10 Best Docker Alternatives 2022

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Docker is a popular open source platform for developing, testing, deploying, and managing applications. Notably, Docker has a virtual production environment called containers that can be easily shared with others.

However, some developers have complained about the challenges associated with using Docker containers during application development.

Popular Docker alternatives have taken advantage of some of these challenges to create virtualized platforms that add many features that Docker lacks.

In this article, TipsMake will show you 10 best Docker alternatives that are ideal for creating isolated virtual environments for application development and providing users with unique benefits.

1. Podman

The first Docker alternative on this list is Podman. Podman is an open source alternative virtualization platform by RedHat. Like Docker, you can use the Podman container tool to develop, manage, and run OCI containers on Linux. However, the Podman Container Engine runs on a non-daemon architecture. does not require root privileges.

With Podman, containers are run in the background without root privileges because it integrates directly with systemD (the system daemon), allowing it to run in the background. Thus, the system takes over the Docker daemon functionality in Podman.

2. OpenVZ

Another Docker alternative on today's list is OpenVZ.

OpenVZ from Virtuozzo is a Linux-based containerization technology, similar to Docker in features and functionality, but with the ability to do more than just deploy applications.

OpenVZ allows users to create several isolated Linux containers on a single Linux host. Therefore, these Linux-based containers are used to create an isolated environment to host virtual servers (for example, most virtual private servers implemented in VPN technology will host in OpenVZ containers).

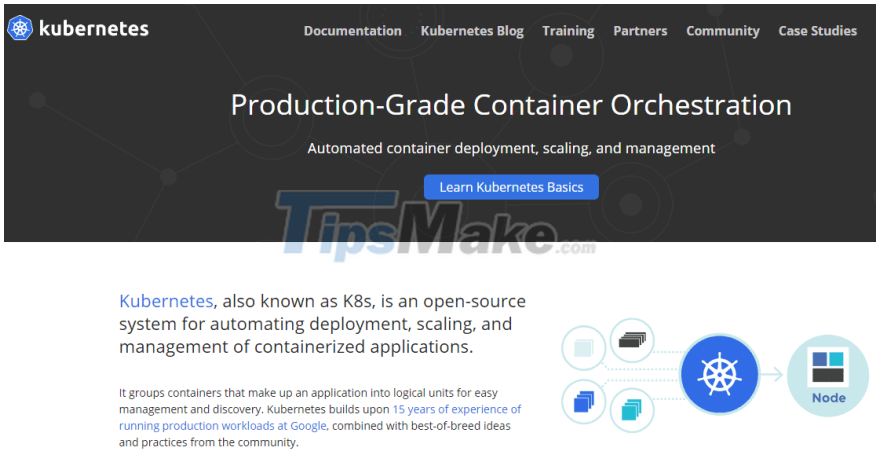
3. VirtualBox

VirtualBox, first released in 2007, is functionally similar to Docker because they are both virtual platforms that developers can use to create and run applications. However, unlike Docker, developers can use VirtualBox to create several virtual machines that run on different operating systems.

This facilitates applications that require other operating systems to run. In addition, since VirtualBox runs on X86 and AMD64/Intel64 operating systems, it allows easy storage and backup of files to cloud-based storage facilities and can also switch between operating systems without There is no need to store data in containers on

Docker.

4. Kubernetes (K8)



Unlike the other Docker alternatives on this list, Kubernetes is a popular choice.

Kubernetes (aka K8) is an open source container automation system developed by Google for managing container applications in physical, virtual, or cloud environments. Kubernetes acts as a orchestrator controlling thousands of containers and workloads.

