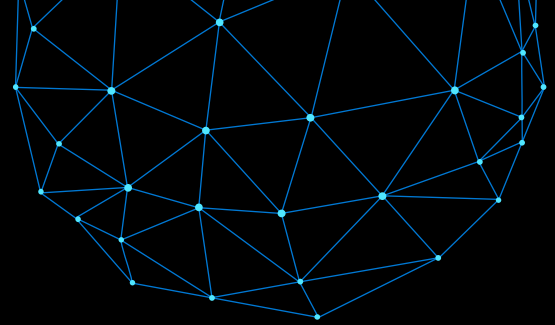


Azure HPC



Unlock your innovation with the leading HPC cloud solution

Azure high-performance computing (HPC) is a complete set of computing, networking, and storage resources integrated with workload orchestration services for HPC applications. With purpose-built infrastructure and optimized application services, Azure offers HPC customers a competitive price/performance against on premises with additional benefits. Additionally, Azure includes next-generation machine learning tools to drive smarter simulations and empower intelligent decision making.



Workload Orchestration

End-to-end workflow agility using known, familiar tools & processes



Purpose-built HPC

A full range of CPU and GPU capabilities that help applications scale to 80K+ cores



Intelligence Services

AI, machine learning, and deep learning at supercomputer scale



Fast, Secure Networking

Fast InfiniBand inter-connects as well as edge-to-cloud connectivity



High Performing Storage

A range of storage capabilities to support simple-to-complex storage needs

80,000

cores utilized for one tightly coupled job

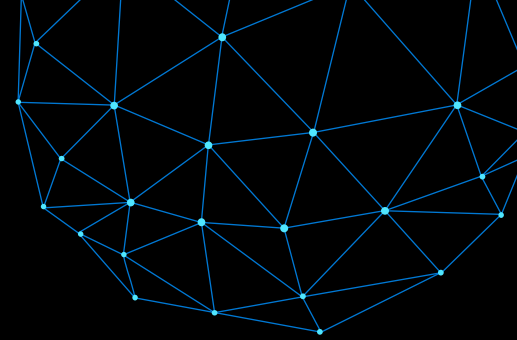
1 billion

cell model of a sports car named after the famed 24 Hours of Le Mans race.





45%

more memory bandwidth means faster application performance




Azure HPC










High Performing H-Series VMs

				
Optimum Workload	Memory Bandwidth	Memory Bandwidth	Dense Compute	Large-Memory HPC
CPU	AMD EPYC 2 nd Gen "Rome"	AMD EPYC 1 st Gen "Naples"	Intel Xeon Platinum 1 st Gen "Skylake"	Intel Xeon E5 v3 "Haswell"
Cores/VM	120	60	44	16
TeraFLOPS/VM (FP64)	4 TF	0.9 TF	2.6 TF	0.7 TF
Memory Bandwidth	353 GB/s	263 GB/sec	191 GB/sec	82 GB/s
Memory	4 GB/core, 480 total	4 GB/core, 240 total	8 GB/core, 352 GB	14 GB/core, 224 GB
Local Disk	900 GB NVMe	700 GB NVMe		2 TB SATA
InfiniBand	200 Gb HDR	100 Gb EDR		56 Gb FDR
Network	32 GbE	32 GbE		16 GbE

GPU-powered N-Series VMs

			
Cores	6, 12, 24	40	8, 16 (IPUs)
GPU	1, 2, or 4 P40 GPU	8 V100 SXM 32 GB GPU	8 x Graphcore C2
Memory	112/224/448 GB	768 GB	672 DDR4
Local Disk	~700/~1.4/~3 TB SSD	~1.3 TB SSD	6 TB NVMe Flash
Network	Azure Network + InfiniBand	Azure Network + InfiniBand EDR+ NVLink GPU interconnect	Azure Network + InfiniBand

				
Cores	6, 12, 24	6, 12, 24	12, 24, 48 (24, 32 HT)	4, 8, 16 Partial, 32 Full
GPU	K80	P100	M60	Radeon Mi25
Memory	56/112/224 GB	112/224/448 GB	112/224/448 GB	14/28/56/112 GB
Local Disk	~380/~680/~1.5 TB SSD	~700/~1.4/~3 TB SSD	~700/~1.4/~3 TB SSD	~88/~176/~352/~700 GB
Network	Azure Network + InfiniBand (largest size only)			

			
Cores	6, 12, 24	6, 12, 24	6, 12, 24
GPU	K80	P100	V100
Memory	56/112/224 GB	112/224/448 GB	112/224/448 GB
Local Disk	~380/~680/~1.5 TB SSD	~700/~1.4/~3 TB SSD	~700/~1.4/~3 TB SSD
Network	Azure Network + InfiniBand (largest size only)		

Storage Options



Azure Blob Storage

For stage-able workloads, pleasantly parallelized for single node, single user configuration



Azure Data Lake

For HDFS/analytics workloads, pleasantly parallelized for single node and shared data access



Premium/Ultra SSD

For low scale NFS workloads with <1.5Gbps, <500 cores, 100TB SSD



Azure HPC Cache

For medium scale, read-heavy NFS workloads with <2Gbps Write and <14Gbps Read and 6-24 nodes



Azure NetApp Files

For balanced, write-heavy NFS workloads with <6.5 Gbps Write and <2Gbps Read and <4000 cores



Orchestrated FS

For large-scale, parallelized workloads with <50 Gbps Write, <500 TB SSD and <50,000 cores



Cray ClusterStor

For bare metal HPC storage with >30 Gbps Write/Read, >500 TB, and >50,000 cores

Learn more about Azure HPC → <http://aka.ms/hpc>

learn

visualize

compute