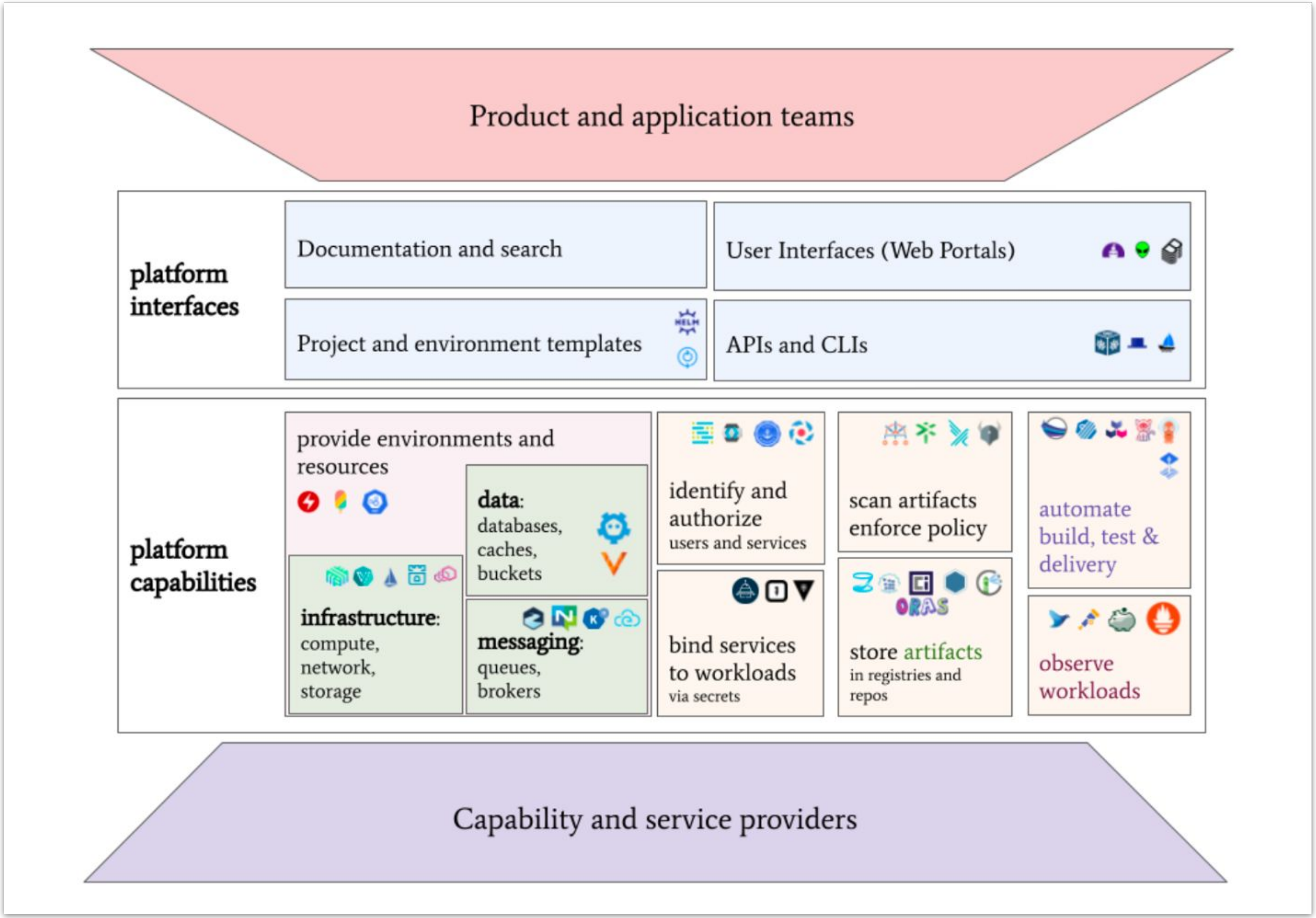
Tanzu®
by Broadcom

When the developer is the customer

What to request from the platform team

Coté, Feb 2024



Product and application teams

platform interfaces

Documentation and search

User Interfaces (Web Portals)

