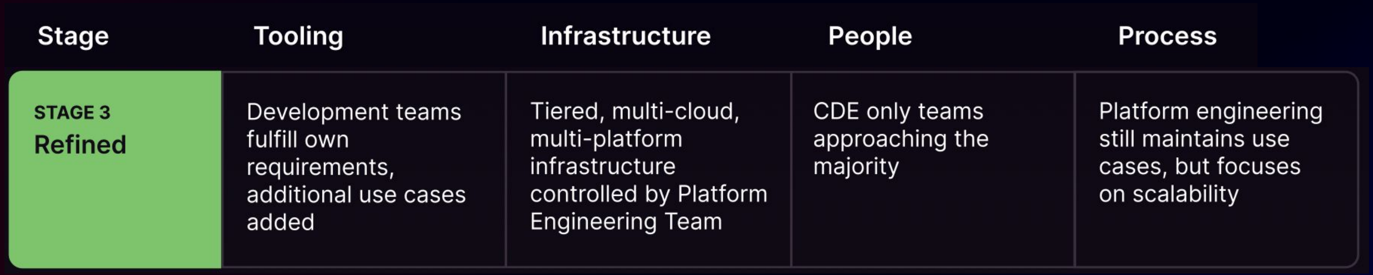
Effectively Scaling the CDE

1. **Identify a Process Champion**
   Promote CDE as strategic platform

2. **Define functional goals**
   Short term & long term

3. **Calculate ROI**
   Model productivity & DevEx gains

Stage 3 Refined



Stage	Tooling	Infrastructure	People	Process
STAGE 3 **Refined**	Development teams fulfill own requirements, additional use cases added	Tiered, multi-cloud, multi-platform infrastructure controlled by Platform Engineering Team	CDE only teams approaching the majority	Platform engineering still maintains use cases, but focuses on scalability

Goals:

- ✓ CDE is the standard
- ✓ Security, Stability & Scalability
- ✓ Platform team begins to delegate

Golden Path:

- ✓ Guided self-fulfillment
- ✓ DevEx scoring refined
- ✓ Tiered workspaces

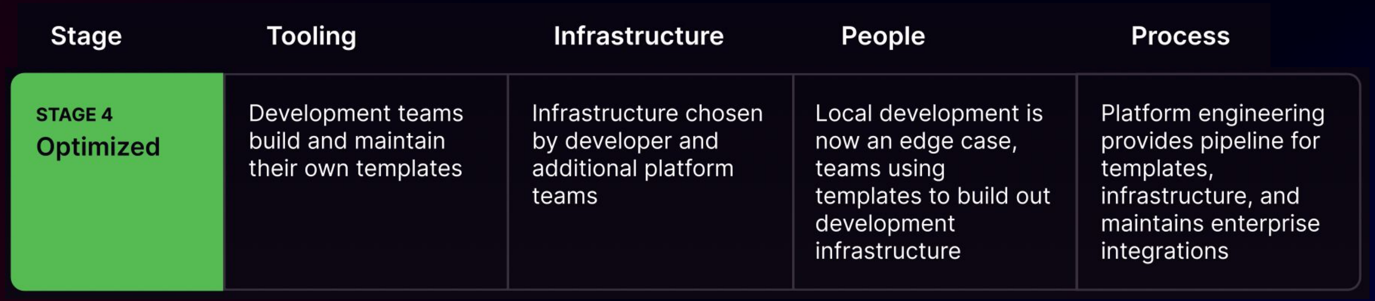
Scoring

1 **Technical Performance**
TTFC, TT10PR, Reproducibility

2 **Developer Sentiment**
NPS, Self Service, Productivity Ratio

3 **Organizational Value**
Adoption Rate, Compliance Adherence

Stage 4 Optimized



Stage	Tooling	Infrastructure	People	Process
STAGE 4 Optimized	Development teams build and maintain their own templates	Infrastructure chosen by developer and additional platform teams	Local development is now an edge case, teams using templates to build out development infrastructure	Platform engineering provides pipeline for templates, infrastructure, and maintains enterprise integrations

Goals:

- ✓ CDE is the default*
- ✓ Devs able to declare IaC
- ✓ Support & integration are SRE motions

