

HOW THE DEUTSCHE BUNDESBANK MAKES PROGRESS



SIMPLIFYING ACCESS TO THE MAINFRAME

As the central bank of the Federal Republic of Germany and an integral part of the European System of Central Banks (ESCB), the Deutsche Bundesbank's tasks range from guaranteeing price stability and completing transactions in the domestic and foreign markets to ensuring the stability of the payment and exchange systems.

When the Deutsche Bundesbank needed the ability to access data stored in its DB2 and IMS mainframe databases through distributed applications as well as through the Web, the company looked to Progress® Shadow® technology for a solution. Progress Software, the leader in enterprise-class mainframe adapters that reduce integration complexity, simplified access to the Bundesbank's DB2 and IMS mainframe databases, allowing users to reach mission-critical data stored on the mainframe.



CHALLENGE

Simplify access to large volumes of data on mainframe databases from a Web browser and from Java environments

SOLUTION

Shadow enterprise-class mainframe adapters to integrate distributed applications with DB2 and IMS mainframe databases

BENEFIT

Ability to develop modern applications with mainframe data gives the flexibility to rapidly evolve the IT infrastructure to better meet changing business requirements

With a institution the size of the Deutsche Bundesbank, it goes without saying that over many decades enormous amounts of data are accumulated. This data must be identified, prepared and evaluated for different target groups and then be made accessible to a broad user base. The data processing for the central areas of statistics and economics at the Bundesbank contain data relating to many different business areas – both domestic and foreign. While the domestic data predominantly consists of external trade and bank statistics, the data provided by international organizations is used in regular data exchange.

These organizations require up-to-date applications and middleware to provide the widest possible user network. Where levels of administration and organization are integrated through Internet or intranet applications, user-friendly browser solutions must be made available to give access to the mainframe data. At the same time, investments should be protected and strengthened, the operational lifetime of the systems lengthened, and new applications integrated.

ACCESSING MAINFRAME DB2 AND IMS DATA FROM THE WEB AND DISTRIBUTED APPLICATIONS

The Deutsche Bundesbank was faced with the challenge of maintaining the levels of performance, reliability and access security guaranteed by the mainframe while unlocking the data stored within. The company looked to Shadow technology for a solution.

“The aim was to create a connection between user-friendly Windows or browser applications and the host data while maintaining the high levels of accessibility, performance and security guaranteed by the mainframe. In addition, we wanted to give our developers the ability to create applications using up-to-date development tools such as Java or Visual Basic,” said one of the project people from the Statistics department at the Bundesbank.

TRANSPARENTLY INTEGRATING APPLICATIONS WITH MAINFRAME DATA SOURCES WHILE MAINTAINING PERFORMANCE, RELIABILITY, AND SECURITY

Shadow technology provided Bundesbank with a way to simply and transparently integrate application platforms with mainframe data sources. Shadow keeps the training and programming requirements to a minimum, while maximizing the high levels of performance, reliability, security and maintenance-friendly attributes of the mainframe. The Shadow infrastructure facilitates the integration of multiple application platforms, such as J2EE, .NET and mainframe resources, and supports a number of applications together with thousands of users and transactions per minute.

While Progress® Shadow® z/Direct was initially chosen as an infrastructure component and implemented into the mainframe of the Bundesbank, the solution eventually grew to also include Progress® Shadow® Web Server.

When Shadow was first introduced, the Deutsche Bundesbank was supported exclusively by Progress. “It was important for us to have a good relay of knowledge as well as high availability when dealing with problems,” said one project manager at the Bundesbank. Shadow is now used both for statistics and economic applications at the Bundesbank, as well as for testing and development. Shadow z/Direct runs on three IBM zSeries mainframes under z/OS. These mainframes are merged into a parallel Sysplex, which synchronizes the computer processes.

GOALS FULLY ACHIEVED: UP-TO-DATE DEVELOPMENT TOOLS LINKED TO HIGH-PERFORMANCE HOST

It is no surprise that there is a high acceptance by the employees involved in the conversion—both mainframe and PC software developers. “Thanks to Shadow, developers are able to provide Windows or Web applications with access to mainframe data in the quickest time possible.

