“Slovenia’s libraries and their users depend on IZUM for critical services and applications. HDS enables us to provide all of our users constant access to the database, 24 hours a day, without failures.”

Domen Šetar
Systems Administrator
OpenVMS Server and SAN Environments
Institute of Information Science (IZUM)
IZUM Ensures 100% Availability for National Bibliographical Database with Hitachi Data Systems Virtualization Solution

The Institute of Information Science (IZUM) is a public, not-for-profit organization founded by the Government of the Republic of Slovenia. IZUM provides the library information service that underpins the national bibliographic system as well as an information service for research, education and culture.

To support hundreds of thousands of users accessing millions of titles in Slovenian libraries, IZUM installed Hitachi Universal Storage Platform® VM to provide a public database with 100% availability and fast application response.

About IZUM
IZUM is engaged mainly in the development and operation of a system that centralizes all the information needed by Slovenia’s library on a day-to-day basis. This includes more than 100,000 links to e-resources, over 2 million books, 1.3 million articles, 90,000 journals, 75,000 CDs or DVDs, etc.

The Slovene Virtual Library – COBISS (Co-operative Online Bibliographic System and Services) serves over 600 Slovenian libraries, which constantly read, write and share information across the system.

IZUM’s database is accessed by around 3,000 librarians and more than 300,000 public users across the country, both through the internal network and externally, via the Internet. Traffic at peak access times can include over 2,500 simultaneous users on the system.

The organization itself has more than 120 staff operating in five departments: Computer Systems Support, Service Management, Software, Bibliographic Control and Application Design and Documentation.

An Outdated Storage System
The company was handling a constant increase in the volume of data stored, particularly with increased amounts of rich media, as well as demand for more sophisticated applications. After many years of using digitized resources, IZUM needed to tackle the issue of storing its data in a more organized system with greater intelligence.

The organization also found that libraries were facing several problems with the existing system’s performance and reliability. Availability was inconsistent at peak times and users frequently reported problems with applications. Furthermore, the ever-growing base of new users and increasing amounts of data written to the system meant that IZUM was starting to run out of storage space.

IZUM’s incumbent storage infrastructure was very complex. It included HP EVA6000 and HP EVA3000 disk arrays as primary storage systems alongside 8 Brocade SAN Switches and a HP Blade C7000 Enclosure. The COBISS system’s applications ran across 15 physical HP OpenVMS servers, with several virtual servers and blades implemented. For database and other research and testing servers 20 physical rack-mounted servers were in place.

“The HDS system has provided us with more flexibility and dynamic responsiveness through improved storage virtualization, and we have achieved the increased uptime and application response time we desperately needed.”

Domen Šetar
Systems Administrator
OpenVMS Server and SAN Environments
Institute of Information Science (IZUM)
By upgrading its existing storage infrastructure, IZUM hoped to achieve:

- Stabilization and simplification of its system
- 100% availability
- Consolidation of all storage
- Virtualization of external storage
- Increased storage capacity
- Data replication functionality

IZUM Selects and Implements a More Reliable System

“Stability was our first concern. Our users access the system 24 hours a day, 7 days a week, so we need it to be a 100% available. We had encountered problems with our previous servers going down and needed to fix this,” said Systems Administrator for IZUM’s OpenVMS server and SAN environments, Domen Šetar.

IZUM chose the Hitachi Data Systems solution primarily for its reliability as an enterprise system and the ease of attaching other external drives to the network.

Working with Hitachi TrueNorth™ Partner S&T Slovenija, the organization implemented Hitachi Universal Storage Platform VM, a high-performing enterprise storage services platform to virtualize storage from Hitachi and the other vendors into a single pool. Universal Storage Platform VM with internal virtualization includes Hitachi Dynamic Provisioning software in addition to logical partitioning, which simplifies storage administration, improves performance and reduces overall costs.

IZUM’s IT team now has a single console for managing a significant proportion of their storage environment, with 2 SAN systems administrators operating 2 disk storage systems; 1 on their primary location the other co-located for disaster recovery. All servers with primary COBISS applications are connected to 1 Universal Storage Platform VM storage system in the primary data center.

Other vendors tested included HP XP20000 disk storage systems, EMC’s single engine Symmetrix system and the IBM® DS4800 disk system and used IBM SAN Volume Controller (SVC) to manage the storage infrastructure.

“One of the main advantages HDS could provide us with was supporting the HP OpenVMS system. Cost was naturally another decisive factor,” said Šetar. “The economy of using the HDS solution meant we purchased not 1, but 2 disk storage systems, which has made us ready for future requirements with a flexible and scalable system that we are confident will cope with upcoming IT challenges posed by the library system.”

Instant Simplification

“The primary benefit of our new storage solution is the high availability of our applications and services,” Šetar reported a few months after the installation.

“The old system needed a lot of time and effort dedicated to maintenance as it had so many component parts with different systems from different vendors. We now have better IT core infrastructure and processes and have started to see increased productivity related to this,” he added.

IZUM reported a smooth implementation and migration of data onto the new platform, with support provided by Hitachi Data Systems team members, who leveraged their in-depth understanding of IZUM’s needs and IT environment to deploy the new hardware and supporting software successfully.