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JUNE

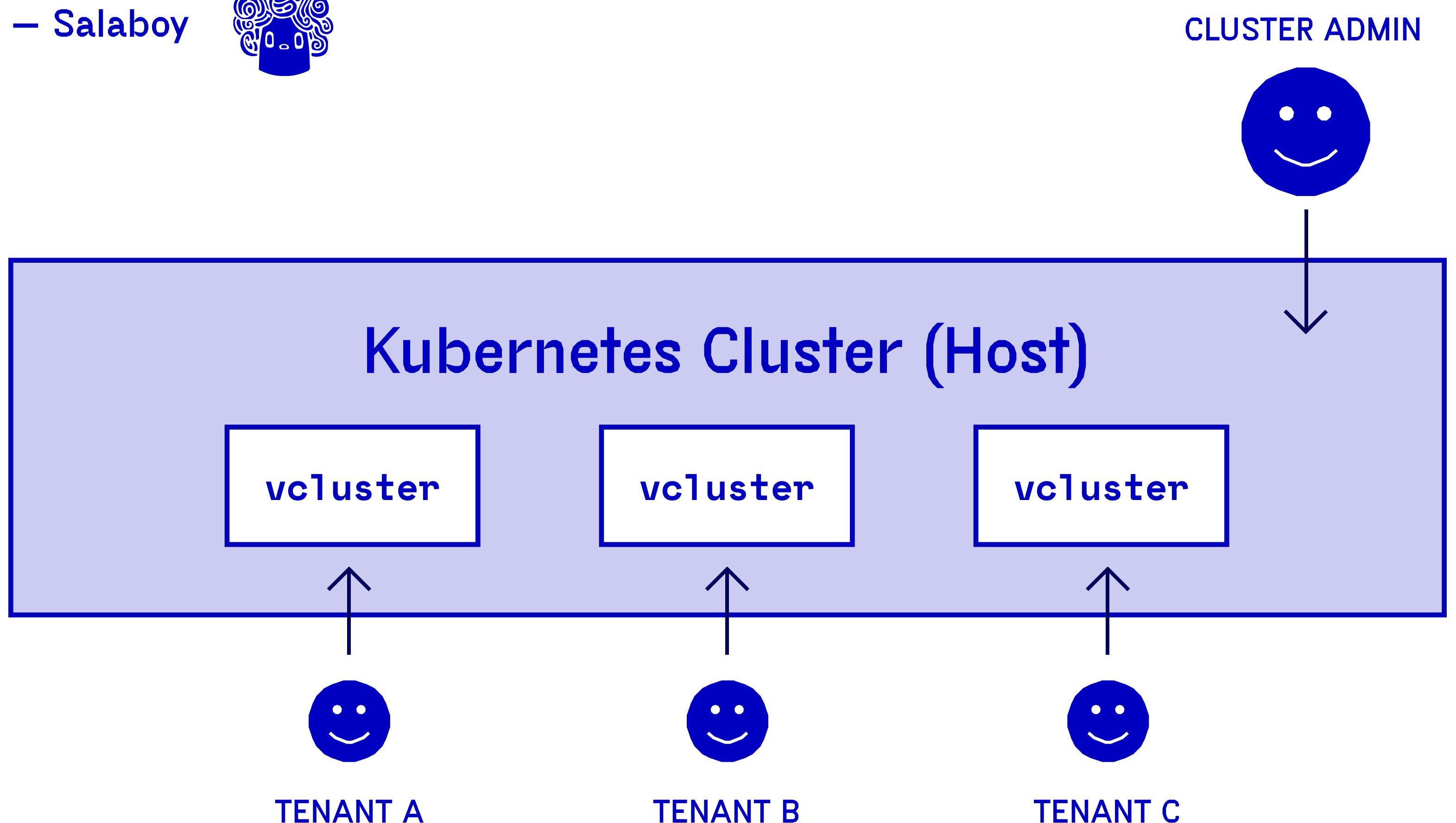
2023

This month snapshot

COST- EFFECTIVE MULTI- TENANCY ON KUBERNETES

Provisioning Kubernetes Clusters is expensive and becomes problematic if your organization or customers demand tenant isolation. In this report, I decided to cover **vc1uster**. This tool is becoming more popular in the CNCF space, as it offers an alternative to the options available when faced with tenant isolation and costly bills at the end of the month just to pay machines to run Kubernetes itself. The company behind **vc1uster**, Loft Labs, enables teams with cost-effective clusters and the management tools you will need to give your developers what they need to work.

— Salaboy



PROBLEM

Sooner or later, you will need more than one Kubernetes cluster, this isn't cheap.

