

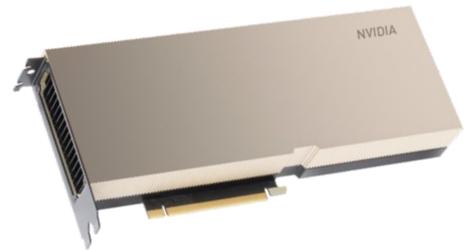
NVIDIA A100 80 GB TENSOR CORE GPU

The Most Powerful Compute Platform for Every Workload

The NVIDIA A100 Tensor Core GPU delivers unprecedented acceleration—at every scale—to power the world’s highest-performing elastic data centers for AI, data analytics, and high-performance computing (HPC) applications. As the engine of the NVIDIA data center platform, A100 provides up to 20X higher performance over the prior NVIDIA Volta™ generation. A100 can efficiently scale up or be partitioned into seven isolated GPU instances with Multi-Instance GPU (MIG), providing a unified platform that enables elastic data centers to dynamically adjust to shifting workload demands.

NVIDIA A100 Tensor Core technology supports a broad range of math precisions, providing a single accelerator for every workload. The latest generation A100 80GB doubles GPU memory and debuts the world’s fastest memory bandwidth at 2 terabytes per second (TB/s), speeding time to solution for the largest models and most massive datasets.

A100 is part of the complete NVIDIA data center solution that incorporates building blocks across hardware, networking, software, libraries, and optimized AI models and applications from the NVIDIA NGC™ catalog. Representing the most powerful end-to-end AI and HPC platform for data centers, it allows researchers to deliver real-world results and deploy solutions into production at scale.

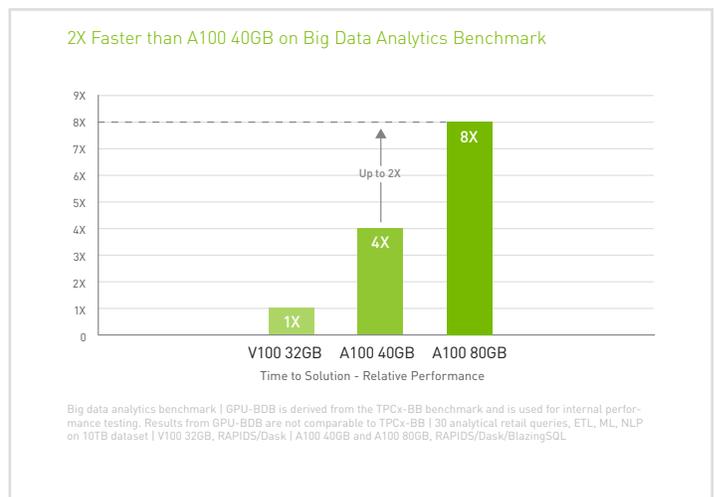
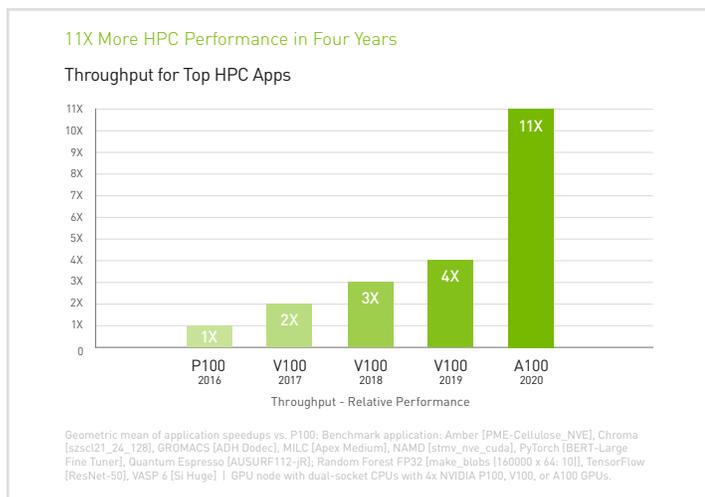
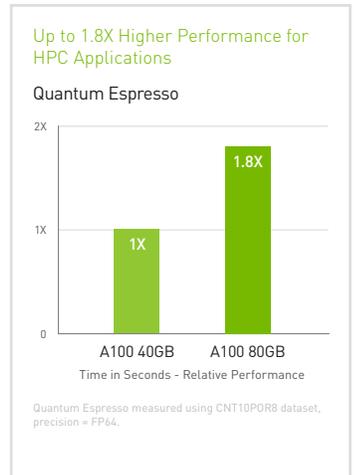
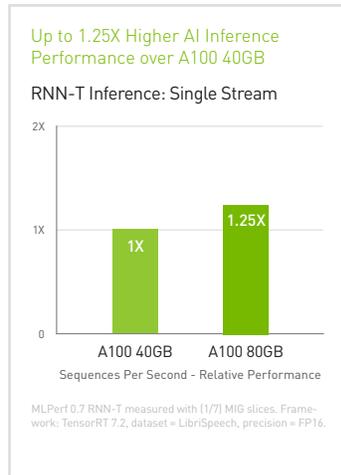
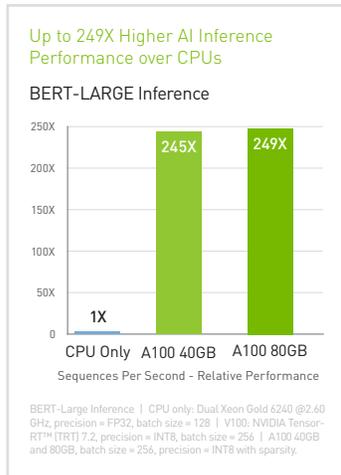


