# Kubernetes Comes to the Enterprise

# Enterprise Kubernetes

Kubernetes is simultaneously the most powerful yet complex IT platform to be deployed by enterprise IT teams in modern times. On the one hand, it provides IT operations teams with orchestration capabilities needed to scale container workloads up and down on demand to flexibly help curtail infrastructure costs.

However, deploying and maintaining Kubernetes clusters requires a significant amount of IT expertise that is challenging to find and retain. IT teams are also debating the merits of deploying a small number of large Kubernetes clusters that multiple applications share, versus fleets of Kubernetes clusters running a small number of applications.

For the long term, the hope is advances in automation will make it easier for mere IT mortals to build and deploy applications on Kubernetes platforms that will drive a new era of hybrid cloud computing. In the meantime, enterprise IT leaders need to carefully consider when and where to employ Kubernetes in the enterprise.

Slow but Steady Adoption

**77%**

of enterprise IT teams have been working with Kubernetes clusters in some form for the past two years

**40%**

have deployed Kubernetes clusters in a production environment

**<25%**

have deployed Kubernetes clusters in a production environment within the last 12 months.

# Half of developers report Kubernetes complexity is slowing adoption.

Source

**±75%**

of organizations are adopting Kubernetes to deploy new apps more quickly.

**45%**

are adopting Kubernetes to support changes in business stragegy

**48%**

are adopting Kubernetes to support program areas that need to evolve

**44%**

are adopting Kubernetes to help increase revenue or profits.

Source

Kubernetes Challenges

# The Core Deployment Challenge

The most widely encountered hurdles are:

## 55%
**Lack of in-house skills**

## 33%
**Incompatibility with legacy systems**

## 35%
**Compliance Concerns**

## 37%
**IT Infrastructure**

## 30%
**Difficulty training users**

## 19%
**Integrating cloud-native applications**

### Kubernetes Deployment Options

Most Kubernetes instances today are deployed on virtual machines either in the cloud or an on-premises IT environment. However, a case for deploying Kubernetes on bare-metal servers is now being made.

Source

# The Day Two Challenge

Organizations not yet using Kubernetes spend an average of 14.3 hours per week on low-level DevOps tasks.
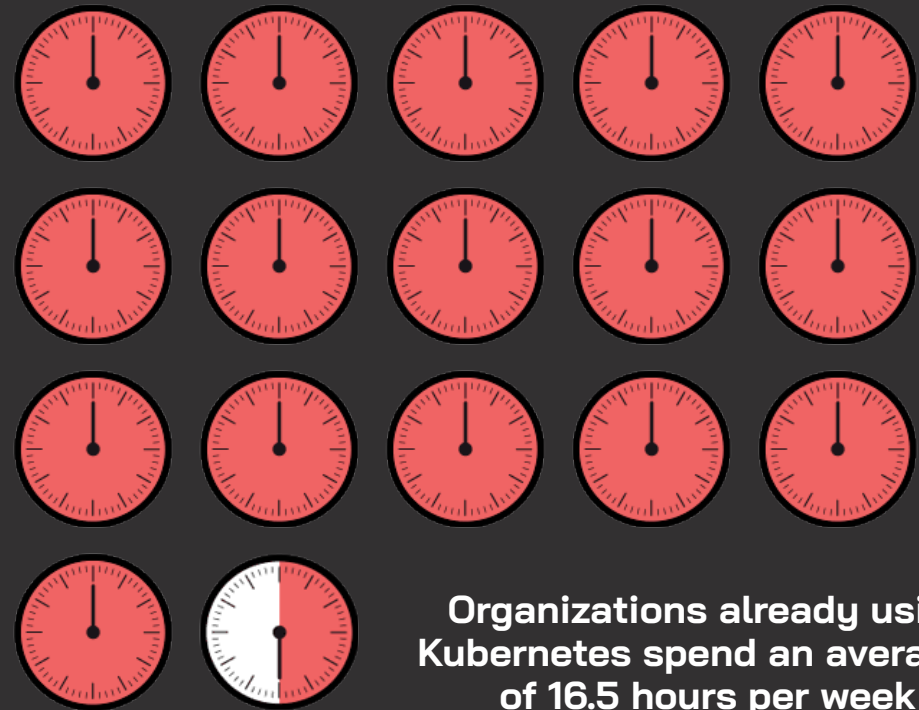
Organizations already using Kubernetes spend an average of 16.5 hours per week on low-level DevOps Tasks.

Source

A Kubernetes maturity model created by the Cloud Native Computing Foundation (CNCF) suggests organizations should be move as fast as possible to embrace higher levels of automation.

