



Data Center Refreshed for Virtualization

To increase capacity, save data center space and promote Green IT, India Infoline Ltd turns to virtualization on the Intel® Xeon® processor 5600 series platform



CHALLENGES

- **More Power, less space.** Improve compute capability while reducing server footprint in the data center.
- **Improve infrastructure stability.** Increase server stability for high-performance data processing while improving data center performance.
- **Save on energy usage.** Encourage green environment through energy-efficient computing and save on energy and associated costs.

SOLUTIONS

- **Deploy multi-core processor-based servers.** Refresh data center server infrastructure with Intel Xeon processor 5600 series¹, replacing its 80 old servers with eight new servers with a total of 16 processors.
- **Implement virtualization.** Utilize virtualization technology such as Open Source VMware ESX 4* to take advantage of Intel Xeon processor 5600 series-based servers.



India Infoline Limited is one of India's leading financial services company with approximately one million customers.

“With the Intel Xeon processor 5600 series-based servers, we created 80 virtual servers that helped reduce rack space and energy usage in our data center.”

Kamal Goel
Vice President, Technology
India Infoline Ltd

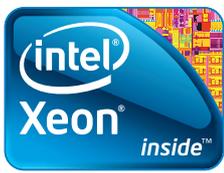
Introduction

India Infoline Ltd (IIFL) is one of India's leading financial services companies. Together with its wholly-owned subsidiaries, the company offers from equity research and derivatives trading to mutual funds, bonds and investment banking. To manage its daily data operations, IIFL has a data center with single- and dual-core processor-based servers that process its financial operations. In a recent technology refresh and consolidation exercise, India Infoline migrated its servers to run on the multi-core Intel Xeon processor 5600 series and implemented Intel® Virtualization Technology, which greatly enhanced its data center computing capability while taking a step forward in the company's Green IT initiative.

Data center is important to business operations

Like many companies in the financial services industry, India Infoline relies greatly on its data center to process the millions of financial transactions that occur every working day. The servers and applications in the data center perform mission-critical tasks, processing, analyzing, managing and reporting on data transmitted to it across secured networks from its branch offices and other locations. The company has a network of over 2,100 business locations (branches and sub-brokers) spread across more than 450 cities and towns, and caters to approximately a million customers. With that many customers and a business that ranges from insurance to investment banking, India Infoline's data center is a hotbed of data processing activity and is kept busy round the clock.

Millions of transactions and data records are processed every day and keeping the data center's server infrastructure operating efficiently and reliably is an important factor to the company's business success. Any server outage would be a costly affair in terms of lost transactions and financial opportunities. India Infoline therefore keeps a tight rein on keeping its IT infrastructure relevant to the evolving needs of the company. “As it is, our existing servers are already two to four years old and out of warranty; moreover, our data processing isn't as optimal as it should be,” says Kamal Goel, vice president of technology at India Infoline. “We should be doing 100,000 transactions per hour, but the problems with our existing servers are reducing our transaction performance. Our new servers based on the Intel Xeon processor 5600 series should help us improve performance and meet this mark.” Meeting this goal would enable India Infoline to provide a higher level of responsiveness to the operations of its various business areas that depend on the data center.



India Infoline Ltd chose the Intel® Xeon® processor 5600 series platform to create virtual servers, saving space and reducing carbon emissions

Green IT can help reduce data center costs

India Infoline identified several challenges as it sought to improve the reliability and efficiency of its data center. One way of increasing server resources was to purchase more servers. However, this would lead to future issues including using up premium space in the data center, increasing energy use and cooling costs as well as force India Infoline to pay more for annual maintenance contracts (AMC) to keep everything operating optimally. This plan did not fit in well with the company's Green IT initiative to reduce energy usage and carbon emissions in the long run.

Being environmentally responsible was also tied to realistic issues such as budget and space in terms of housing equipment. Improving data center energy efficiency is becoming a fundamental requirement in most organizations, not only to contain operating costs, but also to support growth, extend the life of existing facilities, protect the environment, and address increasing regulatory requirements. Plus, there was a limit to how much space was available in the data center to expand physically.

According to Gartner² research, "Going green is about more than just 'political correctness'; it also can have a tremendous, positive effect on business pressures to lower the overall cost of computing." Energy costs will become an increasingly significant component of IT budgets and an increasingly tough challenge for organizations as they work to grow their computing capabilities and contain costs.

Basically, there are two ways to increase data center energy efficiency—reducing energy consumption and improving

cooling efficiency. In most cases, it is more effective and less costly to reduce consumption. This approach delivers savings both directly, through lower consumption, and indirectly, by generating less heat and therefore reducing the load on the cooling infrastructure.

Going virtual on Intel platform

India Infoline decided that virtualization technology was the ideal solution to meet its needs for power, space and Green IT. The solution was to implement virtualization technology on the latest Intel® Xeon® processor 5600 series which incorporated high performance with a number of advanced energy-saving technologies. This would enable India Infoline to increase its total computing performance with no significant increase in power and cooling requirements. An added benefit was that the open standards-based architecture of Intel processor-based servers enabled India Infoline to benefit from the wide range of configurations and vendors within the Intel ecosystem.

India Infoline retired 80 of its older servers in the data center and replaced them with eight Intel Xeon processor E5650-based servers in rack configurations. The servers run financial and trading applications with Open Source VMware ESX 4* virtualization software. One of the key benefits in using platforms based on the Intel® Xeon processor is that Intel® Virtualization Technology (Intel® VT) is not only built into the processor, but also the chipset and networking controller. Virtualization software such as VMware ESX 4 has been optimized for Intel's hardware-based virtualization technology to boost performance even more and with higher reliability and stability.

Overall, India Infoline tabled the following benefits in employing virtualization technology with the Intel® Xeon® processor 5600 platform:

- **Reduced number of older servers** thereby reducing AMC renewal issues
- **Saved on data center space** which allows the company to keep premium data center space for future expansion when required
- **Legacy applications** can still be used as virtual machines can be configured to meet specific requirements of legacy applications
- **Increased production stability** as physical server count is lower and virtual machines can be shifted, moved and reconfigured whenever required to align with the company's operations
- **Aligns with company's Green IT initiative** in embracing energy-saving strategies and devices that help reduce power usage and carbon emissions.

Impact of virtualization technology

The 80 old servers occupied six racks in the data center. By retiring the 80 old servers and consolidating the systems into the new servers which only occupied one rack, the data center was left with five free racks which could be used for future expansion. India Infoline created 80 virtual servers on five of the physical servers, with the remaining three serving as standalone servers. In effect, India Infoline increased its server resources while simultaneously reducing server footprint.

"The servers are meeting our transaction processing needs even when not running at full utilization," says Kamal. "That means we have enough headroom expansion. We were also able to save 5 percent of our overall IT budget through this IT refresh/consolidation exercise."

Find a solution that is right for your organization. Contact your Intel representative or visit the Reference Room at www.intel.com/references.

¹ 64-bit Intel® Xeon® processors with Intel® EM64T requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information. Performance will vary depending on the specific hardware and software you use. See most up to date benchmarks at <http://www.intel.com/products/benchmarks/server/index.htm> for detailed information.

² Source: Data Centre Conference: Day 4 Highlights the 'Greening' of Data Centres, by John R. Phelps and Mike Chuba, November 30, 2007, Gartner, Inc., ID Number G00153658.

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