SPECIFICATIONS (PEAK PERFORMANCE)

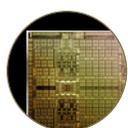
Part Number	TCSA100M-80GB-PB
EAN	3536403386689
GPU Architecture	NVIDIA Ampere
NVIDIA Tensor Cores	432
NVIDIA CUDA® Cores	6,912
Double-Precision Performance	FP64: 9.7 TFLOPS FP64 Tensor Core: 19.5 TFLOPS
Single-Precision Performance	FP32: 19.5 TFLOPS Tensor Float 32 (TF32): 156 TFLOPS 312 TFLOPS*
Half Precision Performance	312 TFLOPS 624 TFLOPS*
Integer Performance	INT8: 624 TOPS 1,248 TOPS* INT4: 1,248 TOPS 2,496 TOPS*
GPU Memory	80 GB HBM2
Memory Bandwidth	1.935 TB/sec
ECC	Yes
System Interface	PCIe Gen4
Form Factor	PCIe Full Height
Multi-Instance GPU	Up to 7 GPU instances
Max Power Consumption	300 W
Thermal Solution	Passive
Compute APIs	CUDA, DirectCompute, OpenCL™, OpenACC



Incredible Performance Across Workloads



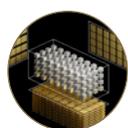
Groundbreaking Innovations



NVIDIA AMPERE ARCHITECTURE

Whether using MIG to partition an A100 GPU into smaller instances or NVLink to connect multiple

GPUs to speed large-scale workloads, A100 can readily handle different-sized acceleration needs, from the smallest job to the biggest multi-node workload. A100's versatility means IT managers can maximize the utility of every GPU in their data center, around the clock.



THIRD-GENERATION TENSOR CORES

NVIDIA A100 delivers 312 teraFLOPS (TFLOPS) of deep learning performance. That's 20X

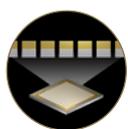
the Tensor floating-point operations per second (FLOPS) for deep learning training and 20X the Tensor tera operations per second (TOPS) for deep learning inference compared to NVIDIA Volta GPUs.



NEXT-GENERATION NVLINK

NVIDIA NVLink in A100 delivers 2X higher throughput compared to the previous generation. When combined with NVIDIA NVSwitch™,

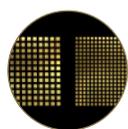
up to 16 A100 GPUs can be interconnected at up to 600 gigabytes per second (GB/sec), unleashing the highest application performance possible on a single server. NVLink is available in A100 SXM GPUs via HGX A100 server boards and in PCIe GPUs via an NVLink Bridge for up to 2 GPUs.



MULTI-INSTANCE GPU (MIG)

An A100 GPU can be partitioned into as many as seven GPU instances, fully isolated at the hardware level with their

own high-bandwidth memory, cache, and compute cores. MIG gives developers access to breakthrough acceleration for all their applications, and IT administrators can offer right-sized GPU acceleration for every job, optimizing utilization and expanding access to every user and application.



HIGH-BANDWIDTH MEMORY (HBM2E)

With up to 80 gigabytes of HBM2e, A100 delivers the world's fastest GPU memory bandwidth

of over 2TB/s, as well as a dynamic random-access memory (DRAM) utilization efficiency of 95%. A100 delivers 1.7X higher memory bandwidth over the previous generation.



STRUCTURAL SPARSITY

AI networks have millions to billions of parameters. Not all of these parameters are needed for accurate predictions, and some

can be converted to zeros, making the models "sparse" without compromising accuracy. Tensor Cores in A100 can provide up to 2X higher performance for sparse models. While the sparsity feature more readily benefits AI inference, it can also improve the performance of model training.

The NVIDIA A100 Tensor Core GPU is the flagship product of the NVIDIA data center platform for deep learning, HPC, and data analytics. The platform accelerates over 2,000 applications, including every major deep learning framework. A100 is available everywhere, from desktops to servers to cloud services, delivering both dramatic performance gains and cost-saving opportunities.

OPTIMIZED SOFTWARE AND SERVICES FOR ENTERPRISE



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PYTORCH

APACHE
Spark™

TensorFlow

2,000+ GPU-ACCELERATED APPLICATIONS

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 Altair ultraFluidX

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To learn more about the NVIDIA A100 Tensor Core GPU, visit www.nvidia.com/a100

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