ActualTech Media

Hewlett Packard Enterprise

The HPE and NVIDIA Difference

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Extend VDI to both traditional and graphics-intensive workloads and use cases with GPU-accelerated virtualization solutions for your entire workforce.

Highlights include:

- Choose the server platform that best fits your business needs and use cases

- Enjoy cloud-like savings with consumption-based options

- Deploy with confidence leveraging validated designs and professional services

Virtual desktop infrastructure (VDI) software, such as Citrix Virtual Apps and Desktops and VMware Horizon, enables organizations to deliver a full application or desktop experience to end users across a broad array of devices and locations. But apps with strong graphics needs, like CAD, weren't typically seen as good fits for VDI.

As applications become more graphically intensive, GPU

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hardware acceleration is increasingly required to deliver superior performance and return on investment (ROI) in VDI environments. By adding virtual GPU software to your VDI server infrastructure, the GPU can be virtualized and shared across multiple users, or multiple GPUs can be aggregated for a single user who needs a more powerful virtual machine (VM), as shown in **Figure 1**.
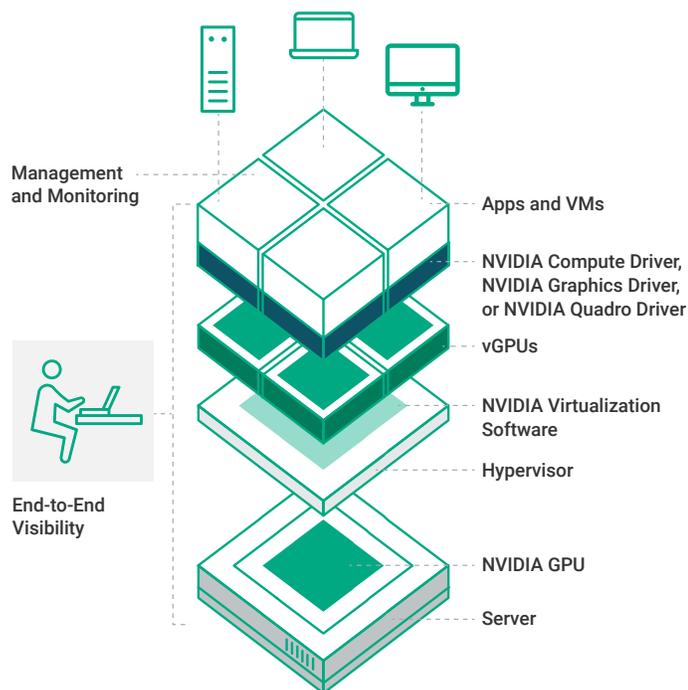
Figure 1: A high-level overview of a GPU-accelerated VDI architecture

NVIDIA virtual GPU (vGPU software) is available in three editions to address specific virtualization use cases:

- **NVIDIA GRID vPC and GRID vApps** provide a multimedia-rich VDI user experience nearly indistinguishable from a native PC

- **NVIDIA Quadro Virtual Data Center Workstation** (Quadro vDWS) delivers the most powerful virtual workstations from the data center to any device, anywhere

- **NVIDIA Virtual Compute Server** (vCS) enables data centers to accelerate compute-intensive workloads such as artificial intelligence (AI), deep learning, and data science, run in a VM

Across every industry, HPE VDI solutions with NVIDIA have been adopted to drive these applications while providing simplified management and increased security.

HPE and NVIDIA have partnered to deliver the "better together" VDI experience. This partnership provides customers with many value-added benefits for their VDI deployments, including the flexibility of platform choice, the freedom of consumption-based models, the confidence of validated designs and reference architectures, and the speed of professional deployment services.

Platform Choice

HPE offers a broad portfolio of secure VDI infrastructure solutions to match specific use cases, workloads, and deployment models for creative and knowledge workers, architects and designers, engineers and professionals, and professors and students. Designed for Citrix and VMware environments, the portfolio supports a wide spectrum of architectures to align with specific workload requirements.

HPE's portfolio includes a choice of traditional rack servers, hyperconverged infrastructure (HCI) solutions, composable solutions, and even support for bare-metal VDI:

- **HCI.** For small to midsize businesses (SMBs) that prefer a simplified all-in-one HCI experience, HPE offers HCI and disaggregated HCI solutions that let you start small, scale incrementally, and expand as your needs change. These platforms are ideal for use cases that involve persistent users.

- **Composable solutions.** For a more traditional approach to VDI, HPE provides rack-based form factors backed by centralized storage. Many medium and large organizations opt for a composable solution.

For graphics-intensive workloads on both virtual desktops and virtual workstations, there are platform options that include NVIDIA vGPU technology to address a wide range of VDI needs with superior security, performance, and manageability.

Consumption-Based Models

Although many organizations recognize the benefits of VDI in enterprise workplace productivity strategies, the significant capital investments required for a traditional VDI implementation have been a barrier to implementation.

