



#### Objective

Reduce the cost of running mission-critical core banking services while improving application performance and enabling greater flexibility to grow the business

#### Approach

Migrate from IBM Power Systems to HPE Integrity Superdome X Servers running a virtualized Linux open source operating environment

#### IT Matters

- Improved application performance by 250%
- Achieved 30% improvement in operating efficiency, supporting more workloads with fewer resources
- Enabled IT to spin up new environments in hours rather than days

#### Business Matters

- Reduced capital expenses by 38%
- Lowered operating expenses by 78% over four years
- Ensured the highest levels of reliability and availability for mission-critical core banking

# Financial institution migrates core banking from IBM Power Systems to HPE Superdome X

Reduces costs while optimizing performance, availability, and scalability



## Introduction

Hypo Group Alpe Adria AG (HGAA) runs six banking subsidiaries in Slovenia, Croatia, Bosnia-Herzegovina, Serbia, and Montenegro. To meet its financial objectives, HGAA, HGAA needed to divest an internal IT service organization, Zajednicki Informacioni Sistem (ZIS), which was responsible for running all core banking services and associated applications. ZIS had long relied on custom-developed IBM mainframe applications, which were becoming increasingly expensive to maintain.

In an effort to improve efficiency and flexibility, ZIS moved from the mainframe to IBM Power Systems running the industry-leading Temenos Core Banking platform in an IBM AIX operating environment. However, the costs of retaining ZIS as an internal service provider were still too high, so HGAA decided to sell off ZIS and outsource core banking services.

HPE ultimately won the bid and absorbed ZIS into a banking center of excellence based in Belgrade, Serbia. From this centralized location, HPE is positioned to provide

“To run a mission-critical environment like core banking, you need enterprise-class technology that delivers the highest levels of performance and classic RAS—reliability, availability, and serviceability. We saw all of this in Superdome X. It has the robust capabilities we were used to in a UNIX environment but implemented on an open platform.”

— Holger Salzer, Account Delivery Executive with HPE and former CEO of ZIS

Performance on the HPE  
infrastructure is

2.5

times better than on the  
previous IBM Power Systems.

banking-as-a-service to four HGAA banking subsidiaries, including Serbia, Montenegro, and Bosnia-Herzegovina, which comprises two legal entities.

To meet HGAA's cost-cutting objectives, HPE immediately began looking for an alternative to the expensive and proprietary IBM Power Systems. The primary objectives were:

- Lower operational and capital expenses
- Increase agility to support growing business requirements
- Optimize performance of Temenos Core Banking in an open environment that delivers the same or better reliability and availability as AIX.

After conducting an intensive evaluation and proof of concept (POC), consultants from HPE advised HGAA that HPE Integrity Superdome X was the ideal replacement for IBM Power Systems. The evaluation highlighted that Superdome X met the highest standards for x86 availability, scalability, and performance to meet HGAA's mission-critical core banking requirements.

Moreover, HPE developed a business case for Superdome X. The financial analysis showed that deploying a completely new HPE Superdome X and 3PAR solution would save HGAA more than €524,000 compared to upgrading the legacy IBM Power Systems

to newer Power Systems. Moreover, ongoing maintenance of Superdome X would be lower than IBM Power Systems by nearly €973,000 over four years.

### **Superdome X proves to be the ideal migration target**

As a first step toward replacing IBM Power Systems, HPE held an intensive workshop with its server management team at the Belgrade banking center of excellence. The workshop included a deep-dive analysis of Superdome X features and technical capabilities, which provided the server team with an understanding of why this x86 platform is a viable alternative to IBM Power Systems.

Following the workshop, services professionals from HPE set up a POC to validate that Superdome X would meet HGAA's technical requirements and budget. The POC environment was configured as follows:

- Superdome X populated with four HPE BL920s Gen8 server blades
- Red Hat® Enterprise Linux (RHEL 6.6) operating environment
- Red Hat Enterprise Virtualization (RHEV 3.5)
- Temenos Core Banking (T24 R10)

**Case study**  
Hypo Group Alpe  
Adria AG

**Industry**  
Financial services



- application software
- IBM DB2 10.5 database
  - HPE BladeSystem C7000 to host the Temenos Core Banking presentation layer
  - HPE 3PAR StoreServ 7400 storage with solid state drives and Adaptive Optimization

The POC included a number of tests, such as a performance test of Temenos Core Banking operations. This test simulated regular daily activities of users handling a certain number of transactions, accounts, and customers. The POC also included a regression test of the Temenos Core Banking application to verify stability and quality.

One of the most important processes tested during the POC was Close of Business (COB). This is a batch process consisting of numerous jobs needed to reconcile the day's activities, including posting transactions, calculating interest rates, and processing accruals. Daily COB processes on Superdome X with 3PAR completed in 1 hour and 40

minutes compared to Power Systems and EMC VMAX 10K, which took 3 hours and 30 minutes. In addition, the monthly COB, which generates the heaviest workload, completed two hours faster than with IBM Power Systems.

As part of the POC, HPE also conducted a failover test to validate the platform's high availability features. During the test one BL920s blade was powered off while virtual machines (VMs) were actively running. All the VMs were successfully recovered on another BL920s blade in approximately 3 minutes with no negative ramifications.