Golden Path:

- ✓ Fully established
- ✓ Pipelineable
- ✓ Tiered self service/fulfilment

Tiered Self Service

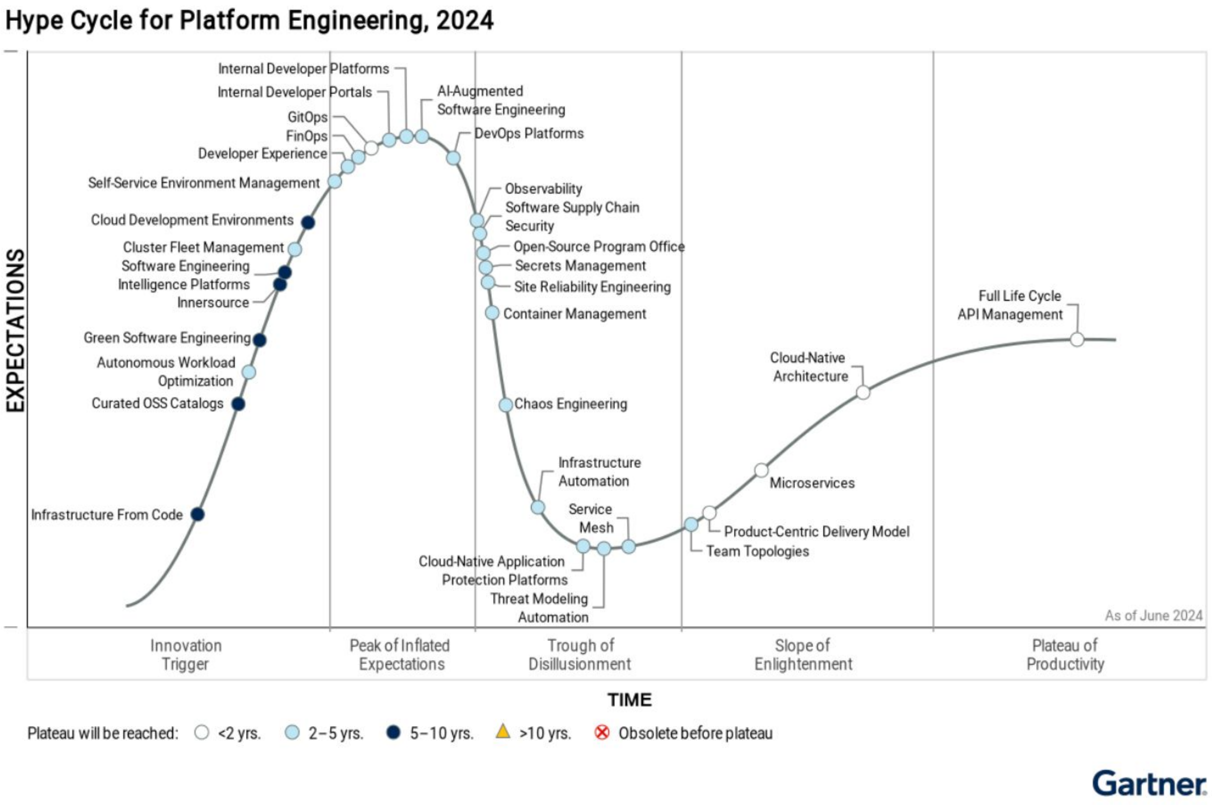
1. Standard request & fulfilment cycle
2. Multiple choice infra + self service dependencies
3. Devs self serving IaC + dependencies

