

Dell EMC Ready Solutions for HPC BeeGFS Storage

High performance and ease of use for I/O-intensive workloads

Dell EMC Customer Results

31 million

years of calculations in a single second¹

1.7 petaFLOPS

peak performance capacity²

15,000 CAT

iterations over a weekend³

2PB

all NVMe storage system — one of the largest in the world⁴

In the data-driven age, data-intensive workloads have become critical to success in a wide variety of industries. To gain a competitive advantage, many organizations are leveraging high performance computing (HPC) to handle increasingly large data sets in variable formats. When it comes to HPC, speed can make all the difference in getting insights, bringing products to market and making discoveries.

If I/O intensive workloads are slowing your HPC performance, BeeGFS® is the solution. BeeGFS is an open-source, parallel-cluster file system, designed specifically to manage I/O-intensive workloads in performance-critical environments. Hundreds of leading enterprises, universities and researchers worldwide choose BeeGFS for its ease of installation, massive scalability, robustness and exceptional flexibility, including converged systems where servers are used for storage and compute.

BeeGFS transparently spreads user data across multiple servers. File system performance and capacity can be scaled out to the desired level by simply increasing the number of servers and disks in the system. You can scale seamlessly from small clusters up to enterprise-class systems with thousands of nodes — on-premises or in the cloud.

The flexibility, robustness and outstanding performance of BeeGFS helps increase productivity by delivering results faster. BeeGFS also enables new data analysis methods that simply aren't possible without it. Running BeeGFS on a modern HPC infrastructure from Dell EMC makes adoption faster, simpler and more collaborative.

Dell EMC Ready Solutions for HPC Storage

Dell EMC Ready Solutions for HPC Storage are preconfigured, tested and validated solutions that allow you to deploy large-capacity storage systems more easily and with less risk, while preserving resources and budget for higher-value activities. They also give you the power to quickly and easily scale storage capacity as computing needs grow.

By partnering with ThinkParQ®, Dell EMC is able to offer tested and tuned systems for high performance, scalable HPC storage systems with simplified installation, configuration and management features.

¹ Dell EMC Case Study, "[Inspiring A New Generation of Scientists with Large-Scale Compute](#)," August 2018.

² Dell EMC Case Study, "[Petaflop Performance](#)," November 2016.

³ Dell EMC Video Case Study, "[High Performance Computing Drives Cummins' Industry Leading Engine Design and Development](#)," July 2019.

⁴ IT News, [CSIRO removes HPC 'bottleneck' with storage upgrade](#), July 2018.

Together, Dell EMC and ThinkParQ help you run HPC workloads more efficiently by simplifying your infrastructure and streamlining technology. Dell EMC HPC and AI experts are available to help you design a solution for your specific needs. [Services](#) — from consulting and education to deployment and support — are available when and where you need them.

Management server	Metadata and Storage servers	Software	Networking	Storage
<ul style="list-style-type: none"> • 1x PowerEdge R640 	<ul style="list-style-type: none"> • 2x PowerEdge R740 metadata servers • 2x PowerEdge R740 storage servers 	<ul style="list-style-type: none"> • BeeGFS • CentOS™ • OpenManage • iDRAC 	<ul style="list-style-type: none"> • PowerSwitch • S3048-ON • Mellanox® SB7890 	<ul style="list-style-type: none"> • 1x PowerVault ME4024 • 1, 2 or 4x PowerVault ME4084

Resources

- View validated designs and performance benchmarks at hpcatdell.com.
- Learn about the [Dell EMC HPC and AI Innovation Lab](#).
- Join the Dell EMC HPC Community at dellhpc.org.

Learn more

dell EMC.com/hpc

ThinkParQ and Dell EMC

Together, engineers from Dell EMC and ThinkParQ test and tune HPC storage solutions tailored for your high-I/O workload requirements.

ThinkParQ is the company behind the popular parallel cluster file system BeeGFS. Next to helping world-wide BeeGFS customers get the best out of their systems, ThinkParQ continuously drives the development and optimization of BeeGFS. With partners, we work hard to create the fastest, most stable and most flexible turn-key solutions for every performance-oriented environment.

Dell EMC enables organizations to modernize, automate and transform their data center using industry-leading converged infrastructure, servers, storage and data protection technologies. Businesses get a trusted foundation to transform their IT and develop new and better ways to work through hybrid cloud, big data solutions and the creation of cloud-native applications.