### **Performing a successful migration from Power Systems to Superdome X**

Based on the success of the POC, HGAA was convinced that Superdome X would meet its mission-critical core banking requirements and deliver the desired cost savings. And the

bank had complete confidence in HPE as a trusted service provider. The next big hurdle was for HPE to successfully migrate the Temenos Core Banking application and IBM DB2 database from the legacy Power Systems to Superdome X.

The challenge in migrating DB2 is that AIX is a “big-endian” system while modern computing systems such as Linux follow a “little-endian” approach. Endian refers to the order that individual bytes of data are stored in memory. Big-endian systems place the most significant value in the byte sequence first (the lowest storage address) while little-endian systems are the opposite, storing the least significant value first.

To migrate DB2 from a big-endian to a little-endian system required services professionals from HPE to export the entire database and

To overcome this challenge, HPE’s services professionals custom-developed an automated tool to export big-endian data from Power Systems, convert the data to the little-endian format, and import it into Superdome X. Thanks to this tool, the data migration could be performed in stages during the short window of time available on weekends.

Because each stage of the data migration could take 14 – 18 hours, the HPE team also incorporated a monitoring feature into the tool. Instead of requiring staff to be onsite watching the migration process, they could periodically check in remotely to ensure the migration was advancing as expected.

In addition, migrating the Temenos Core Banking platform presented another challenge. The HPE team had to modify the

application code to fit a Linux environment, and all of the application modules in the Temenos platform had to be restored to Superdome X at the same time. To coordinate the application migration, detailed plans were developed for each of the four HGAA banks and executed through a collaborative effort between the HPE operations and

server management teams.

For each bank, migrating the Temenos Core Banking platform and IBM DB2 database from Power Systems to Superdome X took approximately eight weeks. The key to the successful migration was having highly skilled people with deep knowledge in DB2,

HPE can now deliver new environments in a matter of hours instead of days like it took with IBM Power Systems.

then import it into the Linux environment.

Due to the endian issue, it was not possible to simply backup the database and restore it to the new system as is typical. To further compound the challenge, the HPE team could only perform the migration over weekends to avoid impacting HGAA’s business operations.



as well as the coding expertise to develop sophisticated mechanisms for moving data and application modules across two distinctly different computing environments.

While the migration has been successful, HPE was charting new territory with Temenos Core Banking. Looking back on the experience, Holger Salzer, Account Delivery Executive with HPE and former CEO of ZIS, advises, “The computing infrastructure was absolutely correct and well planned for the project according to best practices. But the application layer needed to be analyzed in more detail. Without direct support and assistance from the application vendor, we ran into some issues with Temenos Core Banking. Fortunately, we have a skilled staff that could create workarounds.”

### **Outstanding results meet mission-critical banking requirements**

Since replacing IBM Power Systems with Superdome X, HPE has been able to deliver the performance, efficiency, and cost benefits HGAA had been seeking. For example, overall performance on the HPE infrastructure is 2.5 times better than on the previous IBM Power Systems.

HGAA also gained efficient scalability to take on growing workloads and handle new acquisitions as opportunities emerge. The current Superdome X systems are using only a fraction of their full capabilities, which provides plenty of headroom for HGAA to expand its operations without compromising performance.

One of HGAA's most important objectives was lowering costs. HPE delivered outstanding results with Superdome X, reducing near-term capital expenses by 38%, as well as lowering operating expenses by 78% over four years. In total, the HPE infrastructure trimmed 39% off of HGAA's infrastructure expenses, taking into account the cost to deploy the systems, migrate applications and data, and train administrative staff on the new environment.

By standardizing on HPE technology and implementing open source tools to automate and optimize workloads, HPE also achieved a 30% improvement in operating efficiency by optimizing workloads on standardized technology compared to Power Systems. This translates to supporting more work using fewer resources.

Improved efficiency also helps keep HGAA's costs lower, and it enables the banking center of excellence to respond faster when the

## Case study

Hypo Group Alpe  
Adria AG

## Industry

Financial services

## Customer at a glance

### Application

- Migrate Temenos Core Banking software and IBM DB2 database off of IBM Power Systems onto HPE Integrity Superdome X running a virtualized Red Hat Enterprise Linux operating environment

### Hardware

- HPE Integrity Superdome X Servers
- HPE 3PAR StoreServ 7400 Storage
- HPE BladeSystem c7000

### Software

- Red Hat Enterprise Linux
- Red Hat Enterprise Virtualization
- Temenos Core Banking
- IBM DB2

### Services

- HPE Integration and Implementation Services
- HPE Managed Services
- HPE Managed Business Intelligence Services
- HPE Server Management Services
- HPE Application Management Services
- HPE Technology Support Services – Server Support

HGAA needs to spin up new application, test, or development environments. In fact, HPE can now deliver new environments in a matter of hours instead of days like it took with IBM Power Systems.

By migrating from IBM Power Systems to Superdome X, the HPE banking center of excellence in Belgrade can now perform its day to day responsibilities for HGAA much faster and help the bank get the highest levels of performance, availability, and scalability from its mission-critical Temenos

Core Banking platform. Moreover, since core banking is delivered as a service, back-end infrastructure and operations management is completely transparent to HGAA. Bank employees simply get the highly reliable, highly responsive access to mission-critical core banking services they need, and HGAA leadership can focus on running the business and delivering the best possible services to its customers.

Learn more at  
[hpe.com/](http://hpe.com/)



Sign up for updates