



## GPU-ACCELERATED ANALYTICS AI-ACCELERATED ANALYTICS AND INTERACTIVE VISUALIZATION

### The Path from a Digital Business to an AI Enterprise

Unprecedented amounts of data are generated and collected every day. Some companies struggle to survive the data deluge while others thrive with an insatiable appetite for even more information. The more data you have, the more you learn. As enterprises prepare to take advantage of the benefits of deep learning and AI, better understanding of their data is an important first step. How can customers effectively analyze, visualize, and turn insights into AI-driven knowledge to transform their digital business into an AI enterprise?

GPU-accelerated analytics, visualization, and machine learning solutions—powered by NVIDIA® Tesla® GPUs, NVIDIA DGX™ Systems, and the NVIDIA GPU-accelerated cloud platform—provide deeper insights, enable dynamic correlation, and deliver predictive outcomes at superhuman speed, accuracy, and scale.

Bring the power of AI to your company.

#### ANALYZE DATA FASTER

NVIDIA GPU-accelerated databases enable customers to stream, process, query, and analyze datasets in seconds to milliseconds, instead of hours to minutes. Either on-premise or in the cloud, these databases help manage the ever-increasing data demand. GPU-parallelized processing architecture enables linear scalability. It also reduces analytical processing times for multi-billion-row datasets by more than 100X, compared to leading in-memory and analytical databases.

#### VISUALIZE MORE DATA

NVIDIA GPU-accelerated visualization platforms are 10-100X faster than existing systems. They allow users to do complex, multidimensional visual renderings in real time, including easy drill-down and dynamic correlation analysis. Customers can now interact with millions of edges like never before and drive insights from 100X more data. Unexpected insights come from both historical data and unseen long-tail, outlier data.

#### AI-ACCELERATE WITH MORE COMPUTE POWER

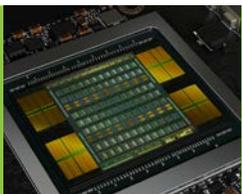
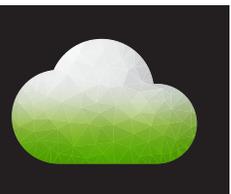
NVIDIA is focused on innovation at the intersection of visual processing, AI, and high performance computing. From real-world data, GPU-accelerated software algorithms can learn to recognize patterns too complex, too massive, or too subtle for manually coded software. GPU deep learning is the computing model companies will use to transform their digital business into an AI enterprise.

### Advantages of a GPU-Accelerated Data Center

- > **TURN DATA INTO KNOWLEDGE**  
Uncover patterns in large datasets to reveal new knowledge and insights in hours or minutes, instead of days or weeks.
- > **STAY AHEAD OF THE COMPETITION**  
Deliver the fastest solutions for your deep learning training and AI-accelerated analytics workloads.
- > **MAXIMIZE YOUR INVESTMENT**  
Improve ROI through increased productivity with compute power equivalent to up to 800 CPUs, without the hidden cost of traditional systems.

## Get Started with NVIDIA GPU Infrastructure

NVIDIA, the leader in accelerated computing, brings the power of GPU computing to analytics platforms. NVIDIA Tesla GPUs, NVIDIA DGX Systems, and NVIDIA GPU-accelerated cloud platforms combine the power of deep learning and accelerated analytics, providing customers an end-to-end GPU-powered data center.

<b>TESLA</b> SERVERS IN EVERY SHAPE AND SIZE		<b>DGX SYSTEMS</b> AI TOOLS FOR INSTANT PRODUCTIVITY		<b>CLOUD EVERYWHERE</b>	
       				     	 

## NVIDIA Tesla GPUs

NVIDIA Tesla GPUs power the world's fastest compute systems with higher performance than hundreds of slower commodity systems and allow data centers to dramatically increase throughput and save money. One of our latest GPUs, NVIDIA Tesla V100, is the world's most advanced data center GPU ever built to accelerate AI, analytics, and graphics. Powered by the latest GPU architecture, NVIDIA Volta™, Tesla V100 offers the performance of 100 CPUs in a single GPU—enabling data scientists, researchers, and engineers to tackle challenges that were once impossible.

