Guide

Deliver Powerful 3D VDI Performance for Your Power Users—and Everyone Else

Understanding the new requirements of VDI in healthcare, oil and gas, and manufacturing

VDI-Ready
Certified for 3,200 VDI users, IOmark-VDI standard storage workloads (Evaluator Group 2019)

Unmatched Scalability
Independent scale and QoS that maximize resource and capacity utilization, significantly lowering TCO

Radical Simplicity
92% less administrative time with non-disruptive scaling and no downtime

Workplace Transformation

When the first wave of virtual desktop infrastructure (VDI) was implemented, the most frequently deployed applications were lightweight and made minimal demands on CPU. These demands centered on maintaining the client environment and applications individually, protecting data on the device, and enabling access from other locations. The virtualization of applications and the smaller compute footprint of VDI delivered the added benefits of security, accessibility, flexibility, and manageability for the data center.

Today, you're faced with major changes in VDI requirements and the challenge of new resource demands for VDI. The demand for higher visual quality of graphics, high performance, and the expansion to virtual workstations means that even lightweight VDI applications are putting pressure on performance. Business is global and is conducted on a wide range of devices, and workplaces are transforming. Furthering that transformation, the influx of graphic applications brings its own set of challenges:

- Remote sites often have different IT standards and support capabilities.
- Access to high-definition graphics and video from any location and on multiple device types is required.
- Multiple parties, both internal and external, must be able to collaborate without threat to intellectual property.
- IT needs to deliver high levels of services to meet business needs.
- Maintaining security requirements is of utmost importance.

Rapid Acceleration of 3D Virtual Desktops in Healthcare, Oil and Gas Exploration, and Manufacturing

3D graphics and resource-intensive applications are increasingly relevant for verticals such as healthcare, oil and gas exploration, and manufacturing, a trend that is driving the rapid adoption of VDI technology. Data protection and storage management requirements remain paramount, but it's clear that the next generation of VDI needs to include the element of graphics in addition to compute, network, and storage. Even video training for Windows 10 users can be improved with the addition of a graphics element for virtual desktops. In the years to come, immersive technology for training and simulation will drive new use cases with even greater performance demands.

NetApp®

In these industries, the implementation of 3D VDI means that:

- It's simpler to design high-availability desktop provisioning for working sessions.
- Users' resources expand to fit their workflow and multiwork-load requirements.
- Data stays in the data center, regardless of where it is accessed.
- Low bandwidth requirements mean that users can connect from remote locations.
- Data doesn't have to be transferred off the network, which mitigates the risk of losing IP.

INDUSTRY	GRAPHIC USES
Oil and Gas	Geosystemic apps
Manufacturing	CAD/CAE apps Product lifecycle management apps: CATIA, SolidWorks, Siemens PLM NX
Healthcare	MRI, PET scan, and CT image analysis
Media and Entertainment	Remote artistic expertise, image rendering
Education and Training	Video training and collaboration
Law Firms	Sharing video evidence and depositions in the courtroom
Internet Service Providers	3D desktop as a service and cloud services

Healthcare

Virtual desktop infrastructure has established a place for itself in the healthcare IT infrastructure. Constant access to electronic health data via the cloud is the first step in mobilizing the healthcare workplace. VDI takes it a step further by giving end users access to their desktops though any secure mobile device. Access to personal desktops through mobile devices saves time in retrieving information and logging into cloud service interfaces.

The healthcare industry stands to gain even more important benefits from the mobilization of corporate culture. Doctors can access records more quickly and give patients more personalized care by accessing their records while on the phone, at the bedside, or in an exam room. While patients enjoy a modern healthcare experience, administrators can better protect sensitive patient information from cyber threats. Displaying high-resolution medical images and 3D graphics in a virtual environment can be a challenge. The NetApp® HCI H615C solution ensures the delivery of healthcare applications that demand complex visualization. Different classes of users with needs can be provisioned on the same system without creating silos, so everyone from clinical staff to administration can get the performance they need and access to applications when they need it.

Oil and Gas Exploration

With new oil and gas projects costing tens of billions of dollars, decisions about where to drill and how to maximize reservoir performance must be based on expensive and sensitive data generated by the most sophisticated modeling and simulation technology available.

Understanding the importance of protecting these valuable datasets, oil and gas firms are increasingly focused on better management and security, typically relying on remote systems to keep data backed up in local data centers. This creates long project load times and save times and tethers geoscientists to traditional workstations or one-to-one data center workstations. Moreover, simulating and analyzing petabytes of data can be slow when real-time access is crucial to success. The NetApp HCI H615C solution helps oil and gas firms overcome the challenges of processing, analyzing, visualizing, and securing large datasets. The solution also enables the migration of traditional workstations to the data center. With NetApp, enterprises can transform their IT infrastructure, maximize compute resources, and increase user mobility to stay agile in an intrinsically volatile industry that demands efficiency.

