CASE STUDY
Intel® Xeon® Processor E5 Family
Financial Services
Security in the Cloud
Cloud Computing

Providing the Foundation for an Expanding Cloud

Aria Systems selects the Intel® Xeon® processor E5 family to deliver the performance, scalability, security, and availability needed for its cloud-based subscription billing solution

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get paid. again and again.

"Using HP blades based on Intel® Xeon® processors, we gain the performance we need for our cloud infrastructure in a very small infrastructure footprint....Cost savings help us keep prices low and facilitate further expansion."

– Oleg Ganopolskiy, Vice President of Production Operations, Aria Systems

To accommodate the tremendous customer demand for its cloud-based subscription billing solution, Aria Systems decided to expand its cloud infrastructure from one data center to four. The company selected HP ProLiant* server blades based on the Intel® Xeon® processor E5 family as the foundation for this growing cloud environment. The new, dense infrastructure is helping the company to expand cost-effectively while delivering the performance, security, and availability that its customers require.

CHALLENGES

- **Scale to accommodate customer growth.** Expand its cloud infrastructure from one data center to four while controlling operating costs.
- **Maintain high security.** Deliver high data security to customers while achieving compliance with a number of government regulations.
- **Sustain performance and availability.** Meet strict service-level agreements (SLAs) with customers, providing fast response times, support for large data volumes, and high availability of cloud-based services.

SOLUTION

- **HP systems with the Intel Xeon processor E5 family.** Aria Systems implemented HP ProLiant server blades equipped with the Intel Xeon processor E5 family in its new and existing data centers, replacing previous servers based on AMD processors.

TECHNOLOGY RESULTS

- **Outstanding performance.** Aria Systems' tests showed that Intel Xeon processors deliver up to 30 percent better performance for database workloads than a competing platform.
- **Tight security.** Administrators capitalize on the Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) to encrypt data while using up to 20 percent fewer processing resources, enabling the company to meet performance and security criteria without purchasing more systems.
- **High availability.** By implementing a dense, energy-efficient infrastructure, Aria Systems can afford to deploy high-availability solutions that help maintain uptime.

BUSINESS VALUE

- **Cost-effective scalability.** The dense Intel® processor–based blade servers require 85 percent less data center space than competing systems, allowing Aria Systems to scale its infrastructure while controlling costs.

Aria Systems has experienced the rising demand for cloud-based business solutions firsthand. In the last few years, rapidly multiplying subscriptions for the company's software-as-a-service billing and subscription management solution have helped the company double its revenues year over year. To accommodate that customer growth, Aria Systems decided to substantially expand its cloud infrastructure from one data center to four.

Intel® Xeon® processors deliver performance and security for the cloud

In building out the infrastructure, the Aria Systems team needed a robust processing platform that could deliver strong performance, availability, and security. "We have SLAs with our customers that require us to deliver fast response times, accommodate large transaction volumes, and maintain uptime," says Oleg Ganopolskiy, vice president of production operations at Aria Systems. "As a financial services company, we also must adhere to strict government and industry regulations about data security. Consequently, we needed a hardware platform that could handle very processor-intensive encryption tasks."

At the same time, the new platform had to help keep costs under control. "We wanted to build a dense, energy-efficient infrastructure for our cloud environment so we could continue to expand cost-effectively," says Ganopolskiy.

Expanding the Cloud with Intel Xeon Processors

The search for the right hardware platform led to Intel. "We evaluated a variety of processing platforms, including Intel, SPARC*, and AMD, which we had been using in our existing data center," says Ganopolskiy. "We assessed performance, density, scalability, and the ability to run a diverse array of application workloads, and we found that Intel Xeon processors offered the best overall results for those criteria."

The Aria Systems team implemented HP ProLiant server blades equipped with the Intel Xeon processor E5 family across all four data centers, replacing the AMD-based systems in the existing data center. Aria Systems runs its proprietary applications in conjunction with Oracle Database* on the Red Hat Enterprise Linux* operating system. The environment is virtualized with Citrix XenServer* software.

Realizing 30 Percent Better Database Performance than Competing Platforms

Through the testing process, the Aria Systems team found that the Intel processors could help deliver superior performance compared with other platforms. "The new servers based on the Intel Xeon processor E5 family easily handle both I/O-intensive database workloads and heavy computational workloads," says Ganopolskiy. "Our benchmark testing showed that the Intel processors could deliver 30 percent better performance than competing platforms. That performance allows us to deliver rapid response times to customers and accommodate their large data volumes while enabling our company to scale more cost-effectively."

Deploying a Dense Infrastructure that Requires 85 Percent Less Space

Selecting HP ProLiant server blades based on the Intel Xeon processor E5 family also enabled Aria Systems to build a highly dense infrastructure that can facilitate expansion while controlling costs. "Using HP blades based on Intel Xeon processors, we gain the performance we need for our cloud infrastructure in a very small infrastructure footprint. Each of our pre-filled infrastructure units now requires just 6U of rack space, compared with a full 42U of rack space used by competing platforms," says Ganopolskiy. "We can control the monthly fees we pay to our data center provider and reduce ongoing systems management costs. Cost savings help us keep prices low and facilitate further expansion."

Maintaining Tight Security Without Adding Costs

By capitalizing on Intel AES-NI capabilities, which offload encryption tasks to the hardware, Aria Systems also encrypts data much more efficiently than before. "In the past, encryption tasks consumed approximately 10 to 20 percent of our processor resources. Because we couldn't sacrifice application performance, we purchased additional servers to handle the encryption processing load," says Ganopolskiy. "Intel AES-NI capabilities enable us to handle encryption tasks without having to buy additional servers. We can deliver the security that financial services customers require while saving money."

Bolstering Availability with a Reliable, Cost-Effective Infrastructure

The Intel processor–based infrastructure also helps Aria Systems deliver high availability for its billing application. "High availability is absolutely critical for a billing system—if our service goes down, our customers can't collect revenue. The Intel Xeon processors provide a very reliable platform for our mission-critical application," says Ganopolskiy. "And because we created a dense, cost-effective infrastructure, we have been able to invest in high-availability configurations and disaster recovery solutions to help maintain uptime. With the exceptional availability that our new infrastructure provides, we can meet expectations of existing customers and offer a compelling value proposition for prospective customers."

LESSONS LEARNED

"In selecting a hardware platform, take all costs into account—don't just select the lowest-cost product," says Ganopolskiy. "For our infrastructure expansion, Intel Xeon processors provide density advantages and security capabilities that help us substantially reduce our total cost of ownership."

Find the solution that's right for your organization. Contact your Intel representative, visit **Intel's Business Success Stories for IT Managers**, or explore the **Intel.com IT Center**.

Intel® AES-NI requires a computer system with an AES-NI enabled processor, as well as non-Intel software to execute the instructions in the correct sequence. AES-NI is available on select Intel® processors. For availability, consult your reseller or system manufacturer. For more information, see http://software.intel.com/en-us/articles/intel-advanced-encryption-standard-instructions-aes-ni/

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