Hewlett Packard Enterprise

THE HISTORY OF THE LEADING[1] PARALLEL FILE SYSTEMS

and their most cost-effective implementation embedded in storage systems from HPE

1998

GPFS

is born (V1.0) as general parallel file system for the **Enterprise**

- NFS support
- Linux® support

2003

GPFS 2.2

- Heterogenous clusters
- Snapshots

Lustre

is born (V1.0) as open source parallel file system for **scientific HPC**

2004

Cray takes Lustre to supercomputing with the Red Storm system at Sandia National Laboratory

2006

GPFS 3.1

- ILM & Tiering
- Policy engine

- Data Management API (DMAPI)
- Over two million licenses in use

2011

First Cray ClusterStor Storage system launches at ISC'11 in Hamburg

- Declustered Software RAID
- SNMP support
- File cloning
- Active File Management (AFM)
- Share nothing clusters
- Read cache (LROC)

2013

Cray builds first > 1 TB/sec file system (26 PB) based on Cray ClusterStor with Blue Waters supercomputer at NCSA which has delivered over 38 billion core hours (and still counting)

- Asynchronous disaster recovery
- Encryption & Secure erase

2014

IBM Spectrum Scale 4.1

- OpenStack cloud
- HDFS

- Synchronous disaster recovery
- HAWC write cache
- Windows client support (SMB)

2015

Cray builds first > 3 TB/sec file system (78 PB) based on Cray ClusterStor and Cray DataWarp with Trinity supercomputer at LANL

- Object support
- Self-tuning capabilities

2018

IBM Spectrum Scale 5.0

Performance improvements for HPC

Cray announces award for first > 4 TB/sec file system (35 PB) based on Cray ClusterStor for NERSC

- Audit log
- SEC 17a-4 (Financial trading)
- Cloud data sharing
- Federated HDFS
- Transparent cloud tiering

2019

IBM Spectrum Scale Erasure Code Edition V5.0.4

Cray announces award for first 10+ TB/sec file system (nearly 700 PB) based on Cray ClusterStor for Oak Ridge National Laboratory

2020

HPE announces Cray ClusterStor E1000 Storage System

2021

HPE announces HPE Parallel File System Storage

HPE Parallel File System Storage

Cray ClusterStor E1000 Storage System

What it is?

First & only
IBM Spectrum Scale-based HPC/AI storage system with standard x86 rack servers as storage nodes that does not require file system licensing per terabyte or storage drive (SSD or HDD)

First & only
Lustre-based HPC/AI storage system with an end-to-end PCIe 4.0 architecture that can support extreme performance like 25 Watt per SSD drive

Who it is for?

Organizations that

need enterprise grade storage features including availability, redundancy, security, auditability, data protection, and replication

for

the shared fast file storage that is feeding their HPC/AI clusters built from HPE Apollo systems or HPE ProLiant DL rack servers with HPE IB EDR/200GbE adapters running high performance, very data intensive workloads

and who struggle with

the limitations of their current NFS/Scale-out NAS based file storage infrastructure from a performance, scalability, and cost perspective.

Organizations that

need extreme scalability and price/performance from their parallel file system and do not have the enterprise grade requirements on the left side

for

the shared fast file storage that is feeding their HPE Cray EX supercomputer or very large HPC/AI cluster running high performance, very data intensive workloads

