Driving Changes

Intel helps BMW migrate to new architecture to boost business performance

The BMW Group is internationally recognised as a leader in the premium sector automobile market, offering its three brands BMW*, MINI* and Rolls-Royce*. It prides itself on delivering high quality products with unmatched efficiency and in order to maintain its reputation it is committed to continually updating and improving all areas of its business.

CASE STUDY

Intel® Xeon® processor 5600 and 7500 series
Enterprise Server
Energy Efficiency: Environment and Performance

CHALLENGES

• **Energy efficiency.** Cut carbon emissions and energy use to support corporate goals
• **Business performance.** Make applications and operations in all areas of the business more efficient
• **Enable virtualisation.** Support the development of a larger virtual environment for key applications to simplify management costs

SOLUTIONS

• **Intel technology.** Based on its existing relationship with Intel, BMW Group tested and demonstrated the suitability of the new Intel® Xeon® processors 5600 and 7500 series
• **Migration.** Moving away from its existing RISC-based platform to the x86 architecture enables more efficient power usage and increased performance
• **Virtualisation.** Make use of virtualisation to minimize its physical server fleet and improve system manageability

IMPACT

• **Power use reduction.** BMW expects a 20 per cent reduction in energy used, which will lead to 10 per cent cost savings
• **Consolidation.** Virtualising the environment on Intel® architecture will create a consolidation ratio of 30:1
• **Faster results.** Better system and application performance mean business and development teams can get results sooner and speed time to market

“A diverse IT environment

At BMW, IT operations extend across many different disciplines. To develop new top-of-the-range car models that are aerodynamic, safe and efficient, BMW’s R&D department operates complex design and computational fluid dynamics (CFD) applications. Meanwhile, its business units operate large databases to support the company’s financial management, sales, marketing, customer relations and logistics operations.

With such heavy reliance on technology to drive business efficiency and performance, it is imperative that BMW ensures it is using the most effective solutions to meet its needs. At the same time, since it is a significant player in the automotive manufacturing industry, Axel-Knut Bethkenhagen, manager and head of corporate license management for BMW Group, explains the challenge this creates for the IT department: “Essentially, we need to do more with less. More performance, more efficiency and more scalability with less energy and less cost.”

We’re confident that with our new Intel® technology-based platform we will overachieve against the goals we have set ourselves in terms of business performance and energy efficiency.”

Axel-Knut Bethkenhagen, Manager, Head of Corporate License Management BMW Group
Paving the way for virtualisation

BMW Group knew that consolidating its existing server infrastructure using virtualisation would help it to meet all of these requirements, but it also had more ambitious plans. It has a RISC architecture in place that had supported data warehousing and SAP applications for a number of years, but the IT team found that its performance was not high enough to support business needs. It therefore migrated this environment away from RISC to an x86 architecture as a first stage of this project.

BMW has a very long-standing and successful relationship with Intel and it was eager to see what solutions and support it could offer to help achieve the maximum benefit from its new x86 architecture. With more than 3,700 applications and databases, it needed to make sure that whatever new platform it chose would support them all.

They were tiered into three main groups: SAP systems, Oracle databases and other business applications.

Already aware of the new-generation Intel® Xeon® processors 5600 and 7500 series through its ongoing partnership with Intel, BMW decided to evaluate both of these technologies to identify which would best meet its requirements for each environment.

The key criteria it wanted to measure were the processors’ energy efficiency, virtualisation capabilities and performance.

The testing showed that BMW could boost its system throughput by 30 per cent while consolidating its existing servers at a ratio of 30:1 to drive manageability improvements and significantly reduce energy requirements and emissions.

Having demonstrated that the new Intel technology was a good fit, BMW issued a call for proposals to a range of hardware vendors, asking them to present their proposed solutions with the requirement that they be based on Intel® Xeon® processors.

After considering the solutions, the team chose to deploy powerful HP ProLiant® DL580 G7 servers with Intel Xeon processors 7500 series to support the virtual environment holding its mission-critical applications. This technology combination was chosen due to its large memory footprint as well as new virtualization features such as nested page tables and virtualised I/O.

It also purchased lower-voltage HP ProLiant® DL380 G7 servers powered by Intel Xeon processors 5600 series to support its data warehousing environment and any applications that cannot be virtualised.

Business-wide success

With the new solution based on Intel architecture in place, BMW is looking forward to seeing improvements across the business. It expects to see a 20 per cent reduction in energy used, which will decrease its energy costs by up to 10 per cent. Moreover, with the virtualised environment in place, its system will be easier to manage, meaning the cost of human administration will also be reduced.

In terms of meeting BMW’s business goals, the new environment is making a difference. By reducing its power consumption, it is making a clear contribution toward meeting BMW Group’s CO₂ reduction targets. It is also able to help reduce time to market for new products as its CFD and other engineering programs can now run in shorter cycles. It can get results the same day rather than having to wait for calculations to run overnight.

“We’re confident that with our new Intel technology-based platform we will overachieve against the goals we have set ourselves in terms of business performance and energy efficiency,” concludes Bethken-hagen.

This project means BMW is now well on its way towards its goal of migrating almost its entire IT environment to Intel architecture, with 95 per cent of its infrastructure now running on Intel technology.

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