

CONTAINERIZED CEPH FOR ON-DEMAND, HYPERSCALE STORAGE

SOLUTION BRIEF



According to a survey of senior executives at telecommunications companies,

84%

believe that technology or capacity limitations will have a negative impact on their organization's revenue.¹

Red Hat and QCT are developing a software-defined, containerized storage solution that increases storage scalability, efficiency, elasticity, and provisioning speed while lowering costs.

INCREASE AGILITY AND EFFICIENCY WITH CONTAINER PLATFORMS

Many telecommunications service providers are adopting scale-out container and microservices platforms to develop and provision high-quality applications and services with greater speed and efficiency. Storage for these platforms is often housed on proprietary, external systems, complicating management and spin up. Deploying storage within containers, however, can alleviate these issues.

With input from telecommunications leaders, Red Hat and QCT (Quanta Cloud Technology) are developing a software-defined, containerized storage solution for cloud environments.² Based on QCT QuantaGrid servers, Red Hat® Atomic Enterprise Platform, and Red Hat Ceph Storage, this solution combines the benefits of containers and software-defined storage, for increased efficiency at scale, higher density and elasticity, faster deployment, and lower costs.

TAKE ADVANTAGE OF ON-DEMAND, DEDICATED STORAGE CLUSTERS

The Red Hat and QCT solution uses containers to create customized storage instances, in real time, that meet specific quality of service (QoS) requirements. These storage containers are dynamically deployed on dedicated storage servers on a per-tenant basis. The result is a hyper-converged architecture with multiple, segregated Red Hat Ceph Storage clusters co-located on a group of servers. Benefits include enhancements in:

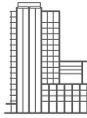
- **Scalability.** Combining QCT QuantaGrid servers with Red Hat Ceph Storage provides immense storage density and massive scalability with lower total cost of ownership (TCO).
- **Performance.** Containerized storage aligns performance to QoS needs and increases performance consistency and stability at high densities.
- **Efficiency.** Running Red Hat Ceph Storage in containers reduces overhead and speeds deployment. Dynamic orchestration allocates storage on demand and improves system resource utilization and efficiency.
- **Security.** Red Hat Ceph Storage and Red Hat Atomic Enterprise Platform integrate advanced security features for more protection from threats. Container technology isolates workloads and data and enables better tracking and retrieval.
- **Manageability.** A unified management interface and automation makes storage containers easy and fast to deploy, maintain, and upgrade.

DEPLOY CONTAINERIZED STORAGE WITH RED HAT AND QCT

The Red Hat and QCT solution combines open, standards-based storage and container technologies with efficient, dense storage hardware to deliver flexible, scalable, software-defined storage for private and public cloud environments. The solution runs Red Hat Ceph Storage within Docker-based containers (Figure 1). All Red Hat Ceph Storage daemons are bootstrapped, letting you provision and deploy storage containers faster and without manual intervention. In addition, Red Hat Ceph Storage monitors use Kubernetes orchestration for unified management and operation.

¹ KPMG, "2014 Media and Telecommunications Survey," December 2014.

² The Red Hat and QCT containerized Ceph solution will be available in Technology Preview soon. Learn more about Technology Preview features and solutions at <https://access.redhat.com/solutions/21101>.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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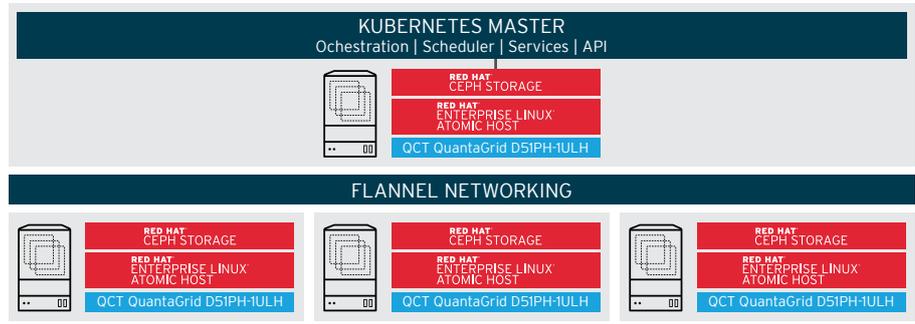


Figure 1. The Red Hat and QCT containerized storage solution architecture

Designed for cloud environments, QCT servers form the open, standard-based hardware infrastructure of the solution. Combining twelve 2TB SAS disk drives with four 200GB solid state drives (SSDs) in a single system, QCT QuantaGrid D51PH-1ULH servers provide extreme storage density and computing power to accelerate cloud workloads. Each server is configured with two Intel Xeon E5-2660 V3 processors, 64GB DDR4 memory, an LSI 3008 SAS controller, a 10Gb SFP+ dual-port network controller, and a SATADOM 32GB storage controller.

Ideal for scale-out container deployments, Red Hat Atomic Enterprise Platform is an integrated container infrastructure platform based on Red Hat Enterprise Linux®. It uses the Docker runtime and packaging format and Kubernetes orchestration to run, manage, and scale applications and services based on multiple containers.

Red Hat Ceph Storage is a self-healing, self-managing storage platform for cloud environments. This massively scalable, open source, software-defined system unifies block and object storage, lowering the cost of storing data and helping you manage exponential data growth efficiently and automatically. No single point of failure ensures effective data service to critical applications.

COMPETE IN A FAST-PACED MARKET

Containers and microservices deliver greater agility and efficiency, capabilities that are essential to success in the rapidly changing telecommunications industry. The containerized storage solution from Red Hat and QCT increases scalability, performance, efficiency, and manageability to help you develop and deploy applications and services faster and gain a competitive advantage.

ABOUT QCT

QCT (Quanta Cloud Technology) is a global datacenter solution provider extending the power of hyperscale datacenter design in standard and open SKUs to all datacenter customers. QCT offers a full spectrum of datacenter products and services from hardware, engineering, integration, and optimization to global supply chain support, all under one roof. The parent of QCT is Quanta Computer Inc., a Fortune Global 500 technology engineering and manufacturing company. For more information, visit QCT.io.

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