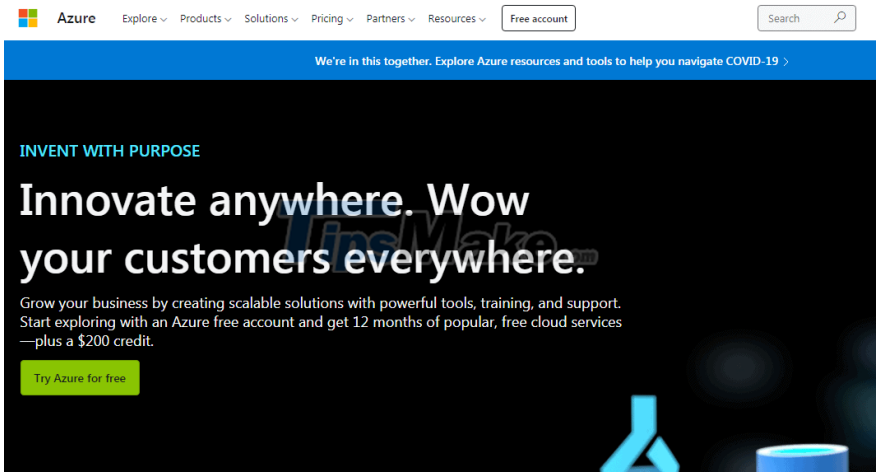
If you're running multiple containerized applications regardless of their hosting platform, you'll need Kubernetes, which serves as an API to orchestrate, control, schedule, and automate multiple containers.

5. LXC (Linux Containers)

LXC is a Linux-based containerization tool that allows users to create multiple separate Linux environments on a single Linux machine. Unlike Docker, LXC acts as a hypervisor to create multiple Linux machines with separate file systems, network features, and applications.

While Linux's LXC is an old containerization technology abandoned by Docker, it's made a strong comeback by building on Docker's shortcomings including reduced disk performance, poor volume management, and sharing server resources like IP address, file system, hostname, etc.

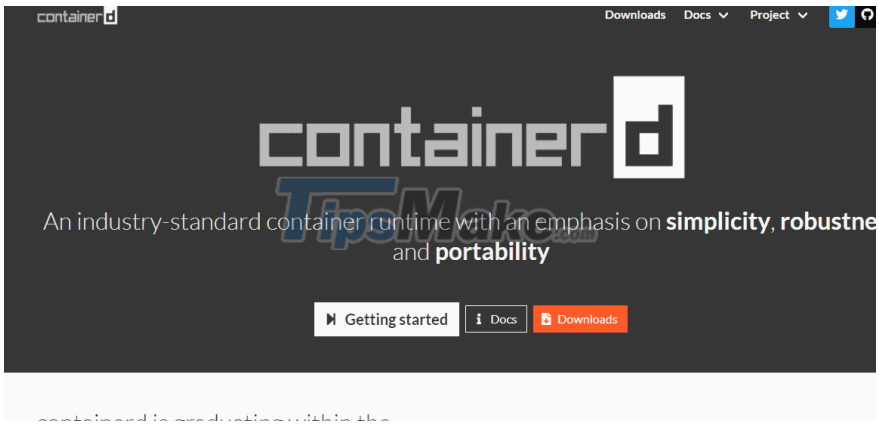
6. Microsoft Azure Container Registry



Microsoft Azure Container Registry is a private Docker registry for storing and managing container images using DCLI (Docker Command Line Interface) tools. It provides users with more robust security options, including container vulnerability scanning, runtime protection, and Twist Lock compatibility.

Microsoft Azure allows developers to migrate easily from Monolithic architecture to containerized environments. It also makes container management easy without requiring expertise. This makes Microsoft Azure a more powerful option for managing container clusters, allowing developers to easily run and scale applications using Kubernetes, Docker Swarm, and dispatchers other containers.

