QxSmart
HPC/DL Solution

An Optimized and Scalable High Performance Computing / Deep Learning Solution

Quanta Cloud Technology (QCT) offers cutting-edge High Performance Computing (HPC) / Deep Learning (DL) solution that integrates adaptive hardware with software stacks and common applications. This unique solution combines QCT's best-in-class infrastructure with high-bandwidth and low-latency interconnect. Furthermore, QCT's solution offers seamless connectivity with leading parallel file systems, to provide a scalable cluster architecture for supercomputing users. QCT delivers its starter kit with comprehensive software tools, which comply with OpenHPC conventions, to simplify deployment processes and to speed time-to-market. The QCT QxSmart HPC/DL solution is a fast and reliable way to build a HPC or deep learning environment across many industries, while reducing the time and effort to implement projects.

Solution Highlights

Rapid Deployment through QCT HPC/DL Cluster Starter Kit and rack-level integration.

Simplified Management with comprehensive software tools.

Optimized Integration on legacy HPC workload and deep learning framework.

Flexible Scalability to meet your business requirement.

What QCT HPC/DL Solution Can Offer

The QxSmart HPC/DL Solution is composed of validated software tools and vertical applications powered by QCT's infrastructure platform. This architecture simplifies the deployment process and minimizes time-to-value, which brings huge benefits to end users, administrators, and developers.

End Users:
√ Accelerate time-to-value through the QCT HPC/DL Cluster Starter Kit
√ Speed up productivity with intelligent workload management

Administrators:
√ Simplify complex IT environments
√ Streamline cluster deployment, monitoring, and management

Developers:
√ Compile on de facto standard application frameworks
√ Maximize ROI on comprehensive software tools

HPC/DL Software Stack

HPC/DL Applications						
User Authentication	Resource Management	Job Scheduling	Task Launching	Network Security	Compilers & Math Libraries	Application Frameworks
NIS/LDAP	SLURM/PBS pro			Firewall	Intel/GNU/PGI Compilers & Libraries	MPICH/MVAPICH2 OpenMPI / Intel MPI — Hadoop / Spark — TensorFlow/PyTorch Keras/ CUDA

System Deployment	System Monitoring				System Operation		System Environment	
xCAT	Ansible	Pacemaker	Ganglia	Nagios	QSM	PDSH — Lmod / Modules	Docker	Singularity

	Scale-Out NAS	Parallel File System
	pNFS	BeeGFS

Operating System	
Red Hat Enterprise Linux	CentOS Linux

System Monitoring		
Server	Networking	Storage

Powered by Intel® Xeon® Scalable Processors

Found at: www.QCT.io/wheretobuy

Specifications

QxSmart HPC/DL System Architecture

Interconnect Fabric

Storage Pool

CPU + Accelerator
Computing Cluster

Admin
Utility Nodes
Login

In-band Management

Out-of-band Management
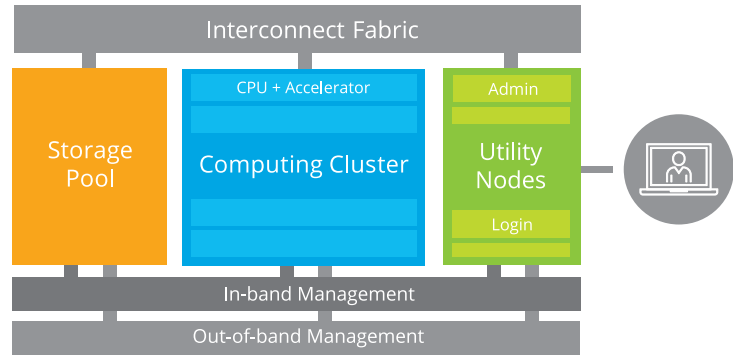
QxSmart HPC/DL System Component

High Density

Compute
Utility

QuantaPlex T42SP-2U
- Form Factor: 2U 4 Node
- Support AEP/NVMe

| Per Node | - Dual Intel® Xeon® Scalable Processors
- Up to 8TB RDIMM DDR4 |

Big Memory

Compute

QuantaGrid Q72D-2U
- Quad Intel® Xeon® Scalable Processors
- Support AEP/NVMe
- Up to 3TB DDR4 RDIMM
- Up to 16 2.5" HDD/SSD

Deep Learning

Compute

QuantaGrid D52G-4U
- Dual Intel® Xeon® Scalable Processors
- Support AEP/NVMe
- Up to 3TB DDR4-2666
- Up to 24 2.5" SSD

| SXM2
- Up to 8 GPU | PCIe
- Up to 16 GPU/FPGA |

Accelerated

Compute
Utility

QuantaGrid D52BV-2U
- Dual Intel® Xeon® Scalable Processors
- Support AEP/NVMe
- Up to 3TB DDR4-2666
- Up to 8 3.5"/2.5" HDD/SSD
- Up to 4 GPU

Compute
Utility
Storage

QuantaGrid D52B-1U
- Dual Intel® Xeon® Scalable Processors
- Up to 3TB DDR4 RDIMM
- Up to 12 2.5" SSD

Utility
Storage

QuantaGrid D52BQ-2U
- Dual Intel® Xeon® Scalable Processors
- Up to 3TB DDR4 RDIMM
- Up to 24 2.5"SSD
- Support AEP/NVMe

Storage

QuantaVault JB4242
- Up to 8 2.5" SSD
- Up to 24 3.5" SAS/SATA HDD

Storage

QuantaVault JB4602
- Up to 60 SAS/SATA HDD

Inter-connection

25/100Gb Ethernet Switch
Mellanox InfiniBand Switch
Intel® Omni-Path Switch

About Quanta Cloud Technology (QCT)

Quanta Cloud Technology (QCT) is a global data center solution provider. We combine the efficiency of hyperscale hardware with infrastructure software from a diversity of industry leaders to solve next-generation data center design and operation challenges. QCT serves cloud service providers, telecoms and enterprises running public, hybrid and private clouds.

Product lines include hyper-converged and software-defined data center solutions as well as servers, storage, switches, integrated racks with a diverse ecosystem of hardware component and software partners. QCT designs, manufactures, integrates and services cutting edge offerings via its own global network. The parent of QCT is Quanta Computer, Inc., a Fortune Global 500 corporation.