

Nemzeti Infrastruktúra Fejlesztő Zrt. (NIF) is a state funded, non-profit organization in Hungary, responsible for management of the national roads and railroads. With its legacy storage infrastructure incapable of supporting application performance requirements and complex to manage, NIF upgraded to the Pure Storage FlashArray™//M20 in September 2016. Since the upgrade, NIF has been able to improve test environment performance, increase volume of data stored, while at the same time reducing used-storage capacity, maintenance, power consumption and the storage footprint — translating to increased productivity and significant cost savings for the company.



BUSINESS TRANSFORMATION

The 80% reduction in power usage and nearly 90% reduction in storage footprint has allowed NIF to significantly reduce its total cost of ownership (TCO). Reliability, simplicity and ease of management of Pure Storage FlashArray has freed up IT resources to work on business-critical projects such as the construction of a new disaster recovery (DR) site.

GEO

Hungary

INDUSTRY

Transportation

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Máté Mikos, *Head of IT Department*

LEGACY STORAGE INFRASTRUCTURE HAMPERING BUSINESS PRODUCTIVITY

As a publicly owned development company, NIF carries out professional economic and transport projects across Hungary. Their development tasks — expressways, public roads and railways — are executed cost effectively with the aim of creating a transportation infrastructure for the country that meets European standards.

Managing a country’s infrastructure is no easy task and to ensure that their engineers can design and plan the safest and most effective roads and railways, NIF utilizes the latest technology software applications. To support these, the IT team has invested considerable resources in building a best-of-breed network infrastructure. Speed is everything in the delivery of their projects but unfortunately their legacy storage infrastructure, based on spinning disk technology, was not agile or intelligent enough to scale with their operations. Máté Mikos, Head of the IT Department at NIF elaborated, “Each snapshot we created in our test environment cluttered the storage and as a result, each time we created a new test environment, we saw a degradation in I/O performance in our production environment, something that is a natural limitation with spinning disk.”

“As a workaround, we decided to use cloning instead of snapshots, but that took up a significant amount of storage, so that wasn’t an ideal solution either. Between inefficient snapshot and cloning capabilities of our legacy storage infrastructure, over time, performance of our core applications — SAP, Microsoft SQL databases, Oracle databases — as well as our Hyper-V virtual server environment became extremely I/O constrained. This in turn severely impacted the performance of our internal payroll system, document handling/management system and our Microsoft Exchange server.”

To make matters worse, the NIF IT team found management of the legacy storage infrastructure to be extremely complicated and time consuming, something they could ill afford given the limited IT resources.

“By early 2016, we had just about maxed out our storage capacity and needed an upgrade. We realized that investing in a future-proofed, flash-based storage solution was going to be critical to our ability to deliver projects on time and within budget,” continued Máté.

IMPROVED PERFORMANCE FOR KEY APPLICATIONS

On the recommendation of their System Integrator, Invigor, NIF decided to consider Pure Storage as they needed a solution that not only met their technical requirements but that would also be able to integrate easily with their existing data centre hardware systems without any disruption to business services. “Invigor has been our long time

COMPANY:

Nemzeti Infrastruktúra Fejlesztő Zrt.
<http://nif.hu/>

USE CASE:

- Database – Microsoft® SQL Server, Oracle®, SAP®
- Virtual Server Infrastructure – Microsoft Hyper-V®

CHALLENGES:

- Management of legacy storage infrastructure was complex and labor intensive.
- I/O capabilities of existing storage could not support application performance requirements.
- Inefficient clone and snapshot features consumed significant storage capacity.

IT TRANSFORMATION:

- Migrated 13TB of data (against goal of 10TB) while using only 50% of storage capacity.
- Deduplication capabilities drastically minimize the storage needs of testing environments which greatly speeds them up.
- The writing speed of the file server reached 1.5 GB/s after migration.
- Compressed Microsoft Exchange nodes storage from 4TBs to 700GBs.

trusted advisor on storage technologies, and they were the ones who supported our legacy storage infrastructure. Between their knowledge of our infrastructure and their relationship with Pure Storage, they were in an ideal position to show us how the Pure Storage FlashArray could solve our storage problems by providing better performance, advanced data reduction and zero impact snapshots,” explained Máté.