> **HPE GreenLake VDI brings cloud-like economics and agility together with the performance, compliance, and control you expect from your on-premises IT.**

Organizations had to design a VDI environment to deliver desktop services at peak capacity, procure all the hardware and software upfront, and build and integrate it to operate the entire complex stack.

Every five to seven years, this cycle would repeat as the environment required a refresh to manage the ongoing costs related to hardware obsolescence, software end of life, operational efficiency, and the need to meet ever-growing user experience expectations to maximize productivity.

HPE GreenLake brings the simplicity of the cloud experience to VDI. The ability to scale capacity—and costs—is a key benefit of the cloud. But most pure-cloud VDI implementations can't meet the necessary standards of security, compliance, and, especially, performance.

HPE GreenLake VDI brings cloud-like economics and agility together with the performance, compliance, and

control you expect from your on-premises IT. The benefits of HPE GreenLake include:

- **Pay per use.** HPE GreenLake's pay-per-use consumption model frees up capital and boosts operational and financial flexibility.

- **Scale up and down.** HPE GreenLake helps you support rapidly changing workforce requirements with on-demand, scale-up-and-down freedom.

- **Simplified IT.** HPE GreenLake Central provides centralized operations and insights across your VDI deployment from a single intuitive self-service platform. Get a unified view and monitor usage, cost, performance, compliance, and more.

- **Managed for you.** Offload the monitoring and management of your on-premises cloud and public clouds to HPE's world-class IT Operations Centers, freeing your IT resources for more strategic business initiatives.

Validated Designs and Reference Architectures

HPE reference architectures deliver complete, validated configurations for a wide range of VDI use cases. Validated designs and reference architectures enable organizations to:

- Reduce the complexities of planning, designing, and implementing infrastructure across a variety of workloads and infrastructure platforms.

- Speed deployment time with less risk using a repeatable, best-practices reference to determine particular, optimized configurations.

Recommended solutions for knowledge worker VDI use cases include:

- **Cost-optimized bundle:**

  - 2-socket, 2U rack server

  - 2x Intel Xeon Gold 6248 (20C, 2.5 GHz)

  - 2-4 vCPUs

  - 6GB to 8GB memory, per user

- Up to 3x NVIDIA M10 GPUs (1B user profile)

- Up to 96x concurrent user (CCU) licenses of NVIDIA GRID Virtual PC (GRID vPC) software

- **Flexibility optimized bundle:**

  - 2-socket, 2U rack server

  - 2x Intel Xeon Gold 6248 (20C, 2.5 GHz)

  - 2-4 vCPUs

  - 6GB to 8GB memory, per user

  - Up to 6x NVIDIA T4 Tensor Core GPUs (1B user profile)

  - Up to 96x CCU licenses of NVIDIA GRID vPC software

NVIDIA GRID vPC software accelerates office productivity applications, WebGL, and streaming video, and supports high-resolution displays and multiple monitors for knowledge worker VDI workloads.

Recommended solutions for high-performance virtual workstations include:

- **Light to medium users:**

  - 2-socket, 2U rack server

  - 2x Intel Xeon Gold 6254 (18C, 3.1 GHz)

  - 8 vCPUs

  - 16-32GB memory, per user

  - Up to 6x NVIDIA T4 GPUs (4Q user profile) or up to 2x Quadro RTX 6000 or RTX 8000 (4Q or 6Q user profile)

  - Up to 16-24 CCU licenses of NVIDIA Quadro Virtual Data Center Workstation (Quadro vDWS) software

- **Heavy users:**

  - 2-socket, 2U rack server

  - 2x Intel Xeon Gold 6254 (18C, 3.1 GHz)

  - 12+ vCPUs

  - >96GB memory, per user

  - Up to 2x RTX 6000 or RTX 8000 GPUs (8Q or 12Q user profile)

- Up to 8-12 CCU licenses of NVIDIA Quadro vDWS software

NVIDIA Quadro vDWS software accelerates professional visualization applications, including Autodesk Revit and Maya, Dassault CATIA and SolidWorks, Esri ArcGIS Pro, and Siemens NX, and many more.

Deployment Services

Building the right-sized VDI solution for your organization requires in-depth planning and a strategic roadmap. HPE Pointnext Services can help you architect your VDI deployment with:

- Advisory services to assist with rationalization of applications, workloads, and images to determine readiness

- Professional services—including solution design, migration planning, and solution deployment—to streamline your VDI deployment

- Operational services to simplify and optimize your IT operations and free up staff to focus more on innovation

- Global consulting, financial, educational, and other services, including emergency remote working solutions with HPE VDI in the cloud with 24/7 support

Accelerated Performance with HPE and NVIDIA

Virtual desktop solutions from HPE and NVIDIA help organizations overcome the challenges of mobility, collaboration, and security in remote working environments. With the accelerated performance of NVIDIA virtual GPUs, customers enjoy a consistently superior user experience. Remote professionals and creative workers can work from anywhere on any device and get the performance, security, and manageability they need to succeed in a virtual environment.

Learn more about HPE VDI solutions with NVIDIA by visiting www.hpe.com/solutions/desktopvirtualization.