

Fighting crime in Germany with Intel® Itanium® 2 Processor technology



Technology Powers Business



SOLUTION SUMMARY

Sector:	Public sector
Challenge:	Lower Saxony police need to be able to deal with crime and emergencies around the clock. Its applications are mission critical and data intensive including operative, administrative and statistical and management information tasks. In the past, individual police forces in the area had separate IT systems that were not connected creating cost overheads, operational inefficiencies and delays in the fight against crime.
Solution:	All police forces in Lower Saxony are standardising on servers based on the Intel® Itanium® 2 processor. There are 20 centralised Linux* systems and 100 decentralised servers running internal applications for 11,600 client desktop systems. A centralised standardised database is accessible from the entire area with high performance and low cost of ownership. The HP servers based on the Itanium 2 processor supports multiple operating systems including Linux, HP-UX* and Microsoft* Windows*.
Business Value:	Streamlining of police criminal proceedings, investigation and general administration. Ultimately the ability to connect to a central repository and access the data, files and criminal records from anywhere in the Lower Saxony area without need for manual processes. Consolidation of applications and operating systems on the HP Itanium 2-based platform will simplify technical support and reduce maintenance costs. The system's high-performance will ensure a rapid response with outstanding throughput and headroom for large-scale long-term growth.
Server Infrastructure:	100 decentralised HP servers based on Intel® architecture running diverse infrastructure services including BEA* message queuing, DNS, LDAP, file and print, and DMS. 20 central servers based on the Intel Itanium 2 processor running mostly Enterprise Java Beans in addition to some of the decentralised server functionality.
Clients:	11,600 Intel® Pentium® 4 based desktops
Operating Systems:	RedHat* Enterprise Linux AS 2.1 64-bit, HP-UX
Applications:	Criminal records tracking and reporting, Adisoft* MOBILEmanager*
Application Platform:	BEA WebLogic* Platform 8.1
Database:	Oracle*9i
Java Virtual Machine:	BEA WebLogic JRockit 8.1
The Solution Provider:	Mummert Consulting



BUSINESS CHALLENGE

Fighting crime round the clock

Germany is a federal republic with 16 states, each with its own police force. Lower Saxony is the second largest state in terms of area, employing 22,500 people in the police force, with more than 600 police stations. The force has to be in action right around the clock, even in outlying areas, so as to provide help for citizens in the event of crime or emergencies.

Central service provider

The mission of the Police Office for Engineering and Procurement (PATBNI) in Lower Saxony is to act as a central service provider for the entire force. It provides them with information technology, weapons, vehicles and other equipment, and carries out procurement of everything from office stationery to helicopters. PATBNI has to assure optimum availability for police deployment, and at the same time be as cost-effective as possible when competing with private organisations.

PATBNI employs 325 people. Their job is to ensure that the force's 22,500 policemen and women are constantly provided with information, via data networks, radio links, and equipment in the vehicles. Previously all police forces in Lower Saxony had their own separate servers. These were not interconnected so when data files were requested from one office to another they had to be transmitted manually – a time-consuming and expensive process.

High-performance customisable system

PATBNI needed a standardised and inter-connected customisable information system with a centralised database, to support all levels of the police work, including operative, administrative and statistical and management information tasks.

The system would have to offer extremely high performance, delivering the very fastest throughput and response-time. In addition, there was a need for cost-effectiveness, with low cost-of-ownership. And PATBNI wanted rapid deployment with minimum complexity. It was a clear case for the power and price/performance of the Intel Itanium 2 processor with its industry-leading 64-bit architecture, flexibility and conformance to open industry standards.

PATBNI needed to ensure that the system was in line with federal regulations from the BKA (German FBI), so the decision was made to base it on BEA Web Logic. Axel Köhler, project manager at the Lower Saxony Police, is responsible for central IT systems and centralised applications for Lower Saxony Police's 11,600 clients. "The applications also have to be administered as efficiently as possible, and so we need a basis that ensures all the applications have maximum availability around the clock with very little maintenance," he says.

"In view of the fact that 11,600 clients will access this system, key requirements are rapid response times and outstanding reliability," Mr Köhler says. "This will ensure that the infrastructure implementation will be available 24x7." No longer will forces depend on manual processes to gain access to files and criminal records held by others in the Lower Saxony region. All will be available at a few strokes of the computer keyboard – providing the requests conform to security and policy requirements.

Implementation partner

For guidance on the choice of platform, and help with implementation, PATBNI turned to Mummert Consulting, a leading European consulting company for service industries, particularly the public sector.

