CASE STUDY

Intel® Xeon® processor E7-4860

Manufacturing
IT Efficiency

Motoring on

Russian auto manufacturer AutoVAZ test drives the Intel® Xeon® processor E7-4860 and places it firmly on its roadmap

AutoVAZ is one of Russia's largest auto manufacturers. Founded in the 1960s following a collaboration with Italian manufacturer Fiat, the company has grown into a worldwide player in the automotive market segment. In early 2011, the Renault-Nissan alliance increased its stake in AutoVAZ to 25 percent. In practical terms, this meant more information sharing among the three manufacturers, as each seeks to use designs and specifications from each other to manufacture cars. Within this context, AutoVAZ wanted to upgrade its servers and information systems that ran its mission-critical enterprise resource planning (ERP) applications. It turned to the Intel® Xeon® processor E7-4860 to power these new servers.

"Thanks to the Intel® Xeon® processor E7-4860 and Intel® 10GbE Server Adapter, we can achieve our objectives by implementing higher-performing servers, converged storage and server networks, while also lowering total cost of ownership."

Yury Katyanov,
CIO, AutoVAZ

CHALLENGES

- **Server upgrade:** AutoVAZ has hundreds of servers that run mission-critical infrastructure applications and it wanted to gain better performance and ensure easier management
- **Auto partnership:** An alliance with Renault-Nissan became imperative to the upgrade, since sharing information such as engine specifications across the three companies is central to the partnership

SOLUTIONS

- **Test drive:** The company tested the Intel Xeon processor E7-4860 for performance of mission-critical applications
- **Six to one:** ERP workloads, online transaction processing (OLTP), and online analytical processing (OLAP) all improved by a factor of six to one[1]
- **Twenty to one:** Achieved a virtualization ratio of approximately 20 virtual servers to one physical server

IMPACT

- **Initial roll-out:** Performance increase and lower total cost of ownership (TCO) led AutoVAZ to evaluate the deployment of four-socket HP Integrity* blade servers powered by the Intel Xeon processor E7-4860
- **Wider deployment:** In 2012 the company plans to extend the deployment by adding more blade and rack-mounted servers powered by the Intel Xeon processor E7 family
- **Global success:** The server upgrade underpins the success of the Renault-Nissan partnership, which is based on exchanging information for auto manufacturing across three continents

Driving together

AutoVAZ is one of Russia's largest auto manufacturers. It produces almost one million cars a year including the Kalina*, Lada* Priora*, Granta* and the Niva* off-road vehicle. It was established in the late 1960s in collaboration with Italian auto manufacturer Fiat. The AutoVAZ factory is one of the largest in the world, with over 90 miles of production lines, and uniquely makes most of the parts for its cars in-house.

Early in 2011, the company formed an alliance with French and Japanese auto manufacturers Renault-Nissan. As a result, all three manufacturers will have equal access to each other's product platforms and engine specifications. In the wake of this deal AutoVAZ planned to upgrade its IT server infrastructure. The objective of the refresh was to improve the reliability of its information systems and ensure easier management. At a wider level, the refresh also aimed at ensuring similar standards and approaches to IT for all companies within the Nissan-Renault and AutoVAZ groups.

Server infrastructure gains a powerful new engine

Powerful performance

With an infrastructure that consisted of hundreds of servers running mission-critical ERP software and infrastructure applications that AutoVAZ had mostly developed in-house, the upgrade needed to be broken down into small segments.

However, before this began, the company initiated a pilot designed to assess the performance and reliability of the Intel Xeon processor E7-4860. This processor was chosen following AutoVAZ's positive experience with Intel® Itanium® processors and Intel Xeon processors powering HP Integrity and HP ProLiant* servers.

The most important assessments for the pilot were the performance of ERP workloads for OLTP and OLAP. The pilot was carried out on a white-box server from Intel powered by the Intel Xeon processor E7-4860 and running an Oracle 10gR2* database on a Red Hat EL 5.5* operating system.

The ERP systems – databases and applications servers – are mission-critical and power transactional applications including finance, sales, and manufacturing. These applications are both revenue-generating and critical to the manufacturing of AutoVAZ vehicles.

On the road

Across a range of OLTP and OLAP processes, the pilot revealed a six-fold performance increase[1] when compared to existing servers powered by a range of earlier Intel Xeon processors.

Vladimir Bulov, head of the IT Development Department, AutoVAZ, said: "Performance was our top-most criterion and the overall goals included improving end-user response times when accessing applications, ensuring high-service availability, and trying to deliver a lower TCO. The pilot proved to us that we could meet these objectives by using the new Intel Xeon processor E7 family."

As a result, AutoVAZ is planning an initial roll-out of a small number of four-socket HP ProLiant blade servers powered by the Intel Xeon processor E7 family. It also expects to achieve a virtualization ratio of approximately 20:1 for each of the blade servers. The deployment is expected to affect several thousand users.

Rolling along

During 2012, AutoVAZ intends to implement a considerably larger number of HP blade and rack-mounted servers powered by the Intel Xeon processor E7 family. This wider deployment will benefit between 10,000 and 12,000 users across the company, who can expect much faster response times when using the mission-critical ERP systems.

Spotlight on AutoVAZ

AutoVAZ is the Russian auto manufacturer formerly known as VAZ. It's one of the largest in the country and produces, among other brands, the Lada. The company was also set up as a collaboration between Italy and the Soviet Union. The Lada was envisioned as a people's car and originally developed following an adaption of the lightweight Italian Fiat 124* to survive the difficult driving conditions across large parts of Russia. Today, the company builds a wide range of different models and exports automobiles all over the world.

AutoVAZ also intends to deploy Intel® 10GbE Server Adapters across its network infrastructure to converge its computing and storage networks and ensure it can meet the growth in network data traffic when information sharing with Nissan-Renault gets underway.

Yury Katyanov, CIO, AutoVAZ, added: "Our strategic goal is to increase performance while operating within limited budgets. In terms of the specific information systems, it means we can extend system lifecycles without having to redesign the infrastructure. Thanks to the Intel Xeon processor E7-4860 and Intel 10GbE Server Adapters, we can achieve our objectives by implementing higher-performing servers and converged storage and server networks while also resulting in lower TCO."

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