



Case Study

**Intel® Core™ 2 Processor
and Intel® Centrino®
with vPro™ technology**

Automotive
AUDI AG

„The Intel Core 2 processor and vPro technology will help us to improve data quality, cut down on desk-side visits and reduce operating costs.“

Hubert Fischer,
Head of Client Services, AUDI AG

Investment in the future

The AUDI AG is aiming to improve data quality and optimize the network management of around 35,000 desktops and notebooks with the aid of Intel®'s Core™ 2 processors and Centrino® with vPro™ technology.

AUDI AG is one of the world's leading manufacturers of premium, technologically advanced cars. Worldwide, the group employs around 52,000 workers. Its strategic targets are supported by innovative IT technologies, and the group is currently adopting innovative concepts to ensure enhanced, cost-effective administration and maintenance for its 35,000 enterprise clients. The newly-introduced hardware is based on Intel®'s Core™ 2 processor and Centrino® with vPro™ technology. Intel®'s Active Management Technology offers functions designed to optimize the remote maintenance of desktop PCs and notebooks.

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- The challenge:**
- **AUDI AG uses around 35,000 desktop PCs and notebooks.** Since April 2007, these have gradually been phased out in favor of hardware incorporating Intel Core 2 processor and Intel Centrino with vPro technology. The new hardware must be powerful enough to guarantee security of investment for the next three years.
 - **Network administration and maintenance** for the 35,000 enterprise clients will be simplified thanks to remote manageability, in order to reduce desk-side visits and cut costs.
 - **The aims are enhanced data quality,** since data can also be retrieved when PCs are powered off, efficient and centralized asset tracking with up-to-date information (PC configuration, software installed), and improved security functions.

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- The solution:**
- **Hardware based on Intel Core 2 processor and Centrino with vPro technology,** which support AUDI's existing and future system administration software (currently Microsoft SMS* - Microsoft SCCM 2007* to be introduced from 2008).
 - **Integrated Intel Active Management Technology** (Intel AMT) offers functions to optimize remote maintenance. These include enhanced tracking of hard- and software assets in networked PCs.
 - **Intel Core 2 processor and Centrino with vPro technology** offer comprehensive security functions to prevent attacks and protect critical data. The quarantine function enables virus-infected files to be isolated, thus protecting the network.
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Intel Core 2 processors with vPro technology provide greater security in client system administration



The business environment

One of the ways in which AUDI supports its strategic targets is through innovative IT technologies. This is why AUDI is currently implementing its FMO initiative (Future Mode Operations): new concepts designed to provide enhanced, cost-effective administration and maintenance for its 35,000 enterprise clients. "The aim of FMO is to optimize processes by using the latest technologies. This allows users to work better, and boosts productivity" explains Hubert Fischer, Head of

Spotlight: AUDI AG

- AUDI AG is a globally operating company that develops and manufactures high-quality, technologically innovative automobiles. It is headquartered in Ingolstadt (Germany) with a facility in Neckarsulm (Germany).
- Audi got off to a good start in 2007. During the first six months of the year, the company grew its revenues to a record figure of about €17.4 billion, delivering more than 509,079 cars to customers. The company's growth was accompanied by ongoing expansion of its manufacturing facilities, which today employ a total workforce of some 52,700 people.
- The current model portfolio comprises the Audi A3, A4, A5, A6 and A8 model lines and the Audi TT sports car, each available in a variety of body styles, feature options and additional sport versions. In 2006, Audi broadened its offerings to include the Audi Q7, an innovative SUV. The Audi R8, a mid-engined sports car that was launched in April 2007, has established itself as a brand icon.
- The company continues to set itself ambitious goals for the future: Audi intends to sell a million cars worldwide for the first time in 2008. It is the stated objective of AUDI AG to become the world's most successful premium car manufacturer by the year 2015.

Client Services at AUDI AG. "We focus on the user. It's not just about cutting costs, but also about investing in the future".

Over a three-year period, AUDI AG will gradually phase out all the 35,000 desktop PCs and notebooks and replace them with a new software image. Enterprise clients are currently using the Microsoft Systems Management Server (SMS). Over the coming year, the group intends to install its successor – the Microsoft System Center Configuration Manager (SCCM) 2007. In tandem with this, it is planned that during 2008, the hardware will also be equipped with Windows Vista and Office 2007.

"The hardware needs to be powerful enough to offer security of investment for the next three years" explains Hubert Fischer. AUDI finally decided on the Intel Core 2 processor and Centrino with vPro technology. "We are committed to a partnership with Intel because for us, the future security of our IT is crucial. The Core 2 processors and Centrino with vPro technology offer added value and benefits that make the difference" says Hubert Fischer.