SPACE

It doesn't matter if you need a new cluster for internal teams to run their applications or if you want to give each of your customers their isolated clusters to run your services. Once this conversation starts, two main factors get in the way and block teams from moving forward: money and time.

Paying for new clusters is not a decision that most teams can make, they will need the whole organization's buy-in. Creating clusters in any cloud provider is not instant. It usually takes 5 to 10 minutes (depending on the cloud provider) to set up hardware and software. While this is almost nothing compared to the time it would take you to set up a cluster On-Prem, you cannot make your customers wait for 10 minutes to start using your software.

THE OPEN SOURCE PROJECT

vcluster offers a simple way to create new virtual Kubernetes clusters inside an existing Kubernetes cluster (host). These virtual clusters can be created using the ``vcluster`` CLI or Helm, a package manager for Kubernetes. Once a virtual cluster is created, you can share the details (credentials and API Server URL) for teams/customers to interact with it. From the consumer's perspective, they interact with a real cluster. From the provisioner point of view, you still have a single Kubernetes cluster with workloads running on them. Because each **vcluster** spins up a new API Server, the load of each tenant on the API Server is isolated and doesn't go through the host.



PRODUCT SPACE

Founded in 2019, Loft Labs is focused on enabling teams to adopt Kubernetes in a fast and cost-efficient way. Tools like **vc1uster**, DevSpace, and now (May 2023) DevPod aim to facilitate platform teams with tools focused on adopting Kubernetes-based solutions. Loft V3 is a managed service suite that provides a central place for you to create **vc1usters** for your teams.

Their pricing model is based on users. Depending on the tier you select, Loft V3 allows you to create and manage **vc1usters** in multiple regions, including VPC support and Single Sign On capabilities. When I think about the features offered by Loft V3 I think about all the time it can save companies, as you are most likely to implement all these features in-house.

COMPANY



[WEBSITE](#) →

FUNDING

SEED

SERIES
~25 PEOPLE

INVESTMENT

4.3


[MILLIONS USD](#)

PRODUCT

Loft V3 - Self-Service
Virtual Clusters at Scale
with GitOps integrations

COMPETITORS

[Hypershift](#) →

 [Kamaji](#) →

These projects are not direct competitors to `vcluster` but they are in the same space, multi-tenant Kubernetes. Hypershift is mostly maintained by Red Hat and Kamaji by Clastix.

COMMUNITY INVOLVEMENT

CNCF Gold Sponsor
KubeCon EU 2023

[CORE MAINTAINERS](#)

PROJECT



[WEBSITE](#) →

POPULARITY

2.5K 
Github
stars

MATURITY

CNCF incubating,
solidifying its user base
and refining use cases

SPACE

MULTI-TENANCY

ISOLATION

DEVELOPER ENVIRONMENTS

loftsh	10.8%
infracloudio	5.4%
Datadog	5.4%
upbound	2.7%
Snyk	2.7%
getditto	2.7%
digitalocean	2.7%
trendyol	2.7%
Vizmo	2.7%

