PosAm

useful technologies:

Slovak Telekom
Storage strategy

NEW DISC ARRAYS IMPROVED DATA STORAGE AND CUT COSTS

Priemyselné odvetvie:
Telekomunikácie

Profil zákazníka:
Slovak Telekom je najväčší slovenský telekomunikačný operátor. Pod značkou Telekom ponúka jednotlivcom, domácnostiam a firemným zákazníkom produkty a služby pevnej i mobilnej siete. Spoločnosť poskytuje internet prostredníctvom optickej a metalickej siete, služby digitálnej televízie a mobilný internet prostredníctvom najrýchlejšej 4G/LTE siete.

Cost savings for operation, support, systems administration and data management translate as a return on investment of within 4 years. State-of-the-art technologies facilitate effective use of disc capacity, producing a 36 % saving on disc space. The output and response of business applications has been boosted significantly. At the same time, data security was raised and compliance assured with the Deutsche Telekom standards.

INITIAL STATUS

The information systems of Slovak Telekom were used for storing critical data of 33 disk arrays. The user data capacity exceeded 1.1 PB. The inheritance was a strong heterogeneity of platforms and manufacturers (HP, IBM, EMC, NetApp). They were situated in four geographically remote data centres and were 4-8 years old (in 2011).This status had been unsustainable for some time, accompanied by:

- High energy costs for power and cooling
- High costs for support and maintenance of old systems with expiring lifecycles
- High personnel costs for administrating a large number of systems
- Data duplicity causing senseless demands for additional capacity
- Strong fragmentation of data and low usage of available capacity
- Inadequate output parameters and limited options for their optimisation
- Non-compliance with Deutsche Telecom standards

OBJECTIVES AND REQUIREMENTS

In 2011, the management of Slovak Telekom approved a Storage Strategy. It called for a major reduction in costs for data management and the operation of disk arrays, cutting their capacity by 40%, and to ensure harmonisation with the standards of the Deutsche Telekom group.

SEEKING A SOLUTION

From the outset, we faced one key question: *try to satisfy the requirements of the austerity measures while preserving the existing status, or to invest into fundamental modernisation?* The decision to invest was based on an economic analysis of Storage Economics from the company Hitachi Data Systems. The prepared business case showed a lower total cost of ownership (TCO) and return on investment. Consolidation and modernisation was to affect 29 of the original 33 systems.

DESCRIPTION OF SOLUTION

The basis of the technical solution comprised 4 disk arrays of Hitachi Data Systems. Two of them, Hitachi Virtual Storage Platform (Hitachi VSP) and Hitachi Unified Storage (HUS VM), are at the primary data centre. They are backed up by their twins in geographically remote backup data centres. The arrays are set up using modern, and in many respects, unique technologies.

Virtualization
More effective use of the disk capacity of an external disk array thanks to clustering into a single pool (per system) produced

savings in the overall required capacity. The usable unallocated capacity was reduced by two thirds, while the capacity for RAID protection was slashed by as much as 70% by a change of RAID 10 to RAID 5.

Tiering
As 80% of activity is carried out on just 20% of data, the disk space was split into three tiers. The maximum output (at the highest cost) is provided by Tier1, designated for only the most active data. It uses Hitachi accelerated flash technology, which is 3-5 times more powerful than the SSD of other manufacturers. Tier2 is intended for data with basic accessibility requirements and Tier3 is for inactive data. These tiers utilise various high-performance spinning hard drives. Data are transferred between the tiers automatically depending on their activity. Technologies for **Dynamic Tiering** automate the whole process and unburden operators.

Dynamic Provisioning
Dynamic provisioning of disk capacity allocates capacity according to current requirements of applications using the "just-in-time" principle. Unused capacity is freed up for other applications. This led to a reduction in unused capacity of disk racks by a third.

100% Data availability warranty
With a guarantee that no other manufacturer provides, customers are assured that they will not lose any data at the fault of Hitachi technologies. The protection of data is secured by various technologies for local and remote data replication and their safe deletion.

IMPLEMENTATION

Implementation took place in four stages from December 2011 to April 2015. In the first three stages, 12 enterprise systems were migrated to the Hitachi Virtual Storage platform. In the final stage, 17 midrange systems were migrated to Hitachi Unified Storage. The order of migrating the systems was dependent on their age (the oldest first), operating cost (the most expensive first), and quality of support (the most problematic first). Data were reorganised before migration (to minimise duplicity) and classified for placement into tiers. The actual implementation included physical installation, configuration, data migration, tuning and implementation of additional functionality. It was crucial for the client that the migration took place without any lengthy outage of critical systems, and so it was carried out during full operation.

BENEFITS

Lower operating costs
A reduction in the number of systems from 29 to 4 and the use of green technologies was attributable to an 85% reduction on electricity consumption. Even greater savings in absolute figures were generated by a drop in costs for support. Unlimited software licences were acquired, meaning no additional costs for scaling up capacity.

Lower costs for data managemen
Consolidation and integrated management facilitated simpler and cheaper administration of systems, with a further positive impact on operating costs.

Reduced disk capacity and number of network ports
By employing the latest technologes, a 36% reduction was achieved in user capacity from 1 033 TB to 656 TB, with a 52% drop in the number of disks from 5 759 to 2 743. Consolidation means also a 50% reduction in the number of ports from 428 to 216.

Compliance with standards
Controlled data deletion and Disaster recovery based on two geographically remote data centres satisfies the highest demands for data protection against unwanted deletion or loss in the event of unforeseeable circumstances.

THE PARTNERSHIP OF IT AND BUSINESS

The outcome of the 3.5-year long process is a modern, effective and efficient technical solution that meets all requirements of the business. From the perspective of the end user, faster access to data is the most prominent difference. For administrators and IT managers the main improvement is simpler management of disk arrays, fewer tasks linked to their operation and faster backup.For the company management, the reduction in costs for operation, administration and disk capacity, greater data security, faster business processes and compliance of infrastructure with the requirements of the Deutsche Telekom group, were the biggest benefits of the solution. All with the added plus of a return on investment within a reasonable time.

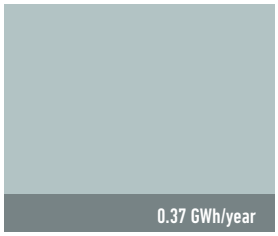
Simplify systems management and data management

Improve performance and shortening response

Seamless and cheaper support

Return on investment over 4 years

85%
Reduction
energy costs



52%
Reduction
number of disks

50%
Reduction
number of network ports

36%
Reduction
disk capacity

PosAm

PosAm's goal is to deliver usefulness to coustomers through unique solutions based on potential of information technologies. The company is certified by ISO 9001:2008, ISO/IEC 20000-1:2011, ISO/IEC 27001:2005, OHSAS 18001:2007 and ISO 14001:2004. PosAm is the holder of the National Quality Award and as the first Slovak based company it was granted the award „Recognized for Excellence in Europe" by the European Foundation of Quality Management (EFQM).

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