

# Speed Jenkins performance with container storage



Using Red Hat OpenShift Container Storage to provide persistent storage for Jenkins pods delivers up to

**98%**

faster build times.<sup>1</sup>

## Business relies on rapid application development

Applications are at the core of modern business. Within organizations, developers need to build and improve applications quickly to meet increasing demands. Development processes must be as efficient as possible to support business effectively. Tuning and adapting these processes can significantly speed operations and increase developer productivity.

Combined with Red Hat® OpenShift® Container Platform and Jenkins, Red Hat OpenShift Container Storage can help you accelerate your development pipelines, simplify application deployment and portability, and improve efficiency.

## Create an efficient application development environment

[Continuous integration/continuous deployment \(CI/CD\) pipelines](#) can help you streamline development. CI/CD introduces ongoing automation and continuous monitoring throughout the application life cycle – from integration and testing to delivery and deployment – to boost efficiency and speed. Many organizations use Jenkins, an open source automation tool, within their CI/CD pipelines.

Combining Red Hat OpenShift Container Storage with Jenkins and Red Hat OpenShift can help you speed time to market for new applications and features, improve developer productivity, and improve application development workflows. An enterprise-ready Kubernetes container platform, [Red Hat OpenShift Container Platform](#) provides full-stack, automated operations for application development and deployment. It is optimized to improve developer productivity and promote innovation. Running Jenkins in Red Hat OpenShift containers allows you to build and test your software projects continuously, improving software quality. Developers can more easily integrate changes and users can freely obtain fresh builds.

[Red Hat OpenShift Container Storage](#) provides flexible, cost-effective, and developer-friendly storage for containers. It helps you standardize storage across multiple development and deployment environments and easily integrates with Red Hat OpenShift to deliver a persistent and foundational storage layer for containerized applications. Self-service capabilities and automated operations streamline storage provisioning and management.

## Improve Jenkins build and test performance with persistent storage

The build and test phase of CI/CD pipelines can be a source of delays at scale. During this phase, Jenkins assembles all application dependencies to create a build for testing. When developers commit large amounts of code simultaneously, the amount of time needed to assemble these dependencies can be significantly large, leading to longer build times.

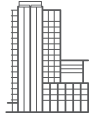
Using persistent volumes to store dependencies for concurrent builds can greatly reduce build and test time for subsequent instances. Red Hat OpenShift Container Storage provides developer-centric storage to support this. Fast persistent volume provisioning and attachment improve developer productivity. Support for large numbers of persistent volumes per node allows you to test more applications on a smaller footprint. And low concurrent use and input/output (I/O) throughput per persistent volume reduces network bandwidth requirements.



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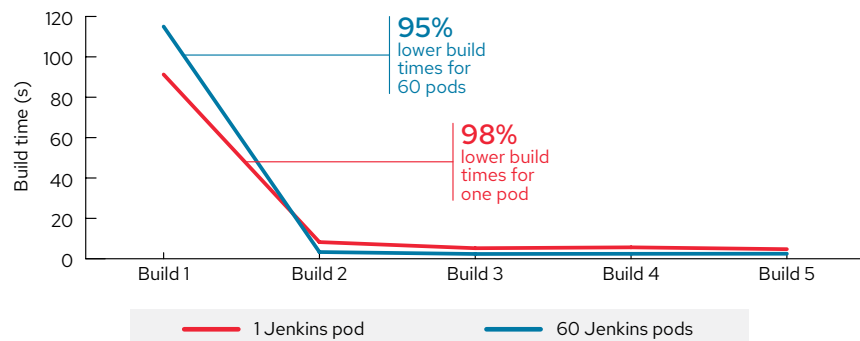


Figure 1. Jenkins build performance test results

## Examining build performance with persistent volumes

To show the benefits of using Red Hat OpenShift Container Storage persistent volumes with Jenkins, two tests were performed – the first for a single Jenkins pod, and the second for 60 parallel Jenkins pods – using the same workload. Build times for each run were gathered and evaluated. These times are workload-specific and vary by application.

First, we created one Jenkins pod with an attached persistent volume and ran 5 build jobs. For our workload, this resulted in an initial build time of 115 seconds and subsequent build times of 2.4 to 3.3 seconds. The longer initial time is due to generating, writing, and replicating the persistent volume. Subsequent builds used the populated persistent volume, reducing build time by up to 98%.

Next, we created 60 Jenkins pods with an attached persistent volume, in parallel, and ran 5 build jobs each. For our workload, this resulted in an average first build time of 91.3 seconds and subsequent average build times of 4.7 to 8.2 seconds, a reduction of up to 95%.

## Learn more

Modern business relies on applications. Using Red Hat OpenShift Container Storage to attach persistent volumes to build pods in your application development and testing processes can reduce build times, increasing your efficiency and productivity. Test Jenkins and Red Hat OpenShift Container Storage together to see the benefits in your own environment. Read the [Deploy Jenkins Pipelines in OpenShift 4 with OpenShift Container Storage 4 blog post](#) to learn how.

Learn more about Red Hat OpenShift Container Storage at [openshift.com/storage](https://openshift.com/storage).