OTHER 59.5%

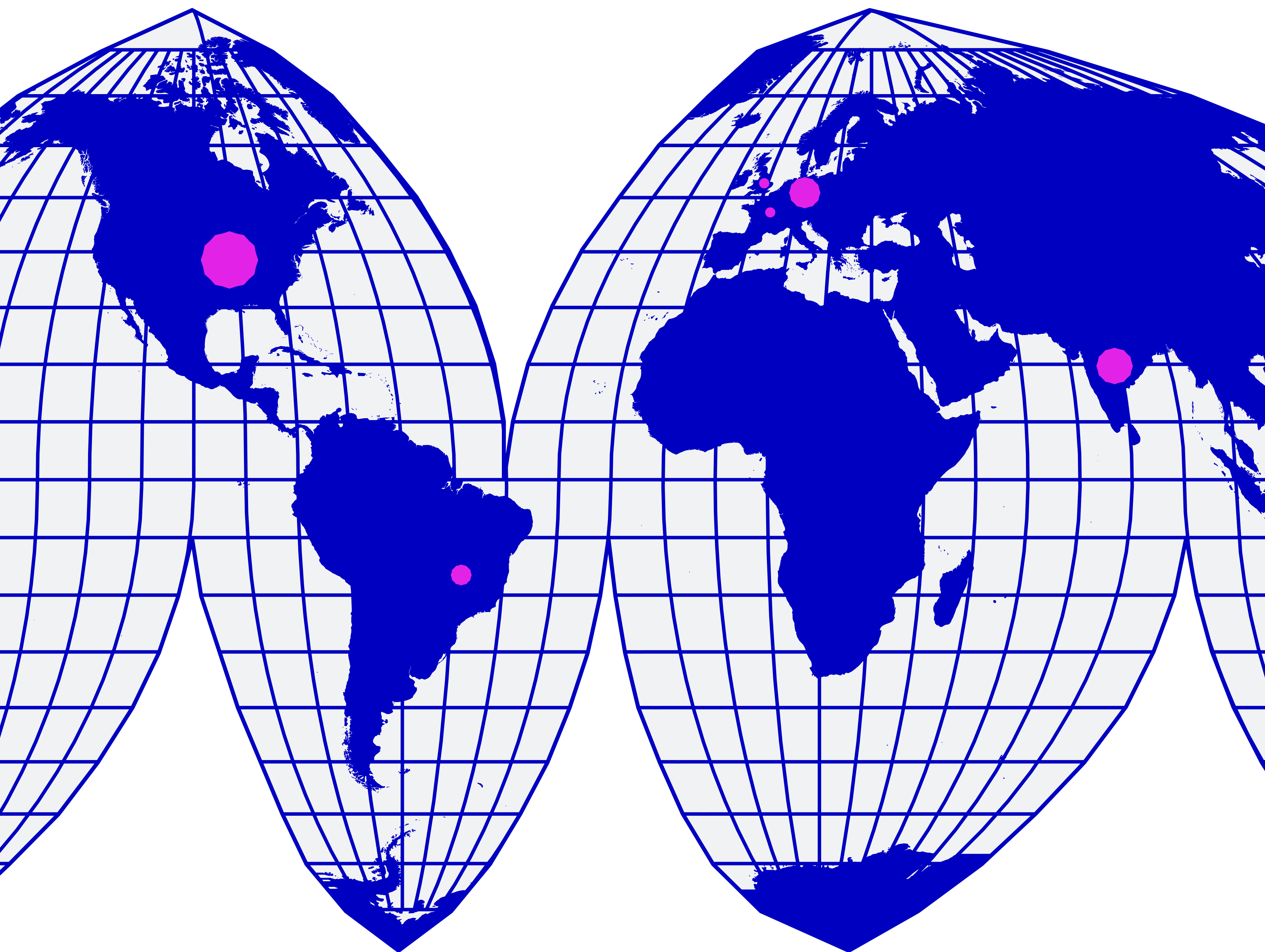
TOP

CON-

TRIBUTORS

Source:
[OSSInsights](#)