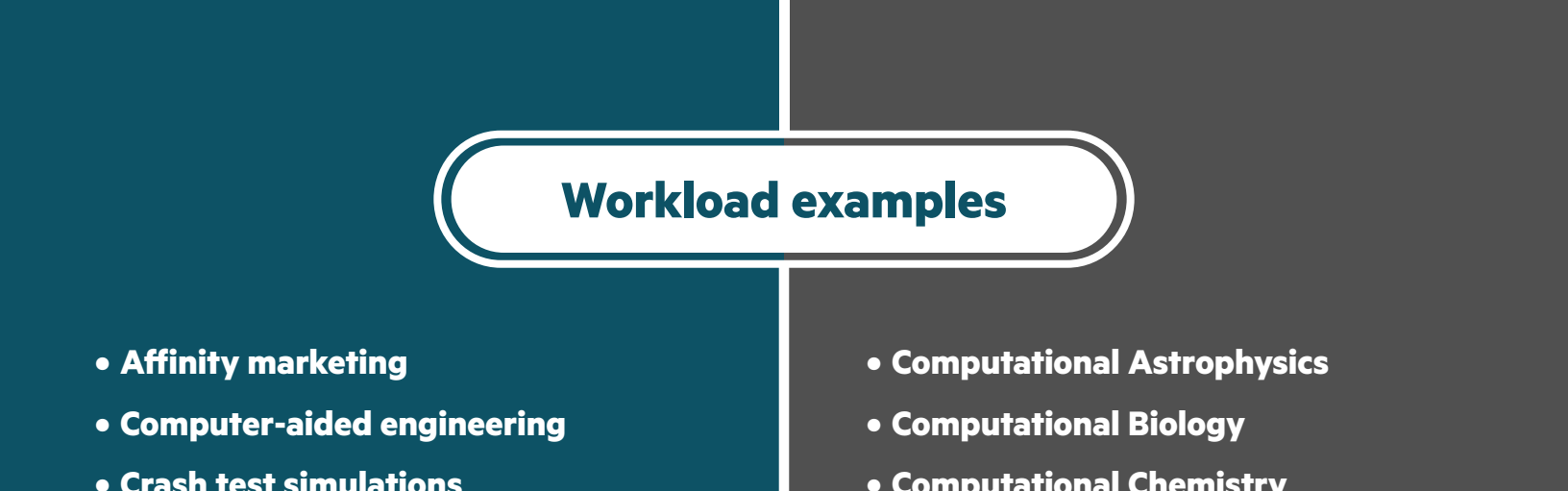
and who struggle with

the fact that their cost of their current parallel storage is consuming too much of the overall system budget due to inefficient storage architectures that leaves performance "stranded".

Workload examples

- Affinity marketing
- Computer-aided engineering
- Crash test simulations
- Wind tunnel simulations
- Automated driving systems
- Digital twin
- Mechanical design
- Chemical engineering
- Electronic design automation
- Precision medicine
- Genome sequencing
- Drug discovery
- Cryogenic electron microscopy
- Fraud and anomaly protection
- Quantitative pre-trade analytics
- Algorithmic trading
- Training of Machine Learning

- Computational Astrophysics
- Computational Biology
- Computational Chemistry
- Computational Cosmology
- Computational Environmental Science
- Computational Fluid Dynamics
- Computational Geosciences
- Computational Materials Science
- Computational National Defense
- Computational National Security
- Computational Nuclear Engineering
- Computational Neuroscience
- Computational Physics
- Cybersecurity
- Seismic exploration
- Reservoir simulation
- Weather forecasting



Value propositions from Hewlett Packard Enterprise as the #1 HPC compute vendor[2] beyond those two differentiated parallel storage systems

One Hand to Shake

from procurement to support for the full HPC/AI "stack" (software, compute, and storage) with best of breed technology on every layer

Your managed private cloud

with innovative as-a-service offerings like HPE GreenLake for HPC or HPE GreenLake for ML Ops

Create investment capacity

with HPE Accelerated Migration from HPE Financial Services—turning your ageing, owned infrastructure into cash—accelerating your innovation

Want to learn more about those two differentiated parallel storage systems? Check out the new HPC Storage webpage!

[1] Hyperion Research, Special Study: Shifts Are Occurring in the File System Landscape, June 2020

[2] Hyperion Research, SC20 Virtual Market Update, November 2020

Make the right purchase decision. Contact our presales specialists.

Chat Email Call

Get updates

a50003764ENW, April 2021