Manufacturing

Manufacturers are looking to virtualization solutions to help mobile and distributed teams collaborate on designing and producing a wide range of products, from aerospace and aviation to automotive and industrial machinery. However, the sheer size of the 3D models required for this work, combined with workstation performance and network limitations, means that loading times can be excessive, often resulting in lost production time. By adding the NetApp HCI H615C technology to their VDI environments, manufacturers are realizing significant benefits, including improved productivity, more effective collaboration with distributed teams, and increased data security.

Enable Your 3D VDI Environment

With the NetApp HCI H615C, powered by NVIDIA GPUs, it's easy to deploy an enterprise-grade 3D VDI experience. You can transform your workplace by allowing end users to access 3D data anywhere, while maintaining the protection required for your sensitive applications.

Key benefits of virtualizing the graphic workstation into a VDI desktop:

- Extends 3D visualization to engineers, specialists, and co-workers wherever they happen to be—local, remote office, or the field.
- Incorporates leading technologies from NetApp, Cisco, AMD, VMware, Citrix Mechdyne, and NVIDIA in an integrated solution that's fast and easy to deploy.
- Eliminates bottlenecks and enhances geographical collaboration to decrease time to decision.
- Keeps valuable datasets inside the data center, where they are protected and secure.
- Lowers TCO by decreasing reliance on expensive, difficult-to-maintain desktop workstations and increasing the use of software licenses.
- Increases user productivity by providing ubiquitous fast access to data and applications.

NetApp HCI for VDI with VMware Horizon and NVIDIA GPUs

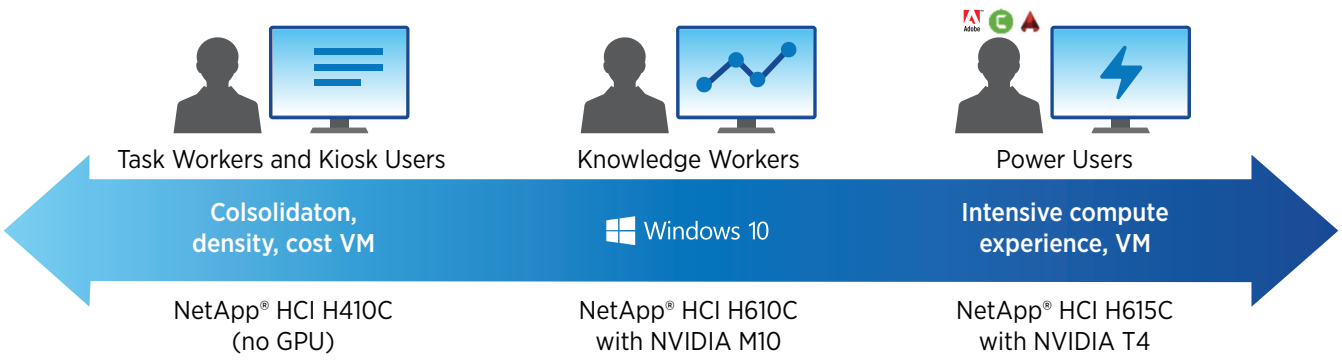

Figure 1) NetApp HCI, NVIDIA GPUs, and VMware Horizon work together to meet the needs of any end user.

VDI Solutions on NetApp HCI

To meet the demands of the various users in an organization, NetApp HCI has partnered with NVIDIA and VMware Horizon View to create VDI solutions for 3D graphics power users. End users can fall anywhere on the spectrum between task user and power user. These validated solutions give you confidence that no matter the type of user, no one will notice a dip in the performance of their desktop.

NetApp HCI for VDI with VMware Horizon and NVIDIA GPUs

NetApp HCI is a hybrid cloud infrastructure that has a scalable architecture to meet the growing VDI demands in three ways. First is the use of NVIDIA GPUs to meet the demands of your high-performance applications and the growing need for graphics-intensive workloads. And when the VDI day ends, the GPUs can be repurposed for compute-intensive post-processing like modeling or rendering. Second, NetApp Element® software gives you the quality of service (QoS) that you need to tailor resources to your applications so that you can deliver the expected user experience. Element software QoS can bring all your VDI workloads under an elastic architecture so that boot storms don't affect other applications or your users' experience. Third, with NetApp HCI, you can start with what you need today to help you manage costs and your data center footprint. NetApp HCI has disaggregated CPU from storage, so your enterprise can grow in any way you want.

"The NetApp HCI proved its ability to deliver scalable performance, including the most VDI instances of any HCI system Evaluator Group has tested and the most VM instances of any HCI configuration under $1M. The NetApp HCI achieved these records with data reduction, providing significant capacity savings. In contrast, competing HCI solutions often disable data reduction during benchmarking."

Evaluator Group, 2019

LEARN MORE

NetApp HCI

NetApp HCI for Virtual Desktop Infrastructure with VMware Horizon View