

Testo implements virtual CAD workstations with Nutanix

Testo, a manufacturer of measuring instruments, has replaced its design engineers' CAD workstations with a flexible VDI solution. A Nutanix platform with technology from HPE and NVIDIA provides the necessary computing and graphics power – and is easily scalable and highly available.

To develop the next generation of measuring instruments, Testo's design engineers need a powerful working environment. In addition to reliable performance, they also expect flexible access options. Design engineers want to be able to access their CAD applications and design data on the road or in the home office when needed – without compromising on user experience.

Challenges

Testo, headquartered in Titisee-Neustadt, Germany, is a world leader in portable and stationary measurement solutions. In 37 subsidiaries around the globe, approximately 3,500 employees are engaged in research, development, and production for customers all over the world. Their high-precision instruments and innovative solutions for the management of measurement data are used today in a wide range of applications, from heating and air conditioning technology to the pharmaceutical and food industries. Testo's products help to save time and resources, protect the environment and people's health, and improve the quality of goods and services.

Since it was founded in 1957, Testo has grown by around ten percent annually, most recently achieving a turnover of around 427 million Euro. Part of Testo's recipe for success was and is to invest more than average into the future of the company. Approximately one tenth of annual global sales is directed towards research and development.

When designing new measuring equipment, Testo relies on PTC Creo CAD software, among other tools. "The software is very demanding in terms of system hardware. That's why we have always equipped our 30 or so CAD design engineers with very powerful workstations," says Udo Mettmann, Group Manager Device Management and Data Center at Testo. "The full system performance, however, was rarely really required by our engineers. 80 percent of users were typically using only about 20 percent of the hardware resources available. So when the rather expensive leasing agreements for the CAD workstations expired, we were looking for a more efficient solution for the operation of these workplaces."

About Testo

- **Industry:** Manufacturing
- **Employees:** 3,500
- **Turnover:** 427 million euros
- **Region:** Germany / Europe
- **Website:** <https://www.testo.com>

Solutions

- Nutanix Cloud Infrastructure HCI Platform
- Nutanix Prism Management Solution
- Nutanix AHV Hypervisor
- HPE® ProLiant® DX Hardware

Applications

- PTC Creo
- Citrix Virtual Apps and Desktops

Benefits

- **Rapid implementation:** Thanks to its partner NetPlans, Testo was able to set up the entire VDI environment in less than two days.
- **Minimal maintenance:** The IT team hardly needs to spend any time on administration – updates are done with just a few clicks.
- **High level of user satisfaction:** Design engineers appreciate the flexible access options and are enthusiastic about the graphics performance.

Solutions

Testo's IT department already gained some experience with application and desktop virtualization, running a large Citrix infrastructure across its remote offices. "We have now recognized the opportunity to also migrate our CAD users to a virtual desktop solution," says Simon Kötting, System Administrator at Testo. "But one prerequisite was a high-performance infrastructure solution that would allow us to deploy the resource-intensive design engineering software from the data center."

After extensive consultation with IT systems integrator NetPlans, Testo selected a proof of concept (PoC) with a Nutanix Cloud Platform based on HPE ProLiant DX hardware. The hyper-convergent infrastructure (HCI) solution can be equipped with powerful NVIDIA graphics cards to run professional 3D applications in a virtualized manner.

"The solution concept proposed by NetPlans perfectly fits our use case," Simon Kötting explains. "The individual infrastructure components – from computing to storage – are seamlessly integrated and can be centrally managed via Nutanix's management solution. Nutanix's hypervisor AHV also works extremely well with Citrix Virtual Apps and Desktops and NVIDIA vGPU technology. This accelerates the deployment of a VDI environment for graphics-intensive workloads and saves the cost of an additional virtualization solution such as VMware vSphere."

When configuring and sizing the 3-node cluster for the PoC, the project partners followed HPE's sizing guidelines. This ensured that the cluster had the performance required for Testo's workloads. "HPE guarantees an optimized performance and takes back the clusters free of charge if the customer's requirements are not met," explains Udo Mettmann.

Once the hardware components were delivered, the new VDI infrastructure was set up in less than two days. NetPlans specialists helped integrate the cluster into the existing network and connect it to the existing Citrix management solution. After extensive performance testing and feedback talks with end users, the platform, originally ordered as a PoC, went directly into production.

Results


High performance and availability for design engineers

The Nutanix platform provides design engineers with graphics performance that easily matches that of their previous workstations. In the new environment, multiple virtual desktops share the resources of an NVIDIA graphics card. Testo's IT department uses vGPU profiles to allocate users the graphics performance they need. "Even the standard profiles were able to meet the requirements of most of the design engineers," says Simon Kötting. "Some power users get access to additional graphics memory. This allows them to

The Nutanix platform enables us to run our CAD workstations with minimal effort and quickly expand them on demand. Compared to traditional workstations, the cost remained the same, but our design engineers now have much more flexible access options. This is why we would choose to use the solution recommended and implemented by NetPlans again at any time."

Udo Mettmann,
Group Manager Device
Management and Data Center,
Testo SE & Co. KGaA





process even complex designs with high performance and, if necessary, use more than two high-resolution screens simultaneously.”

The centralized deployment of virtual desktops not only improves system utilization compared to locally operated workstations - Testo also benefits from higher availability as a result. In the past, it often took days to get a replacement unit and set it up in the event of a workstation failure. Today, design engineers can access their virtual desktop from any notebook or desktop computer.

The Nutanix platform itself is designed for maximum availability through its redundant system architecture and can automatically compensate for failures of individual components. Even during cluster upgrades, users do not have to interrupt their work. Nutanix supports live migration of vGPU VMs and automatically moves virtual desktops to other nodes during the upgrade process. This allows the cluster to be upgraded without any end user downtime.

Flexible access from any location


One of the biggest benefits for design engineers, according to Udo Mettmann, is the flexibility they have gained: “Our CAD users are no longer tied to a fixed workstation in the office, but have access to all the data and tools they need at other company locations or in their home offices.”

Remote access to virtual desktops has already proven itself during the COVID-19 pandemic. At that time, part of the team always worked from home to minimize the risk of infection. Meanwhile, Testo’s design engineers no longer want to give up flexible working options. The new infrastructure allows them to move between the office and home office as needed. Cross-site collaboration has also become easier: When design engineers visit other production sites, for example, they can now access their entire virtual workspace from there at any time.

“For us as an IT department, we must retain full control over data protection, even in the new hybrid world of work,” emphasizes Simon Kötting. “All sensitive data is well protected on the Nutanix platform in our data center – and access is fully secured by a zero-trust architecture.”

Easy scalability – including moving to hybrid cloud

When planning the VDI infrastructure with NetPlans, future-proofing was also a key consideration. Additional CAD design engineers shall be integrated soon – in the near future, up to 75 users could be working on the platform at the same time. With the Nutanix Prism management interface, Testo can always keep an eye on the utilization of the environment and immediately see when bottlenecks are imminent. In this case, additional nodes can be added on the fly to increase performance capacity.



“With Nutanix, we also have the ability to extend the environment to the cloud, such as migrating workloads to AWS or Azure,” says Udo Mettmann. “As we offer our customers more and more digital services around our measurement solutions, the cloud plays a strategic role in our business. That is why it is important to keep our options open for the future. Nutanix supports hybrid cloud models and manages them as efficiently as pure on-premises infrastructure.”

The Partner

NetPlans is a global managed service provider specializing in innovative cloud solutions, with its own business cloud in Germany. The company has a nationwide network of branch offices as well as locations in Switzerland and employs a staff of more than 350 people.

www.netplans.de

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