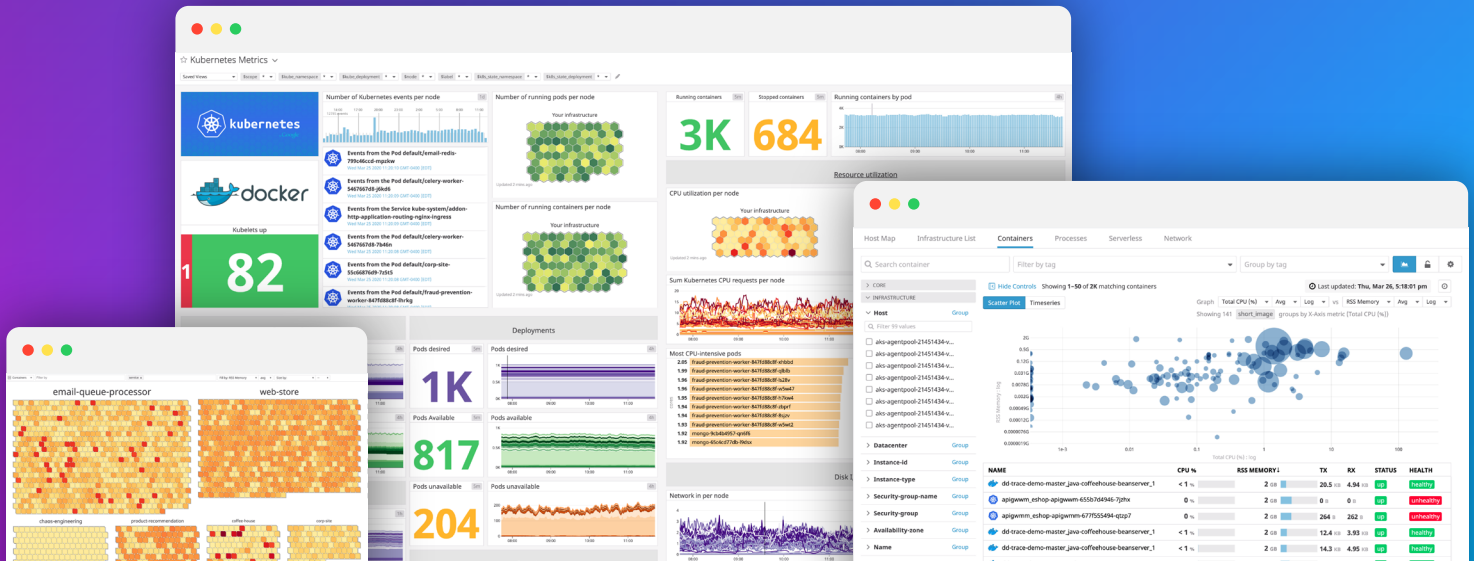


Datadog Kubernetes Monitoring



Get maximum visibility into your Kubernetes environment within minutes.



Introduction

As organizations move towards containerized workloads, they are also adopting orchestration systems like Kubernetes to increase scalability and resilience. But while Kubernetes significantly decreases time-to-market, monitoring these complex environments can pose significant operational cost. Whether you're a mature Kubernetes shop with large containerized workloads, or just beginning your move to containers, **Datadog provides real-time visibility into your entire Kubernetes environment—from your hosts, containers, and applications, down to Kubernetes itself—in a matter of minutes.**

Challenges with Kubernetes

If you are used to monitoring traditional, long-lived hosts such as virtual or physical machines, Kubernetes requires you to rethink your monitoring strategies in several ways:

- **There are now more components to monitor**
In traditional, host-centric infrastructure, you have only two main layers to monitor: your applications and the hosts running them. Orchestrated environments add new layers of abstraction, meaning that you also need to monitor your containers—as well as Kubernetes itself—to comprehensively track your infrastructure.
- **Applications are highly distributed and constantly moving**
Kubernetes is constantly shifting pods across hosts or scaling them up and down to accommodate demand. To understand what your customers are experiencing, you have to keep tabs on all your pods—and the applications running in them. However, since Kubernetes automatically schedules your workloads, it can be difficult to keep tabs on where they are actually running.
- **Tags and labels are essential for continuous visibility**
With so many moving pieces in a typical Kubernetes cluster, tags and labels provide the only reliable way to identify your pods and the applications within. Without labels or tags, it becomes nearly impossible to aggregate or interpret performance data from your ever-changing Kubernetes infrastructure.

