Humanity’s Toughest Challenges Require Infinite Computing

NVIDIA® PASCAL™ GPU ARCHITECTURE
OPENING A WORLD OF POSSIBILITIES

SOLVING THE UNSOLVABLE

IT TAKES A LARGE AMOUNT OF COMPUTATIONAL POWER TO DEVELOP BETTER CANCER DRUGS

THE ENERGY INDUSTRY HAS HARNESSED THE POWER OF GPU ACCELERATION TO DESIGN CLEANER, MORE EFFICIENT FUEL

INCREASINGLY COMPLEX NEURAL NETWORKS AND THE FLOWING OF CONNECTIONS LEAD TO DEEPER UNDERSTANDING

SMARter MEDICINE

CLEANER ENERGY

MODERN AI

IT TAKES A LARGE AMOUNT OF COMPUTATIONALLY EXPENSIVE RESEARCH TO DEVELOP BETTER CANCER DRUGS

THE ENERGY INDUSTRY HAS HARNESSED THE POWER OF GPU ACCELERATION TO DESIGN CLEANER, MORE EFFICIENT FUEL

INCREASINGLY COMPLEX NEURAL NETWORKS AND THE FLOWING OF CONNECTIONS LEAD TO DEEPER UNDERSTANDING

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OPENING A WORLD OF POSSIBILITIES

SOLVING MASSIVE COMPUTE INEFFICIENCY

TRADITIONAL DATA CENTER
Built for transactional workloads with limited computing needs.
Uses many commodity servers interconnected with complex network infrastructures.
Time lost to network latency and energy spent communicating across complex networks results in performance inefficiencies.

THE NEW DATA CENTER
Designed for workloads with infinite computing needs.
Uses fewer, lightning-fast nodes equal to the performance of thousands of commodity servers for simpler network infrastructure.
Removing the bottleneck saves time and energy. Completing tasks in a fraction of the time.

APPLICATION PERFORMANCE: COMPUTE VS COMMUNICATE

FIVE BREAKTHROUGHS LEAPS IN TECHNOLOGY TO DRIVE COMPUTE EFFICIENCY

Leap in neural network training performance with new NVIDIA Pascal Architecture
12X TRAINING PERFORMANCE

Fabricated with 16 nanometer FinFET for unparalleled energy efficiency
3X MEMORY BANDWIDTH

CoWooS® with HBM2 compared to NVIDIA Maxwell™ architecture for big data workloads
5X BANDWIDTH

With CoWoS™ with HBM2 compared to NVIDIA Maxwell™ architecture for big data workloads

With CoWoS™ with HBM2 compared to NVIDIA Maxwell™ architecture for big data workloads

What Challenge Will You Solve?
Explore what the latest breakthroughs in GPU acceleration can help you achieve, discover, and solve today.
www.nvidia.com/pascal

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Traditional data center

The new data center

Application performance: compute vs communicate

Five breakthroughs: leaps in technology to drive compute efficiency

Leap in neural network training performance with new NVIDIA Pascal Architecture

12X Training performance

Fabricated with 16 nanometer FinFET for unprecedented energy efficiency

3X Memory bandwidth

CoWoS® with HBM2 compared to NVIDIA Maxwell™ architecture for big data workloads

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