



University of Arkansas creates new learning with SAP and IBM

Overview

■ The Challenge

Providing the opportunity to learn real-world business skills in the academic environment presents a significant challenge for higher education institutions. Ensuring students gain access to commercial-scale databases, enterprise software and high-performance infrastructure can strain the resources of even the most progressive institutions.

■ The Solution

The University of Arkansas, supported by local businesses, and by SAP and IBM, has implemented a complete SAP NetWeaver Business Warehouse application landscape on an IBM System z900 server running Linux. Businesses have contributed copies of anonymized commercial databases, which run on IBM DB2 for z/OS, to provide a real-world education environment available for Arkansas students and thousands of guest students from other institutions.

■ The Benefits

Students in multiple schools such as computer science, computing, finance and accountancy have access to a world-class enterprise-scale server, complete with commercial data and the latest software and applications. Free licenses for the entire SAP application suite for the z900 and IBM software components allow students to learn the latest techniques on the most current software, gaining skills on IBM System z that will be valued by their future employers.

■ Key Solution Components

*Industry: Education
Applications: SAP® ERP 6.0 applications, SAP NetWeaver® Business Warehouse 7.0, SAP NetWeaver Portal 3.5
Hardware: IBM® System z® 900
Software: IBM z/OS® 1.8, IBM z/VM 5.3, SUSE® Linux Enterprise Server, IBM DB2® v9.1, IBM CICS®, IBM Rational Developer for System z, IBM FlashCopy.*

The University of Arkansas at Fayetteville resides on 345 picturesque acres overlooking the Ozark Mountains. The University is one of the leading academic institutions in America, with nearly 19,000 students from some 100 nations enrolled in almost 200 courses.

Local businesses are closely involved in supporting the University, particularly for the more commercially focused courses. In the Information Systems faculty at the Sam M. Walton College of Business, this approach helps students of accounting, finance and business gain access to real-world experience of commercial-scale, enterprise-class infrastructure. SAP contributes to the endeavor by supplying the complete SAP application suite free of charge, and IBM provides free licenses for its software portfolio, as well as an IBM System z900 server for academic use.

David Douglas, Director of the University of Arkansas Enterprise Systems, which resides in the Walton College, said "Employers want graduates who have education and

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Christine Davis
Executive in Residence
Information Systems
Sam M. Walton College of Business
University of Arkansas

skills tuned the needs of their business. In the commercial world the enterprise environment continues to grow both in processing capacity and number of physical machines. With SAP, IBM and the help of our business sponsors, the University of Arkansas is leading the academic field.”

Replacing the baby-boomers

The market for programmers with IBM System z skills is tightening as baby-boomer generation professionals retire. An essential part of the course is hands-on programming in languages such as ABAP and COBOL, and test and development experience on live servers using both the z/OS natively and Linux under z/VM, which is used by most customers to gain virtualization benefits.

This Linux under z/VM environment is provided to other academic units for academic use. The initiative ensures that graduates have valuable expertise that helps companies continue to support their business-critical environments.

“The IBM System z platform is a lifeblood technology platform: banks, retail outlets and large corporations have been using it for their most critical information systems for the past 40 years, and they will continue to do so,” said David Douglas. “With technology comes the consistent need to have skilled professionals who can run, manage and update processes and systems. We teach students essential enterprise-class computing skills, so when they graduate they should have a diploma in one hand and a job offer in the other.”

More than 70 academic institutions worldwide work with the University of Arkansas’s Information Systems Department, which provides a System z course that includes programming, databases such as DB2, transaction processing and operating systems including z/OS, z/VM and Linux.

The IBM System z900 provides teaching environments both locally and via the Internet. More than 500 students may be logged on simultaneously, running diverse workloads such as business intelligence queries, transaction tests or system reschedules using real-world data provided by the companies that sponsor the program. Students gain hands-on experience of the capabilities of the IBM System z platform, such as simultaneous native support for multiple operating systems, dynamic load balancing and a host of advanced virtualization technologies available on the System z architecture.

“Access to the z900 provides students with invaluable insight into the demands of real-world business



environments through the study of enterprise computing systems. The z900 offers students opportunities to work in teams on virtual projects, and build virtualization skills on both enterprise-class Linux and the z/OS architecture,” says David Douglas.

