

VMware vSphere Kubernetes Service supports faster streaming & OLTP than bare-metal Red Hat OpenShift Container Platform

Principled Technologies (PT) testing showed vSphere Kubernetes Service sustained more throughput and lower latency for a Kafka workload without adding overhead.

PALO ALTO, CA, UNITED STATES, January 7, 2026 /EINPresswire.com/ -- A new hands-on study from Principled Technologies (PT) demonstrates that virtualized Kubernetes deployments using VMware vSphere Kubernetes Service (VKS) with VMware Cloud Foundation (VCF) can deliver substantially better performance than a bare-metal Red Hat OpenShift Container Platform (OCP) solution for both modern streaming and traditional OLTP workloads.

The study compared identical four-node Dell PowerEdge R640 clusters, configured with either VKS on VCF or OCP on bare metal, running two real-world workloads: an Apache Kafka producer benchmark workload and an online transaction processing (OLTP) workload on PostgreSQL. According to the report, the VKS configuration achieved up to 73 percent greater throughput and up to 78 percent lower latency for the Kafka workload versus the OCP solution on bare metal. In OLTP testing, the VKS deployment supported 80 percent more new orders per minute (NOPM) and reduced latency by 72 percent compared to the bare-metal OCP



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A Principled Technologies report: Hands-on testing. Real-world results.

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On Kafka and OLTP workloads, VMware vSphere Kubernetes Service outperformed an OpenShift 4.19 solution in our testing

Enterprises have many options for tailoring Kubernetes deployments to their performance needs, operational models, and existing infrastructure. Two main approaches, virtualized and bare metal, offer considerable differences. Virtualized Kubernetes environments can offer resource isolation, simple management, and shared infrastructure across diverse workloads. Bare metal Kubernetes deployments can minimize abstraction layers and provide direct access to hardware resources without overhead. Understanding the performance impact of these approaches for workloads, such as modern streaming data pipelines or traditional online transaction processing, can help you choose the Kubernetes platform that more closely aligns with your operational goals.

We set out to compare the performance of two popular Kubernetes platforms: VMware® vSphere® Kubernetes Service (VKS) with VMware Cloud Foundation (VCF) and Red Hat® OpenShift® Container Platform (OCP) on bare metal. VKS represents a VM-based Kubernetes approach and Red Hat OCP on bare metal runs Kubernetes directly on hardware. To capture performance data of containerized modern and traditional workloads, we used both a Kafka workload and a HammerDB TPROC-C workload with PostgreSQL. On both workloads, the VKS solution provided significantly better performance than the Red Hat OCP bare metal solution. Our report explains our findings and how your choice of Kubernetes platform could impact your business.

Move more data in real time with up to 73% greater Kafka throughput

Deliver faster streaming responses with up to 78% lower Kafka latency

Speed database transactions with 80% more OLTP performance

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deployment. Organizations evaluating Kubernetes platforms for streaming analytics or high-throughput transactional databases may find these results useful when looking for a solution that balances performance, operational flexibility, and infrastructure consolidation.

The report states that “for enterprises that depend on rapid ingestion, such as those in retail, logistics, and fintech, higher throughput can mean systems process more data in less time.” The report also notes regarding latency that “faster response times help ensure that fraud detection engines remain accurate, supply chain systems stay synchronized, and user-facing applications provide timely updates.” In addition to the higher throughput and lower latency delivered by VKS, the virtualized solution supported more workloads than the OCP deployment on bare metal before exceeding a potentially problematic latency threshold of 50 milliseconds.

Organizations running more traditional SQL database workloads should note of the OLTP findings that “when your database can process more transactions in the same amount of time, your customers and staff get a more responsive experience, critical for engagement and productivity.”

To learn more about the PT study, its results, and VKS, visit [A new hands-on study from Principled Technologies \(PT\) demonstrates that virtualized Kubernetes deployments using VMware vSphere Kubernetes Service \(VKS\) with VMware Cloud Foundation \(VCF\) can deliver substantially better performance than a bare-metal Red Hat OpenShift Container Platform \(OCP\) solution for both modern streaming and traditional OLTP workloads.](#)

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Principled Technologies, Inc. is the leading provider of technology marketing and learning & development services.

Principled Technologies, Inc. is located in Durham, North Carolina, USA. For more information, please visit www.principledtechnologies.com.

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Sharon Horton

Principled Technologies, Inc.

press@principledtechnologies.com

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