TOP GEOLOCATIONS



1. United States 22.0%

2. India 14.0%

3. Germany 12.0%

4. Brazil 8.0%

5. United Kingdom 4.0%

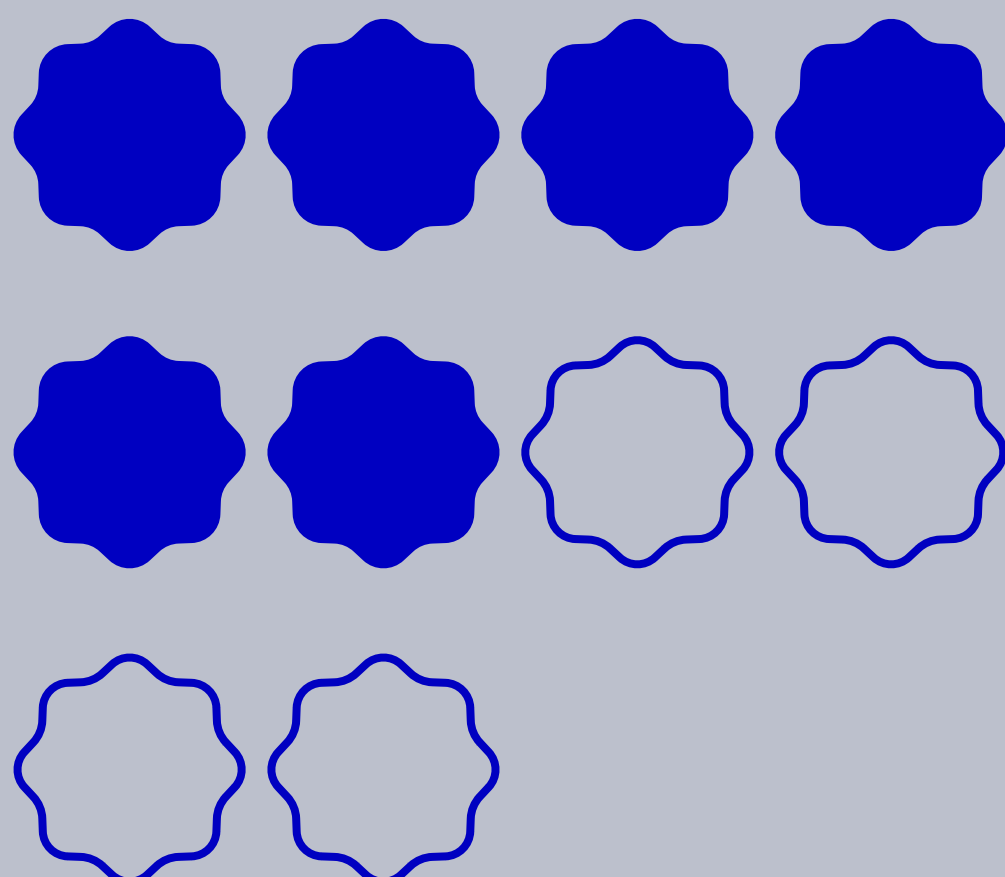
6. France 4.0%



* These ratings are my opinion based on what I hear, see, and feel after engaging with these companies and projects.

