NVIDIA GRID BRINGS EFFICIENCY, SECURITY, AND FLEXIBILITY TO TOFAŞ

Tofaş chooses NVIDIA GRID™ to deliver GPU-enabled virtual desktops.
NVIDIA GRID provides full workstation graphics performance to engineers and designers while allowing mobility and empowering collaboration at Tofaş.

Turkish automotive manufacturer Tofaş is the second-largest industrial firm in Bursa, Turkey, and the sixth-largest industrial firm in all of Turkey. The company employs approximately 6,500 people within one million square meters of production facilities (350,000 square meters of which are indoors) to produce 400,000 passenger cars and light commercial vehicles per year. Tofaş is jointly held by Koç Holding and Fiat Chrysler Automobiles (FCA) as equal shareholders, and is one of FCA’s three world-wide strategic manufacturing centers.

**CHALLENGE**

Increasing worker mobility and enhancing data security were the key drivers behind the decision to explore a Virtual Desktop Infrastructure (VDI) at Tofaş. Designers used both a physical workstation to access graphics-intensive applications, including Siemens Teamcenter, NX, PLM, and VisMockUp, along with Autodesk AutoCAD. They also used a second computer to handle their general office work—an arrangement that greatly limited their mobility, especially compared to peers in other departments who did not require two computers. These employees used laptop computers to allow mobility; however, CAD performance on these platforms was not optimal for use with designers.

From an IT perspective, managing and maintaining individual workstations required significant time, personnel, and budget to keep work processes moving smoothly. Also, in that environment, any hardware or software failure effectively prevented the employees from carrying out their tasks, resulting in lost time and significant indirect costs to the company.

**SOLUTION**

Tofaş began searching for a suitable VDI solution at the end of 2012 and ran several trials using NVIDIA GRID technology with the VMware hypervisor and desktop remoting. These initial trials delivered positive results, and Tofaş decided to undertake a proof-of-concept (POC), wherein business units participated in testing cycles that ran for several weeks and then provided feedback.
The NVIDIA GRAIL-enabled VDI delivered superior graphics performance while enhancing user mobility by freeing designers from their workstations and desks.

Based on overwhelmingly positive user feedback, Tofaş made the decision to move forward with NVIDIA GRID technology to build out their VDI. Implementation has been gradual, with the differing needs of various users taken into consideration. High-end users receive dedicated GRID K1 or K2 GPU resources, while those with lesser needs may be assigned pooled GPUs. For example, designers use dedicated GPUs, while laptop users, such as cost engineers, project managers, and other managers normally use pooled GPUs. VMware View delivers secure access to the VDI system and the specific applications needed by each user from any location, thus freeing users to log in and run applications remotely. IT overhead was reduced thanks to the ease of scaling up or down as needed, simplified resource management, and enhanced data security.

“The NVIDIA and VMware teams worked with us as if they were members of our project team,” said İlknur Arca, Client Systems & Services Manager, Tofaş. “We benefited from their dedication, experience, and customer support. This is a first-of-its-kind technology in Turkey, but it has the potential to be widely employed by the entire Koç Group as well as other brands.”

İlknur Arca
Client Systems & Services Manager
Tofaş

5 REASONS FOR GRID
1 Efficient use of resources to meet changing needs.
2 Safe access to virtual desktops from everywhere with secure connections.
3 Much better graphics performance.
4 Increase employee flexibility, mobility, and satisfaction.
5 Allows the Production and R&D departments to access operations cards.
RESULTS

GPU virtualization is giving the designers at Tofaş the same flexibility and mobility formerly enjoyed only by non-designer employees. This freedom also extends to the products themselves, in that machinery no longer needs to be shipped to the design factory in Italy during the design process. Employees and contractors alike can access their allocated resources from anywhere, such as from home—a benefit that is expected to increase employee productivity and morale.

Onboarding a new employee and assigning them a physical workstation used to take hours—half a day or even longer. With the NVIDIA GRID-enabled VDI, it only takes a few minutes to assign a person to a group using the simple and user-friendly VMware interface. VDI also makes it easy to meet temporary workstation needs, such as for contractors or other third parties.

“When an employee using a desktop or a notebook computer wants to see the operation card and needs high-end processing, memory, and performance, it is more efficient to let him use the virtual platform rather than put a second computer on his desk,” explained Emre Ülgen, Client Systems and Service Management Specialist at Tofaş.

The primary benefit of VDI is removing the application installations and graphics processing from the end-user device. Analysis indicates that the upfront per-user costs of the VDI deployment are similar to providing them with a physical workstation; however, the ongoing reduction in operating and management costs delivers a significant overall savings of time, budget, and even power consumption; a single workstation used by a single person draws almost as much power as a server shared by many people. Thus, the Tofaş VDI project also supports the company’s green vision.
“Virtual workstations are not only effective for the R&D teams but also for the Manufacturing teams, as they are also enabled with Teamcenter Manufacturing,” Ülgen continued. “250 employees from the Manufacturing teams can work in a secure virtual workstation pool of 60 clients in three shifts. Therefore, more people can make use of the pool at any time of day or night.”

The success of the VDI project has earned recognition for the project team, which also received an in-house award for “Most Successful Tofaş Business Units” in the Electronic Benefit Transfer category. The VDI project also won the “Most Creative Innovations” award.