An introduction to Kubernetes

7 expert tips for deploying containers

Containers are an exciting technology that promises to simplify DevOps and deliver unprecedented portability and scalability for applications living in a hybrid cloud world. You may be familiar with Kubernetes, a very popular open source platform for managing containerized workloads and services. However, there are a lot of questions you'll need to answer before you start your first project.
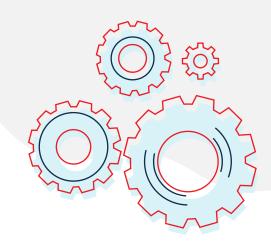
The following seven points will help you better understand containers and what you need to know to get started.

1 Containers are Linux®.

Linux is foundational to containers. Containers were first created in Linux, and the technology exists because of key Linux subsystems. When you deploy apps into containers, those apps are running within Linux.

2 Containers are the foundation for Kubernetes.

Kubernetes was also built from Linux. It uses key Linux constructs, system calls, libraries, and features to manage infrastructure and orchestrate containers. When choosing an operating system (OS) for your Kubernetes environment, you'll want a leading, trusted Linux distribution.

3 There's more to containers than just Kubernetes.

To complete the Kubernetes picture, you also need a Linux OS, a container registry, container networking, container storage, logging, monitoring, and a method to integrate your continuous integration and continuous delivery (CI/CD) pipelines. For richer developer experiences, you'll want advanced capabilities like service mesh, application programming interface (API) gateways, application integration workflows, and an integrated developer interface and built-in source control system.

4 The technology is still evolving.

Since its introduction in 2015, Kubernetes has evolved from a high-level concept to a problem solving, highly scalable, automated solution for both operations and applications. If you're thinking about adopting Kubernetes, it's essential to choose a supported, tested, certified solution that will allow you to evolve along with the technology without introducing unnecessary costs, complexity, or risks.

5 The development team needs to weigh in.

They're the ones who are going to be using it, so make developer buy-in part of your Kubernetes planning. Since developers value their time, get ahead of objections with a Kubernetes deployment model that includes easy-to-use, familiar tools that support teamwork and supercharge efficiency.

6   Don't forget about operations.

Kubernetes introduces entirely new operational concepts and structures that impact day-to-day operations across the enterprise. Your infrastructure, operations, application, enterprise architecture, and line of business groups should all be involved in a Kubernetes decision.

7   Build or buy?

Building from scratch may seem like it could save costs, but that's usually not the case. In fact, when you implement a do-it-yourself (DIY) Kubernetes solution, you're actually increasing costs and risks. That's because you're signing your operations team up for a continuous, time consuming, upgrade-and-test cycle that might break compatibility. Commercial distributions of Kubernetes are time-tested and supported, saving operational costs and reducing risks to your environment.

Bottom line: when it comes to Kubernetes and containers, the operating system matters.

Linux is intrinsic to both containers and Kubernetes. Red Hat® Enterprise Linux® is the industry's leading Linux distribution. It's certified across thousands of physical and cloud footprints so applications teams can build and deploy on a robust, consistent, and secure environment no matter where they're running their code. Red Hat Enterprise Linux provides a solid foundation so you can use a robust portfolio of virtualization, private cloud, and Kubernetes-native solutions across your hybrid IT environment.

Working with an expert Kubernetes partner can simplify your journey to containers, with specialized expertise that helps you spin up new projects quickly and with less risk. Red Hat partners offer a comprehensive portfolio of container products and services including developer tools, security, application services, storage, and management solutions.

Get started with Red Hat

Learn more about Red Hat's flexible hybrid cloud solutions and find additional resources.

Explore Red Hat ▶

About Red Hat
Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

About HCL Technologies
HCL Technologies is a next-generation global technology company that helps enterprises reimagine their businesses for the digital age. Our technology products and services are built on four decades of innovation, with a world-renowned management philosophy, a strong culture of invention and risk-taking, and a relentless focus on customer relationships. HCL also takes pride in its many diversity, social responsibility, sustainability, and education initiatives. Through its worldwide network of R&D facilities and co-innovation labs, global delivery capabilities, and over 208,000+ "Ideapreneurs" across 52 countries, HCL delivers holistic services across industry verticals to leading enterprises, including 250 of the Fortune 500 and 650 of the Global 2000.