Project and environment templates

APIs and CLIs

platform capabilities

provide environments and resources

data: databases, caches, buckets

infrastructure: compute, network, storage

messaging: queues, brokers

identify and authorize users and services

bind services to workloads via secrets

scan artifacts enforce policy

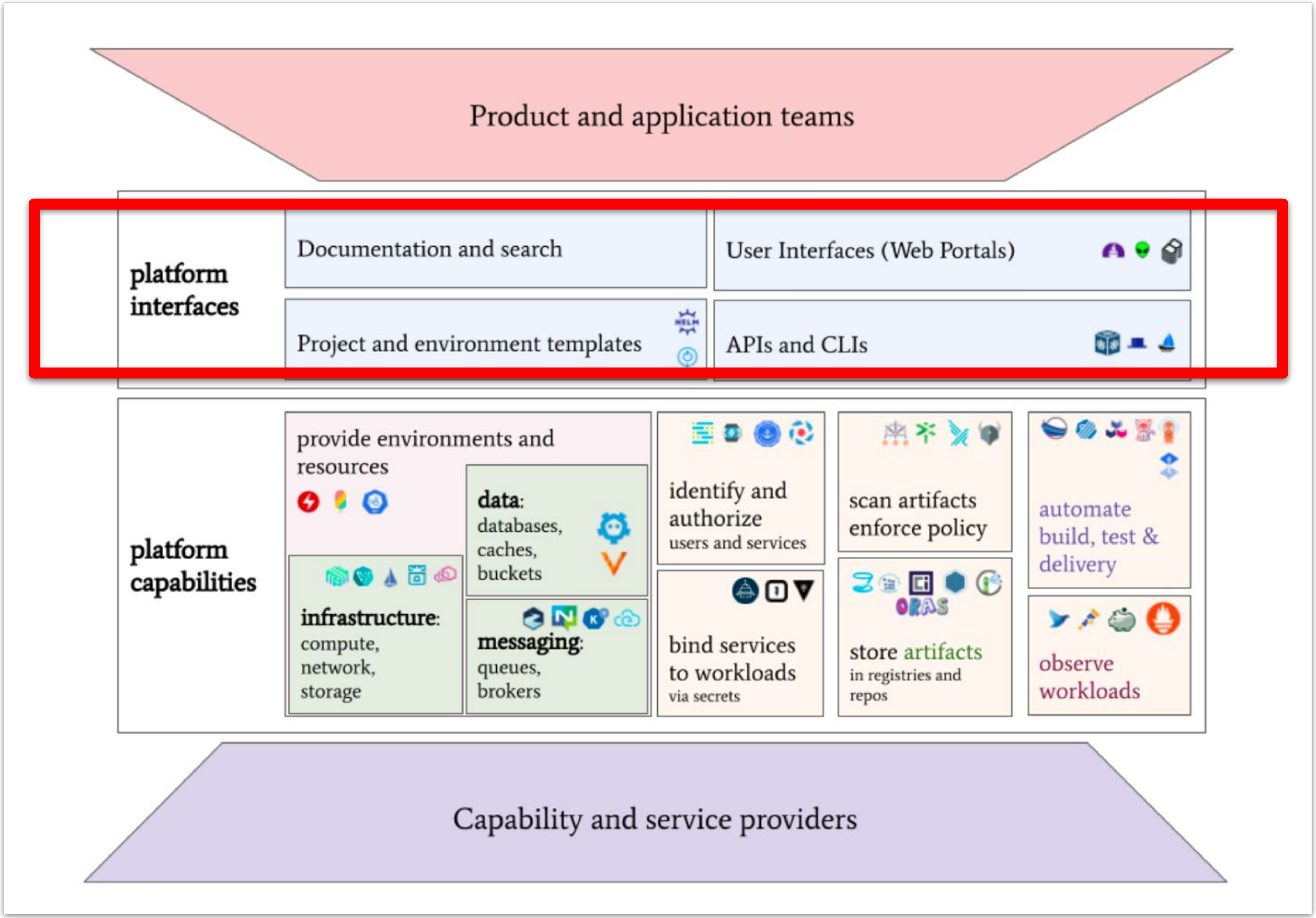
store artifacts in registries and repos

automate build, test & delivery

observe workloads

Capability and service providers

Source: “CNCF Platforms White Paper,” March 2023.



