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WAGENINGEN
UNIVERSITY & RESEARCH

Wageningen University & Research boosts compute performance with HPE Synergy

The composable infrastructure speeds up education and research transformation for leading Dutch university

Industry
Higher education and research

Objective
Increase and improve compute performance

Approach
Issued a tender and evaluated responses with the help of independent consultants

IT matters
- Saves one week every six months for firmware upgrades
- Provides more power to streamline VDI
- Introduces automation to cut development times for new deployments

Business matters
- Delivers better experiences through higher application availability to increase student and staff satisfaction
- Reduces time-to-market for research projects
- Embodies the agility to meet future business demands of the university and research groups
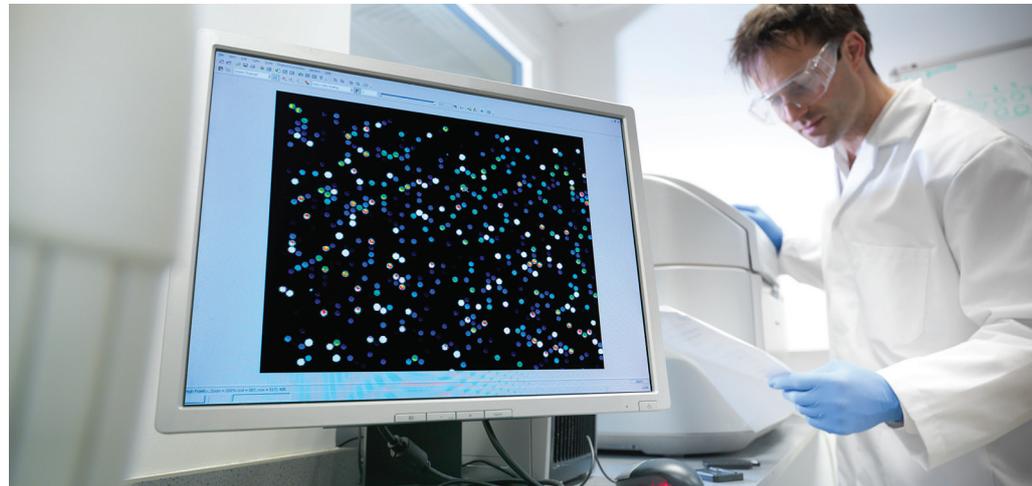
Increased speed and performance

The Netherlands' Wageningen University & Research (WUR) is embarking on an IT transformation journey and as part of this ambitious project, it is replacing traditional blade servers with state-of-the-art computing from HPE Synergy. Increased compute efficiency reduces development and deployment times and supports better services for students by decreasing application downtime and enabling scale up when needed.

Challenge

Need for speed
WUR in the Netherlands is both a public university and a world-class research establishment whose mission is to explore the potential of nature to improve quality of life.

With 12,000 students from over 100 countries, WUR has been named as the Netherlands' best university in the Times Higher Education World University Rankings in October 2018. Formerly, the agricultural research institute of the Dutch Ministry of Agriculture, its research arm was also number one worldwide for agriculture and forestry research in the 2017 QS World University Ranking charts. It trains BSc, MSc, and PhD specialists in life and social sciences. It also extends its work to cover food production, living environments, health, lifestyle, and livelihood.

WUR has 6,500 employees who work mainly at the Wageningen campus and from 30 smaller research locations across the Netherlands. All enterprise and educational applications are delivered centrally from two data centers by an IT team of 165 people, including an infrastructure squad of 40. A smaller off-site location is used for backup and archiving.

Case study
Wageningen
University & Research

Industry
Higher education
and research

Page 2

"HPE Synergy is the platform we intend to use in the foreseeable future and we will continue to exchange our c7000 BladeSystem for the flexibility and scalability of HPE Synergy. I think in the long term, it will save us money. It's much easier to operate and speeds up all our processes."

– Wojtek Sablik, head of FB-IT Infrastructure, Wageningen University & Research

Currently, WUR is running most applications on-premises but it is in a transition phase that will see some services, in particular education, move to the cloud. That transition is also affecting hardware platforms, as Wojtek Sablik, head of FB-IT Infrastructure, explains, "We were using HPE c7000 enclosures and blade servers combined with HPE 3PAR storage and a Brocade/HPE SAN solution. However, memory density on the traditional blades had become an issue and memory became too expensive in the configuration we had. Limited power blocked our growth plans and affected the development of high-performance workloads and TCO was an issue when we were looking to grow our environment. Firmware and driver maintenance were also becoming too labor-intensive.

"As part of our lifecycle management process, we wanted to replace the traditional hardware with state-of-the-art solutions that would increase speed and performance and reduce deployment times. Our goal was to deploy faster and more flexible solutions for our business user."

