

# Kubernetes Is Here to Stay: This Is Why

APRIL 26, 2022 | [MICHAEL COTÉ](#)

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Back for a fourth year, our annual **State of Kubernetes survey** shows ongoing momentum with Kubernetes adoption. Respondents expressed an easing of most challenges, aside from security.

Here are four highlights from this year's survey:

- Kubernetes is improving operations concerns like resource utilization and spending, cloud migrations, and application upgrades. However, Kubernetes remains a challenge for application development concerns.
- Managing Kubernetes is getting easier, but the challenge of meeting security and compliance requirements has increased.
- Security concerns for multi-cluster and multi-team Kubernetes use has become a focal point.
- People run Kubernetes everywhere, across on-premises, public cloud, and at the edge. 65 percent of respondents were running in multiple locations, showing that multi-cloud management is definitely an important capability.

## Who we asked

First, some quick demographics. This year, our survey polled 776 people at organizations with more than 1,000 people, with 36 percent of respondents coming from organizations with 10,000 or more people. As always, when it comes to where respondents work, technology ranked the highest: 28 percent of respondents work in tech. Next came finance and insurance at 16 percent, telecommunications at 11 percent, followed by manufacturing and healthcare at 7 percent each. See the full survey for the rest.

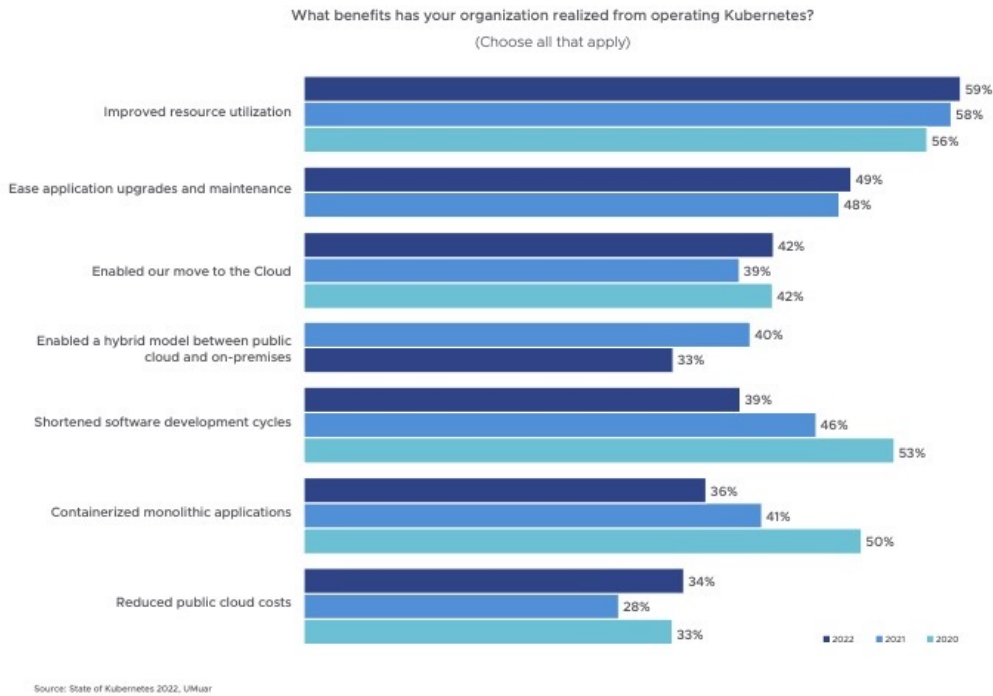
Smaller companies, especially tech startups, are potentially not represented. Tech companies and finance usually lead technology adoption, so keep in mind that the answers might be for more mature users rather than conservative ones.

With that to keep in the back of your mind, let's look at some of my highlights.

## Good for ops, could be better for dev

When it comes to cloud operations, Kubernetes has clear benefits, as the responses in the chart below show:





Respondents in larger organizations (10,000+ people, 2,500+ developers) see even more of these benefits. On the extreme end, 70 percent of respondents at 10,000+ people organizations selected improved resource utilization as one of the benefits. This indicates that larger organizations benefit more from the standardization that Kubernetes brings to their sprawling infrastructure—but I'm no numbers expert, so don't hold me to that.

However, the two developer-related benefits are actually declining. **Back in 2020**, respondents reported quicker release cycles and **application modernization** as benefits, but both of these have decreased since then. What's going on here?