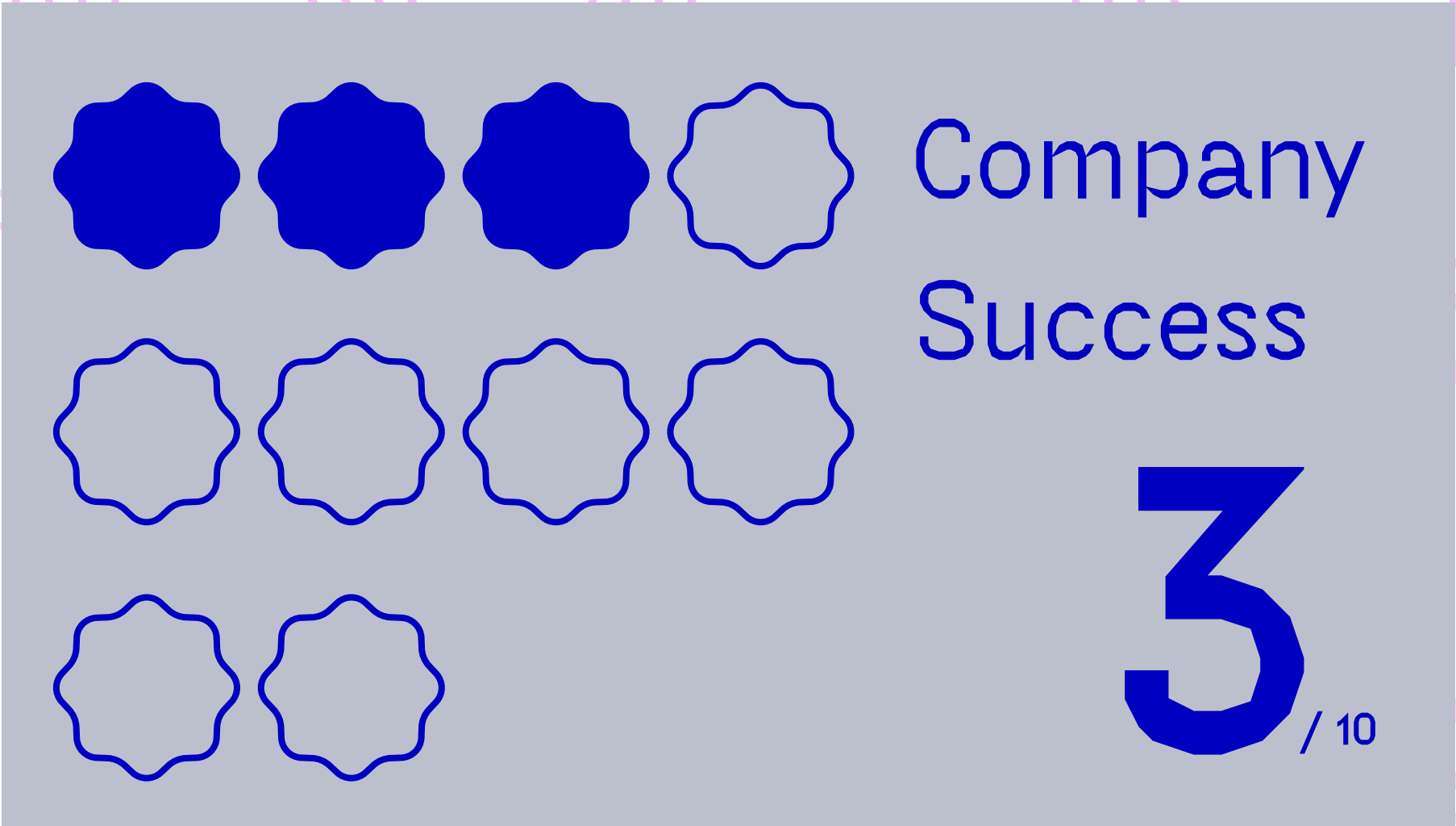
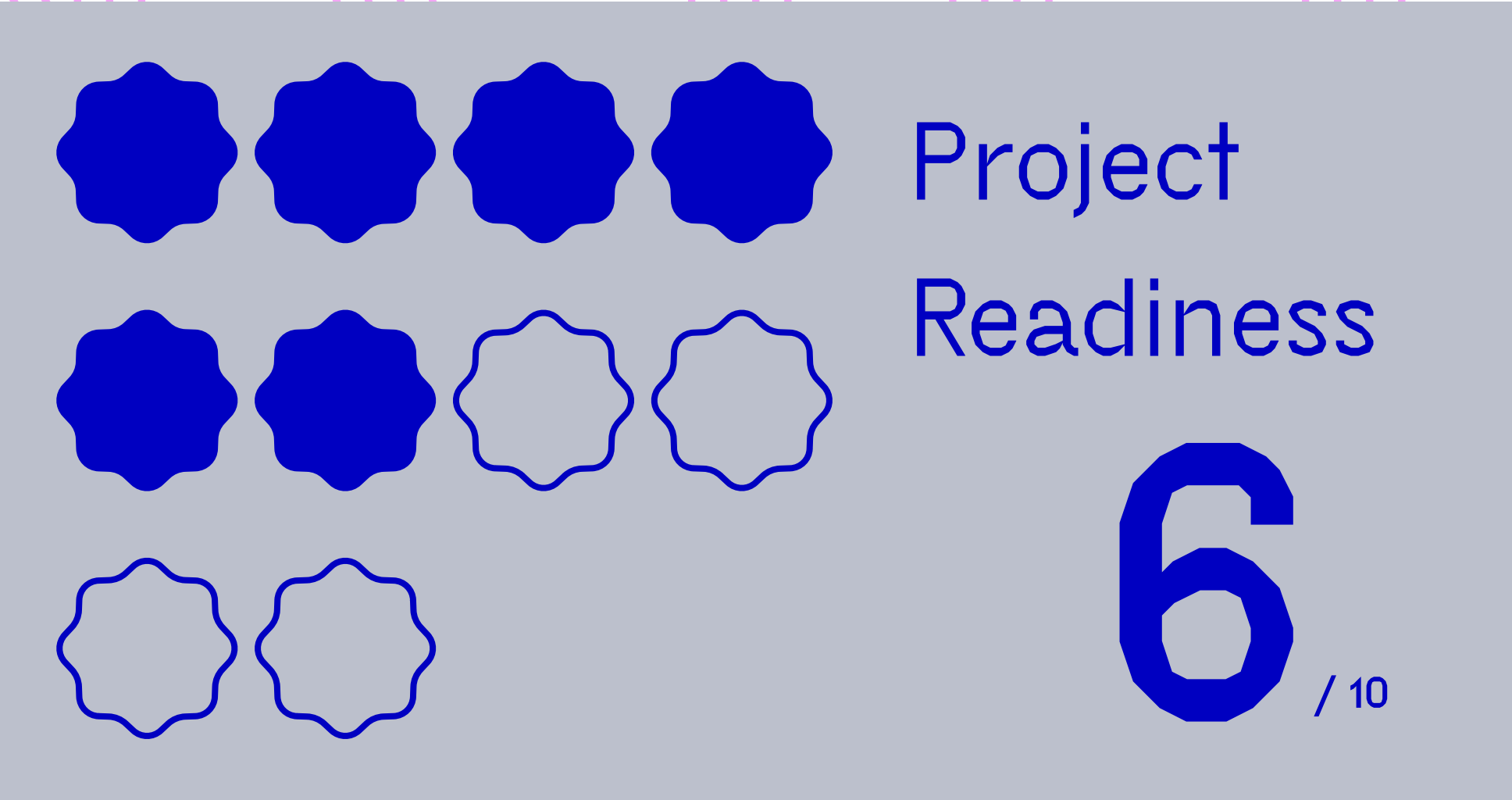
