



## Software and Hardware Innovation for Our Most Cost-Effective Ceph Storage Solution

With continued advances in Red Hat® Ceph Storage, choosing a high-performance software defined storage solution with the ability to scale to double-digit petabyte capacities has become an easy choice. Architected with the right hardware, Red Hat® Ceph Storage can provide the optimal combination of high-performance and smart economics. Micron has collaborated with Red Hat and AMD® to create such a solution using a combination of Micron's fastest NVMe™ SSDs, providing a -performance tier, along with cost-effective SATA SSDs using Micron's latest quad-level cell (QLC) NAND technology. Micron's unique hardware, and recent performance increases in Red Hat® Ceph Storage using the [BlueStore](#) storage engine, combine to provide a challenge to traditional storage architectures.

Micron's new scalable NVMe solution is pre-tuned and suitable for a wide variety of workload storage requirements. Built on the latest AMD EPYC™ server architecture, along with Micron 9200 MAX NVMe SSDs and Micron 5210 ION SATA SSDs in a tiered configuration, it offers a high-performance, ultra-dense, all-flash Ceph Storage infrastructure you can count on — today and tomorrow.

[Download the reference architecture](#) to get started.

## Key Features



Nearly 1 million read IOPS base configuration easily scale to meet your growing needs 2U (and 114TB) at a time



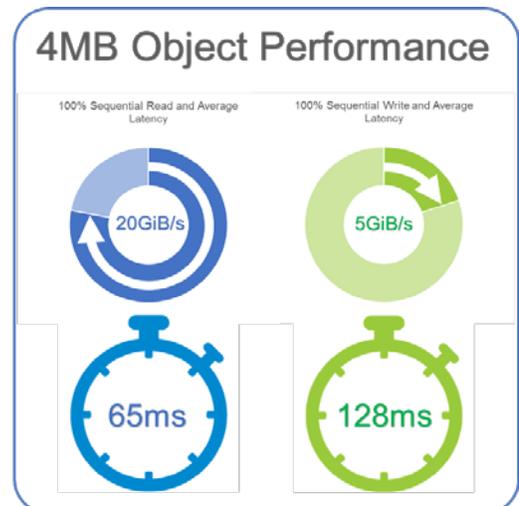
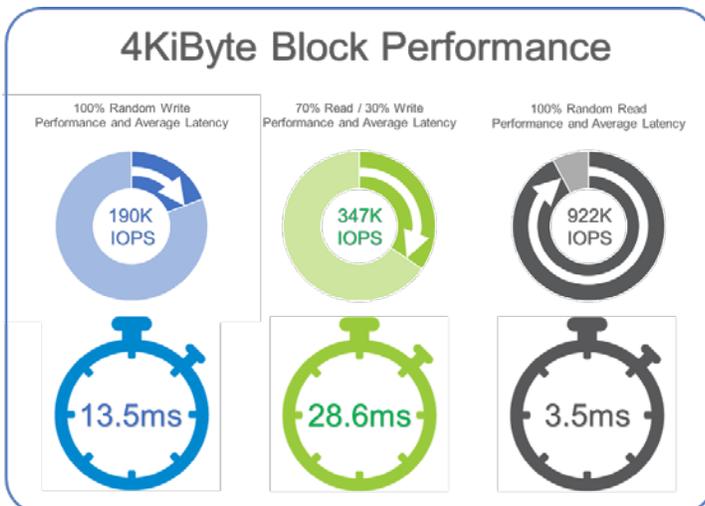
Built on a foundation of latest generation AMD EPYC® server platforms, open software and blazing fast NVMe storage



Pre-engineered to optimize compute, networking and storage into a highly compact, efficient design that delivers



Ideal for web-scale active archives, media content repositories, OpenStack® cloud storage and content distribution.

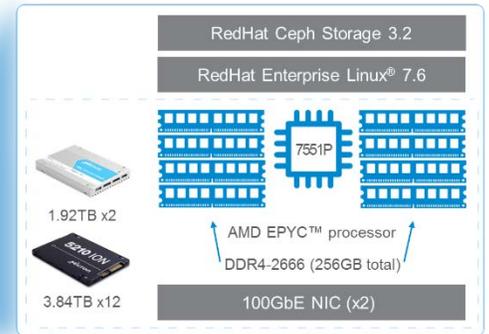
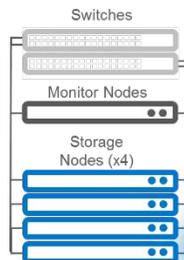


## Micron® 9200 Max NVMe™ with 5210 SATA QLC SSDs for Red Hat® Ceph Storage on AMD EPYC™ Servers

The Micron 9200 MAX SSDs with NVMe used in this design offer tremendous performance with low latencies along with the Micron 5210 ION SATA SSDs using Micron's industry first QLC NAND technology in a tiered BlueStore-based solution. Capacity per rack unit (RU) is maximized with two NVMe and 12x 8TB SATA SSDs per two RU node. These storage nodes occupy just eight RU (the entire reference architecture occupies nine RU including one monitor node<sup>1</sup>) and can easily be scaled up by two RU and 114TB at a time<sup>2</sup>.

With four nodes, this RA supports 456TB of total data storage.

Ten storage nodes are the recommended scale for an enterprise Ceph Storage cluster.



## Micron Reference Architectures Deliver

The Micron 9200 Max NVMe with 5210 SATA QLC SSDs for Red Hat Ceph Storage on AMD EPYC Servers reference architecture describes the hardware and software building blocks and tuning parameters needed to construct a performance-focused, scalable block and object Ceph Storage platform. This tiered-storage solution is optimized for block performance while also providing very high object performance in a compact, rack-efficient design. Benefits include:

**Faster deployment:** A pre-validated and thoroughly documented configuration enables faster deployment

**Balanced design:** The right combination of NVMe SSDs, DRAM, processors and networking to ensure that subsystems are balanced and performance-matched

**Broad use:** Complete tuning and performance characterization across multiple IO profiles for broad deployment across multiple use cases and industries

### Learn More



[Red Hat Ceph Storage 3.2](#) is the latest scale out software-defined storage solution from Red Hat. Based on the open-source Ceph version 12.2 (Luminous), RHCS 3.2 raises the bar for a complete, supported Ceph solution using the new BlueStore storage engine.

To learn more about all of Micron's Ceph reference architectures, visit the [Micron Accelerated Ceph Solutions](#) site.

[Download the complete Reference Architecture](#) – Get started today, complete with layout, networking, test and performance details.

## micron.com

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<sup>1</sup> It is recommended that a minimum of three monitor nodes be deployed in any production Ceph Storage solution. See the details in the reference architecture available at [micron.com](#)

<sup>2</sup> Scaling is based on the use of the Supermicro AS-2113S-WTRT configuration's support for up to 16 SATA and two NVMe SSDs per node. For more information, see the specifications for the AS-2113S-WTRT at [supermicro.com](#).