Commenting on the superior technical capabilities of Pure Storage, Gábor Pap, Technical Director at Invigor said, “In traditional storage arrays, data reduction technologies are often burdensome to implement as they often operate as a scheduled process that can be difficult to manage without negatively impacting other data management processes including snapshots, backup and replication. However, each FlashArray comes inbuilt with the Pure Storage patented ‘Always On’ FlashReduce feature that includes five data reduction processes.

“This technology coupled with the extremely aggressive price point, intuitive and user-friendly Pure1® management interface and Máté’s positive impression of Pure Storage, based on their continued leadership position in the Gartner Magic Quadrant for Solid State Arrays, “made it an easy sell for us,” he explained.

NIF installed a FlashArray//M20 with 10TB raw capacity into their servers. The process took two days, and Máté and his team completed the migration of data from their old system to the Pure Storage solution within two weeks.

It wasn’t long after this deployment and data migration that NIF began to reap the benefits in terms of improved productivity and reduction in CapEx. “When we initially made the decision to switch to Pure Storage, our goal was to migrate 10TB of data. However, we have already exceeded that target, migrating 13TB of data to date, while only using 50% of actual storage capacity. Also with a 4x improvement in deduplication and data reduction, we are now able to create new test environments within seconds and there is no noticeable decrease in either performance or storage capacity, even if we create a large number of new environments,” commented Máté.

The reduction in storage capacity has had a positive knock-on effect on performance of applications across the board. As an example, NIF has seen a 2x improvement in processing speeds for their core SAP application and the writing speed of its file servers has reached 1.5GB/s. With the Pure Storage advanced deduplication technology, the NIF IT team has also been able to compress Microsoft Exchange nodes storage from 4TBs to 700GBs, allowing them to increase the email quota for all 450 employees! Similarly, employees have seen significant improvement in the speed and performance of the internal payroll system, which feeds off of an Oracle database, and their in-house document handling/management application, which feeds off a Microsoft SQL database. “These were two areas of considerable frustration with our previous spinning disk storage array,” said Máté.

Ease of management was another immediate benefit for Máté and his team.

“Thanks to Pure1, the Pure Storage SaaS based, storage management tool, we do not have to actively manage our storage like before. We can monitor all storage vitals from an easy-to-use, intuitive, single dashboard. As a result, the two IT resources we have allocated to managing our storage, now spend their time on other IT-critical tasks including server management, network management and more recently, the planning and design of our own DR site.”

In addition to these benefits, NIF has managed to decrease the storage footprint by almost 90% and power consumption by almost 80% which has allowed the organization to reduce their total cost of ownership (TCO) and see an immediate return on their investment.

PARTNER FOR THE FUTURE

“Thanks to the industry leading Pure Evergreen™ Storage model that allows us to increase capacity without having to re-buy storage and go through extremely cumbersome forklift upgrades, we are already planning to add another 10TB of capacity in the next few months. Also, with the recent inclusion of sync-rep in their storage arrays, we are considering Pure Storage technology for our DR site as well,” stated Máté.

“In the year since we switched to Pure Storage, I really couldn’t be more pleased with the decision. The improvements we have seen in application performance, resource allocation and TCO have had a direct impact on business and IT productivity and our bottom line. I am confident that with Pure now serving as the backbone of our data centre, we will be able to continue our mission of delivering best-in-class road and rail infrastructure to the people of Hungary,” he concluded.

INVIGOR INFORMATIKA KFT

Founded in 2009, Invigor is a young and dynamic company. Using their experience and operational competence, they aim to provide exceptional levels of service in a wide range of software solutions — from operating systems, backup software, database systems and virtualization to complex hardware solutions, such as storage, network and backup systems and high-end servers. Invigor has teamed up with leading partners to help their clients realize the benefits of a Data Platform powered by all-flash Pure Storage as a member of the Pure Storage Authorized Support Partner Program. Invigor’s storage solutions have enabled instant, reliable access to several petabytes of data in various mission-critical environments, and are trusted by clients such as OTP Bank, NISZ Group and Almotive.

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Máté Mikos, *Head of IT Department*



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