



Delivering an Agile Data Center with the Intel® Xeon® Processor E7 Family

Intel's mission-critical processor technology helps Manila Electric Company (Meralco) transform its aging and inflexible data center into a strategic asset



"The business environment is forcing electric utilities to change rapidly. Meralco is committed to use technology as an enabler in transforming the way we deliver and provide service to our customers."

— Marthyn Cuan,
Chief Information Officer,
Meralco

The electrical utility industry is in the midst of an important paradigm shift away from its traditional model for providing power. Faced with a changing business landscape, Meralco—the largest distributor of electrical power in the Philippines—is undergoing business transformation as part of a strategic process to engage and empower customers. This required the power company to reassess its information technology strategy and take a new approach to infrastructure, applications, and services.

Challenges

- **Align infrastructure strategy to new business initiatives.** Meralco's IT department needed to use technology as an enabler for the company to open up new applications and services for customers. However, the legacy infrastructure was based on a closed architecture that limited agility and, at times, the ability to deploy new solutions.

Solutions

- **Virtualize for flexibility, agility, and cost-efficient scalability.** Virtualization streamlined infrastructure management and enabled faster and more cost-effective expansion of infrastructure as business conditions mandated.
- **Use industry-standard architecture for mission-critical performance.** The Intel® Xeon® processor E7 family delivered improved resilience and high-scale performance to handle demand spikes.

Technology Results

- **Fewer physical servers.** Meralco IT was able to cut down the number of physical servers while increasing total capacity by using Cisco Unified Computing Systems* (UCS*) based on the Intel Xeon processor E7 family and adopting VMware vSphere* Hypervisor 5.1.
- **Faster deployment of new applications.** The combination of Intel processors and VMware vSphere 5.1 hypervisor gave Meralco IT additional server capacity within a few days, compared with a month or more under the previous infrastructure.

Business Value

- **Faster time to value in infrastructure investment.** Meralco can now buy IT infrastructure on a just-in-time basis rather than purchasing big machines in anticipation of future needs.
- **Allow organization to position itself as innovator in its industry.** Meralco went from a traditional conservative technology adoption profile to an industry innovator because it was able to rethink its technology strategy and smartly invest in solutions as the business needs changed.

Modernizing the Data Center for Alignment with Key Goals

Electric utilities are under tremendous pressure to modernize every part of their business operations to help customers become more efficient in their power usage. This means utilities have had to rethink and re-engineer their historic business models to become more responsive to customers' needs for energy efficiency and the increased availability of electric grid resources.

Meralco, operating for 110 years, is the largest power distributor in the Philippines, serving more than 5.3 million customers across 31 cities and 77 municipalities. With the paradigm shift in the electric utility industry around the globe, Meralco is looking to implementing a smart grid platform to transform power distribution for its customers. Smart grid is about placing intelligence and automation at various points in the electric grid to better understand and manage the supply and



Intel architecture-based Infrastructure lets Meralco Increase Capacity, Performance, and Manageability

demand for power, with the end goal of increasing resilience and improving power quality.

One of Meralco's strategic initiatives was to implement automated meter reading, a key foundation for smart grid that uses hybrid technology and smart sensors to compile power usage data more quickly and accurately. The utility company knew its customers had become increasingly savvy about the need to conserve energy and wanted to share the relevant information in real time, to help them make smarter choices about power consumption.

Meralco also needed to develop more innovative customer-facing applications such as social media and real-time energy consumption tracking to actively engage customers by providing awareness via educational content and usage information. However, its legacy data center infrastructure lacked the flexibility and performance to support its business goals. "For the last years, Meralco was a classic case of a utility company that took a very conservative approach in adopting new technology because it was focused on the stability of operations," said Marthyn Cuan, Meralco's CIO.

"We had several important business initiatives, but our core infrastructure was based on proprietary designs and was inflexible and difficult to manage," said Cuan. "We needed a new infrastructure model that promoted flexibility and scalability and let us be not only more effective, but also more efficient in the use of our resources."

Delivering a Modernized Infrastructure with the Intel Xeon Processor E7 Family

To transform its data center infrastructure, Meralco adopted an open solution architecture

based on high-performance computing platforms optimized for mission-critical applications. Cuan and his team opted for a new data center architecture based on the Intel Xeon processor E7 family, a high-performance computing platform ideal for mission-critical workloads such as those required by Meralco for both its core operations and its new strategic initiatives.

Meralco selected Intel Xeon processor E7 family-based server solutions from Cisco Systems to replace its legacy machines. Also, Cuan placed high emphasis on moving to open software platforms to further improve manageability and facilitate faster deployment, as well as open up new applications to support the utility's key business goals. Building the new infrastructure around Intel® processor-based platforms aligned well with other mainstream technology that IT invested in and moved into.

"We dabbled with virtualization for some time, but by 2012 we had embraced it," Cuan said. "Virtualization provided us with the high availability, agility, and cost efficiency we needed to go along with our new hardware infrastructure. It has also given us a lot of flexibility and resiliency. Now we can easily move workloads as needed, whether from a physical server to a virtual server, or from one VM to another."

Delivering Multiple Benefits

For Meralco, adopting the new architecture led the company to its first green data center and delivered many tangible benefits. "First, we can provision servers much faster than we previously could," said Cuan. "When we suddenly discover that we need more server power, our use of virtualization allows us to advance provisioning without waiting for the purchase process for new servers to run its course.

Lessons Learned

If you want to achieve a quantum leap in cost-benefit improvements, pay attention to improving infrastructure management. Operating a highly proprietary infrastructure will inevitably become more cumbersome and expensive over time. "Compared to our legacy equipment, managing our data center has become much easier with the new open infrastructure," said Cuan. "We were able to achieve operational and cost efficiencies because the system is easier to manage."

"We were also able to reduce our carbon footprint as the number of physical servers became lower," he said. "This contributed to cost efficiencies for facilities and energy consumption."

Finally, Meralco's adoption of advanced, open solutions is allowing it to be seen as an innovator and visionary in the electric utility industry. "Most utilities are very conservative when it comes to technology adoption. Meralco was no exception," said Cuan. "Now, we're changing the pace of IT in the utility, rather than waiting for old technology to plateau to the point where it no longer met our needs. We're now able to spot up-and-coming technologies and adopt them quickly once they've become stable enough for us to base key business decisions around them."

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](#).



This document and the information given are for the convenience of Intel®'s customer base and are provided "AS IS" WITH NO WARRANTIES WHATSOEVER, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. Receipt or possession of this document does not grant any license to any of the intellectual property described, displayed, or contained herein. Intel® products are not intended for use in medical, lifesaving, life-sustaining, critical control, or safety systems, or in nuclear facility applications.

Software and workloads used in performance tests may have been optimized for performance only on Intel® microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations, and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to <http://www.intel.com/performance>.

Intel does not control or audit the design or implementation of third-party benchmark data or Web sites referenced in this document. Intel encourages all of its customers to visit the referenced Web sites or others where similar performance benchmark data are reported and confirm whether the referenced benchmark data are accurate and reflect performance of systems available for purchase.

© 2014, Intel Corporation. All rights reserved. Intel, the Intel logo, and Xeon are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.