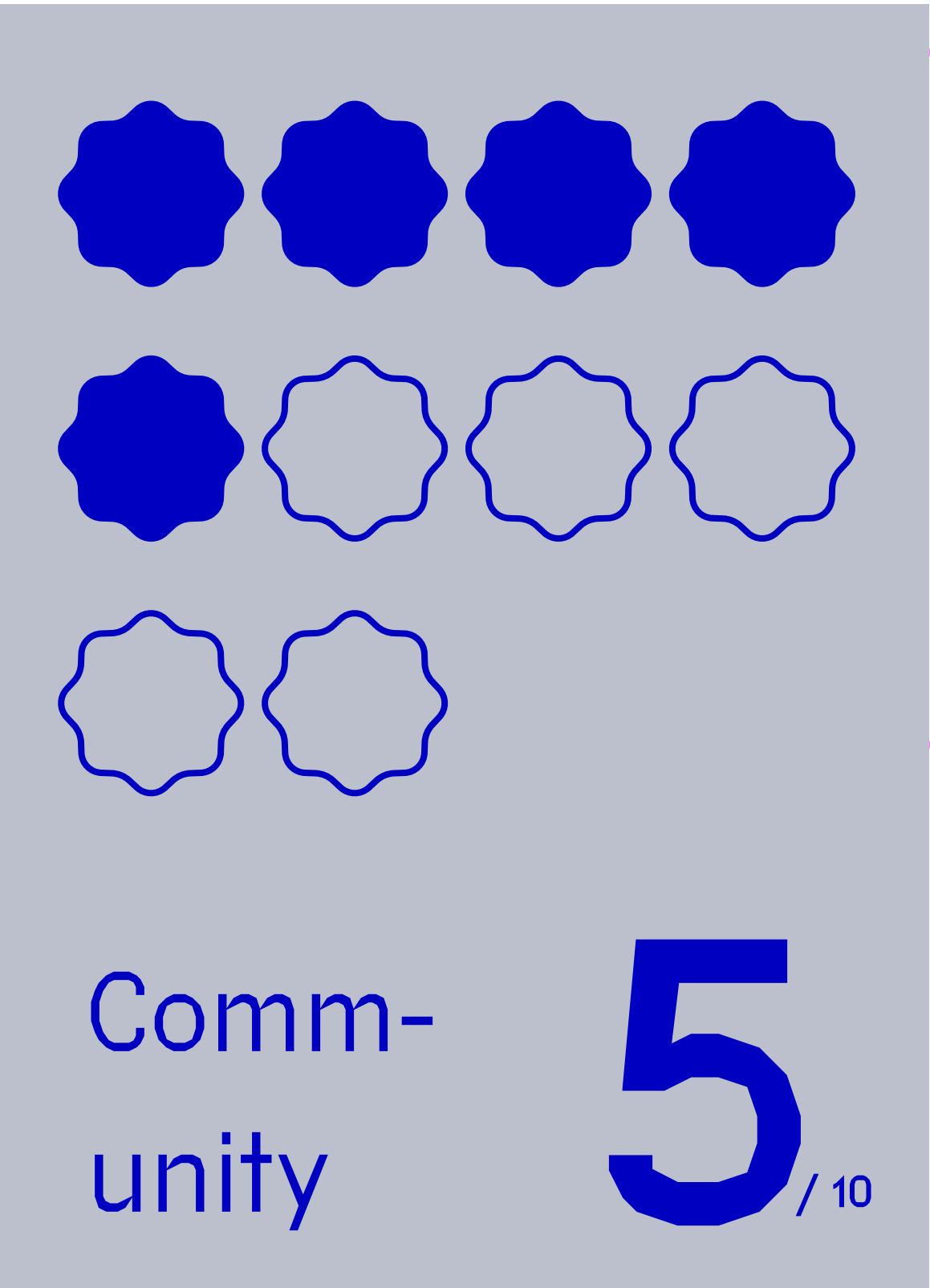
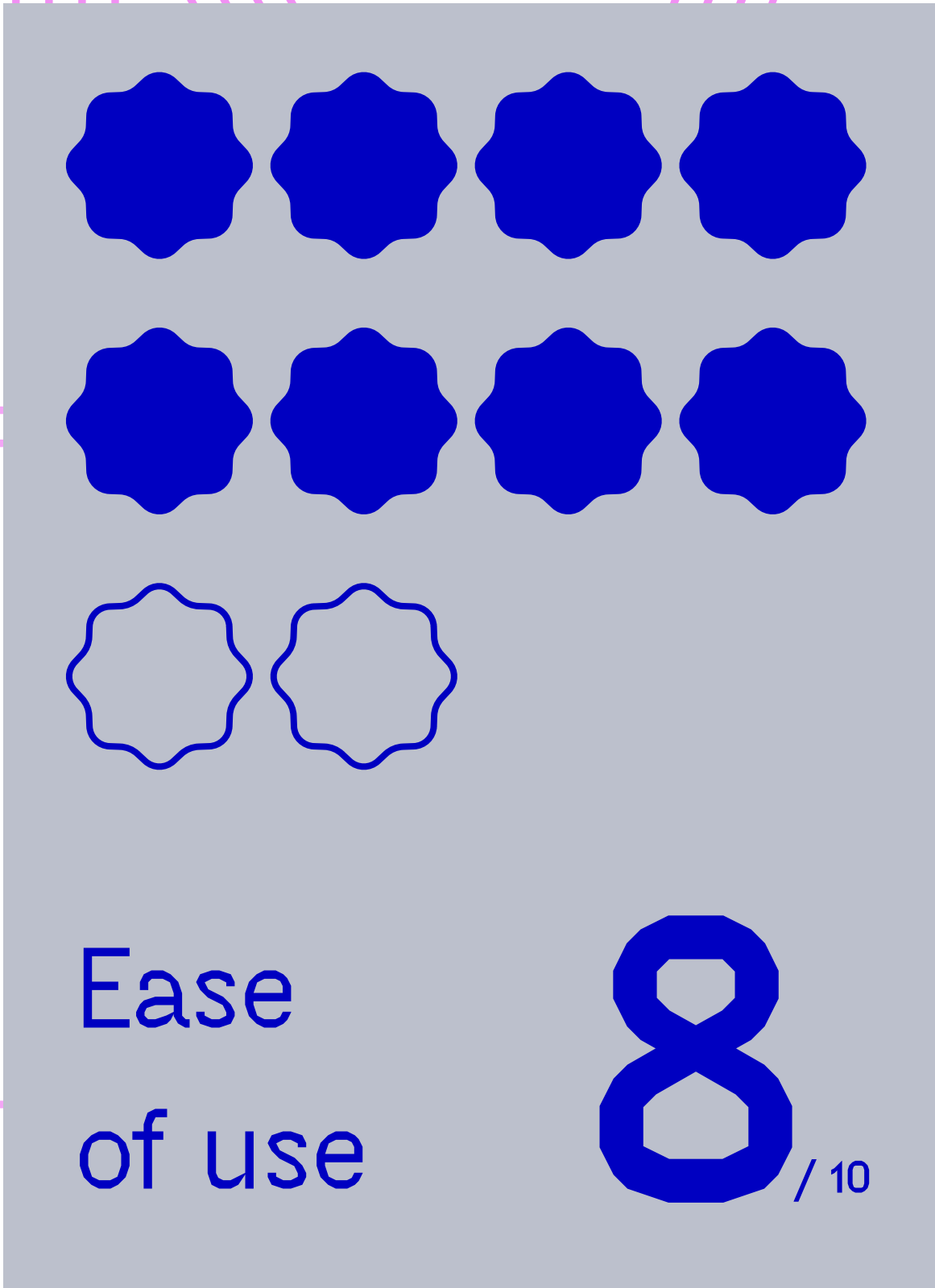
CHECK PAGE 18 FOR MORE

