NetApp E-Series High-Performance Storage Solutions for Edge Computing

BACKGROUND

Everything in our lives is becoming smarter. Office buildings, homes, cars, televisions, kitchen appliances, and more are all connected to the Internet of Things (IoT) to help make daily living more efficient. Recent research by IOT Analytics estimates that the number of global IOT devices will grow from 7 billion in 2018 to a staggering 22 billion in 2025. Also by 2025, IDC predicts that the world will create 163 zettabytes of data every year. (One ZB equals a trillion GB.) To get the most insight and value from all this data, organizations are turning to high-performance computing (HPC) solutions to help them apply artificial intelligence and analytics to real-time data.

CHALLENGE

As IoT devices and datasets expand, the challenges around data agility, security, cost efficiency, and movement become ever more complex and the need for an HPC solution becomes more critical. Companies of all sizes struggle to reconcile data management across a growing footprint with limited network capabilities, aggressive timelines, and strict governance policies. With shrinking budgets and the cost of HPC solutions running anywhere from tens of thousands of dollars to hundreds of millions for the fastest supercomputers, many organizations are wondering how to drive innovation without having to buy massive compute farms that are required only 1 or 2 months each year.

SOLUTION

Modern HPC workloads such as artificial intelligence (AI) and analytics require innovative IT solutions. The NetApp® E-Series HPC solution features a complete line of high-performance, highly reliable storage systems that can be deployed next to the cloud. You get a rock-solid storage infrastructure that connects to the compute resources of any hyperscaler of your choice—without sacrificing control of your data. You're not locked in to any one vendor, so you can switch cloud providers at any time and avoid costly data migrations.

A modular architecture with industry-leading price/performance offers a true pay-as-you-grow solution to meet storage requirements for the massive amounts of data generated by the IoT and also to deliver the performance needed for artificial intelligence (AI) and deep learning (DL) operations. The system is integrated with leading HPC file systems, including BeeGFS, IBM Spectrum Scale, and others to handle the performance and reliability requirements of the most demanding workflows.

■ NetApp®

THE SPEED YOU NEED

To keep your operations running smoothly, your storage must be able to keep pace with your compute power. The high-performance NetApp E-Series solution delivers top performance in industry benchmarks. It can process up to 1 million random-read IOPS with under 250 microseconds of latency and 14GBps sustained (maximum burst) write bandwidth per scalable building block. Optimized for both flash and spinning media, the solution includes built-in technology that monitors workloads and automatically adjusts system parameters to maximize performance.

AROUND-THE-CLOCK RELIABILITY

In an HPC environment, downtime of any kind is intolerable.

The NetApp E-Series HPC solution offers nonstop reliability with a fault-tolerant design that delivers greater than 99.9999% availability. With industry-leading redundancy, the solution provides outstanding resilience, proven by more than 1 million systems deployed. Built-in data assurance features help increase data accuracy by avoiding drops, corruption, and missed bits—all the way from host to storage media.

Our extensive partner ecosystem helps us validate configurability, stability, interoperability, and reliability. You can be certain that your NetApp E-Series HPC solution will deliver the 24/7 availability your manufacturing operations require.

EASY DEPLOYMENT AND SUPPORT

The NetApp E-Series HPC solution makes enterprise storage easy. As systems are scaled, the solution is easy to install and manage as a single unit or expanded to hundreds of units. The modular design enables your IT staff to nondisruptively add performance and capacity without complex deployments or migrations. Scripting allows dynamic replication, so you can spontaneously configure new systems for faster deployment and automate common tasks for easier management.

The NetApp enterprise architecture E-Series systems also feature proactive monitoring and support to automate issue resolution and reduce management overhead. Worldwide support and 4-hour parts delivery help keep operations flowing. NetApp also offers secure support options for sensitive sites.

LIMITLESS SCALABILITY

The modular design of the NetApp E-Series HPC solution offers a granular, building-block approach to growth. You can scale seamlessly from terabytes to petabytes by adding capacity in any increment—one drive or multiple drives at a time.

LOWER TCO

With the exponential increase in size of IoT datasets, storage costs can easily spiral out of control. With price/performance-optimized building blocks from NetApp, configurations of all sizes, from small to large, are cost efficient. In addition, NetApp HDDs and SSDs are required to meet strict quality, performance, and interoperability requirements before acceptance. This extra scrutiny results in failure rates that are four times lower than those of commodity HDD and SSD devices. Also, NetApp employs the industry's best performance density per rack unit, resulting in lower power, cooling, and support costs. Finally, you enjoy the flexibility to support 100Gb InfiniBand (IB), 100Gb NVMe over Fabrics (NVMe-oF), 32GB FC, and 12Gb SAS connectivity. All of these capabilities add up to significantly lower TCO.

MORE INFORMATION

To learn more about NetApp high-performance computing solutions for edge computing, visit netapp.com/hpc.

ABOUT NETAPP

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit **www.netapp.com**. #DataDriven