Hardenberg offers municipal employees safe & optimal user experience with VMware vSAN and NSX

Hardenberg is one of the largest municipalities in the province of Overijssel; over 60,000 people live there in an area that spans over 300 km². From online contact to front-desk support: the municipality has a team of 18 ICT employees which ensures that 600 of their colleagues can provide excellent service to the people living in the area. All of these activities require some very serious ICT infrastructure. This foundation needs to be sufficiently available, flexible and secure to ensure that the municipality is able to perform optimally. To safeguard this target for the long term, Hardenberg worked with ICT partner PQR to set up a future-proof ICT infrastructure based on VMware vSAN and NSX.

The municipality of Hardenberg enjoys taking the lead in using modern technology. Stefan Breukelman, network and system administrator at the municipality of Hardenberg, says: “Technology is not a goal all in itself. The aim is to help our residents as quickly and as well as possible, at the front desk as well as online. To achieve that goal, we want to facilitate our employees as well as possible, and we are always looking for the best technology to serve that purpose. In a previous phase, we had already opted for server virtualisation at the back end. And when we moved to the new town hall in 2012, we also made the switch to desktop virtualisation at the front end by using VMware’s Horizon.”

Challenge
The ICT infrastructure in Hardenberg not only provides support to the municipality’s own organisation; the municipality of Ommen also uses the ICT services provided by Hardenberg. Breukelman: “The storage, including the hosts, that we used for our front end needed to be replaced. Performance was going downhill and support would expire soon. This contributed to a decline in user experience. In particular in Ommen, users had to deal with slow desktop computers.” The municipality also wanted to replace the storage for the back end in parallel to this project, since that was also at the end of its life cycle. Breukelman explains: “In this situation, we deliberately opted to make our ICT infrastructure future-proof again. We wanted to resolve the latency issues, and at the same time modernise to guarantee a scalable, high-availability, secure and redundant environment. In that light, it was also key in this project to ensure easy administration and realistic costing.”

Results and Impact
In consultation with VMware partner PQR, Hardenberg organised workshops to discuss requirements and preferences for the new front-end and back-end environment. Breukelman: “In previous projects, PQR had already made a good
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STEFAN BREUKELMAN
NETWORK AND SYSTEM ADMINISTRATOR
MUNICIPALITY OF HARDENBERG

impression with their expert and expedient approach. It was clear that they could link their knowledge and experience with technology to the requirements we imposed as a municipality. In the workshops, we discussed with them what we would be aiming for.”

After taking inventory of all requirements and possibilities, it became clear that a hyper-converged infrastructure would be the best way to meet Hardenberg’s requirements. Following from that, PQR created a high-level design. “Together, we set up a new front-end environment with new servers and VMware vSAN. Connected to that, a virtual desktop infrastructure was set up using VMware Horizon.” For the back end, the municipality opted for a VMware vSAN stretched cluster. Networking, storage and servers are available at two locations. The data of the VMs is replicated using vSAN, ensuring that it will be available quickly again in the event of a failure. This approach means that the municipality of Hardenberg currently has redundancy without any additional products, based on simple, central administration.

The implementation was split up into two phases. First, the front end was upgraded. Breukelman: “It was important for us as a municipality to keep up with the digital transformation that is not just expected from our users, but also from our citizens. At the same time, we also wanted our users to experience as little delay and inconvenience as possible from our modernisation. And we succeeded. The storage is currently highly scalable and the new environment is significantly faster. The user experience, especially in Ommen, has improved drastically. All users connect to the datacentre in Hardenberg, and Ommen is the contingency location. That way the municipality can continue operations in case of any failure or disaster. This approach has already proven its worth in practice. After an emergency situation some time ago, we managed to switch completely within half an hour. This kept disruption to a minimum.” Another advantage of the new infrastructure is improved security. “We are now sure that we are providing this functionality securely. That applies to access to applications and data flows within the system. Choosing VMware NSX means that micro-segmentation is now possible, which automatically configures the security policy to the VM level. Micro-segmentation splits up the IT environment into smaller parts. On the one hand to facilitate easier administration, and on the other hand to limit the damage in case of any hacking and/or malware infection. That way it is possible to quickly isolate the infected part from the rest, and prevent any problems due to carelessness or deliberate hacking attempts.”

The Software Defined strategy based on virtual servers, networking and storage for the back end also gives Hardenberg various advantages. Breukelman: “The replacement and extension of our computing, networking and storage infrastructure offers much more than just additional capacity and performance. Administration has merged and the central approach gives us better control on administration of all the various parts. And without losing control of the environment. The higher availability and redundancy ensure that we keep unplanned downtime to a minimum. In addition, we can also provide maintenance during working hours. And it will not affect the user experience. With the new environment, we can provide optimal support to everyone in the municipality. The preferred ICT infrastructure is flexible, fast, secure and offers automated access.”

VMWARE FOOTPRINT
• VMware Horizon 7 Enterprise
• VMware NSX Data Center Advanced
• VMware vSAN 6 Enterprise

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Looking ahead

The municipality of Hardenberg is constantly in motion. “We need to continue anticipating new developments, in our municipal sector as well as in the technological field. For instance, we are planning to migrate to Windows 10 at the end of 2019. At that time, we will sit down with PQR to review the front end again. Windows 10 requires more resources to safeguard the same performance and availability for end-users. With our current ICT infrastructure, we are at least sure that we can use it relatively easily for development, and expand if necessary. That way we can guarantee that the municipal employees have all the resources they need to maintain services to the Hardenberg and Ommen residents at the highest level.”