An HPE customer for 25 years and one of the first in the Netherlands to use its blades, WUR included HPE in a request for proposal (RFP) it conducted with the help of external consultants.

Solution

Taking the composable route
WUR decided to implement HPE Synergy for many reasons as team manager for platform services, Remco Harmsen explains, "We decided to go with HPE Synergy because it is the next logical step in the evolution of our data center. It is easier to free up resources because of the fluid resource

pools and deployment of servers is much faster with this new infrastructure model. With this advanced technology, we can work with wider network bandwidth and the compute power is much better."

HPE Synergy brings compute, network, and storage infrastructures together as a single platform with integrated management and incorporates a single API so companies can program their whole infrastructure in an automated manner. Intel® Xeon® processors provide several performance enhancements, including the ability for scale-out workloads to achieve higher turbo speeds without being capped. It is software-defined from the bottom up and allows users to program infrastructure as code. This means they can provision hardware quickly using server-based templates and can almost instantaneously provision software.

IT staff are also already experienced with the HPE OneView management tool, which, in common with the HPE Synergy unified API, allows it to automate many common infrastructure operations. It has implemented six HPE Synergy frames divided equally between its two data centers—both working in active mode. They hold 32 HPE Synergy 480 Gen10 compute modules and are directly connected to four HPE 3PAR StoreServ Storage arrays. HPE 3PAR delivers 1.4 PB capacity. Compute modules are used for the VMware® environment with 800 virtual machines, database clustering, and virtual desktop infrastructure (VDI). Ancillary software includes PowerShell scripting, Puppet configuration management, and Ansible for automation. WUR is also in the early stages of using the Docker Linux® container technology.

Case study
Wageningen
University & Research

Industry
Higher education
and research

"HPE Synergy delivers infrastructure as code, so if we have the templates and the scripts, it's much easier and quicker to implement new hardware as soon as the organization needs it."

– Remco Harmsen, team manager, platform services, Wageningen University & Research

Customer at a glance

Hardware
- HPE Synergy 480 Gen10 compute modules
- HPE 3PAR StoreServ Storage

Software
- HPE OneView

HPE Pointnext
- HPE Datacenter Care Service

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The university bought the equipment through Centralpoint and carried out its own installation and configuration. The solution is covered by an HPE Datacenter Care Service contract delivered by HPE Pointnext, which provides an assigned support team with technical account manager to quickly deal with any issues and to share best practice advice.

"The close cooperation with HPE Pointnext brings us reliability, stability, and great support when needed," adds Harmsen. "If we have problems, we can call them and get valuable help from them. They provide assurance that our systems are running correctly."

Benefit

Speed and scalability
"The benefit of using software-driven deployment is that we are no longer dependent on the knowledge of a few people but can deploy our environment at the push of a button," says Harmsen. "The roll out of servers is sped up, which saves us time on maintenance and the composable infrastructure lowers resource overprovisioning by enabling fluid resource pools.

"With HPE OneView, we are offered a single pane of glass to monitor and manage our hardware landscape. In our environment, we cannot calculate the actual figures but this saves on tooling and also eliminates the need to know about all the tools. We can create templates that make management of our environment more straightforward than before and contributes to standardization. The time needed for installing firmware or driver updates is also greatly reduced."

With the old blade environment driver, firmware upgrades could not be automated. Using HPE OneView to automate processes saves
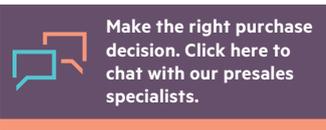
15 to 30 minutes per server, which amounts to a week's work every six months. Saved time is re-deployed on client-specific use cases.

HPE Synergy also benefits the university's VDI because it enables a single type of frame and standard compute node to provide enough power for all users. With HPE BladeSystem, rack mounts were needed for graphically intensive workloads so there is now a saving on hardware with no need for spare servers. There will also be power savings when migrating from the rack mount environment to an HPE Synergy VDI solution.

Increased compute efficiency supports better services for students by decreasing application downtime and enabling scale up when needed. Greater flexibility and ease of deployment also reduces time-to-delivery, a key requirement for the research departments. Having more memory in HPE Synergy compared to HPE c-Class blades also enables the IT team to build more powerful virtual machines than before.

"Because of this new generation of infrastructure, we are ready for future updates and growth of our server landscape, which saves both time and money," says Sablik. "Our infrastructure department relies heavily on our server environment. Being able to rely on such a good product with predictable maintenance and the possibility to scale at need gives our university the tools to do what it does best. We do not need to worry about the infrastructure, the availability of the hardware and its applications, we can simply focus on what makes us the best university in the Netherlands."

Learn more at
hpe.com/synergy