Learn more: [www.nvidia.com/tesla/](http://www.nvidia.com/tesla/)

## NVIDIA DGX Systems

**NVIDIA DGX Systems** are the essential AI tools for accelerated analytics. The DGX portfolio now includes NVIDIA DGX-2, NVIDIA DGX-1, and NVIDIA DGX Station™.

Learn more: [www.nvidia.com/dgx/](http://www.nvidia.com/dgx/)

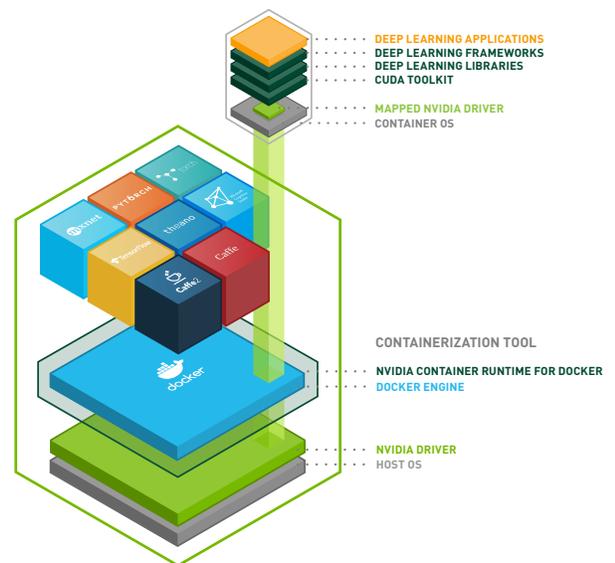
**NVIDIA DGX-2**, the world's largest GPU, is offered with 16 NVIDIA Tesla V100 GPUs and packs the computing power of 300 servers in a single node.

**NVIDIA DGX-1**, the AI supercomputer, with 8 NVIDIA Tesla V100 GPUs, packs the computing power of 140 servers in a single node.

**NVIDIA DGX Station** is designed for easy experimentation at the office, is whisper quiet at 1/10th the noise of other workstations, and delivers the power of a CPU compute cluster while consuming less than 1/20th the power.

These systems feature NVIDIA-optimized software stacks for deep learning and accelerated analytics, combined with NVIDIA GPU libraries and drivers. These industry-leading software applications are comprehensively tested and certified to ensure faster, more reliable, and fully predictable deployment.

## NVIDIA DGX Software Stack



## NVIDIA DGX Systems Partner Applications

DGX Systems include industry-leading accelerated analytics applications that are tested to ensure a fast, reliable, predictable deployment.

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<b>Anaconda</b>	With over 6 million users, Anaconda, now GPU-accelerated, is the world's most popular Python data science platform. Anaconda, Inc., continues to lead open-source projects like Anaconda, NumPy, and SciPy that form the foundation of modern data science.
<b>BlazingDB</b>	BlazingDB is a high-performance SQL data warehouse for petabyte scale needs. Through the use of a distributed and GPU architecture, BlazingDB offers a revolutionary new generation of SQL.
<b>Datalogue</b>	Datalogue is a NVIDIA GPU-accelerated data operations platform, enabling automated ingestion of every data source, every data type across your entire network.
<b>Fastdata.io</b>	Fastdata.io is a GPU-accelerated stream processing engine. Plasma Engine™ is the first GPU-native software to fully leverage NVIDIA GPUs and Apache Arrow for real-time processing of infinite data in motion.
<b>Graphistry</b>	Graphistry's intelligent visual investigation platform, powered by NVIDIA GPUs, streamlines how analysts investigate events and entities and scales to millions of data points.
<b>H2O.ai</b>	H2O.ai's product, Driverless AI, is a GPU-accelerated machine learning platform that automates data science by providing automatic visualization and model interpretability.
<b>Kinetica</b>	Kinetica's GPU-accelerated, distributed, in-memory database visualizes streaming data for real-time intelligence 100X faster and 10X more cost-effectively than traditional databases.
<b>MapD</b>	MapD is an open-source database and visual analytics layer that harnesses the power of NVIDIA GPUs to explore multi-billion-row datasets in milliseconds.
<b>SQream</b>	SQream Technologies provides GPU-powered, near real-time analytic solutions that deliver 10-100X performance and efficiency gains over traditional CPU-bound approaches at a fraction of the price.