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Source: "CNCF Platforms White Paper," March 2023.

Eternal Reoccurance of platforms

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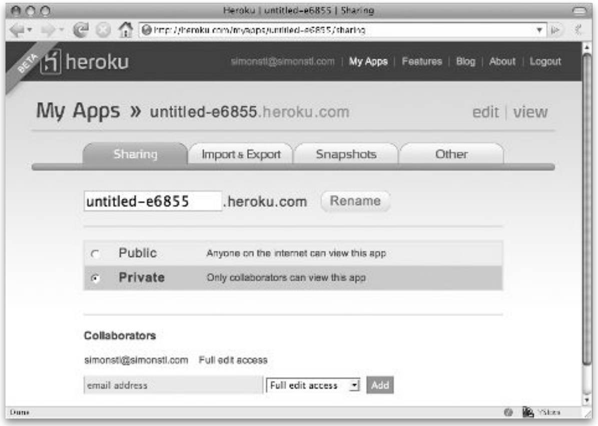

Heroku | untitled-e6855 | Sharing

http://heroku.com/myapps/untitled-e6855/sharing

BETA
heroku
simonstl@simonstl.com | My Apps | Features | Blog | About | Logout

My Apps » untitled-e6855.heroku.com

untitled-e6855 .heroku.com

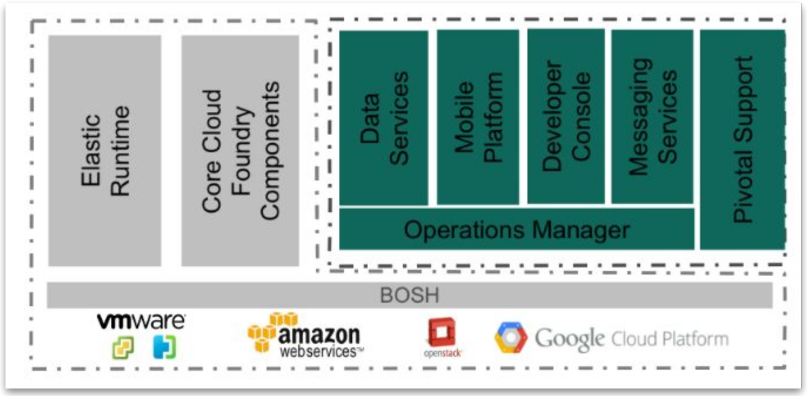
○ Public Anyone on the internet can view this app

