Container Peer Community. | RedHat

State of Workloads Deployed on Containers and Kubernetes

Applications are increasingly built as discrete functional parts, each of which can be delivered as a container. That means for every application, there are more parts to manage. To handle this complexity at scale, teams need a policy-driven, automated solution that dictates how and where containers will run. In a consistent way. Kubernetes is an open-source, extensible container orchestrator designed to handle these challenges. It is at the inflection point of mainstream adoption by organizations globally.

Red Hat leveraged the Gartner Peer Community to survey 500 enterprise tech leaders and find out what workloads they are deploying on containers and Kubernetes, and why and how they are deploying those workloads across hybrid and multi cloud environments, including how to optimize and secure them.

Data collected from: January 5 - March 30, 2020 | Respondents: 500 IT leaders

Containers and Kubernetes-based application platforms are increasingly being used for both modernizing existing non-container native applications as well as developing new cloud-native apps.

Nearly half of respondents (47%) are deploying a mix of custom developed and commercial ISV workloads on containers and Kubernetes. With the ecosystem maturing and containers and Kubernetes being considered default options for deployment, we also see a slight increase in respondents deploying ISV apps from 8% from 2021 to 12% now.

While refactoring and replatforming are the more challenging application modernization approaches, they provide a lot of benefits. Organizations are clearly investing efforts into modernization, with 83% of organizations working towards either refactoring, replatforming or both.

QUICK TIP:
The Migration Toolkit for Applications and open-source projects like konveyor.io can help you in your modernization journey as you decide the best approaches, tools and partners.

Tech leaders are deploying a wide variety of mission-critical workloads on Kubernetes and reaping the benefits.

QUICK TIP:
The demand for data, analytics and AI/ML workloads is driving significant usage patterns on Kubernetes.

The vast majority of tech leaders (87%) are deploying or planning to deploy a blend of both stateless and stateful workloads on containers and Kubernetes.

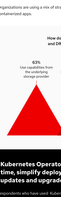
QUICK TIP:
This is an area where Kubernetes Operators can make a big difference, since they have the expertise of the application built in automation for Day-1 & Day-2 operations.

Running workloads consistently across the hybrid cloud is crucial for tech leaders

A vast majority of respondents (93%) are deploying their Kubernetes workloads on a public cloud, and 54% are deploying Kubernetes workloads on-premises.

QUICK TIP:
This indicates a large trend of hybrid deployment across our respondents' organizations. Most of them are likely using or plan on using multiple environments to deploy their workloads.

88% of tech leaders indicate that the ability to run workloads consistently across a hybrid environment is important for their organization.



QUICK TIP:
Organizations will have to start thinking about strategies for consistently managing their Kubernetes clusters and workloads as well as cutting security as we see a rise in applications being built across multiple environments and infrastructures.

It's not just vanilla Kubernetes! The focus is on securely building and deploying applications to production

94% of respondents are adopting various cloud-native capabilities to optimize application development and delivery.

CI/CD, GitOps and DevOps models all allow organizations to define a reliable and consistent workflow for application development, taking away a majority of provisioning work from developers.

In a different way, Serverless allows developers to focus on their code without worrying about the infrastructure and having to manage servers.

Respondents have also become increasingly security-conscious and **93%** of them are already utilizing solutions to build a secure software pipeline for their applications.

They are utilizing multiple security solutions, with a majority utilizing security capabilities already offered from by the containers and Kubernetes platforms.

86% also see the need for enhanced capability and are investing more resources in integrating security products from ISVs as well as open source tools.

Organizations are using a mix of strategies to ensure backup, recovery and DR for their containerized apps.

Kubernetes Operators and Helm charts save time, simplify deployment, and automate updates and upgrades

Respondents who have used Kubernetes Operators and Helm charts say they automated updates and upgrades (28%) and reduced deployment time (18%).

Consistency across environments is key

Respondents indicate that the primary reasons their company deploys workloads on containers and Kubernetes are because they need consistency across environments, because they require agility and because they want portability.

Respondent breakdown

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Source: Gartner Peer Community, "State of Workloads Deployed on Containers and Kubernetes" survey