Koninklijke PTT Nederland

Accelerating Enterprise-Wide Digital Transformation

Koninklijke PTT Nederland (KPN) is the largest telecom operator in the Netherlands. The century-honored enterprise has more than 125 years of history. KPN's domestic market share is as high as 50% and its services extend to Germany and Belgium as well. It offers fixed-line, mobile, Internet, and other services. In 2012, KPN started to feel the squeeze from rivals as its revenue and profits started to take hits. The operator decided to go all out in its digital transformation to improve its products, business processes, and management of IT with new technologies. The ultimate goal was to enhance customer satisfaction, simplify management processes, improve operational efficiency, and lower TCO.

Business benefits

6000 IOPS/TB
to satisfy the most stringent of performance requirements

40%
savings in TCO; reduced footprint; improved green credentials

Non-disruptive migration
with zero interruption to ongoing services

Business Challenges

KPN's strategy focuses on building converged resource pools and accelerating the digital transformation at the enterprise to give it an edge over competitors. The appropriate SLA is ascribed to each service depending on the particulars of each business. The hottest layer would require 5000 IOPS/TB in performance and latency less than 1 ms. The operator also needed to find ways to better control the soaring TCO and the layout that complicated operation of the existing system comprising dozens of different types of storage devices from multiple vendors.

Transformation

Deployment of all flash OceanStor Dorado V3 arrays in the data acceleration solution achieves the needed level of performance for both the hot and warm layers. The Huawei solution built a converged resource pool with an initial capacity of 11 PB, 6000 IOPS/TB in performance, and low 0.5 ms latency that remains stable and predictable. The fastest data stays on the hottest drives to fully satisfy the most stringent of performance requirements. Unified management capabilities and 3:1 data reduction guarantees reduce TCO by 40%.

Satisfying the Most Stringent of Performance Requirements and Improving Customer Satisfaction

The CTO at KPN said: "Five years ago, we embarked on our technical transformation and started to try out some different things and explore some new directions in communications and IT. For the first three years, we focused on IT equipment and hoped to spur on new growth with the upgrades. Unfortunately, we were wrong. The pace of development in science and technology far exceeded our expectations as cloud and Big Data technologies started to appear as did new business models, user habits, and operational approaches that almost immediately made our IT architecture rather outdated. Silo-like architectures and conventional high-end storage mash-ups proved unable to keep up with the rapid developments in data services. We then started to consolidate our nine data centers and build converged data resource pools. To suit the particulars of the service, we divided the resource pools into five layers: hot, warm, tierDB, cold, and frozen. Each tier provides a different SLA. The hot layer carries billing, CRM, and other mission-critical services requiring 5000 IOPS/TB in performance and less than 1 ms in latency to ensure smooth system response even during peak hours and zero traffic congestion or service interruption. We wanted to grow our customer base while improving customer satisfaction but our existing network at the time could not satisfy the high performance requirements."

KPN started to take notice of the all flash Huawei OceanStor Dorado V3 data acceleration solution in its vetting of multiple vendors. It is the only flash offering on the market to offer the end-to-end optimizations in storage operating systems, chips, and SSDs made possible by the vendor's ability to develop all such components. Huawei FlashLink™ enables the controllers to intelligently sense the data layout in SSD disks and make the I/O priority adjustments and reshuffle the data to offer a truly service-driven approach in orchestration. FlashLink™ achieves optimum performance from storage controllers and SSD disks, allowing the Dorado V3 to yield up to 4 million IOPS of superior performance and 0.5 ms in predictably low latency.

The CTO had the following to say when speaking to the service improvements after incorporating the Huawei all flash solution: "Test results showed that the Dorado V3 achieves up to 6000 IOPS/TB in performance and 0.5 ms low latency for CRM and other services carried on the hot layer. This was much higher than our expectations and fully satisfied our service requirements on CRM, billing, and other mission-critical services. We also found that these numbers were not the top levels the device is capable of after adding more nodes in the future. This linear scalability in performance and capacity was a big plus for us. We tested what would happen if our business volume grew by 50%. We wanted to make sure our systems could continue to ensure smooth response in services strongly related to CRM metrics. We wanted to guarantee top levels of customer satisfaction.

40% Savings in TCO, Improved Operational Efficiency

Talking about the digital transformation, the CIO stated: "We faced some stiff competition. In addition to the launch of new products to grow the customer base, KPN needed to lower TCO in upkeep of IT equipment. This was an important metric in assessing the viability of our chosen digital transformation agenda."

The CTO added: "We could not make full use of resources in the traditional silo-like architecture. All the services were basically on the same tier and each data set and piece of duplicate data was copied, leading to tremendous waste in the storage space. The lack of resource sharing also consumed much more power because more pieces of equipment had to be used. More equipment meant much higher cooling costs in the equipment room as well and high maintenance costs. TCO costs were continuing to rise."

