



## Success Brief

Quad-Core Intel® Xeon®  
processor 5400 series  
Government



“Thanks to the Quad-Core Intel® Xeon® processor 5400 series, we will be able to further improve the service we offer our members, both now and into the future”

Thomas Fænø,  
CIO, KL

# Tomorrow’s data centre, today

**Quad-Core Intel® Xeon® processor 5400 series streamlines operations, enabling KL to improve public sector IT for civil servants across Denmark**

<b>Company:</b>	KL is a collaborative group consisting of 98 municipalities. It promotes the interests of these democratically elected and governed local authorities on a national level, and also manages their IT services, providing public sector workers with online access to essential documents and reports
<b>Product evaluated:</b>	Quad-Core Intel® Xeon® processor 5400 series
<b>Challenge:</b>	To improve the utilisation and energy efficiency of hardware in the KL data centre, thereby ensuring the IT infrastructure is future-proofed to process increasing volumes of data, as well as reducing costs
<b>Results:</b>	The Quad-Core Intel Xeon processor 5400 series is expected to reduce CPU usage from 100% to 25%. Greater energy efficiency should lower power consumption by 25% and a standardised infrastructure is expected to reduce the number of administrative man hours by 33%
<b>Impact:</b>	The Intel® platform could result in annual costs savings of at least USD 180,000 (DKK 880,000), improved CPU usage will enable KL to provide even more online services and reduced energy consumption will enable it to set an example in “green IT” for businesses across Denmark
<b>Next steps:</b>	KL has committed to deploying the Quad-Core Intel Xeon processor 5400 series throughout its data centre, and is currently investigating the benefits of Intel® multi-processor (MP) server technology for its next IT refresh

### Challenge

Denmark has a long-standing and unique tradition of a decentralised public sector where each municipality handles most of its own welfare tasks, delivering and administering a swathe of services for the public including social security, local taxation, benefit registration, ballot cards, pension calculations, housing subsidies and more. Recently, in an effort to improve their ability to handle an increasing number of civic tasks, including environmental control, adult education and specialised social services, larger municipalities were created, reducing the number from 271 to 98.

Each of the 98 municipalities is a member of a collective organisation known as KL. KL is responsible for a wide range of issues that affect the 800,000-strong public sector workforce it represents, from working conditions to pay and pensions. KL also manages the municipalities’ IT services, which includes providing public sector workers with access to essential public sector documents and reports. At any one time, up to 125,000 employees are online.

The increasing digitisation of information has led to a threefold increase in the volume of data processed by the KL data centre over the last two years, putting huge strain on KL’s legacy IT infrastructure. Energy costs have soared and CPUs are currently running at 100% utilisation, leaving no room for future growth. Given that data volumes are expected to double every two years and KL will be expected to offer even more online services, it needed to urgently re-assess its data centre operations.

## Deployment

Formed in 1970, KL brought together the IT infrastructures of what was, at that time, 1,360 different municipalities, now consolidated down to 98. This mixture of systems and constant change has resulted in a diverse and unwieldy data centre, which is currently running at maximum capacity and is a voracious consumer of power.

The current hardware is a combination of Dual-Core Intel® Xeon® processor 5100 series, Intel® Pentium® III and Pentium® 4 processors, and competitor offerings. Together they power 50 HP ProLiant DL360\* servers running KL's content management system, databases and several Linux\*, UNIX\* and Microsoft applications, a Citrix MetaFrame\* Server providing employees with remote access to applications running from the central servers, and three virtual HP ProLiant DL380\* servers currently running 45 virtual server environments using VMware used primarily for testing.

In an effort to standardise the hardware in its Copenhagen data centre, as well as reduce CPU usage and soaring energy costs, KL decided to evaluate the benefits of migrating its server environment to the Quad-Core Intel® Xeon® processor 5400 series.

## Results

The benchmarking tests highlighted a range of benefits. CPU usage using the Quad-Core Intel Xeon processor 5400 series was 25% – down from 100% previously, leaving plenty of room for future growth in data volumes and the addition of new services.

Greater energy efficiency was another key advantage. KL expects the Quad-Core Intel Xeon processor 5400 series to reduce power consumption by up to 25%, resulting in annual cost savings of at least USD 77,000 (DKK 380,000). The processor's energy management tools enable unparalleled performance per watt while enabling KL to keep up with environmentally-friendly computing standards.

KL also anticipates a reduction in the number of hours required to manage its data centre. The move to a standardised Intel® environment is expected to reduce administrative hours from 24 hours a day, seven days a week, to 16 hours a day, seven days a week – representing a 33% weekly reduction in man hours and an annual cost reduction of USD 100,000 (DKK 500,000).

## Impact

Reducing power consumption will not only mean significant cost savings, it will also reinforce KL's position as a leading force in environmentally-conscious IT. This is particularly important to the company right now, since the UN's decision to hold its 2009 Climate Change Conference in Copenhagen has forced "green IT" high onto the Danish political agenda. As a government organisation, KL will be expected to show "role model" characteristics to businesses throughout Denmark.

Migrating to the Quad-Core Intel® Xeon® processor 5400 series will also standardise the diverse legacy infrastructure and future-proof hardware, allowing for the expected growth in data volumes. Most importantly this will enable KL to continue to meet deadlines for the introduction of new online services, such as a central medical records system by 2009.

This will also lead to improved dynamic resource management, letting the company optimise asset utilisation and become more agile by using virtualisation and dynamic, policy-based resource management. This gives KL the core foundation for performance and scalability in its data centre.

Finally, the Quad-Core Intel® Xeon® processor 5400 series will enable KL to increase the number of virtual environments running on its virtual servers from 45 to 80, enabling it to speed up and improve the testing of new applications and services.



In total, KL expects the migration of its data centre to the Quad-Core Intel Xeon processor 5400 series to save USD 180,000 (DKK 880,000) per year.

## Future

KL has made the decision to replace its legacy IT infrastructure with 50 HP bladeservers\* powered by the Quad-Core Intel Xeon processor 5400 series. The new platform will help transform KL into a Predictive Enterprise. By simplifying its existing IT infrastructure and making greater use of virtualisation, KL will benefit from better performance and increased efficiency for less money. It will make it easier for KL to meet its environmental requirements and map IT resources to business goals.

In addition, KL will continue to work with Intel to further improve the performance and efficiency of its IT infrastructure. It is currently investigating the benefits of migrating to Intel® multi-processor (MP) server technology for its next IT refresh, and is considering evaluating Intel® Core™ 2 processor with vPro™ technology and Intel® Centrino with vPro™ technology to streamline the remote management of its desktop and mobile fleets.

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