# Race to the Edge

# The most popular edge use cases are:
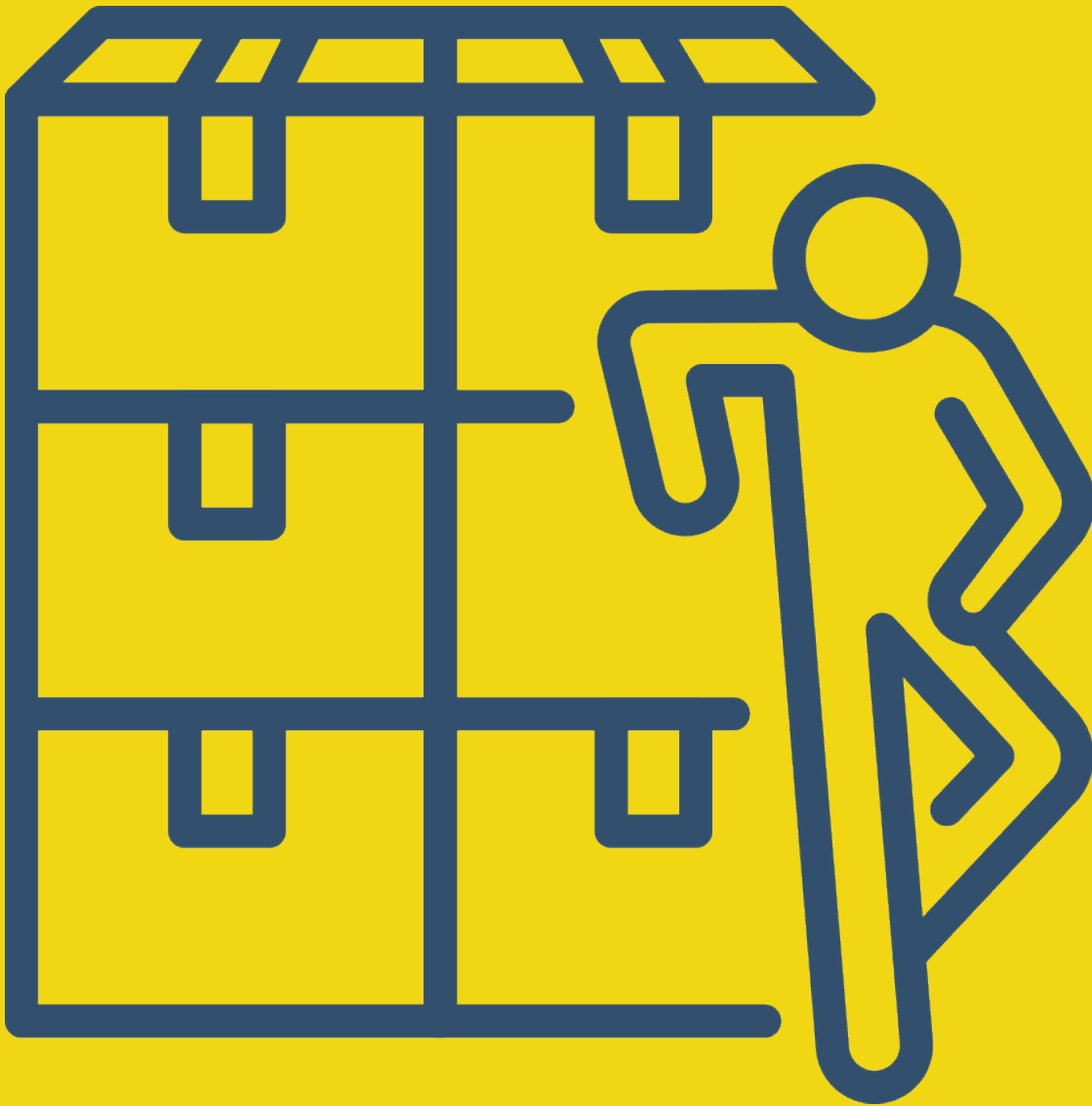
**54%**

Manufacturing/Industrial IoT

**32%**

Telecommunications and
mobile edge computing

**32%**

Image Processing

Just under half of organizations (49%) are already managing 1–10 clusters.

Source

# Stateful Applications Come This Way

**70%**

**of all organizations are now running stateful applications on Kubernetes clusters.**

**20%**

of organizations expect to see these types of workloads deployed on the platform.

Source

# Costs Start to Rise

# The Rising Costs of Kubernetes

More than two-thirds of organizations (68%) have seen an uptick in Kubernetes costs.