CDE Maturity & Golden Path Bottom Line

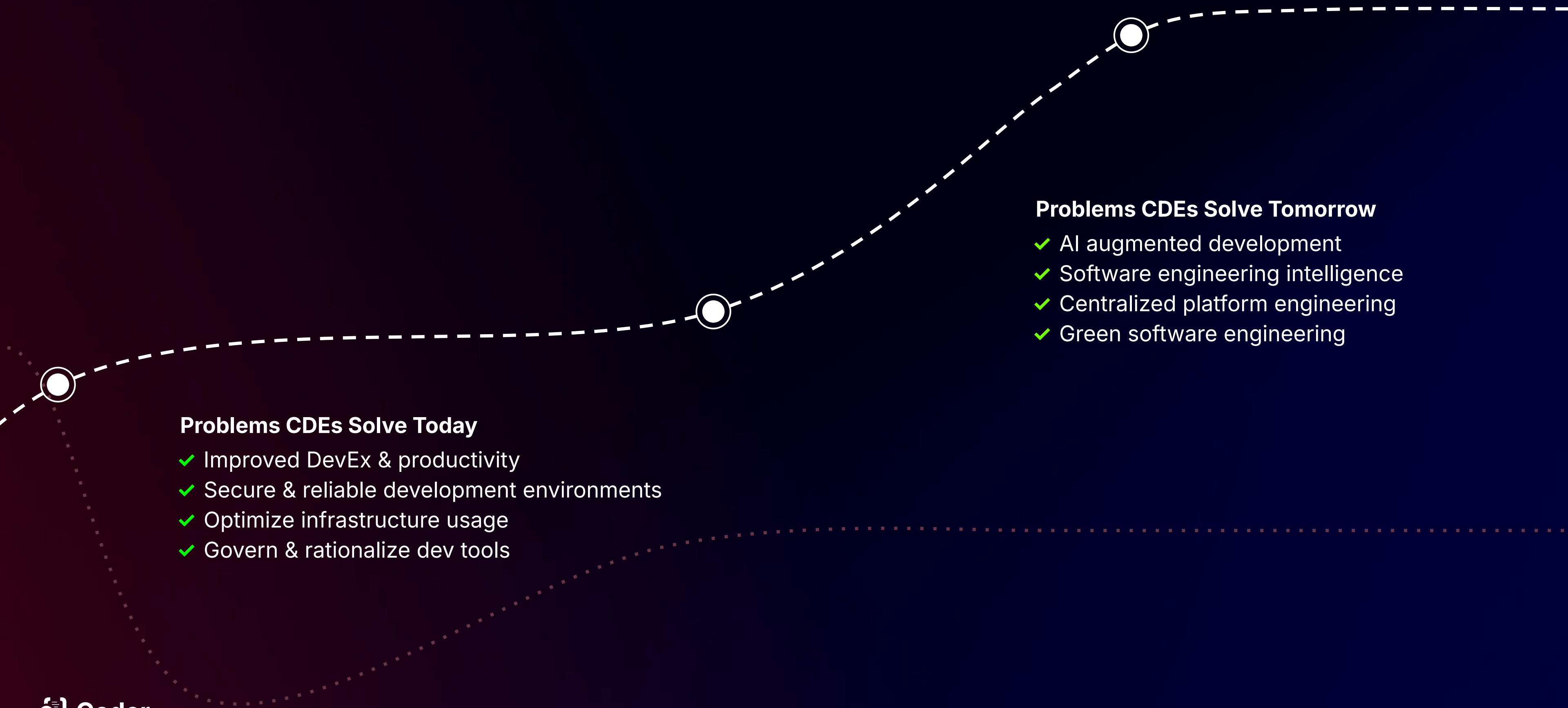
- ✓ Incremental adoption and scoring matters
- ✓ The Golden Path is key
- ✓ Adoption & Golden Path are journeys

CDE Trends

Figure 1: Hype Cycle for Platform Engineering, 2024



Immediate Benefits with a Strategic Outlook



Problems CDEs Solve Today

- ✓ Improved DevEx & productivity
- ✓ Secure & reliable development environments
- ✓ Optimize infrastructure usage
- ✓ Govern & rationalize dev tools

Problems CDEs Solve Tomorrow

- ✓ AI augmented development
- ✓ Software engineering intelligence
- ✓ Centralized platform engineering
- ✓ Green software engineering

Conclusion

- ✓ CDEs enhance DevEx & security
- ✓ Adoption is a journey
- ✓ CDEs are a strategic differentiator

Resources

List of resources:

- Docs, White Papers, Blog, Youtube
- CDE 101 Video Series
- Introducing CDEs to Your Enterprise
- State of CDEs Report 2025
- Enterprise CDE Buyers Guide
- CDE Maturity Model

Slides

Contact