All your Kubernetes data in one place

Datadog helps you understand what's going on across all the layers of your Kubernetes environment so you can deliver the best customer experience possible. You can easily deploy the Datadog Agent on every node in your cluster using the DaemonSet or Datadog Operator. With our Kubernetes integration, you can:

KEEP YOUR CONTROL PLANE HEALTHY

- **Track every part of the Control Plane.** Monitor the health and performance of every component of the Control Plane: the Scheduler, API server, Controller Manager, and etcd. A healthy Control Plane is able to schedule and orchestrate workloads, which keeps the cluster running smoothly.
- **Set up automated alerts.** Detect and resolve critical Control Plane issues, such as anomalous spikes in non-200 HTTP response codes, before they affect your customers.

MULTIDIMENSIONAL VIEW INTO KUBERNETES WORKLOADS

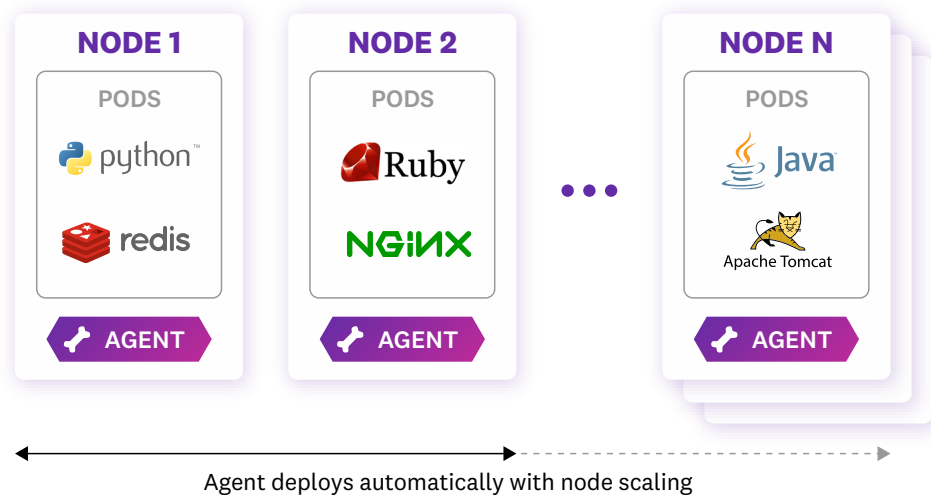
- **Full-stack visibility.** Navigate seamlessly between metrics, logs, and distributed traces from your Kubernetes workloads and applications to quickly troubleshoot problems. Visualize your data in real time with our customizable out-of-the-box dashboards.
- **Search and investigate any Kubernetes resource.** Get real-time views into all your individual containers and orchestration's objects, with additional insights into their overall health. Use tags and Kubernetes labels to filter and group your Kubernetes resources to surface performance issues.
- **Visualize all Kubernetes clusters in one place.** View your entire Kubernetes environment in the Datadog Cluster Map to review the state of any of your deployments and pods at a single glance.