BUZZ FACTOR



6

/ 10



6

10

Buzz Factor:

`vc1uster` is gaining popularity, as it is an easy project to start and provides increased isolation compared with Kubernetes namespaces. If you have a multi-tenant discussion in your organization, `vc1uster` will pop up in that conversation more than once.

5

10

Community:

`vc1uster` has around 2500+ Git-Hub stars and external companies contributing back to the project. Still, the project is driven mostly by Loft Labs engineers.

5

10

Product market fit:

Multitenancy is hard, and `vc1uster` comes as an alternative to mitigate some of those issues with a tool that you can adopt today. Once you have faced these issues and decided that `vc1uster` can help your teams, Loft V3 comes into play. If the number of `vc1usters` grows over 10, and if you need Single Sign On, multi-region, VPC connections, it might be worth considering having a quote from Loft V3 as all these capabilities will need to be designed and built in-house otherwise.

6

10

Project Readiness:

`vc1uster` is one of those projects that do one thing and does it well. The project's scope is well defined, and now the focus is switching to make it more efficient and stable.

8

10

Ease of use:

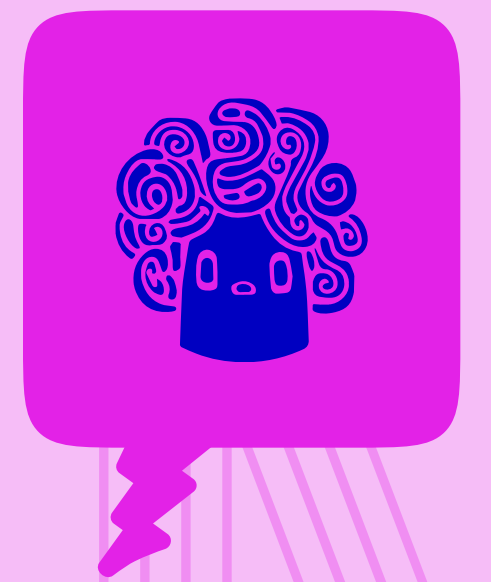
To get started with `vc1uster` you don't need much besides a Kubernetes cluster (host). The `vc1uster` CLI makes it easy to create, connect, pause/resume and delete a `vc1uster`.