● Private Only collaborators can view this app

Collaborators

simonstl@simonstl.com Full edit access

email address | Full edit access


Elastic Runtime

Core Cloud Foundry Components

Data Services

Mobile Platform

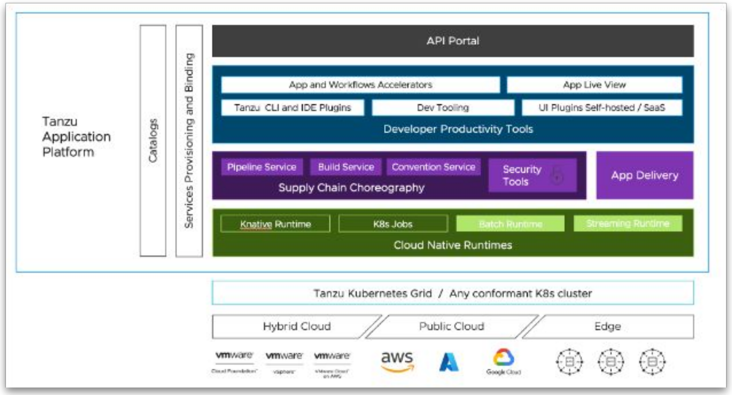
Developer Console

Messaging Services

Pivotal Support

Operations Manager

BOSH


Tanzu Application Platform

Catalogs

Services Provisioning and Binding

API Portal

App and Workflows Accelerators | App Live View

Tanzu CLI and IDE Plugins | Dev Tooling | UI Plugins Self-hosted / SaaS

Developer Productivity Tools