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## NVIDIA GPU-Accelerated Cloud Platforms

NVIDIA GPU-accelerated cloud platforms also allow customers to replace hundreds of non-accelerated nodes with powerful GPU-accelerated instances for accelerated analytics workloads. Customers can achieve faster results without massive capital expenditures and large data transfers while enjoying the 24/7 uptime and scalable performance they have come to expect from NVIDIA Tesla data center GPUs.

Learn more: [www.nvidia.com/cloud/](http://www.nvidia.com/cloud/)

## NVIDIA TITAN V

NVIDIA TITAN V is the most powerful graphics card ever created for the desktop computer, delivering the highest performance for developers, creatives, researchers, and data scientists.

Learn more: [www.nvidia.com/titan-V/](http://www.nvidia.com/titan-V/)

## Industry Use Cases

Customers are using massively parallel graphics processors to provide significantly higher throughput for compute-intensive workloads and achieving significant performance gains without the hidden cost of scale-out architecture. This results in dramatic cost savings across many industries.

<b>Ad Tech</b> <ul style="list-style-type: none"><li>&gt; Assess inventory availability</li><li>&gt; Optimize campaign management and conversion</li><li>&gt; Analyze campaign performance</li></ul>	<b>Federal</b> <ul style="list-style-type: none"><li>&gt; Process data streams like video, speech, and image faster</li><li>&gt; Disrupt planned cyber and criminal activities</li><li>&gt; Leverage advanced sonar and object recognition technologies to locate threats faster, safer, and more accurately</li></ul>
<b>Finance</b> <ul style="list-style-type: none"><li>&gt; Correlate impact of economic trends and hedge funds related to portfolios</li><li>&gt; Campaign and conversion analysis</li><li>&gt; Analyze critical markets and evaluate credit worthiness</li></ul>	<b>Healthcare</b> <ul style="list-style-type: none"><li>&gt; Analyze clinical trials, cross-trials, and drug compliance</li><li>&gt; Identify patient populations that could benefit from predictive outreach</li><li>&gt; Identify disease and risk satisfaction</li></ul>
<b>Manufacturing</b> <ul style="list-style-type: none"><li>&gt; Leverage live-streaming analytics on component functionality to ensure safety, avoid failures, and validate warranty claims</li><li>&gt; Monitor real-time data feeds from laboratory and production-line machinery to identify catastrophic events and generate notifications</li><li>&gt; Predict maintenance and monitor conditions</li></ul>	<b>Oil and Gas</b> <ul style="list-style-type: none"><li>&gt; Manage, visualize, and optimize exploration and production operations</li><li>&gt; Determine drilling and completion of wells</li><li>&gt; Predict and reduce down-hole failures</li></ul>
<b>Retail</b> <ul style="list-style-type: none"><li>&gt; Analyze historical sales to determine geographic product demand for future inventory and store locations</li><li>&gt; Manage real-time supply chains for replenishment and inventory management</li><li>&gt; Manage ad-tech, geospatial tagging, and customer preference recommendations</li></ul>	<b>Security</b> <ul style="list-style-type: none"><li>&gt; Detect anomalous behavior in network traffic to identify vulnerabilities</li><li>&gt; Analyze data in motion and at rest to help find new associations or uncover patterns and facts</li><li>&gt; Analyze internet, smart devices, and social media data to prevent criminal threats</li></ul>
<b>Telco</b> <ul style="list-style-type: none"><li>&gt; Correlate call records with server performance data to spot problems in real time and build ad targeting profiles</li><li>&gt; Analyze intra-day billing</li><li>&gt; Identify emerging trends in customer-specific usage</li></ul>	<b>Transportation</b> <ul style="list-style-type: none"><li>&gt; Real-time management of traffic patterns and congestion</li><li>&gt; Live monitoring of railroad conditions</li><li>&gt; Optimize long-haul trucking routes and load capacities</li></ul>

Get started with deep learning today: [www.developer.nvidia.com/deep-learning](http://www.developer.nvidia.com/deep-learning)

Learn more about GPU-accelerated analytics: [www.nvidia.com/analytics](http://www.nvidia.com/analytics)