SUCCESS STORY | SPORTPESA RACING POINT F1 TEAM

WINNING THE RACE TO DIGITAL INNOVATION WITH NVIDIA QUADRO vDWS

ebb3

NVIDIA

VIRTUAL GPU-ACCELERATED INFRASTRUCTURE PROVIDES THE ULTIMATE EDGE OVER THE COMPETITION

SUMMARY

- SportPesa Racing Point F1 Team competes in Formula 1 Grand Prix races.
- The design team needed to transition to the latest CAD software without impacting operations.
- Racing Point deployed virtual desktops powered by NVIDIA® Quadro® Virtual Data Center Workstation (Quadro vDWS).
- Designers can now access the newest CAD platform without graphics performance issues.
- Part of a future-proof roadmap, NVIDIA technology helps the team stay competitive.

INTRODUCTION

SportPesa Racing Point F1 Team is a group of motor racing specialists who design, manufacture, and compete in the extremely fast-paced world of Formula 1. During racing season, the team travels the world participating in Grand Prix events. The rest of the year, they work from their UK headquarters at the Silverstone racetrack where they recently embarked on an ambitious digital innovation project to secure a competitive edge.

CHALLENGE STATEMENT

With a new owner and new sponsors, Racing Point began an exciting phase in its history in 2018. As part of a push to launch a design center of excellence, the team took its first steps toward IT transformation, focusing on upgrades that would help them achieve some major strategic goals.

SOLUTION STATEMENT

The first priority was switching from an earlier version of CAD to the latest CAD software. The more sophisticated platform would streamline workflows and move design modifications into production faster.

CUSTOMER PROFILE

Company	Industry	Location	Size	Website
SportPesa Racing Point F1 Team	Manufacturing	Silverstone, Northamptonshire, United Kingdon	400 Employees	racingpointf1.com

SOFTWARE

Hypervisor: Citrix Virtual Apps and Desktops 7 1903; VMware vSphere 6.7

Graphics Acceleration: NVIDIA Quadro vDWS

HARDWARE

Server: Cisco HyperFlex HX240c M5 Node

GPU: NVIDIA P40

REASONS FOR QUADRO vDWS

- High-end workstation performance for graphics-intensive 3D design applications
- Better collaboration with access to 3D applications from anywhere
- Windows 10 rollout without the need to upgrade users' machines
- Simplified management that reduces IT workloads

From the outset, transitioning the design team to the upgraded CAD software without disrupting operations wasn't the only concern. The platform also introduced challenges from increased graphics requirements, as the latest releases fully leverage GPU acceleration. While improving performance of physical workstations was one possible solution, that approach was costly. Moreover, it didn't solve an ongoing problem with collaboration. Whenever the team wanted to work on projects with remote colleagues, they had to haul workstations to a video conference room.

Another organizational goal was to increase office productivity by upgrading from Windows 7 to Windows 10. With the graphics improvements delivered in Windows 10, the team had to be sure their computer hardware could smoothly handle the increased performance requirements. As the IT team looked ahead, they knew that Racing Point needed an IT roadmap that didn't involve constant upgrades to keep up with changing system requirements.

Ideally, that roadmap would also be future-proof. Today, using GPU-powered high-performance computing (HPC) to model live simulations, like aerodynamics and wind tunnels, is banned by the Fédération Internationale de l'Automobile (FIA), Formula 1's governing body. But it's expected that those rules will change soon. Ultimately, Racing Point wanted a solution that would position them to take advantage of these tools at a moment's notice to stay ahead of the competition.

"The new NVIDIA-powered virtual workstations consistently deliver performance on the level of physical workstations."

Bill Peters
Chief of IT,
SportPesa Racing Point F1 Team

RESULT STATEMENT

To smooth the transition to both the new CAD platform and Windows 10, the IT team honed in on virtual desktops, because they offered better control, manageability, and scalability. And hyperconverged infrastructure seemed like a good solution to keep CAD running at peak performance. Before moving forward, however, Racing Point reached out to industry IT experts ebb3.

Like most organizations, Racing Point had a limited budget. "The team really needed an external resource to show them what was possible," said Paul Williams, ebb3's director of service delivery. "They needed virtual GPU (vGPU) accelerated infrastructure that was flexible and scalable enough to grow with future demands. The computing power of GPUs continues to make incredible strides, and we wanted to set them up for long-term success."

The two teams came up with a plan to deploy virtual workstations to an initial group of 24 designers. To support this test group, the team deployed four Cisco HyperFlex HX240c M5 servers, which were installed with one NVIDIA P40 card per server with NVIDIA Quadro Virtual Data Center Workstation (Quadro vDWS) software. Each server would handle six users, each assigned a 4-gigabyte (GB) profile. After the first phase, the project would be expanded to a larger user group. "As soon as positive user feedback started coming in, Racing Point was talking about a future application deployment model alongside desktop deployments," said Williams.

Built on Windows 10 desktop infrastructure, Racing Point's new virtual workstations easily run earlier versions of CAD side by side with the most recent version. "It was crucial that our existing platform was uninterrupted during the rollout," said Bill Peters, chief of IT at Racing Point. "Throughout the racing season, there's constant pressure to deliver enhancements as quickly as possible. Designers and engineers need instant access to the right information to make the right decisions. The new NVIDIA-powered virtual workstations consistently deliver performance on the level of physical workstations, which means our IT supports us at the highest level."

ebb3 specializes in the design, building and management of GPU enabled platforms based in North West England.

ebb3.com

Another vGPU benefit for CAD has to do with its product lifecycle management (PLM) database. "With the new platform, models need to be checked in and out of the server, which allows any user to always access a single version of truth and dramatically simplify team collaboration. This also means loading and saving can take a lot of time depending on your network architecture. With NVIDIA Quadro vDWS, however, the server is constantly sitting next to the workstation with a fast interconnect. As a result, users can get the best level of collaboration without being impacted by server network latency for loading and saving models," said Peters.

Besides delivering a great user experience for 3D applications, NVIDIA-powered virtual workstations also provide all of the traditional benefits of virtualization. Said Peters, "Virtualization appealed to us because it makes IT management easier and more cost-effective, and it enables better user collaboration and mobility. Above all, we really appreciate that extra layer of security for our intellectual property (IP). Everyone has access to the internet, and these days, IP can be exfiltrated quite easily. When the smallest detail can be the difference between winning and losing a race, it helps to know we're on a path to locking it down and keeping it truly secure."

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> **Paul Williams**
> Director of Service Delivery, ebb3

Looking ahead, Racing Point is well-prepared for future digital innovation. "Today, Racing Point is using NVIDIA vGPU-accelerated infrastructure to deliver virtual workstations. Tomorrow, that same infrastructure can be leveraged to enable new workloads. When designers and engineers aren't using their virtual workstations, those compute resources can be used for other tasks during off-hours, such as rendering, AI, computational fluid dynamics, running solvers, and more. NVIDIA vGPU-accelerated infrastructure not only provides more efficient use of their resources. It's essentially future-proof. They don't have to worry about technology jumps, because they've made an IT investment that will last at least four to five years," said Williams.

To learn more about NVIDIA virtual GPU solutions, visit: **www.nvidia.com/vgpu**