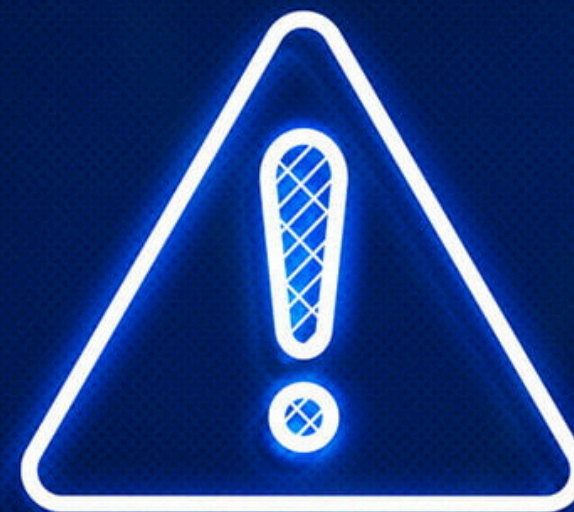44% of organizations rely on monthly estimates to control Kubernetes costs.

24% of organizations are doing nothing to control Kubernetes costs.

More than half of respondents report they saw a 20% increase in Kubernetes related spending in the last year.

**Source**

# Security Raises its Ugly Head

A full 94% of respondents have experienced a security incident involving their Kubernetes and container environments during the last 12 months.

More than half of respondents (55%) needed to delay deploying Kubernetes applications into productions because of a security issue.
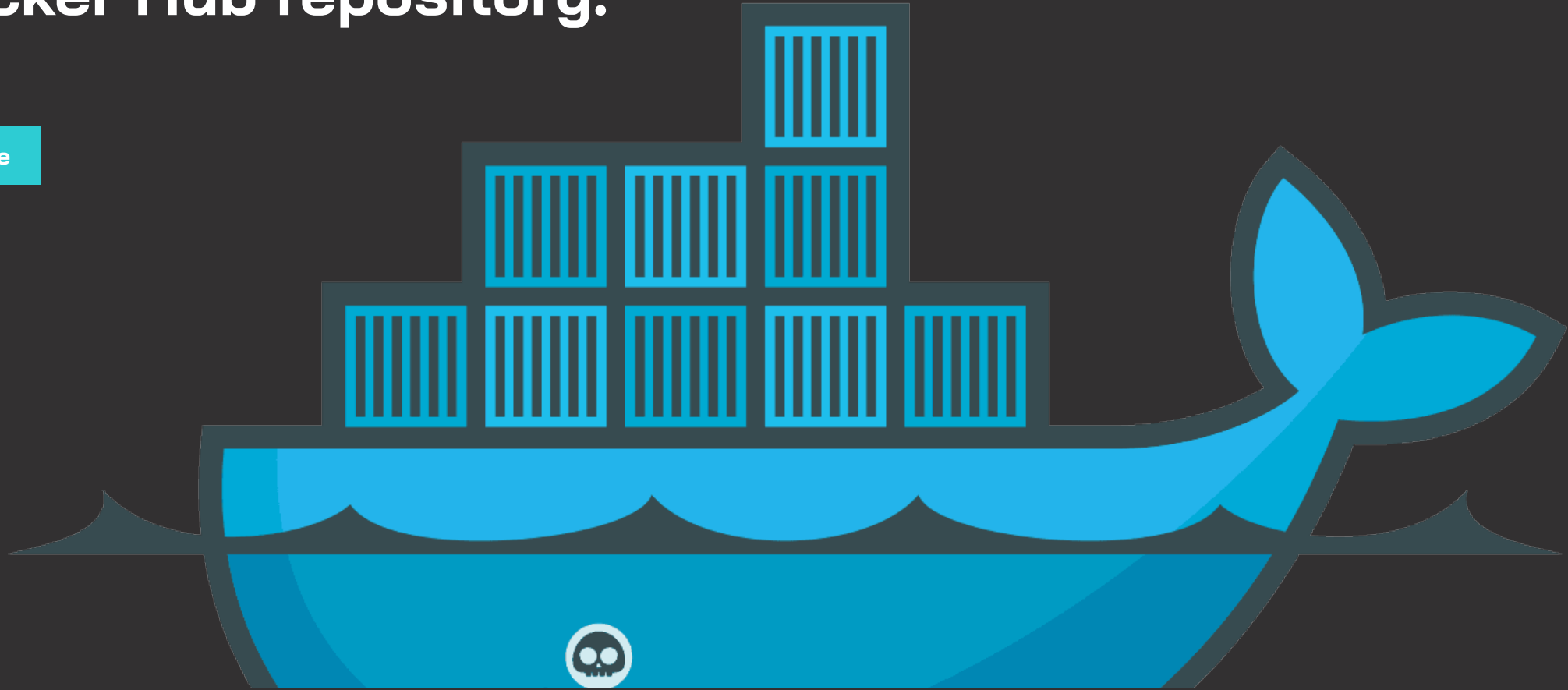
Just under 60% of respondents also noted there was a misconfiguration incident in their environments over the last 12 months.

