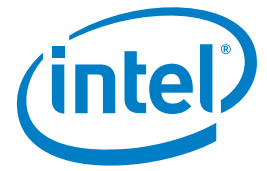


CASE STUDY

Intel® Xeon® Processor E7 and E5 Families

Communications/Media
Mission-Critical Computing



Calling in the Savings

Mobile Telesystems significantly reduces total cost of ownership by migrating to an x86 architecture powered by the Intel® Xeon® processor E7 family

Traditionally the telecommunications market segment has preferred to run its mission-critical systems on RISC rather than x86-based servers. However, Russia and Eastern Europe's leading telecommunications company, Mobile Telesystems (MTS), is the latest in a line of organizations bucking this trend by migrating its operational support systems (OSS) and business support systems (BSS) to x86 servers powered by the Intel® Xeon® processor E7 family. As a result, it estimates a significant reduction in the total cost of ownership (TCO) of its IT infrastructure.



"Intel has always been our server technology of choice. However, up until now, we were unconvinced that x86-based servers were capable of providing the processing power we required for our performance-hungry databases. The arrival of the Intel Xeon processor E7 family has changed that."

Konstantin Yakovlev,
System architect,
Mobile Telesystems

CHALLENGES

- **Reduce costs.** MTS wanted to reduce the TCO of the platform running its OSS and BSS, currently accounting for a significant part of its overall IT budget
- **Licensing benefits.** It also wanted to realize economies of scale on software licenses, accounting for a quarter of IT spending, something that had been impossible on its existing RISC platform

SOLUTIONS

- **Testing performance.** Proof of concept (PoC) compared the performance of x86-based four-socket HP and IBM servers, some powered by the Intel Xeon processor E7 family with eight cores

TECHNOLOGY RESULTS

- **Reassuring benefits.** Simulating real-life workloads, the benchmarking tests conducted by MTS during the PoC proved that a system of 64-plus cores would be more than capable of running 100 percent of the workload of MTS's mission-critical computing systems. The processors deployed by MTS had ten rather than eight cores

BUSINESS VALUE

- **Significant savings.** MTS expects a significant reduction in TCO, due to lower hardware and support costs as well as simplified management, virtualization, lower power consumption, and lower software licensing costs. In total it expects these savings could amount to up to USD 60 million (EUR 46.5 million) over seven years when migration to x86 is complete across all Russian regions

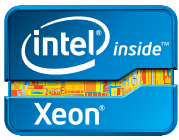
Crippling costs

Mobile Telesystems (MTS) is the leading telecommunications company in Russia and the Commonwealth of Independent States (CIS), offering mobile and fixed voice, broadband, pay TV, as well as content and entertainment services. It has operations in five CIS countries: Russia, Ukraine, Belarus, Turkmenistan and Armenia. It has over 60,000 employees and about 100 million subscribers.

The success of MTS's business relies on a high-performing, reliable and available IT infrastructure. To ensure it is up-to-date and taking advantage of the latest developments in technology, it refreshes its server hardware every five years.

Until now, it has chosen to run its mission-critical applications – for example, its billing system, data warehousing (DWH) and customer relationship management (CRM) platforms – on RISC architecture.

However, the TCO of the RISC platform was high, with MTS's OSS and BSS consuming a significant part of overall IT spending. In particular, the platform did not offer MTS any significant economies of scale on software licenses. These costs were particularly crippling, accounting for up to a quarter of IT spending.



MTS reduces TCO thanks to Intel® architecture

Evaluating performance

MTS was eager to reduce the TCO of its OSS and BSS and had identified a migration to an x86-based architecture as a possible route. However, it had some concerns regarding performance.

Konstantin Yakovlev, system architect at MTS, explains: "Intel has always been our preferred server technology of choice and we've been evaluating the capabilities of Intel's x86 servers in running our mission-critical applications since 2000. However, up until now, we were unconvinced that x86-based servers were capable of providing the processing power we required for our performance-hungry databases.

"However, the performance of Intel's Xeon processor technology has made giant leaps forward in recent years, which is why we were extremely eager to evaluate the capabilities of the Intel Xeon processor E7 family in running and reducing the TCO of our mission-critical systems."

With support from Intel, MTS ran a PoC on x86-based servers from both HP and IBM, some of which were powered by Intel Xeon processors E7 family with eight cores running on a Red Hat Enterprise Linux* operating system (OS). MTS tested standalone databases, projecting the performance of real-life workloads experienced by one of

its existing server models, with a view to replacing it with an eight-socket server powered by 10-core CPUs.

It found that the system remained stable running up to 60 percent of the maximum workload, but started to lose stability at 70 percent. However, the PoC was evaluating the performance of just 32 processor cores per server, when, in fact, MTS was planning to run between 64 and 80 processor cores per server. MTS concluded that a system of 64-plus cores would be more than capable of running a 100 percent workload in a real-life environment.

Migrating benefits

Following the PoC MTS was convinced, for the first time, to migrate its mission-critical OSS and BSS from a RISC to an x86-based architecture. With close cooperation with HP, it has rolled out HP ProLiant* DL980 G7 servers powered by the Intel Xeon processor E7 family with 10 cores to run its billing systems in St. Petersburg. It is also looking forward to migrating to platforms based on higher core-count Intel Xeon processors E7 family in other regions, such as Novosibirsk, Krasnodar, Nizhny Novgorod and Moscow; its enterprise resource planning (ERP) system in Nizhny Novgorod; and its DWH system in Samara. MTS has also migrated its customer

Lessons learned

The decision by Russia and Eastern Europe's largest telecommunications company to migrate its mission-critical systems from a RISC- to an x86-based architecture dispels the myth that Intel® architecture is unable to match the performance, reliability and availability of RISC platforms. Not only that, MTS has found that Intel architecture can also offer cost benefits in terms of reduced TCO, virtualization and lower power consumption and software licensing costs.

support centers to HP ProLiant BL460c server blades running on Intel Xeon processors E5 family, and is also considering migrating its CRM platform in Moscow.

By migrating to x86 servers, MTS expects to see a significant reduction in the TCO of the IT infrastructure running its OSS and BSS. MTS anticipates lowered hardware and support costs, as well as simplified management, virtualization, lower power consumption, and lower software licensing costs. In total it expects these savings could amount to up to USD 60 million (EUR 46.5 million) over seven years. Finally, by running its systems on a standard server architecture, MTS will benefit from being able to choose platforms from a much wider variety of vendors.

Over the next two years, MTS plans to move its entire OSS and BSS from a RISC- to an x86-based architecture.

Find the solution that's right for your organization. Contact your Intel representative, visit Intel's Business Success Stories for IT Managers (www.intel.co.uk/itcasestudies) or explore the Intel.co.uk IT Center (www.intel.co.uk/itcenter).



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