In addition, existing development know-how such as COBOL, PL/I or REXX can be used, as well as internally developed software components. Non-relational structures such as IMS databases, OS and VSAM files can also be made available for languages such as Java, C++ or Visual Basic and standard software such as Microsoft Excel or Access. The implementation of Shadow z/Direct as well as Shadow Web Server was completely problem-free, and in the production operation, the products have proved to be absolutely stable during the past five years," said one project manager at the Bundesbank.

"Thanks to Shadow, we have fully reached our goal of connecting up-to-date development tools with user-friendly surfaces, while having the well-known, high-performance level of the host," he said.

SHADOW Z/DIRECT IN USE FOR MULTIPLE PLATFORMS/WEB-BASED PROJECTS

Numerous projects have been realized at the Bundesbank since the implementation of Shadow. IBM's WebSphere, Sun Microsystem's J2EE and the Microsoft Internet Information Server are all platforms that have been used in Web-based projects with Shadow z/Direct. One of the most important developments has been allowing the Bundesbank's Time-series Information System to access data stored in its IMS mainframe databases.

Approximately 750,000 Time-series from the Deutsche Bundesbank as well as from international organizations can be called up from the Time-series databases. The data consists of monetary data and bank statistics, total accounts of the European monetary union, interest rates, data relating to external trade and public finances, exchange rates and general economic data. The Shadow ODBC connection to the mainframe originates from the application platform suite, so users only need a browser for access.

"Bundesbank now has a user-friendly solution for accessing data stored on the mainframe through Microsoft Windows or Web applications without compromising the stability and security the mainframe is known for."

Project Manager at Bundesbank

ACCESS TO MAINFRAME DATA WHILE SUPPORTING IBM SECURITY STANDARDS

The Bundesbank invested in Shadow Web Server following their positive experience with Shadow z/Direct. Shadow Web Server allows the Bundesbank to develop and operate Web solutions with access to data volumes on the mainframe while still supporting IBM security standards such as RACF (Resource Access Control Facility). Shadow Web Server integrates itself as a Started Task into the z/OS environment and is configured over the user interface ISPF under TSO.

One of the ways the Bundesbank has used Shadow Web Server is for the balance of payments statistics. Approximately 600,000 in-and-out payments per month are made in the German economic area. These payments are sorted according to the underlying kinds of performance to countries that have exchanged them, as well as to different sectors of the economy. Transnational payments must be announced in accordance with the external trade regulation adhering to predefined reporting forms. This is done, to a large extent, on data media or by the Internet, whereby national and international EDIFACT and future-strengthened XML standards are used as data formats.

With Shadow, developing applications that use mainframe data is simplified by enabling Java development tools and techniques to access relational databases. Shadow technology is an inherently more robust solution than competing integration technology, utilizing a mainframe software component to enable secure interoperability at the highest level of performance and scalability, while also providing rich monitoring and diagnostics.

Customers who adopt the solution of Shadow technology open enormous opportunities to leverage their mainframe investments. Shadow's wealth of systems management facilities and fundamental architectural strength give organizations the flexibility to rapidly evolve their IT infrastructure in order to meet changing business conditions. Reducing

integration complexity can be achieved without risk or compromise to the reliability and scalability of the mainframe systems and application platforms that form the core of most enterprise systems today.

PROGRESS SOFTWARE

Progress Software Corporation (NASDAQ: PRGS) is a global software company that enables enterprises to be operationally responsive to changing conditions and customer interactions as they occur. Our goal is to enable our customers to capitalize on new opportunities, drive greater efficiencies, and reduce risk. Progress offers a comprehensive portfolio of best-in-class infrastructure software spanning event-driven visibility and real-time response, open integration, data access and integration, and application development and management—all supporting on-premises and SaaS/cloud deployments. Progress maximizes the benefits of operational responsiveness while minimizing IT complexity and total cost of ownership.

WORLDWIDE HEADQUARTERS

Progress Software Corporation, 14 Oak Park, Bedford, MA 01730 USA
Tel: +1 781 280-4000 Fax: +1 781 280-4095 On the Web at: www.progress.com

Find us on  facebook.com/progresssw  twitter.com/progresssw  youtube.com/progresssw

For regional international office locations and contact information, please refer to the Web page below:
www.progress.com/worldwide

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Rev. 04/12 | 6525-128160