A key factor in the decision was the integrated Intel Active Management Technology (AMT), which offers comprehensive functions to improve remote manageability of desktops and notebooks. For example, administrators can even retrieve hardware data from PCs which are powered off. Intel Core 2 with vPro technology can also be integrated easily into Audi's current IT landscape, as it has an interface with Microsoft SMS. Another advantage to introducing Microsoft SCCM 2007, Office 2007 and Windows Vista during 2008 is the close collaboration between Intel and Microsoft.

Since April 2007, AUDI AG has gradually been introducing new desktop hardware at its German sites in Ingolstadt and Neckarsulm (desktop systems with the Intel Core 2 processor with vPro technology; notebooks will be



„We have committed to a partnership with Intel because for us, the future security of our hardware is key.“

Hubert Fischer,
Head of Client Services, AUDI AG

fitted with the Intel Centrino with vPro technology in the future). From December 2007, notebooks will also be equipped with Intel Centrino and vPro technology. In all, around 30,000 computers at Audi's German sites should be fully kitted out with Microsoft's new software platform by the middle of 2008.

T-Systems is acting as a service provider to implement the new technology. Intel is providing project planning support and on request its consultants and experts can provide on-site assistance. Mid-2008 will see the launch of plans to introduce the second phase of the roll out at Audi's international sites in Győr (Hungary) and Brussels (Belgium), where Audi plans to replace around 5,000 desktop PCs and notebooks.

The solution

The desktop PCs equipped with Intel Core 2 processor with vPro technology operate on Intel Core 2 Duo processors. This allows users to execute multiple compute-intensive tasks simultaneously, while a system management process (such as a virus scan or remote backup) can also be conducted in the background. The Core 2 Duo processor operates up to 40% quicker than its predecessor, and offers improved energy efficiency.

Thanks to the hardware-backed asset tracking, in the future AUDI AG will be able to modernize its existing solutions on a software basis. With Intel Core 2 vPro technology, hardware and software assets can be captured and tracked even when their operating systems are powered off. Hubert Fischer is confident that "because we can gain automatic access to all computers, we expect

enhanced data quality with updated information on hardware and software configurations. As this data is administered centrally, we can offer an improved IT service and minimize desk-side visits. This will boost our workers' productivity".

When Intel Core 2 Processor with vPro technology is activated, booting, discovery and healing can also be managed remotely. For example, software updates or patches can be left to run outside of working hours, since all the PCs connected to the network can be managed via remote access. Hubert Fischer says "Through remote management we can reduce our IT staff's desk-side visits and thereby cut down on support costs. We can also plan the deployment of service resources more efficiently".

The possibilities offered by security functions are also very important for AUDI AG. For example, the quarantine function allows virus-infected PCs to be isolated from the network and healed through remote management, so that the other computers are not threatened. User and system data is protected from loss or theft due to unauthorized access, as the security agents of all powered-up and network-connected PCs are automatically checked and exchanged.

Key technologies

- Intel Core 2 processor with vPro™ technology for desktops and Intel® Core™ 2 Duo processor. Users can execute several compute-intensive tasks at the same time, while a virus scan or remote back up is conducted in the background.
- Intel® Active Management Technology noticeably reduces administration costs, as it offers efficient asset tracking, enhanced remote management functions and pro-active security functions which can be managed centrally regardless of the PC's status.

Remote management simplifies maintenance and diagnosis

Conclusion and forecast

In April 2007, AUDI AG began introducing PCs with Intel Core 2 processor with vPro technology at its German sites in Ingolstadt and Neckarsulm. This was followed in December 2007 by notebooks equipped with Intel Centrino with vPro technology. In all, Audi will replace around 30,000 computers in Germany by the middle of 2008. From the middle of this year, AUDI AG will begin installing the Intel platform on a further 5,000 desktops and notebooks at its international plants at Győr (Hungary) and Brussels.

The group will be using core functions of Intel's Active Management Technology such as remote asset tracking for all network PCs, discovery and system healing via remote access, and the introduction of anti-virus software. Hubert Fischer through out-of-band access. "With the help of Intel Technology, we can simplify system administration, cut down on desk-side visits and operating costs, and optimize business processes. Last but not least, our workers' productivity will be improved".

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Return on investment

- By installing the Intel Core 2 processor and Centrino with vPro technology, AUDI AG plans to streamline its client system administration, as asset tracking, discovery and healing are all possible through remote access.
- Remote procedures limit the number of technicians' desk-side visits, thereby cutting down on support costs.
- Enhanced data quality and centralized administration of software and hardware information keeps users' downtime to a minimum, and increases productivity.
- High-performance Intel hardware offers AUDI AG security of investment for the future.

