



# REMOTE WORK SOLUTIONS FOR RETAIL





## REMOTE WORK CHALLENGES IN RETAIL

With the recent changes to consumer buying behaviors, retailers need to become more agile than ever and respond in real-time to shifts in customer buying trends, while keeping employees and customers safe. This requires that data scientists continue to develop AI applications that help with daily forecasting, optimizing supply chains, and automating self-checkout.

From data scientists to IT managers, professionals in the retail industry are accustomed to working in highly-customized, onsite work environments. But as working remotely becomes a necessity in times of emergency, these professionals find themselves navigating uncharted waters with dispersed teams working from home. This creates unprecedented complexity in day-to-day functions. Data scientists who routinely train their algorithms in data centers, or on GPU hardware in their offices, now need cloud, virtual GPU access, or GPU-powered laptops to develop and train algorithms.

# NVIDIA SOLUTIONS: PERFORMANCE FROM ANYWHERE

GPUs are instrumental for data scientists to develop and train AI applications, such as daily demand forecasting, stockout alerts, supply chain optimization, and automated speech ordering systems.

NVIDIA remote work solutions, such as virtual GPU technology and GPU-powered laptops, ensure mobility and performance in a fast-paced environment.

NVIDIA GPU-powered laptops combine portability with large memory capacity and robust visual computing capabilities, delivering optimal performance to data scientists. These laptops help them function as if they're working from a pool of

shared GPUs in the office, while supporting applications that optimize processes for those in the retail industry.

NVIDIA virtual GPU (vGPU) software solutions bring the power of NVIDIA GPUs to virtual desktops, apps, and workstations, accelerating VDI performance, graphics, and compute to make virtualized workspaces accessible for everyone from knowledge workers to technical professionals. Since data is stored securely in the data center, professionals can access workspaces from anywhere, on any device, with a native PC-like experience.



# COMMON QUESTIONS, ANSWERED

Remote work technology can be transformative for the retail industry. When developing a technology roadmap, retail organizations should assess their current infrastructure needs, goals, and how best to utilize laptops, the cloud, and virtualization. Here are a few high-level questions to help guide that journey:

## > Will NVIDIA vGPUs scale?

Yes, NVIDIA vGPU technology allows large retailers to centralize data and applications in the data center, delivering virtual workspaces with improved manageability, security, and performance, while reducing downtime and support costs. IT can also easily manage large-scale virtualization deployments with end-to-end visibility of the organization's infrastructure and proactive monitoring.

## > How do NVIDIA's remote work solutions enhance productivity?

NVIDIA virtualization solutions can satisfy unique productivity needs for retailers, such as multi-monitor support for demand forecasting systems and larger frame buffers for better data visualization and pattern recognition. NVIDIA GPU-powered laptops afford portability and support graphics-intensive applications for mobile retail workers.

## > How do we continue to roll out GPU edge devices in stores?

The NVIDIA EGX platform enables IT organizations to remotely manage, install, and update software across thousands of distributed devices, without the need to do so individually in each store.

# REMOTE WORK WITH NVIDIA: SOLUTIONS OVERVIEW

## > NVIDIA RTX Laptops

With powerful visual computing capabilities, large memory capacity, and the latest NVIDIA® RTX™ technology—including real-time ray tracing, advanced shading, and AI-enhanced tools—these laptops place local, advanced visualization in the hands of analysts.

Powered by NVIDIA Quadro® GPUs, data scientists can use these laptops to easily develop, train, and deploy AI models.

## > NVIDIA Quadro Virtual Data Center Workstation (Quadro vDWS)

NVIDIA Quadro vDWS provides GPU-accelerated virtual desktops and applications that untether the workforce from physical workstations, providing a native experience on any device. Quadro vDWS is also ideal for high-frequency power data scientists who work with large data sets and complex models.



Auto image courtesy of Epic Games and Porsche

## > NVIDIA GRID Virtual PC (GRID vPC) and Virtual Applications (GRID vApps)

With NVIDIA GRID®, professionals can achieve a VDI user experience that's nearly indistinguishable from a native PC. It provides virtualized access to online training, teleconferencing, Skype, and other graphics-intensive applications and enables users to multi-task across multiple high-resolution monitors for increased productivity.





# REMOTE WORK WITH NVIDIA: SOLUTIONS OVERVIEW

## > NVIDIA Quadro Virtual Workstations (Quadro vWS) in the Cloud

Even without access to local compute resources, or with limited access, organizations can still provide users with the resources they need to be productive. Many applications can be accessed from the cloud, and these solutions can be leveraged to provide compute cycles for specific initiatives.

For example, data scientists, when running limited or time-bound experiments, can use the cloud to get work done. Quadro vWS in the cloud also supports the latest RTX-enabled applications with an NVIDIA T4 Tensor Core GPU instance, available from many cloud service providers.



# NVIDIA ENABLES RETAILERS TO DEVELOP AI APPLICATIONS REMOTELY

## > Warehouse and Logistics Optimization

NVIDIA is working with several logistics software solution providers who use the power of deep learning and machine learning to automate and streamline warehouse tasks, such as the loading and unloading of merchandise from trucks, pick and pack robots, and multi-shuttle shelves. As the volume of online orders increases, AI applications can increase the efficiency of distribution centers and result in faster delivery of online orders.

## > Demand Forecasting and Inventory Management

AI is also improving demand forecasting and inventory management. Demand forecasting uses data from various sources to ensure the right products are available in the right stores, at the right time. Using machine learning to improve forecast accuracy has a significant impact on optimizing the supply chain. The current changes in customer buying behaviors require retailers to run daily forecasts on millions of product and attribute combinations that can only be managed with GPUs.

## > AI for Autonomous Shopping

The convenience of intelligent grab-and-go stores, where customers can use their mobile phones for cashier-less checkout, is becoming increasingly popular. With autonomous checkout, retailers can provide customers with quicker, frictionless shopping experiences, while increasing revenue and margins.



## WORK FROM ANYWHERE WITH NVIDIA

NVIDIA remote work solutions enable retailers to keep their data scientists and developers productive and provide them with the compute power of GPUs, while working from home or any remote location.

Learn more about NVIDIA's remote working solutions at:  
[www.nvidia.com/remote-work/](https://www.nvidia.com/remote-work/)

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