Enterprise-scale commercial systems

The University of Arkansas operates an IBM System z900 with 16 processors and 64GB of main memory, and 7TB of attached storage. The z900 runs two operating systems simultaneously: z/OS and SUSE Linux Enterprise Server for System z. SAP applications run in the Linux environment under z/VM, and data is stored in IBM DB2 databases running under z/OS. There are also additional logical partitions providing IBM CICS, Java, DB2 and COBOL training within the modern Rational Developer for System z environments, and data is protected using IBM FlashCopy to provide rapid data backup.

Rational Developer for System z provides a workstation graphical user interface to TSO/ISPF, SDSF, JES2 and Unix Systems Services on the System z. With Rational, it is possible to use and interact with these powerful functionalities on the System z in a Windows-style environment, making it easier and more productive to exploit its performance, reliability and transaction throughput.

SAP on IBM system z assistance is provided by IBM Systems and Technology Group Lab Services, the IBM Academic Initiative, IBM Sales and Distribution, and IBM System z SAP Solutions Technical Support. Through the Initiative, IBM works with all schools, including universities,

colleges, community colleges and technical schools, to assist and enable students to learn IBM Enterprise Systems. Students are learning the new technology in various majors including CS, IT, MIS, Business, and Software Engineering.

The University of Arkansas is a member of the SAP University Alliance, and runs a full suite of SAP ERP applications on the SAP NetWeaver platform, including SAP NetWeaver Business Warehouse and SAP NetWeaver Portal, donated by SAP free of charge for teaching purposes. Some academic units, both at the University and external institutions, use the portal to access SAP NetWeaver BW data.

Arkansas businesses including Dillard’s Inc., Tyson Foods Inc. and Wal-Mart Stores, Inc. contribute anonymized copies of production databases for students to manage, mine and manipulate. The largest database contains more than 750 million rows in the transaction table, and other databases contain very high degrees of dimensionality, which allows the students to address different challenges based on commercial reality.

“Students do not have the ability to access such systems anywhere else, free of the constraints of commercial pressures,” said Douglas. “The z900 is able to support hundreds of users without us worrying about its ability to provide fast and reliable response; for example, one accountancy department alone has more than 340 user seats.”

Christine Davis, Executive in Residence at Walton College, adds, “The emphasis is on business

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David Douglas
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TECHNICAL LANDSCAPE

Servers: IBM System z900, 16 processors, 64GB memory, 7TB disk
Software: IBM z/OS® 1.8, IBM z/VM 5.3, SUSE® Linux Enterprise Server, IBM DB2® v9.1, IBM CICS®, IBM Rational Developer for System z, IBM FlashCopy
Users: More than 500 concurrent

intelligence, which requires high-performance infrastructure such as Linux on System z. A typical example would be finance students accessing the SAP Controlling and Profitability Analysis application. They can examine any aspect of management reporting such as profitability by product or division or segment, based on real data, and learn about the design of queries, the performance and the utility of the results gained. Students see how SAP applications really run under industry conditions.”

Tomorrow’s chief information officers

The IBM Academic Initiative for System z provides colleges and universities with educational resources to enhance the skilled resource base for enterprise systems, and helps students develop practical skills that enable them to find good jobs quickly upon graduation.

Davis said, “As far as the value proposition of the University is concerned, we compete against other colleges both locally and worldwide. Based on seed money and continued monetary support so graciously provided by Tyson Foods, along with the generous z900 loaner donation from IBM and donated SAP software, the University of Arkansas has grown to become a major center for excellence in the enterprise environment.”

Douglas concludes, “The IBM System z platform is continuously reinventing itself with new applications and offerings, improved performance, and reduced energy consumption. As it reinvents itself, CIOs are looking for graduates who are experienced on the technology and can support it to its next incarnation.

“IBM is a world-class company that realizes how important an investment into educational infrastructure can be. The collaboration between the University of Arkansas, local businesses, SAP and IBM demonstrates our commitment to providing future generations with mutually beneficial teaching, research and learning experiences.”

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