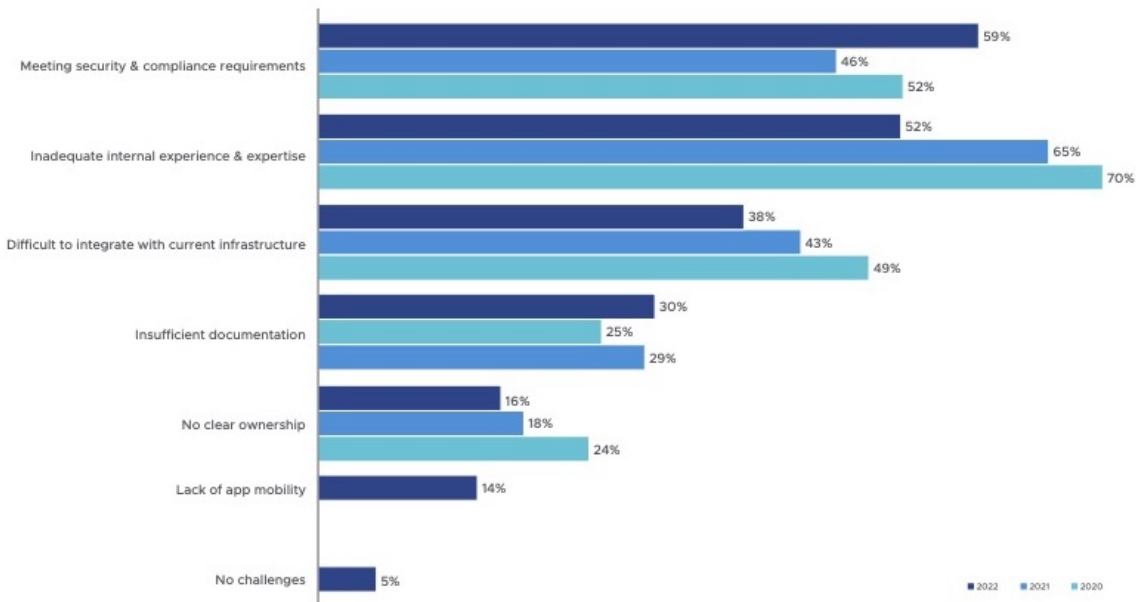
To speculate, once again I'd cite the growing use of Kubernetes, both for more developers but also for more complex applications. As more application developers target Kubernetes for deployment, you'll encounter more people who are not interested in, nor skilled at, tinkering around with infrastructure. They want to focus on their application code. Indeed, the most interesting discussion in the Kubernetes space now is around "developer experience," which is to say, **making Kubernetes easier for application developers**.

The good news is that the Kubernetes ecosystem is working on this problem. For example, check out **what we're doing with VMware Tanzu Application Platform**. We're pulling together many open source components in the Kubernetes world with a laser focus on improving developer productivity and experience.

## Kubernetes is getting easier, security still a priority



What challenges has your organization encountered in DEPLOYING Kubernetes?  
(Choose all that apply)



First, we asked respondents what challenges they were having deploying Kubernetes. While skills were the chief problem **three years ago** at 70 percent, it's steadily decreased to 52 percent. Now, security and compliance is the top challenge. To me, this makes sense for a technology that's nearing eight years old. There's been plenty of time to learn how Kubernetes works, and the community is sharing more and more. Also, as time goes on, there's a larger ecosystem of other services, software, and infrastructure that works with Kubernetes, driving down that challenge.

And as Kubernetes is more widely used for mainstream and critical applications, you encounter new security and compliance challenges. The initial uses of new technology, for better or worse, are usually more focused on functionality and getting software out the door than compliance. In this year's survey, 97 percent of respondents said that they'd be willing to pay for services and support. May I suggest checking out [VMware Tanzu for Kubernetes Operations?](#)

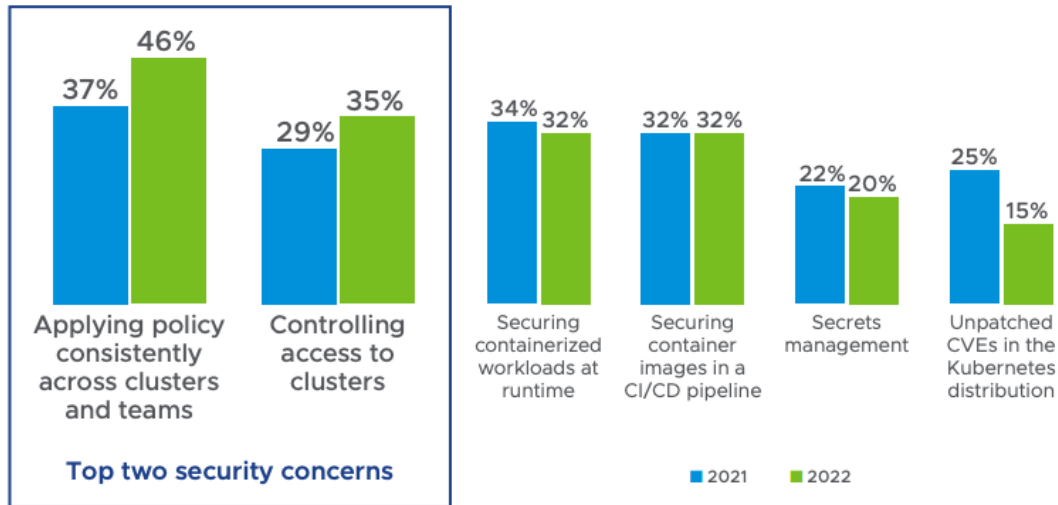
Security is actually an even bigger deal, especially for bigger organizations. The average hides that 68 percent of respondents at organizations with 10,000+ people said security was a challenge. What are the security challenges, though? Let's take a look.