Pipeline Service | Build Service | Convention Service | Security Tools

Supply Chain Choreography

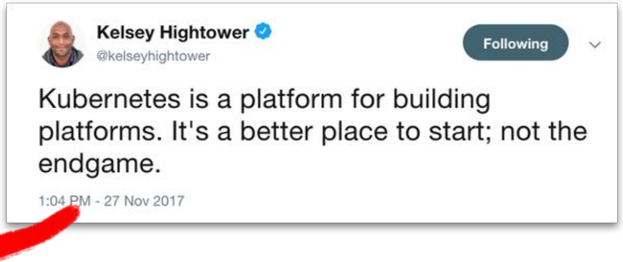
App Delivery

Knative Runtime | K8s Jobs | Batch Runtime | Streaming Runtime

Cloud Native Runtimes

Tanzu Kubernetes Grid / Any conformant K8s cluster

Hybrid Cloud / Public Cloud / Edge


Kelsey Hightower
@kelseyhightower

Kubernetes is a platform for building platforms. It's a better place to start; not the endgame.

1:04 PM - 27 Nov 2017

Not pictured:

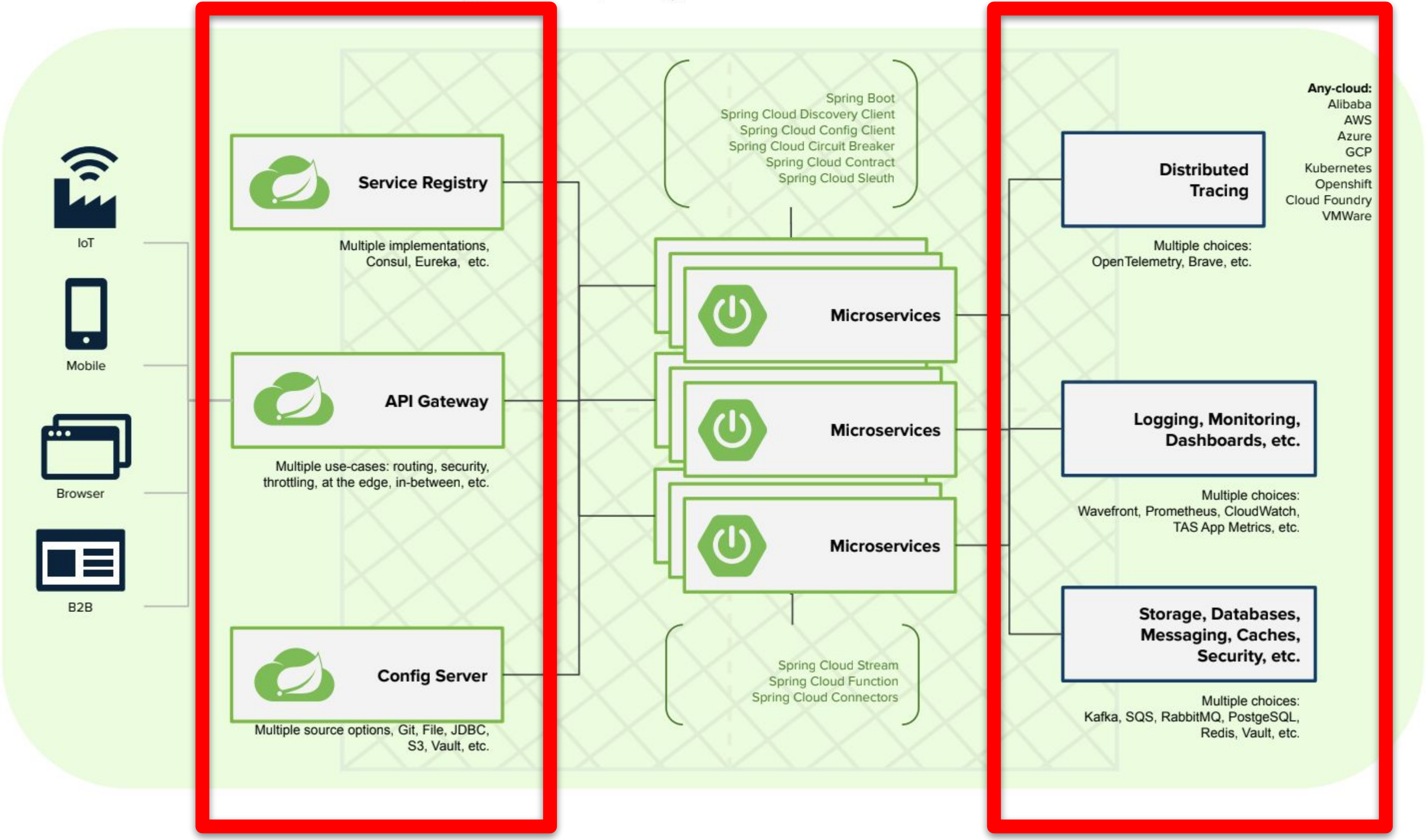
OO, Small Talk, RUP, CORBA, J2EE/.Net, SOA & WS-*, RAD, Low Code, Public Clouds

