



AUTOSTADT GMBH (VOLKSWAGEN)

CUSTOMIZE YOUR IDEAL NEW VW ON SUN-BASED AUTOSTADT.COM

KEY HIGHLIGHTS

Company

Autostadt GmbH (Volkswagen)

Industry/Market

Automotive

Applications/Solutions

- Vignette Content Management Server
- Oracle 8i database
- Sun Cluster 3.0 software
- Checkpoint firewall software

Products/Services

- 2 Sun Enterprise™ 4500 servers
- 4 Sun Enterprise 420R servers
- 8 Sun Enterprise 450 servers
- 2 Netra™ T1 servers
- Sun StorEdge™ disk arrays
- Solaris™ Operating Environment
- Sun Professional Services
- SunSpectrum Platinum™ Support Services

Key Business Challenges

- Provide easily used method for customers to customize cars for pickup at Autostadt
- Deploy the best content management application and its ideal platform
- Achieve high levels of availability and responsiveness

Key Business Results

- Over 100,000 cars delivered in first year
- Many customers converted to Volkswagen from other brands
- Excellent service availability with no data loss

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Claus Hohmann, Chief Information Officer, Autostadt GmbH

Autostadt is Volkswagen’s novel and highly successful new way for customers to acquire automobiles. Customers can completely customize their new vehicles online, order them from a local dealer, and then travel to Autostadt’s elegant facilities in Wolfsburg, Germany to take delivery.

www.autostadt.com is powered by Sun Enterprise™ servers running the Solaris™ Operating Environment, Sun StorEdge™ disk arrays, and content management software from Vignette. Sun Professional Services provided very valuable services in architecting and implementing the Integrated Autostadt System (IAS), working closely with Autostadt’s software developer gedas GmbH. In the service’s first year, over 100,000 customers chose the Autostadt route to obtain their new cars, many of whom did not previously own Volkswagens. Due to Sun’s reliability and the high availability measures adopted by the Autostadt team, the Integrated Autostadt System is just as successful from a technical viewpoint, with high availability and zero data loss in the entire year.

The Autostadt Concept – Customize Your New Car Online, Pick It Up in a Park-Like Setting that Doubles as a Complete Family Experience

Volkswagen, for decades the world’s trusted supplier of high quality vehicles for affordable prices, is an automotive industry innovator in many ways. In 1995, Volkswagen conceived an entirely new way for customers to take delivery of new cars. Called Autostadt, this new approach lets customers employ the Internet for selecting and tailoring a new car, order it from any of Volkswagen’s many dealers, and travel to the company’s headquarters in Wolfsburg, Germany to pick it up in person. As the Autostadt concept matured it became much more than a car pickup center, with a beautiful information and entertainment park that includes an automotive museum and many other public attractions such as exposition buildings of Volkswagen Group’s makes: Audi, Bentley, Lamborghini, Seat, Skoda and of course Volkswagen.

Since the Internet front end was an absolutely crucial component of the plan, Autostadt's architects spent years on overall design of the system that would make it quick and easy for consumers to specify the arrangement of their car. By late 1999 this plan was finalized and it was time to select the service's foundations. The Autostadt

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*Dr. Michal Bruna, Manager of System Design
and Development, Autostadt GmbH*

<http://www.sun.com/service>



team began by evaluating content management solutions to fulfill the essential role of presenting users with an easily used mechanism for specifying the make, model, and options desired on a vehicle – a search that led to Vignette Content Management Server.

Next they turned their attention to hardware and operating system choices. “We wanted a platform with a great deal of stability, power, and built using best practices in Internet solutions, and that’s what Sun platforms are known for,” said Claus Hohmann, Chief Information Officer, Autostadt GmbH. “The only other platform we considered was Hewlett-Packard, which had a substantial presence at Volkswagen, but its UNIX® platforms were not supported by Vignette. We certainly didn’t want Windows NT, and the only other platform Vignette supports is Sun. To be sure we were making the right choice with Vignette on Sun we checked into their customer references, which were very positive.”

Sun Professional Services and Reliable Platforms Combine to Provide High Availability

Autostadt then engaged its key ally, Sun Professional Services, to develop and deploy the solution, working with application developer gedas GmbH. Autostadt made it clear that theirs was a mission-critical application that required optimal availability, reliability, and scalability. Therefore Sun Professional Services drew on the services-driven architecture — part of the SunTone™ Architecture Methodology — in the architectural design. The n-tier infrastructure consists of a client, presentation, application, and database tier, which allows Autostadt to separate presentation, business logic, and data. This architecture design helps lower application development risks while concurrently helping speed time to market. “When it came time to identify help in supporting our aggressive growth and availability targets, we looked no farther than Sun Professional Services,” noted Dr. Bruna. “These very professional consultants from Sun provided us with real value in helping to design and build a robust, high-performance infrastructure.”

Sun Professional Services worked with Autostadt and gedas to integrate load balancing and fail-over support into the configuration of the server and storage infrastructure. At the back end of the configuration they developed are a pair of Sun Enterprise 4500 database servers running Sun Cluster 3.0 software and controlling an Oracle 8i database that is stored on Sun StorEdge A5200 disk arrays.

The application tier is powered by customized applications developed by gedas and Vignette Content Manager running on a pair of Sun Netra™ T1 servers. Powering the front-end presentation tier are two Sun Enterprise 420R servers running Apache Web Server. Two more Sun Enterprise 420R servers are deployed for Internet presentation purposes. A battery of eight Sun Enterprise 450 servers share Checkpoint firewall protection and network management duties.

All of these systems run on the Solaris Operating Environment, helping to provide Autostadt with the power, predictability, and stability it needs to meet the demands of its growing Internet client base.

In the long term, an integral part of Autostadt's continued success will be its selection of a SunSpectrum Platinum™ support agreement. This premium support level is designed for systems where availability is of paramount importance, such as the IAS.

100,000 Cars in Autostadt's First Year

On June 1st, 2000, timed to coincide with the opening of EXPO 2000 in nearby Hanover, Autostadt opened its electronic and physical doors to the public. By June of 2001, just a year later, 2.2 million visitors had toured Autostadt's stylish, entertaining grounds — 30 percent of whom left in a brand new car. Many of the 100,000 vehicles picked up during the year were purchased by first-time Volkswagen owners.

“Without a strong, reliable Internet front end, the Autostadt concept could never have worked,” said Claus Hohmann. “The IAS is consistently there for people, at their fingertips. The Sun system has had a superb availability record, with never a single instance of data loss in the entire year.”

“In the difficult economic climate we've seen in 2001, Volkswagen is proud to be doing quite well compared with the automotive industry as a whole,” Dr. Bruna concluded. “One reason, I believe, is the innovation found throughout our vehicles and our business practices, as typified by Autostadt. We conceived it well, implemented it well, and made a lot of the right decisions along the way — highlighted by our decision to base it all on Sun.”

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