Roland von Bethusy-Huc, senior manager at Mummert Consulting, says: "We work closely with our customers to plan, develop and implement ideas, business strategies and processes as well as IT solutions based on modern technologies which support their business at every level, managerial tasks as well as operational processes. Our mission is to achieve the perfect match between technological potential and business aims."

Mummert Consulting has a close relationship with Intel in providing comprehensive IT solutions to Mummert Consulting's customers and ensuring that technology can be competently implemented by Mummert Consulting to its customers. This enables Mummert Consulting to offer high performance, business-critical systems, based on the latest enterprise-class Intel Itanium architecture.

BUSINESS SOLUTION

Groundbreaking Intel Itanium 2 processor

Mummert Consulting recommended Intel's Itanium 2 architecture, with its ground-breaking 64-bit technology, as the most suitable platform for the demanding mission-critical and data-intensive applications required by Lower Saxony Police. For the 20 central Linux systems, Mummert Consulting proposed HP servers with 64-bit Intel Itanium 2 technology. The main purpose of this system is to run Web accessible applications and products such as Adisoft MOBILEmanager.

Mummert Consulting also recommended Intel architecture for PATBNI's 100 decentralised servers and 11,600 client desktop systems. This system is used mainly for Web applications involving criminal documents. The way these documents are used depends on official policy. For example, policy defines which files can be shared with federal police and/or other state's police and which documents may not be shared.

This solution would take advantage of the price/performance, flexibility and industry-standard architecture of the Intel Itanium 2 technology to be relatively low-cost, simpler and faster to implement, and with much reduced running costs. It is now being built with the support of Intel Solution Services for piloting and optimisation.

Intel Solution Services is Intel Corporation's global strategic enterprise consulting services division. It accelerates the end customer deployment of solutions based on leading Intel architectures and Intel technologies through professional services. The support of Intel Solution Services and its "distributed solutions" practice has enabled Lower Saxony Police to reduce the risk in deploying on Itanium 2-based platforms. This included the validation of BEA WebLogic and JRockit on the Linux 64-bit platform.

"In the area of central servers, the Intel Itanium 2-based servers reduce the complexity in our customers' IT environment," says Mr von Bethusy-Huc.

"We can run on a single hardware architecture, even though more than one OS is required."

**Roland von Bethusy-Huc,
Senior Manager at Mummert Consulting**

Cost-effectiveness

Freedom of Choice

There are several advantages to PATBNI in using Intel architecture in the enterprise, says Mr Köhler. “The Intel Itanium 2-based systems are characterised by a very low total cost of ownership, so that the financial outlay for operating our central systems is low. In our case, Intel systems are also very well supported by HP-UX, Linux and Windows operating systems.”

The use of Intel-based servers also reduces complexity in the PATBNI's IT environment. “We're using Intel Itanium 2-based hardware in our central environment. That allows us to administer and operate different operating systems on similar hardware architecture at a low cost.”

But it was price/performance that was most influential. “The price/performance ratio of the Intel Itanium 2 architecture was the decisive criterion that led to our choosing Intel with BEA WebLogic,” Mr Köhler says.

Integrating applications with BEA WebLogic

All the Lower Saxony Police's key business applications are tied to BEA WebLogic. “We've modelled all the core police processes on the basis of BEA,” says Mr Köhler. “That covers administrative tasks, operational tasks, statistical analyses, and also management matters.”

Several business processes are supported, including criminal proceedings, many kinds of investigation, and general administration. Work is also going on to create a technical infrastructure for the German National Criminal Tracking System under a project known as MIKADO. The aim is to port the current Nivadis 10.0 application, which is based on 32-bit architecture. Under the new system, policies such as document sharing and whether or not individual police forces are allowed to share files or data, will be automatically handled by the system. This will overcome the inefficiencies and delays of the previous system where file sharing involved a time-consuming request process and the manual transfer of files and data. Overall the effect will be to streamline processes, improve efficiency and facilitate productivity gains with the aim of achieving significant improvements in the fight against crime.

Mummert Consulting is carrying out this work in collaboration with Intel and PATBNI. Ultimately, MIKADO will allow all of the police stations in Lower Saxony to connect to the national central repository of criminal information over an interface referred to as “Inpol”. This will create a standardised infrastructure which can be replicated in other locations and which gives common database accessibility to all locations.