> “We are building this platform not for us, we are building it for Mercedes-Benz developers.”

Thomas Müller, Mercedes-Benz

The platform team should manage **undifferentiated services**

A Typical Spring Cloud Architecture



IoT

Mobile

Browser

B2B

Service Registry

Multiple implementations, Consul, Eureka, etc.

API Gateway

Multiple use-cases: routing, security, throttling, at the edge, in-between, etc.

Config Server

Multiple source options, Git, File, JDBC, S3, Vault, etc.

Spring Boot
Spring Cloud Discovery Client
Spring Cloud Config Client
Spring Cloud Circuit Breaker
Spring Cloud Contract
Spring Cloud Sleuth

Microservices

Microservices

Microservices

Spring Cloud Stream
Spring Cloud Function
Spring Cloud Connectors

Distributed Tracing

Multiple choices: OpenTelemetry, Brave, etc.

Any-cloud:
Alibaba
AWS
Azure
GCP
Kubernetes
Openshift
Cloud Foundry
VMWare

Logging, Monitoring, Dashboards, etc.

Multiple choices: Wavefront, Prometheus, CloudWatch, TAS App Metrics, etc.

Storage, Databases, Messaging, Caches, Security, etc.

Multiple choices: Kafka, SQS, RabbitMQ, PostgeSQL, Redis, Vault, etc.

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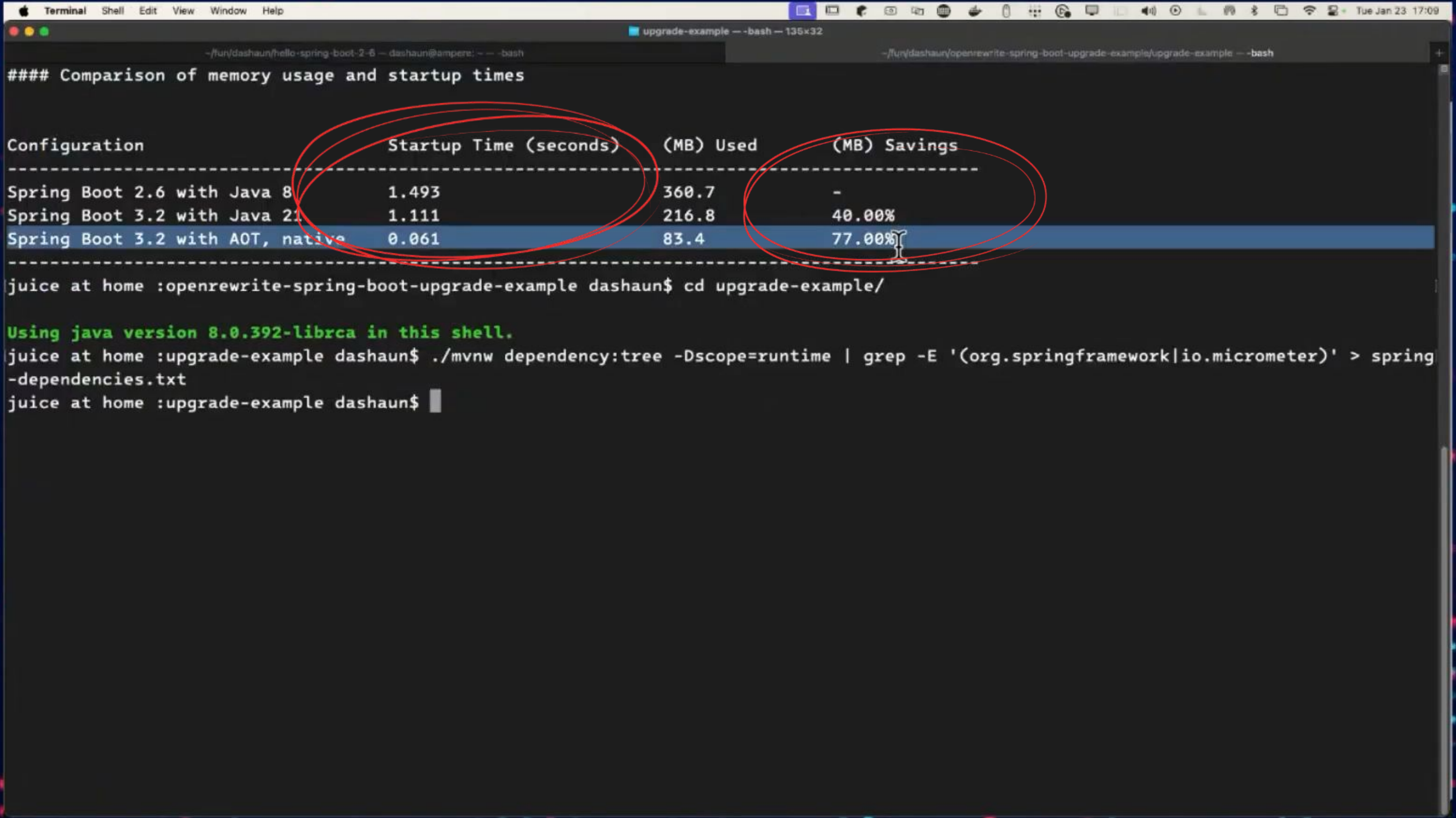
Faster upgrades, new capabilities, less tuning & maintenance for app developers



