



# Consolidation in virtual environment.

Asseco Poland S.A., based in Rzeszow, 14 Olchowa street, 35-322 Rzeszów, performed the following project for the customer, i.e. PKP Polskie Linie Kolejowe SA: “Modernization of the VMware virtual environment, along with the migration of systems for PKP Polskie Linie Kolejowe S.A.”

## Client.

PKP Polskie Linie Kolejowe S.A, a company from the Polish State Railways group, operator of the national railway network in Poland, which makes up to more than 19 thousand kilometers. In addition, it is responsible for the management and synchronization of passenger and freight rail traffic of the 74 licensed carriers. The

company is also responsible for developing and updating the train timetable in the whole country.

The purpose of the implementation was to consolidate the business systems on the new hardware platform in the highly available virtualized environment.

### The project involved:

- The supply of hardware and software
- Drafting the technical plan, installation and implementation of the infrastructure configuration
- Drafting the plan and the execution of the migration and consolidation of customer's server resources
- Drafting post deployment documentation
- Conducting the training and workshops

## Implementation.

„Modernization of the VMware virtual environment, along with the migration of systems for PKP Polskie Linie Kolejowe S.A.” is the project involving the building of highly available platform based on VMware vSphere.

It was created on the basis of the newly supplied hardware components, including: LAN core switches, SAN core network switches, blade servers and Enterprise-class disk arrays. The reliability was achieved through two geographically apart data processing centers: basic in Sosnowiec and secondary in Warsaw.

In the framework of the construction of new infrastructure, we consolidated the SAN networks previously used by the customer. Using the supplied backbone switches, we reconfigured the LAN network in the server and user layers. Using the matrix mechanisms, we

implemented the data replication between the centers, which allowed to run virtual servers in any CPD.

We migrated the systems operated by the customer to a new virtualized platform. Applications that were a subject to migration were very varied: from well-known systems (ERP systems, electronic mail system) to specific in-house solutions dedicated exclusively to the customer (e.g. control systems for the rail infrastructure).

The key factor of the project was to perform the migration in the allotted time (due to the expiring rental agreement for the existing infrastructure) and in a way as to minimize the interruptions in the supply of business services. Due to the widespread nature of the services provided by the customer, any delay in the access the applications were very undesirable.

Installation and configuration of the supplied equipment were performed on the basis of the Technical Project prepared specifically during the implementation, which included the need to build a highly available virtual environment providing a significant degree of automation for handling emergency situations. Raising the level of reliability was achieved through the development and implementation of the architecture of the solution limiting the occurrence of single points of failure.

210 system migrations were performed (including 56 physical ones) while maintaining both, the internal relations among the migrated systems, as well as with the rest of the PKP-PLK infrastructure. At the same time, it required the transfer of 100TB data to new matrix, which was configured to replicate data.

Rafał Zbiróg,  
IT Director, PKP PLK S.A.  
Sebastian Gajecki,  
IT Deputy Director, PKP PLK S.A.

## Key benefits after the implementation.

The project enabled the consolidation of a wide variety of system and database environments, from well-known systems (ERP, electronic mail system) to specific in-house solutions dedicated exclusively to PKP (e.g. control systems for the rail infrastructure) in the highly available virtualized infrastructure. It also allowed to reduce the cost of its operation.

The higher level of reliability was achieved through the development and implementation of the architecture of the solution limiting the occurrence of single points of failure. New environment was implemented in two centers of PKP PLK in two different cities by providing a replication of critical data and services between the

Rafał Zbiróg,  
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## Figures.

- PLN 14.4 mln net the whole project value
- 6 months for implementation
- 210 integrated systems
- 100TB transferred data
- 12 specialist carrying out the migration