

Kubernetes:

Building your own or invest in tooling?

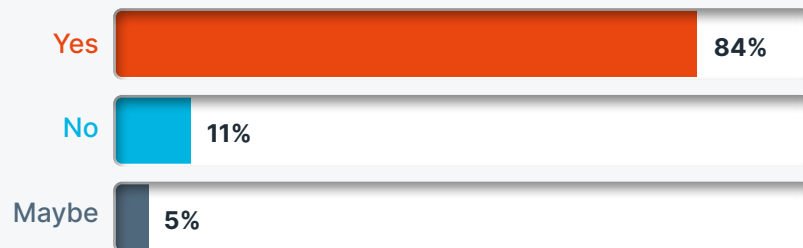


Adoption is growing rapidly

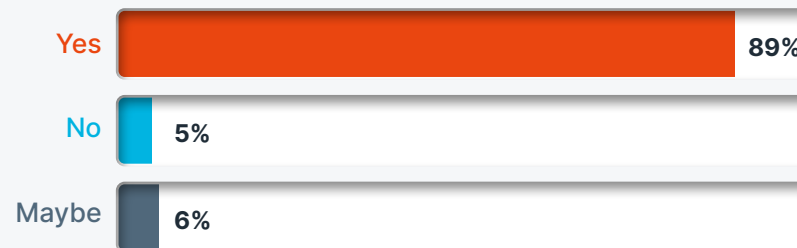


At Bytes, we are seeing an increasing amount of Kubernetes adoption across our customer base. While there are other container platforms out there, Kubernetes (K8s) is the overwhelming leader. Our partners Pure Storage and Portworx carried out a survey which demonstrates both the K8S position, and the general plans to adopt containers:

Has your organisation used a Kubernetes environment to either test or develop AI models and applications?



In the next 2-3 years, do you expect Kubernetes to play a larger role in your organisation's infrastructure management?



Gartner estimates that by 2025, 85% of global organisations will be running containers in production, up from 35% today.

It's no surprise K8s is the platform of choice. It's free and your developers can pull what they need and get cracking. While this may be ideal up to a point, Bytes know that "free" does not always mean best – and for most of the organisations we work with, the 'right way' takes a little more investment.

Surely Free and Build Your Own is a good thing?



Our customers are increasingly looking to use K8s for their pivotal corporate and customer facing apps. Adoption of K8S for crucial business apps allows for innovation, flexibility, and swift market appearance at scale. However, as the old saying goes: “the more things change, the more they stay the same.” Speed and flexibility are great, but the age-old Enterprise IT concerns remain:

Is it secure?

Is it repeatable?

Is my data safe?

What happens in an outage?

How do I patch it?

How do I protect it? Backup, DR, business continuity, etc?

How do I maintain visibility of what’s going on?

What kind of operational savings can I expect, compared to doing things in a traditional manner?

In essence, are your K8S clusters Enterprise ready and fully operationalised?

Along with our friends at Red Hat and Pure Storage, we often see that this isn’t the case.

Securing vanilla K8 clusters is far from straightforward, and one missed hardening rule can leave a wide-open door for hackers to walk straight through. In that regard, it’s no different to using good old servers. And as with good old servers, having tooling and solutions that simplify the support and management ultimately leads to a quicker time to innovate and deliver in the long run.

Enter Red Hat



Red Hat OpenShift Container Platform (OCP) opens the doors to a more robust and enterprise ready containerisation platform, allowing your engineers and developers to build Infrastructure, application, and security practices that will keep your business-critical applications secure and operational - wherever you chose to host them.

On top of that, OpenShift Advance Cluster Management (ACM) can be pointed at your existing EKS and AKS clusters in Azure and AWS, giving you a simplified management plane. ACM allows for accelerated development to production cycles by providing self-service provisioning to your development teams, and frees up IT administrator time in the process.

OCP security gives you the ability to build a secure and robust hosting platform, whilst supporting a multitenancy deployment for mixed workloads. Data can be encrypted using the built-in modules supporting FIPS 140-2 Level 1 compliant encryption when needed. The platform allows for fine grained network controls and supporting encrypted multi-tenant networking environments that you control. OCP can integrate with Red Hat 3scale API management to authenticate, secure, and rate limit API access to your applications.

Red Hat OpenShift Container Platform (OCP) opens the doors to a more robust and enterprise ready containerisation platform...

Enter Pure Storage



Many users are adopting Kubernetes solutions after having had their traditional non-K8S applications run on standard enterprise storage first. This is usually considered a safe bet for first deployment, but customers soon realise that their traditional storage can't cope with the sheer number of backend operations required by K8S at scale. Furthermore, they tend to be vendor-locked solutions (for example, production site uses VendorX, DR site uses VendorY, and cloud uses neither). This, together with the complexity involved in managing multi-cloud environments with traditional storage, encourages users to look for smarter and more efficient alternatives.

Pure's Portworx offering brings much needed enterprise-class storage functionality to your K8S environment, allowing Kubernetes to host your stateful and non-stateful workloads with the storage located as close as possible to your application. Portworx also allows your Infrastructure teams to deploy Disaster Recovery (DR) and Backup processes that normally wouldn't be available to you within Kubernetes for Azure, AWS, or on-prem. Portworx is the gold standard when it comes to cloud-native K8S storage for the enterprise, and can easily reduce compute costs by 40-60%, and storage costs by 30% or more.

In brief, Portworx contains several components enabling DR, Backup and migration, and is solely built with K8S in mind. These tools will work regardless of where you have your K8S storage located, and will allow for backup and restoration anywhere. With PX-Store and PX-Secure you are able to control, access, and encrypt your storage whilst maintaining the flexibility to deploy it anywhere, On-Premise or in any cloud provider, removing limitations and lock-ins with specific hardware vendors. PX-Autopilot provides rules-based auto-scaling, automatic expansion, and re-balancing of Portworx storage pools allowing you to provision storage only when needed. Eliminate over-provisioning, save money!

Yeah, yeah, I'll never get sign off



As more and more workloads move to the cloud, we see almost every customer looking to modernise their application estate by moving away from IAAS, and towards PAAS and K8s. The benefits to this are huge, both in terms of costs savings, and the reduction of time spent coding, leaving more time to innovate. Thus, if these services are fully embraced, there is potential for significant cost savings.

So, you are likely about to free up some significant budget by adopting or moving to a K8S-managed containerised infrastructure, which is obviously a good thing. However, before telling the money folk just how much, make some time to evaluate the leading solutions to help you operationalise and secure your K8S clusters. It'll probably save you even more money in the long run and will definitely save you some headaches.

Here at Bytes we can help you evaluate your strategy for application modernisation and make sure it's the right fit for your organisation.

If you have any questions around the tools that Bytes, Red Hat, or Pure Storage can offer your organisation, contact us today at:

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