Source

Five malicious Docker images
have collectively been pulled
**more than 130,000 times** from the
Docker Hub repository.

# Looking Ahead...

TURN
TO CLEAR
VISION

# Flight to Managed Kubernetes Services

Only **18%** of organizations deploy Kubernetes themselves versus relying on an external provider.

# The Hybrid Cloud Factor

Most organizations (79%) said having workloads to be completely portable with no vendor lock-in is an extremely important element of their digital transformation goals. That capability is a core promise of the Kubernetes application programming interface (API).
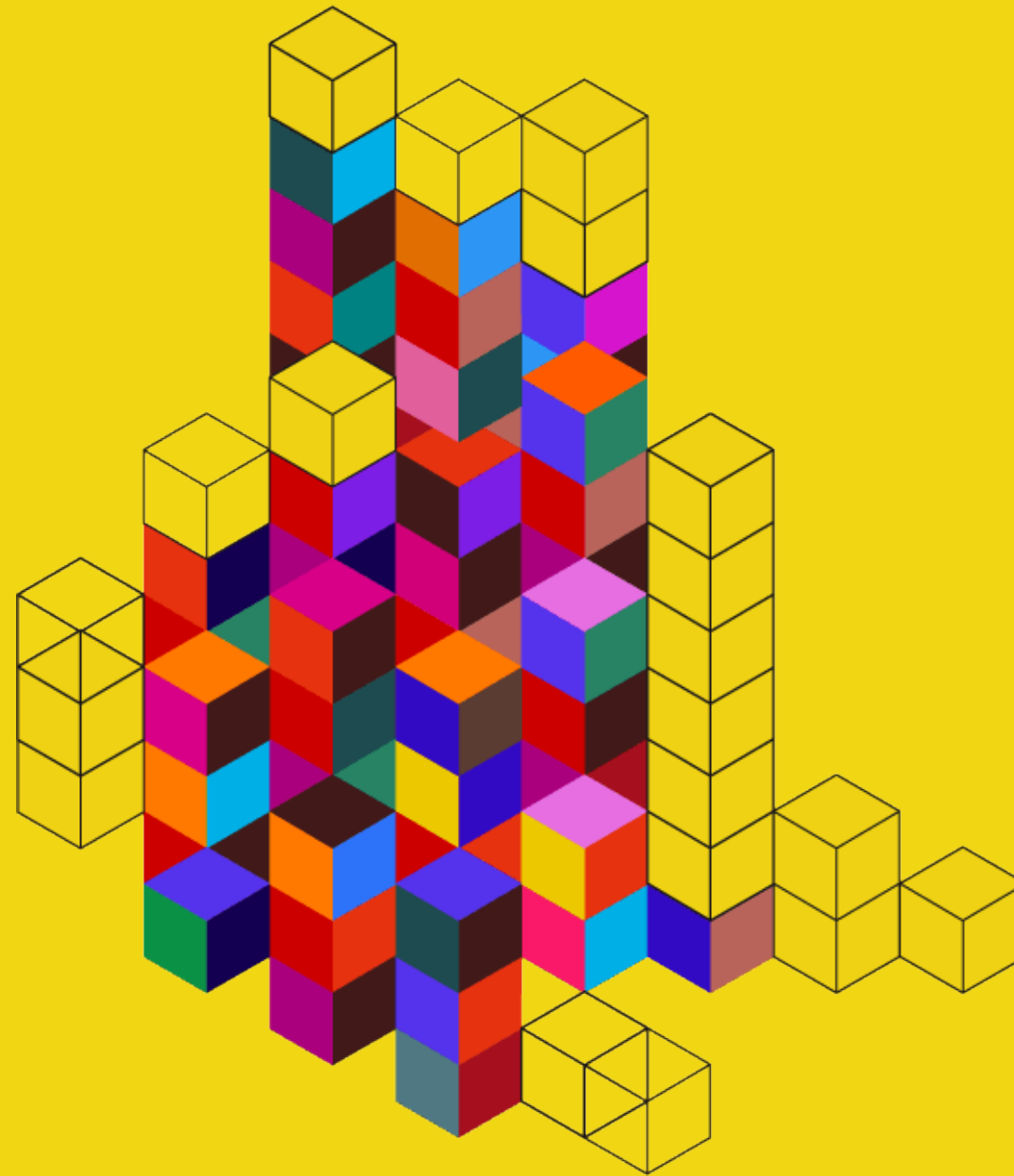
**Source**

# Get Ready for a Lot More Container Apps

The number of application container image repositories on Docker Hub also reached 12.5 million, up from 8.3 million in February 2021. Docker, Inc. reports a more than 50% year-over-year increase in the number of application components that developers employ to build applications.

Source

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