The Intel Itanium 2 processor was chosen for flexibility and choice as well as cost-effectiveness. “The Itanium 2 processor allows us to work much more flexibly and cost-effectively in a centralised operation, because the processor can be used with various operating systems and software. That means we can scale our operations flexibly and use our resources to best effect,” Mr Köhler says. “We gain high flexibility in the computer centre and at the same time a low total cost of ownership.”

The industry-leading throughput of the Intel Itanium 2 processor was another compelling factor in PATBNI's choice. It increases the performance quite considerably, Mr Köhler says. “That's achieved by the step-up to 64-bit technology, and by the use of EPIC (Explicit Parallel Instruction Computing) optimised software.”

Mr Köhler's team did compare the performance of the Intel Itanium 2 processor to other servers. “We compared the usual standard benchmarks that were available for various processor types. The tables helped us decide on the Intel Itanium 2 processor.

Already the PATBNI is seeing results. “Intel Itanium 2-based systems are very fast in actual use,” says Mr Köhler.

Mr Köhler summarises the criteria that played a role in the decision to select the Intel Itanium 2 processor-based system. “From the management point of view, a central IT system is basically a black box. The decisive things for me were the visible factors such as reliability and cost. With the Intel Itanium 2 processors we now have centralised IT systems that carry out the required tasks very quickly and cost-effectively.”

BEA WebLogic JRockit is a Java Virtual Machine specialised for running server-side applications on Intel Architecture. JRockit was a key factor when choosing to run enterprise-class Java applications on Intel Architecture. Benchmarks have repeatedly proved how the JRockit and Intel Architecture combination sets a new bar for price/performance of enterprise Java applications. JRockit comes with a unique management console that offers easy administration, monitoring and tuning on the production system. Capabilities, which are simply not available on similar products, but they are crucial in driving down.

Competitive advantage

From Mummert Consulting's point of view, the advanced throughput and response-time of the Itanium 2-based HP systems are helping meet customer expectations. The systems also outperform RISC-based machines on database applications, where performance is strongly affected by IO capabilities and memory size.

“In the area of central servers, the Intel Itanium 2-based servers reduce the complexity in our customers' IT environment,” says Mr von Bethusy-Huc. “We can run on a single hardware architecture, even though more than one OS is required.

“The price/performance is a factor in the decision of our customers. However, equally if not more important, is the promise that the Intel Itanium 2 processor will be the fastest architecture for Java.”

Mummert Consulting used leading edge technology in such a big, important and well-known project. “We are pleased to say, that our advice to the customer has paid off,” Mr von Bethusy-Huc says.

Return on investment

Lower Saxony Police is very pleased with the performance levels it is receiving from BEA Web Logic running on Intel architecture. “Currently we're gradually changing over our central server to Intel Itanium 2-based systems, and we're getting very satisfactory performance,” says Mr Köhler.

Reducing complexity has improved cost-effectiveness “With these systems we're using both HP-UX and Linux in the central architecture, and that's allowed us to simplify some of the processes.”

Mr Koehler has some advice for other companies deploying BEA WebLogic. “Intel's technology but also their enabling work with JRockit made Intel Architecture an excellent choice for BEA deployments since there you have freedom of choice between various OEM's, operating systems and server types (classical or blades). All that is important when building flexible environments with best TCO on stable platforms.”

“We're using Intel Itanium 2-based hardware in our central environment. That allows us to administer and operate different operating systems on similar hardware architecture at a low cost.”

Axel Köhler,
Project Manager at the Lower Saxony Police

Lessons Learned

- The Intel Itanium 2 processor is a powerful, scalable and cost-effective solution. For mission-critical applications demanding ultra high performance, advanced throughput and rapid response times, Intel Itanium 2 processor is a basis for powerful, robust and highly scalable solution. The fact that it reduces complexity also cuts implementation time and reduces cost.
- Enabling interoperability with conformance to open industry standards. Intel's state-of-the-art 64-bit technology delivers flexibility and minimises cost-of-ownership a centralised IT operation, and it can be used with varied software. Lower Saxony Police can scale its operations flexibly and use its resources to best effect.
- Skilled solution providers help projects meet targets using best practice. Working with partners such as Mummert Consulting brings the benefit of the knowledge and expertise of specialists to a project, helping ensure that implementations are done according to best practice and making use of the latest developments in technology.
- State-of-the-art Intel technology delivers outstanding performance. It can be worth taking what seems like a higher risk with leading edge technology when it comes with the reliability, availability and serviceability of Intel. For PATBNI, this strategy has really paid off with the outstanding price/performance levels of the Intel Itanium 2 processor which outperforms RISC on database applications.



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