7. Containerd

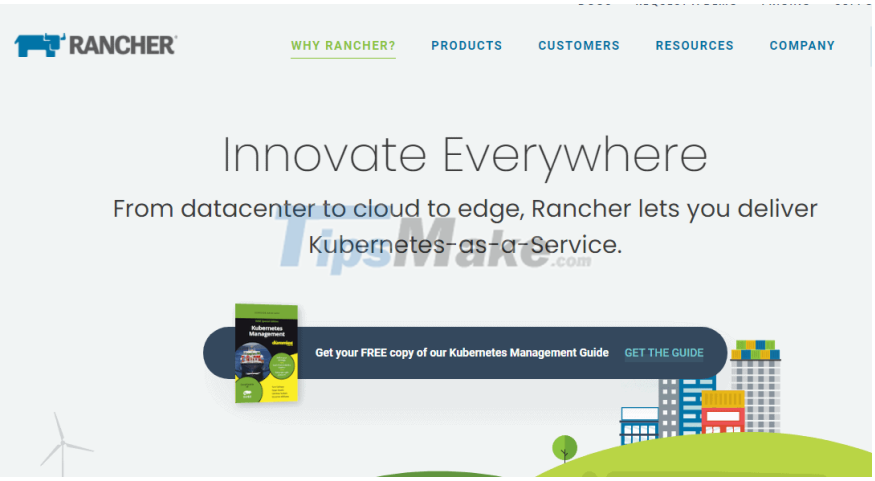


Containerd is another contender in the list of best Docker alternatives. Containerd is a standalone container runtime that combines simplicity, robustness, and portability at the core of its operations. Containerd was previously a tool that ran as part of Docker container services until Docker decided to turn its components into standalone components.

In short, Containerd acts as a client layer on which platforms like Kubernetes, Docker, etc., can build without worrying about the Host Kernel.

With Containerd, you enjoy push and pull, manage container creation and execution using the image management API, snapshot management, and more without worrying about the host operating system.

8. Rancher

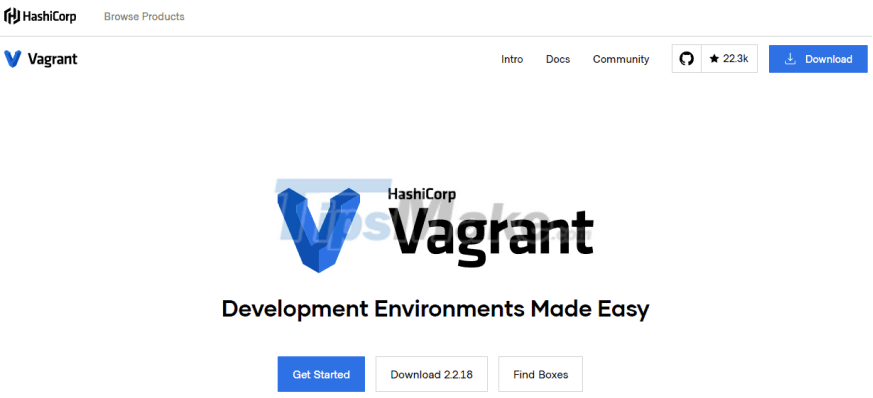


Rancher is a high-level orchestration software for managing clusters of containers. Often, when administrators manage multiple clusters, it becomes difficult to manage, each with a unique access control configuration and settings.

Rancher makes it much easier to manage a complex environment using automation. For example, in a large organization, each department may have a cluster. Manually managing an entire cluster as a group becomes difficult, especially if an administrator has to revoke user permissions across multiple groups in an organization.

With Rancher, administrators can remove users from all groups at once, making the process faster and error-free.

9. Vagrant



HashiCorp Vagrant is a tool for conditional replication of multiple virtual environments across multiple virtual machines and operating systems.

Vagrant is used to set up a virtual environment that can be replicated multiple times across different networks, VMs, and operating systems, as Vagrant can create identical virtual environments for creation, production and application deployment.

With Vagrant, you can create images of virtual machines and share them with your teammates across multiple platforms to create virtual environments with the same compilers and libraries. Unlike Docker with its user-level isolation, Vagrant provides users with separate features and functions that can be used together.

Overall, Vagrant is used to create single-processor environments on top of virtual machines, to give users the advantages of automation, reduce setup time, and increase productivity.

10. ZeroVM

Last but not least in the list of best Docker alternatives is ZeroVM.

ZeroVM is an open source, lightweight virtualization technology based on Google's Chromium Native Client (NaCl) project. With ZeroVM, users can create a secure and isolated environment to embed applications.

Unlike other platforms that virtualize the entire system, ZeroVM virtualizes at the application level by embedding an application in an isolated environment, making deployment faster.

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