## Securing Kubernetes for multi-cluster, multi-team usage

This year saw a rise in security concerns for multi-cluster and multi-team Kubernetes use. We asked people to choose up to two security concerns, and here's what they said:



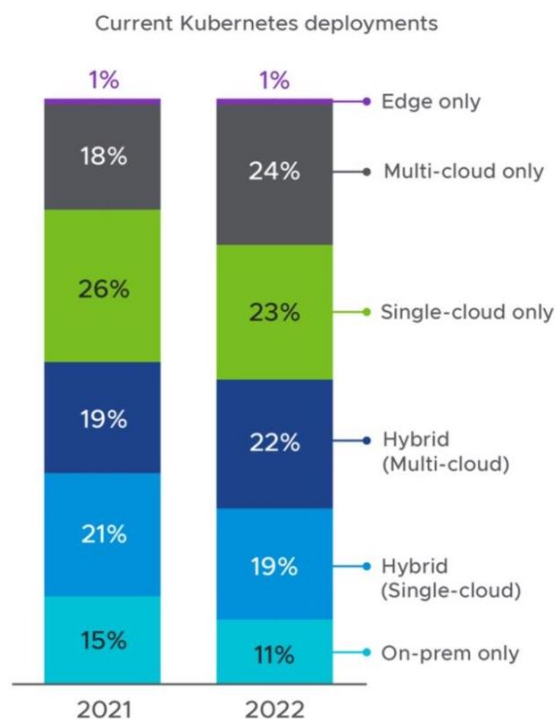
## Biggest security concerns about using Kubernetes



What I see here are concerns that are probably driven by growing use. As organizations open up Kubernetes for use by other teams, you want to make sure those new teams are following policy and that they're isolated from each other. The focus on **secure software supply chains** that's going around in the industry now comes up as a concern as well, with a third of respondents pondering securing containers.

If you're putting together your Kubernetes plan, this means you should get ahead of these concerns and **start planning for multi-team use right from the beginning**. Applying security at the end is rarely ever fun.

## Kubernetes is everywhere



Finally, let's look at where people are running Kubernetes: everywhere they can, and then some! Most people are running Kubernetes in multiple locations. Just 11 percent run on-premises only, 23 percent run in only one public cloud, and a tiny amount—1 percent—run only in edge situations. The

remaining 65 percent are running Kubernetes across multiple locations, or, "multi-cloud."

To me, this means that 65 percent of respondents need to think through managing Kubernetes across multiple public clouds and on-premises. On top of deploying and managing clusters, security policies must be monitored and enforced. To help developers out, it also means those Kubernetes operators need to smooth over the differences between different clouds and Kubernetes services and distros as much as possible. Kubernetes goes a long way to standardize how developers interact with infrastructure. As the responses to developer productivity above show, more help is always needed.

## As you grow, don't do it alone

Kubernetes usage is set to expand over the coming years. Just under half (48 percent) of respondents expect their number of Kubernetes clusters to grow by more than 50 percent. With more usage comes more need to scale out, more need to ensure security compliance, and more needs to ensure that developers are benefiting from faster release cycles instead of getting bogged down in toil.

I'll wager that you could use some help getting Kubernetes running and then with the ongoing management. You see this in the survey as well: just over 20 percent of people are building their own Kubernetes stacks, and the percent using Kubernetes services and distros has been increasing over the past three years.

At VMware, for the past few years we've been learning what organizations need when it comes to Kubernetes and working to create solutions. You can start with the **free, open source Tanzu Community Edition**.

Then, as you ramp up and go deeper, you can move to **Tanzu for Kubernetes Operations**. Without supporting developers, though, Kubernetes would just be a blinking cursor, waiting to run applications. That's why we've built **Tanzu Application Platform**, which brings together an integrated set of tools and frameworks that makes sure developers can get to coding instead of configuring and caring for Kubernetes. The Tanzu Kubernetes journey is easy to get started with and is built to take you all the way to large-scale production.

## Read it all

There's plenty more in the survey that's worth checking out if you're putting your Kubernetes strategy in place or scaling up. You can **download this year's survey for free here**.

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### About the Author

Michael Coté works on the advocates team for VMware Tanzu. See @cote for more.

