

# Sidestep Conventional Challenges with Red Hat OpenShift and Diamanti

## KEY BENEFITS

- ✓ **ACCELERATE TIME-TO-VALUE**  
Seamless integration between Diamanti D20 RH and Red Hat OpenShift offers unprecedented simplicity and agility.
- ✓ **ENTERPRISE-READY**  
Fully integrated storage and networking solutions simplify scaling, boost security, and improve resilience.
- ✓ **IMPROVE PERFORMANCE**  
With sub-100 microsecond latency and 1 million IOPS per node, organizations can scale farther and faster without compromising application responsiveness.

## Introduction

Today's organizations are under unprecedented pressure to deliver new services faster than ever before, bringing innovations to market at an accelerated pace. This pressure is driving organizations towards technology that helps them become more agile, scalable, and resilient. Organizations must develop new applications faster than before, add innovations faster than before, and those applications must be responsive, must always be available, and should scale to the needs of millions of users. These needs have driven adoption of distributed applications running in containers, and as a result, container platforms are becoming widely adopted by most forward-thinking organizations.

But containers come with their own challenges. First, since containers are much smaller and less resource intensive than virtual machines, they're typically deployed in far higher numbers. As a result, provisioning, deployment, monitoring, maintenance, data protection and security across a containerized IT architecture becomes incredibly difficult at scale. Second, as containerized architectures grow, they put unprecedented, unpredictable pressures on the underlying hardware infrastructure. It's complicated to build a highly scalable, low latency IT infrastructure that's built to address storage and networking needs for containers without incurring high costs and complexity. There's a need to solve both these challenges without compromising high levels of agility, efficiency, and value.

## Red Hat OpenShift: The Kubernetes Platform for Big Ideas

Red Hat OpenShift is a leading enterprise Kubernetes platform, purpose-built for the age of hybrid innovation. Built around full-stack automated operations and a consistent experience across all environments, Red Hat OpenShift is optimized for developer productivity that lets you innovate without limits. Using Red Hat OpenShift, operations and development teams can work together more efficiently, with console views that align individually to what each team needs to manage. Red Hat OpenShift is changing the way customers drive digital transformation around the globe — transforming ideas into innovations with a more secure hybrid cloud platform, open to any app, team, or infrastructure.

### With Red Hat OpenShift:

- Businesses can use a proven platform that powers the business today while enabling the creation of a cloud strategy for the future.
- IT Operators use a platform that is ready to help reduce complexity by automating processes more securely from end to end.
- Developers are empowered to code faster with familiar tools.

## Diamanti® D20 RH for Red Hat® OpenShift®: Containerized Infrastructure for Modern Applications

Giving organizations a way to set aside the infrastructure challenges and constraints experienced with conventional do-it-yourself approaches, Diamanti has pioneered purpose-built infrastructure for modern applications running in containers. Built with a cloud-native data plane solution and patented I/O-optimized architecture,

it is specifically designed to deliver transformational application performance, scale, and resilience. Organizations choose Diamanti D20 RH to deploy Red Hat OpenShift to accelerate the return on their investments and support modern stateful and stateless applications on turnkey infrastructure.

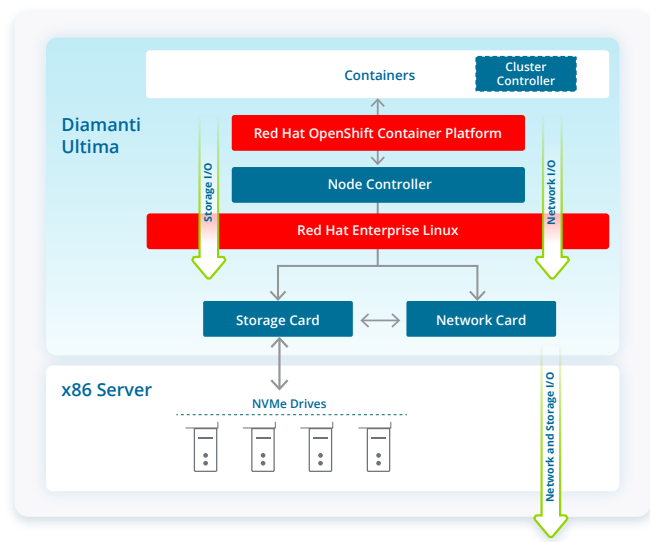
Diamanti D20 RH is built for the most challenging environments. The fully integrated data plane solution includes both Container Network Interface (CNI) and Container Storage Interface (CSI) plugins that are optimized for production-grade services, offering guaranteed Quality of Service for both networking and storage traffic. The distributed storage layer provides built-in data protection and resilience capabilities, including snapshots, backup and restore, disaster recovery, and supports stretched clusters that span across availability zones. It also maintains the highest level of security, with volume encryption and hardware-based self-encrypting drives (SED) on supported hardware.

Delivered as a fully integrated turnkey solution, Diamanti D20 RH significantly improves the performance of data-intensive applications. It eliminates unnecessary layers of abstraction for reduced overhead by deploying containers on bare metal from your choice of hardware vendor. It includes dedicated Diamanti Ultima™ PCIe offload accelerator cards for key network and storage functions, and is designed to be used with ultra-fast persistent NVMe storage. With this combination of leading-edge capabilities, Diamanti D20 RH demonstrates up to 1 million IOPS per node, resulting in 3-10x application acceleration.

Diamanti's pre-validated full-stack solution with an accelerated data plane and patented I/O technology enables enterprises to overcome infrastructure challenges and focus on delivering cloud-native applications instead.

## Running Red Hat OpenShift on the Diamanti D20 RH Platform

The simplicity that results from the tight integration of Diamanti D20 RH and the Red Hat OpenShift offers advantages that are hard to match with any other combination of platform and infrastructure.



Diamanti D20 RH

**Bare metal:** Diamanti D20 RH runs Red Hat OpenShift on bare metal infrastructure. There's no virtualization overhead that reduces available CPU cycles, nor additional layers of code that requires another layer of management complexity.

**Unified support:** Diamanti takes the first call to provide full stack support that covers both Red Hat OpenShift and Diamanti.

**Superior economics:** Organizations using Red Hat OpenShift on Diamanti D20 RH experience compelling economic advantages. Applications are 3-10x faster and no external storage arrays are needed. Overall, Diamanti users report a 70% reduction in TCO through more efficient performance and scaling.

**Enterprise-grade storage features:** Cloud-native data plane supports integrated volume snapshots, backup and disaster recovery for containerized applications

## Summary

As organizations contemplate accelerating distributed application development and deployment at scale, a new approach to infrastructure is needed, and the leading platform for container management is also needed.

Red Hat OpenShift offers a proven approach to developing and managing containers at scale while improving operational efficiency. Diamanti D20 RH offers outstanding performance, enterprise-grade SLAs, and an infrastructure design that's purpose-built for containers. The powerful combination of Diamanti D20 RH and Red Hat OpenShift improves application performance and decreases costs while delivering the performance, simplicity, security and availability that enterprises need to rapidly adopt and expand Kubernetes.



Diamanti is solving the challenge of container-based hybrid clouds with a simple and cost-effective platform that addresses enterprise requirements for managing Kubernetes data.

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