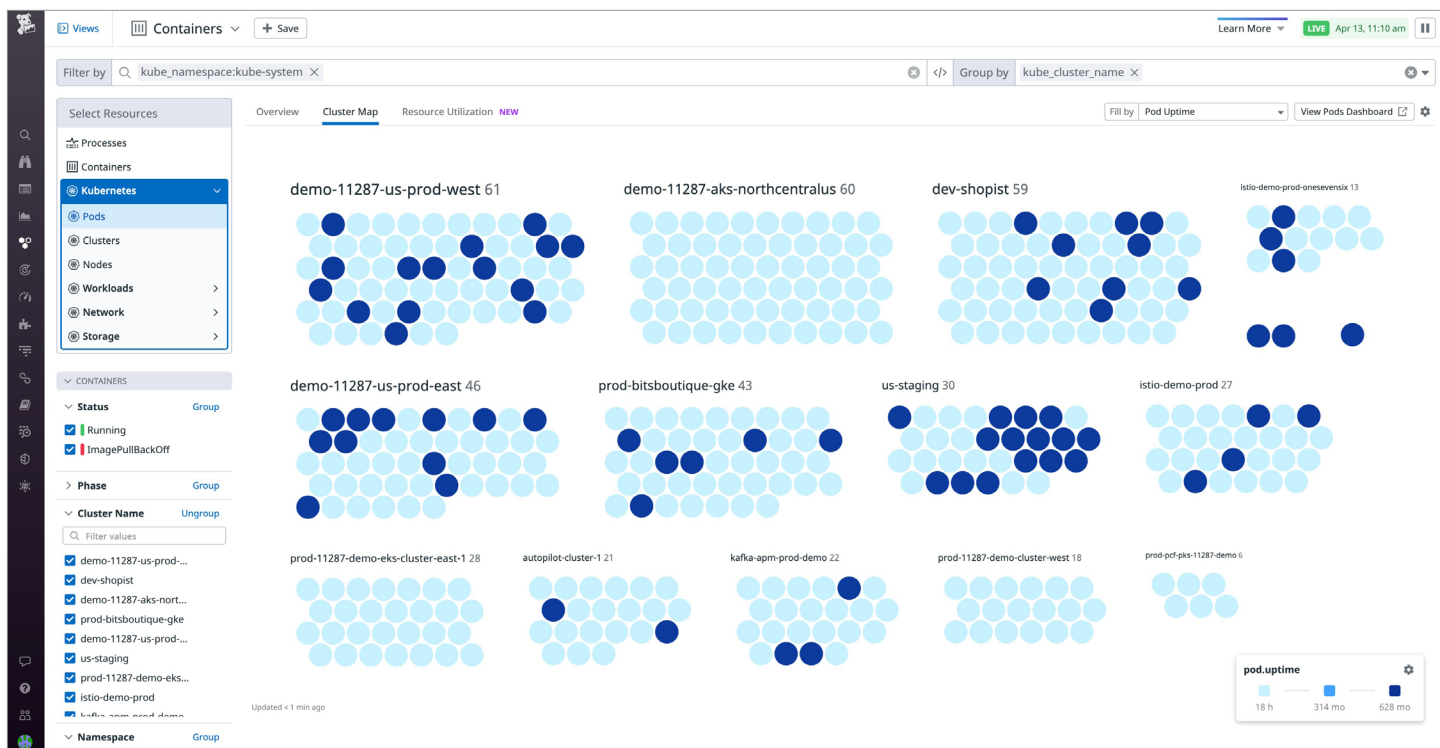
AUTODISCOVER SERVICES NO MATTER WHERE THEY SPIN UP

- **Dynamically monitor orchestrated services.** Datadog detects changes in your cluster and automatically begins collecting data from various cluster components (e.g., the Kubernetes API server and etcd) and popular infrastructure technologies (e.g., Apache Tomcat and Redis), without any user setup. And you can also define custom configuration templates for Agent checks and specify which containers each check should monitor.

AUTOSCALE WITH ANY METRIC

- **Ensure quality customer experience at any scale.** Use Datadog alongside Kubernetes's Horizontal Pod Autoscaler to ensure your applications remain highly available even during times of unexpected traffic. Scale your workloads based on any metric you're monitoring with Datadog—from integration-specific metrics (e.g., PostgreSQL query throughput) to custom business metrics (e.g., daily pageviews).





Monitor any Kubernetes platform, at any scale

Kubernetes clusters run on an increasingly diverse range of platforms. Some organizations opt for a fully managed platform, while others self-host on Rancher, OpenShift, or Anthos. With Datadog's 500+ out-of-the-box integrations—including all major cloud providers—you can monitor the health and performance of all your containerized applications as they come online, regardless of the underlying platform.

From cluster status and low-level resource metrics to distributed traces and logs, Datadog brings all the data from your Kubernetes infrastructure and applications onto a single, unified platform. Datadog also automatically enriches your data with tags from Kubernetes, Docker, and cloud providers, making it easy to investigate issues that arise.

Whether you're running tens or thousands of nodes, **Datadog gives you deep visibility into Kubernetes clusters, with minimal setup, so you can build, deploy, and scale features with confidence.**