Terminal
Shell
Edit
View
Window
Help
Tue Jan 23 17:09
upgrade-example — -bash — 135×32
~/fun/dashaun/hello-spring-boot-2-6 — dashaun@ampere: ~ — -bash
~/fun/dashaun/openrewrite-spring-boot-upgrade-example/upgrade-example — -bash

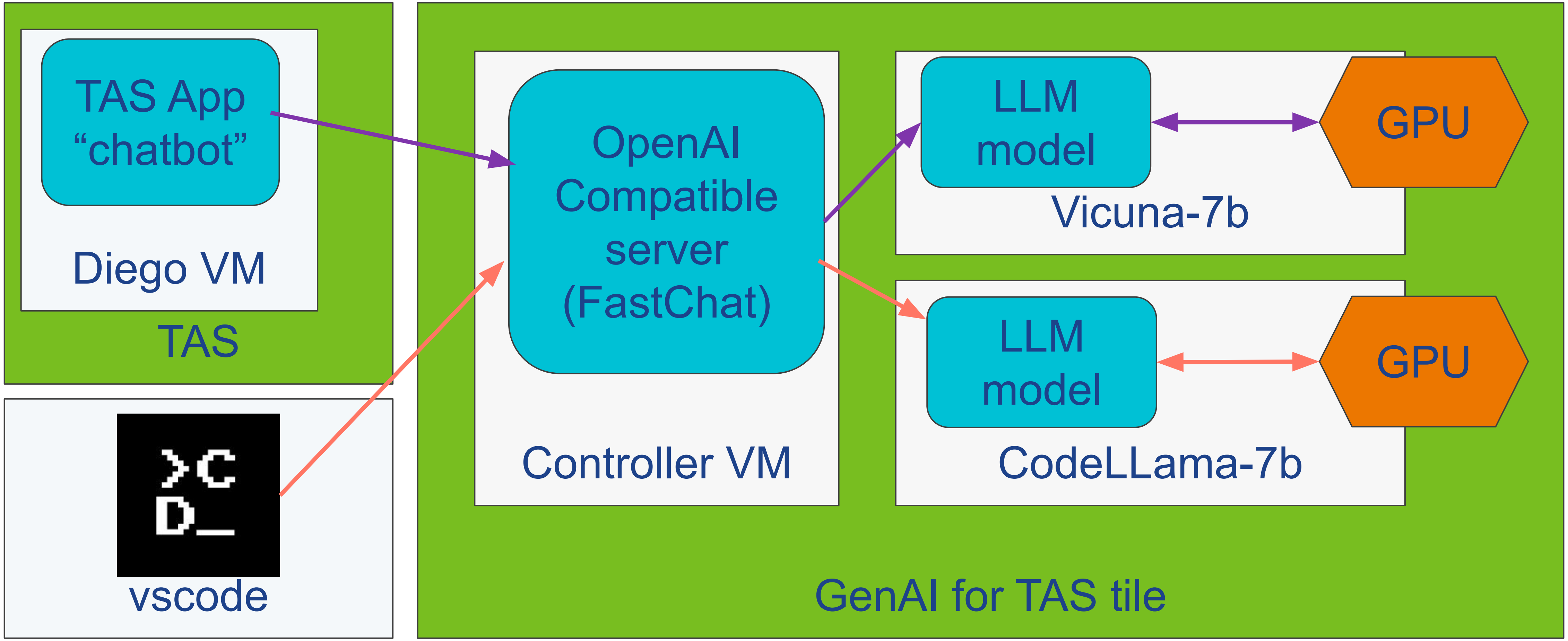
```
#### Comparison of memory usage and startup times


Configuration                      Startup Time (seconds)     (MB) Used     (MB) Savings
-------------------------------------------------------------------------------------------
Spring Boot 2.6 with Java 8        1.493                      360.7         -
Spring Boot 3.2 with Java 21       1.111                      216.8         40.00%
Spring Boot 3.2 with AOT, native   0.061                      83.4          77.00%
-------------------------------------------------------------------------------------------
juice at home :openrewrite-spring-boot-upgrade-example dashaun$ cd upgrade-example/

Using java version 8.0.392-librca in this shell.
juice at home :upgrade-example dashaun$ ./mvnw dependency:tree -Dscope=runtime | grep -E '(org.springframework|io.micrometer)' > spring
-dependencies.txt
juice at home :upgrade-example dashaun$ 
```

Source: "Upgrading Spring Boot and the Spring Health Assessment Report," DaShaun Carter, January 2024.

The platform team should manage **(new) capabilities that require strong governance and security**



Source: GenAI in Tanzu Application Service Beta: blog on beta, beta overview.

Find the Developer Toil, Confusion, Blockers

- What are we making?
- We have a strong vision for our product, and we're doing important work together every day to fulfill that vision.
- I have the context I need to confidently make changes while I'm working.
- I am proud of the work I have delivered so far for our product.
- I am learning things that I look forward to applying to future products.
- My workstation seems to disappear out from under me while I'm working.
- It's easy to get my workstation into the state I need to develop our product.
- What aspect of our workstation setup is painful?
- It's easy to run our software on my workstation while I’m developing it.
- I can boot our software up into the state I need with minimal effort.
- What aspect of running our software locally is painful? What could we do to make it less painful?
- It's easy to run our test suites and to author new ones.
- Tests are a stable, reliable, seamless part of my workflow.
- Test failures give me the feedback I need on the code I am writing.
- What aspect of production support is painful?
- We collaborate well with the teams whose software we integrate with.
- When necessary, it is within my power to request timely changes from other teams.
- I have the resources I need to test and code confidently against other teams' integration points.
- What aspect of integrating with other teams is painful?
- I'm rarely impacted by breaking changes from other tracks of work.
- We almost always catch broken tests and code before they're merged in.
- What aspect of committing changes is painful?
- Our release process (CI/CD) from source control to our story acceptance environment is fully automated.
- If the release process (CI/CD) fails, I'm confident something is truly wrong, and I know I'll be able to track down the problem.
- What aspect of our release process (CI/CD) is painful?
- Our team releases new versions of our software as often as the business needs us to.
- We are meeting our service-level agreements with a minimum of unplanned work.
- When something is wrong in production, we reproduce and solve the problem in a lower environment.

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Sources: "Developer Toil: The Hidden Tech Debt," Susie Forbath, Tyson McNulty, and Coté, August, 2022.

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by Broadcom

Thanks!

📨 https://newsletter.cote.io

📚 https://cote.io/platform/

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