The CIO further iterated: "We were a little skeptical of the 3:1 data reduction claim at first. Companies wanting to maintain an excellent reputation must fulfill all the commitments they make to their customers. KPN deployed Dorado V3 with four controllers to satisfy performance requirements. We measured the projected TCO during testing as well and found that the Huawei solution not only achieved the data reduction guarantees, it also reduced equipment room footprint by 30% and consumed 45% less energy than our previous layout. We saw a 45% reduction in cooling costs and maintenance costs dropped 50%. All these numbers combined produced a projected three-year saving in TCO of 40%. We had found a solution able to fulfill the all-important reduced TCO metric."

Energized Operations at Data Centers with Smooth Data Migration

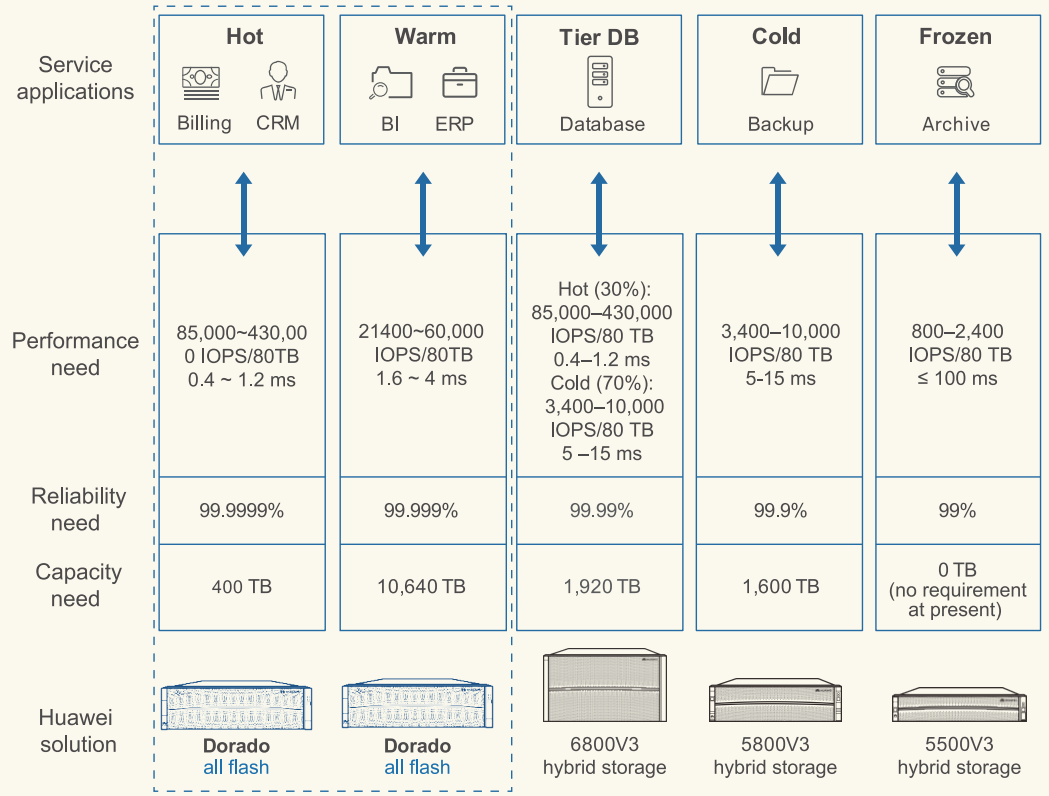
The CTO said: "Migrating services is a rather troubling event. Various types of operating systems, application software, and device models must all be moved over, which creates intense challenges in terms of compatibility. Adding to the complexity, we required zero service interruption because we could not tolerate any negative impact to customer experience."

Huawei has accumulated extensive experience in consolidating and migrating storage layouts over the last decade for over 7,000 customers spanning more than 40 countries. Huawei launched its virtualized data migration solution able to handle various types of heterogeneous equipment (over 300 storage devices from popular vendors can be consolidated and moved into the Huawei program). This impressive level of compatibility adds to the non-disruptive capabilities, keeping services up and running without interruption during the entire migration event window.

Huawei All Flash Accelerates Digital Transformations

Deploying the Huawei Dorado V3 to carry the mission critical services at KPN and consolidating the previous layout delivered the following benefits:

- Fulfillment of the most stringent requirements on the hot layer for enhanced customer satisfaction.
- 3:1 data reduction with inline deduplication and compression; 40% TCO savings.
- Pain-free data migration event free of service interruption; energized data center operations with all-flash arrays.



KPN networking layout

Key Solution Components

1. Storage arrays: OceanStor Dorado6000 V3
2. Storage software: SmartCompression (intelligent inline compression), SmartDedupe (intelligent inline de-duplication), SmartThin (intelligent thin provisioning)
3. Management software: DeviceManager (device management), eService (remote maintenance management), UltraPath (multi-path management), BCManager (disaster recovery management)
4. Switches: PCIe 3.0 switches

Attachments:

3:1 Data Reduction Guarantee: Huawei guarantees a 3:1 data reduction rate with purchase of its OceanStor Dorado V3 series of all flash arrays. Dorado V3 helps minimize needed initial investment while enabling higher returns.

For details on the guarantee program, scan the QR code.