3

10

Company success:

Loft Labs is a young company with exciting Open Source projects and initiatives. Their product provides a solution to a problem that companies are facing today. Loft V3 can save time and enable teams to self-serve on Kubernetes cluster today. If you are not at the stage in your Kubernetes journey, these tools can get you there in no time. For the company to be successful, organizations need to be aware that `vc1uster` exists and then understand how costly and time-consuming it would be to build a self-service platform around it in-house.



Do you need an cost-effective alternative to provision clusters? `vc1uster` might be the answer

Check the newest `vc1uster` friend DevPod, like GitHub codespaces/GitPod but Open Source.

`vc1uster` 0.15.0 includes a generic sync mechanism that let's you save not only on clusters but the tools installed on them.

Check out the ArgoCD and `vc1uster` integrations, and how [Codefresh uses `vc1uster`](#) for their managed service.

I am eager to see see DevPod and `vc1uster` enabled platforms at KubeCon NA 2023.

If the overhead of creating a `vc1uster` can be easily parameterized for different scenarios, platform teams can tweak `vc1uster` for their use cases.

Should I?

COST OF ADOPTION

vccluster is easy to use and adopt by existing Kubernetes users, as it doesn't require installing anything on your existing clusters. No training is needed for **vccluster** users either, as they will receive access to a fully fledged Kubernetes API Server.

Once adopted, a platform team will need to build a management layer to enable development teams to request new **vccluster** and have access to them. Depending on your organization's maturity, you might want to avoid designing and building this self-service management layer.

Should I?

SPEED

If you are having conversations about how to deal with multi-tenant scenarios in relation to your Kubernetes Clusters or getting large bills at the end of each month because your teams are creating too many clusters, **vc1uster** can save you time and money.

If it is clear that your teams will benefit from a cost-efficient and self-service approach to access their Kubernetes clusters, I suggest you have a chat with Loft Labs. At the end of the day, it is a decision about cost and reducing the time that teams need to get their clusters for their applications.

Should I?

RISK

Other multi-tenant approaches exist in the market, such as Hypershift and Kamangi. The main difference between **vc1uster** and these other tools is complexity, but it all boils down to your requirements today. Are you suffering from developers requesting clusters that you can't pay? Or are you managing a large fleet of Kubernetes Clusters that you want to isolate and manage across regions? My strong recommendation here is to consider **vc1uster** as an option when deciding about splitting a single Kubernetes Cluster to be shared across tenants.

TAKEAWAYS

Why should you keep an eye on vcluster and Loft Labs:

1

vcluster provides a viable alternative for multi-tenant scenarios.

3

Loft Labs is building the tools to self-serve and manage vclusters at scale for more targeted use cases, such as development environments.

2

vcluster makes Kubernetes accessible to teams without the need to pay premium prices for iso-lated clusters on Cloud Providers.

4

Loft Labs is expanding its Open Source portfolio and products to tackle more challenges that companies and teams are facing when on-boarding teams to Kubernetes.

WHAT'S NEXT

[Check my blog post](#) about Crossplane and vcluster for creating development environments.

[Check this vcluster introduction](#) from the Loft Labs Youtube Channel

Create your first vcluster by following [this getting started guide](#)

Thanks for reading

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Rating system explanation

These ratings are my opinion based on what I hear, see, and feel after engaging with these companies and projects. The idea of these ratings is to give an indication in time about how do I evaluate different aspects of the projects and companies covered in these reports. Take these ratings as conversation starters and evolving and opinionated measurements.

1. **Buzz Factor:** how much do I hear about the project in the cncf working groups, community channels, conferences, being adopted or tested in different companies.

2. **Project Readiness:** is the project missing any main feature that makes it unusable? Can you easily install it and implement things without hitting any major blockers?

3. **Community:** how engaged is their community on decisions, designs, contributions, extensions.

4. **Ease of use:** How easy is to get started? How easy is to extend?

5. **Product market fit:** how much sense does the project makes in the ecosystem? Is this something you will need to create if you are building platforms or adopting Kubernetes?

6. **Company success:** Does the company have a business model that make sense to people? Are there a lot of customers using the company product? Has the company product or focus changed in the last year?



In the Platform Engineering on Kubernetes book, you can find hands-on examples of Cloud-Native technologies companies use to build their Internal Development Platforms. The book covers the most common challenges you will face when adopting Kubernetes and the tools from the Cloud-Native space. As a token of appreciation, here is a 40% discount:

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