Case Study
Intel® Xeon® Processor E7 Family
RISC Migration
Cloud Computing
Telecommunications

Intel® architecture enhances data center services

Telkomsigma migrates to an Intel architecture-based data center to enhance the performance, availability, and security of its mission-critical workloads and cloud services

"Migrating to an Intel® architecture-based data center allowed us to benefit from an open, highly scalable, high-performance, and reliable platform, enabling an increase of about 30 percent[1] in workloads compared to the previous RISC-based system. Moreover, deploying an Intel architecture-based server lowered the system cost by up to 50 percent[1] compared to the previous database system."

– Judi Ahmadi
Chief Executive Officer
Telkomsigma

PT Sigma Cipta Caraka was established in 1987 and later became known as Telkomsigma when it was acquired in 2008 by PT Telekomunikasi Indonesia Tbk (Telkom), the largest information and telecommunications provider in Indonesia. As part of the Telkom Group, Telkomsigma fully supports Telkom's portfolio of businesses, which include TIMES (telecommunications, information, media and edutainment, and services) with notable expertise in the field of information and services. Since its acquisition, Telkomsigma has become the largest data center service provider in Indonesia, providing end-to-end IT solutions to more than 300 companies from various industries and bringing IT solution innovations, development, and operations to local and international customers. To enable a more efficient delivery of data center services, Telkomsigma migrated from a RISC-based to an Intel® architecture-based server to run its core mission-critical workloads and cloud services.

Challenges

- **Enable always-on projects.** Increase the capability of the data center to run core mission-critical applications and cloud services to meet real-time business demands.
- **Improve data center performance and security.** Enhance reliability and scalability of the data center infrastructure to address current and future business demands.
- **Reduce system cost.** Lower total cost of ownership (TCO) on database system procurement, operation, and maintenance.

Solution

- **Migrate to Intel® architecture.** Replace existing RISC-based system with a data center running on the Intel® Xeon® processor E7 family to allow core mission-critical applications and cloud services to run smoothly with no downtime.

Technology Result

- **Intel® Virtualization Technology FlexMigration (Intel® VT FlexMigration).** Migrate mission-critical applications in the data center across multiple generations of Intel Xeon processor-based servers.
- **Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI)** Protect data integrity and encryption with Intel's security technology to boost customer confidence in data center services.

Business Value

- **Improved data center performance.** Enabled faster query time, better space utilization, and faster provisioning time or time to market, while increasing the workload capacity of the system by 30 percent[1].
- **More secure, scalable infrastructure.** Customers enjoy reliable data center services that protect their data and transactions, with a scalable system that can meet future marketplace demands.
- **Reduced TCO.** Telkomsigma expects its TCO to drop by as much as 50 percent[1] over the next five years.

RISC-based system limits performance and agility of data center

As the largest data center provider in Indonesia, Telkomsigma offers a range of IT-based services including software products, consulting services, data center, and managed services. In 2015, the company sets its sights on providing 100,000 square meters of data center capacity, the largest in Indonesia. However, the company its existing RISC-based infrastructure was a roadblock to achieving its vision.

Telkomsigma's data center handles three core mission-critical applications: billing (Convergys*), database (Oracle*), and enterprise resource planning (ERP) (SAP*). As a telecommunications company, Telkomsigma considers these core, mission-critical applications essential for its operations, with no room for and delay or downtime.

The data center also handles Telkomsigma's cloud computing services, called TelkomCloud*. TelkomCloud provides both infrastructure as a service (IaaS) and software as a service (Saas) for customers. In its RISC-based data center, Telkomsigma's cloud infrastructure was not agile enough to address customers' dynamic business needs and could not provide enhanced security features.

Migrating to an Intel® architecture-based data center improves performance, availability, and security of mission-critical applications and cloud services

To address these challenges, Telkomsigma upgraded its data center to support its Always-On project, which aims to build a data center with technology-based solutions to increase data center availability and bring more active data center services to its growing customer base. Explained Judi Ahmadi, chief executive officer at Telkomsigma, "With a data center that is always active or always on, our customers need not worry about service availability and data loss due to system malfunction or downtime."

Improving data center services with a high-performance, cost-effective platform

To meet the demands of its Always-On project, Telkomsigma sought to migrate from its existing RISC-based system. The company identified some key characteristics that served as guidelines for the migration project:

- Open architecture. The data center should have high hardware and software compatibility.
- Scalability. The data center should be agile enough to support future business needs.
- Reliability and availability. The data center should provide high availability, meet industry standards, and provide 99.95 percent service uptime with no single point of failure.
- High performance. Infrastructure in the data center should have a high-performance design to support demanding customer computing needs.
- Functionality. Data center infrastructure should have load sharing, automatic fail over, data replication, and synchronization functions.
- Security. The data center must meet Telkomsigma's IT security and compliance policy.
- Centralized management. Data center should be managed centrally by the Telkomsigma operation center.
- Low TCO. Data center infrastructure should be able to reduce the TCO of the IT infrastructures (i.e., server, storage, network, software license, maintenance) for the next five years.

To implement the necessary changes, Telkomsigma decided to migrate to an Intel architecture-based data center. Intel technology-based servers were chosen for their open architecture, high scalability, availability, proven high performance, and cost efficiency.

"The reason to migrate to Intel architecture-based servers was to get better cost efficiency and performance. Previously, the Convergys application was running on a Sun SPARC* system, while the Oracle database was running on IBM Power* 6. By deploying Intel architecture-based servers, we won't need to adopt monolithic or proprietary servers in moving our core mission-critical applications," shared Ahmadi.

During the migration process, core mission-critical applications such as the database system, ERP, and billing application were moved to servers based on the Intel Xeon processor E7 family. Ahmadi noted that what makes Intel architecture-based servers stand out is being able to move applications and data easily in real time across multiple generations of Intel Xeon processor-based servers using Intel VT Flex Migration technology, as well as the enhanced security features of Intel® Data Protection Technology and Intel AES-NI.

"These technologies provide infrastructure agility to address our customers' changing business dynamics and enable more security support on the hardware level," explained Ahmadi.

Migrating to Intel architecture-based servers enabled Telkomsigma to offer higher-performing services, make more efficient use of space, and achieve faster service provisioning time, all of which help it adapt to today's changing market dynamics.

- Migrating from a RISC-based architecture is a critical process that needs proper planning.
- A data center built on open standards helps lower total cost of ownership (TCO).
- A data center infrastructure based on the Intel® Xeon® processor E7 family is an excellent foundation for both private and hybrid cloud computing that can efficiently adapt to changing business demands and global competition.

Migrating to a new database system also enabled Telkomsigma to enjoy reduced TCO for the next five years.

"After migrating to an Intel architecture-based data center platform, we were able to increase our workloads to about 30 percent[1] and lower our system cost by up to 50 percent[1] compared to the previous RISC-based system. These remarkable cost savings will allow us to innovate new services according to emerging business needs, particularly creating new service delivery innovation integrated with the billing application system," added Ahmadi.

"Supported by Intel architecture's leadership performance, power efficiency, high reliability, virtualization technology at the processor level, and enhanced security that supports data integrity and encryption in the platform level, we are able to provide huge benefits to our customers. As we plan to follow and adopt the latest Intel Xeon processor E7 family in the future, we believe this synergy we've already seen with the Always-On project will further expand our business in cloud computing and big data services," concluded Ahmadi.

Find the solution that's right for your organization. Contact your Intel representative, visit Intel's **Business Success Stories for IT Managers,** and check out **IT Center,** Intel's resource for the IT industry.

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