Case Study
Intel® Xeon® Processor E5 Product Family
IT Infrastructure
Enterprise Cloud Solutions

Enabling Integrated, Flexible & Highly Available IT Infrastructure For Unprecedented Media Delivery

NxtGen

"Intel's high performance server products and technologies helped in building the infrastructure in line with the availability and scalability requirements of the customer. The performance levels of Intel® Xeon® processor E5 increased the ability to run 120+ virtualized workloads, simplifying the IT infrastructure and reducing the capital cost and operating cost."

-Abhijeet Upponi,
Vice President (Pre-Sales), NxtGen

The Intel® Xeon® processor E5 product family enabled NxtGen to deliver a cloud-powered and more efficient IT infrastructure for Reliance Entertainment Digital

Today, most multimedia content delivery and gaming service providers invest heavily in a flexible and scalable IT infrastructure that is available at all times to meet their data center requirements – both predicted and unpredicted – as multimedia content users & gamers' interest levels and subsequently their usage patterns can be quite volatile. A solution that can support this varying user demand without negatively affecting their experience is invaluable.

NxtGen, with its unique offering off highly efficient solutions in the data center & cloud space, was presented with the challenge of developing and deploying a solution that could provide all this and more for Reliance Entertainment Digital Limited (REDL), the digital arm of Reliance Entertainment (ADA Group), one of the largest media houses in the country, with interests in online media delivery, online gaming solution and e-commerce portal.

Challenges

- **Traditional Server Platform:** REDL needed to limit their reliance on physical servers, which was affecting the delivery of online multimedia content.
- **Consolidated & Cost-Effective:** The need of the hour was a common platform that would simplify the IT infrastructure and reduce capital & operating costs.
- **High-Performance:** REDL needed a highly capable cloud-computing platform to handle the high compute power required for resource-intensive online gaming applications and video streaming.
- **Minimal Downtime:** Another key focus for REDL was to minimize downtime as much as possible.
- **Seamless Migration:** Moving huge volume of data and switching from the current setup needed to happen with minimum disturbance to business.

Solutions

- **Enterprise Cloud Services from NxtGen:** Provided Data Center as a Service, a hybrid model that encapsulates delivering central IT Platform as a Service, for REDL.
- **High Performance, High Availability Resource Servers Powered by Intel:** NxtGen deployed extremely powerful servers with each server consisting of four Intel® Xeon® Processors E5-4640, 256 DDR3 1600 MHz Memory, 2x120GB Intel® SSD Drives mirrored to the host Operating System, Intel® 4 Port GE Ethernet Cards, & Dual HBA FC Cards.

Intel® Xeon® processor-based servers provide the foundation for driving down costs and delivering new data-driven services more quickly and efficiently

- **Infrastructure Consolidation through Virtualization:** REDL's entire IT infrastructure, spanning 30 physical servers, was consolidated into 8 quad processor servers to run 120 virtualized workloads – greatly reducing the infrastructure requirements and also creating additional compute capabilities.
- **Built to Deliver:** The solution was built by NxtGen based on the ITIL Framework & Governance Model to suit the specific requirements of the Massively Multi-Player Online Gaming and other resource-intensive media content delivery needs of REDL.

Impact

- **Huge Reduction in Server Footprint:** The deployment of cloud-powered servers resulted in an unprecedented reduction in the number of physical servers – up to 70%[1].
- **Maximum Agility & Expansion:** Despite this radical decrease, the setup has delivered the necessary agility and provisions for expansion.
- **Significant Cost Savings:** The solution delivered great savings in energy and cooling requirements, which is proportional to direct reduction of cost by 30%[1].
- **Enhancing Experience:** Efficiency increased significantly, thus resulting in enhanced customer experience.
- **Improved Service Delivery:** Total turnaround time for creation and the service improved by 90%[1].
- **Maximizing Uptime:** Reduced downtime with total uptime achieved clocking at 99%[1].
- **Improved Performance:** Consolidation of servers resulted in increasing the compute capability by 40%[1].

"As part of our commitment to the cloud service provider market, Intel worked with NxtGen in order to help configure the solution for REDL. The Intel® Xeon® processor E5 product family helps in decreasing data center power costs and is powering NxtGen Compute Cloud Services, delivered to Reliance Entertainment Digital Limited Services."

- Srinivas S Tadigadapa, Director, Enterprise Solution Sales, Intel South Asia

"The higher processing and compute power of Intel® Xeon® processor E5 helped in increasing the efficiency and customer experience for Gaming and VOD applications."

- Sayed Peerzade, CIO, Reliance Entertainment Digital Limited

Sustaining Growth through Consolidation

Comprising of leading multi-brand consumer digital companies in India, Reliance Entertainment Digital (REDL) has a business portfolio that includes dynamic brands like Reliance* Games, BigFlix*, Zapak* & Zapak* Solutions. With over 20 million satisfied consumers across all digital platforms, REDL set its eyes on further expanding its customer base.

However, after merging the different brands under REDL, the need of the hour was a common solution for the company's traditional setups, which are running individually for each digital business. This led to the conceptualization of a consolidation and cloud project to allow for the transfer of all of REDL's traditional server workloads to the cloud.

REDL realized that they were faced with some of the challenges that are typical with most traditional setups: the multitude of apps running on physical servers was making it impossible to expand or scale up. Every time the company expanded its servers to support the consistently growing businesses, it incurred capital expenditures to facilitate the necessary increment of IDC collocation/energy/cooling requirement costs.

There came a point where the company had 450 physical servers running in 45 racks hosting 150 apps and 55 database instances for all the digital business. The costs were compounded owing to the fact that each setup used different bandwidth links and essential old server AMCs were operational too.

REDL required a comprehensive and scalable solution that could not only help reduce costs and effectively consolidate servers, but also provide in-built security and reduce latency, both of which play a key role in influencing a user's experience in the digital world. REDL presented its challenges and its vision to NxtGen.

Changing the Game with Enterprise Cloud Services

NxtGen brought its expertise in delivering business value by providing Data Center as a Service and offering a complete range of data center and cloud services to enterprises to the fore with Enterprise Cloud Services (ECS), an efficient and agile approach to operate scale-out applications in a predictable and cost-effective manner.

Intel® Xeon® processor E5 product family delivered unparalleled capabilities, flexibility and scalability that were critical to REDL. With features that provide enhanced performance boost and improved energy efficiency, ECS is not just a high-performance solution, it is a cost-effective solution that enabled REDL to reduce capital costs & operating expenses.

Transforming the IT Infrastructure Landscape

With a comprehensive list of requirements as the framework within which to develop a solution with the capabilities to implement and manage the infrastructure for REDL, NxtGen choose the following as the building blocks of the proposed setup:

- Servers with Intel Inside®– Redundancy built-in
- Four numbers of Intel® Xeon® Processor E5-4600 product family with DDR3 1600Mhz Memory
- 2x120GB Intel® Solid-State Drives mirrored to the host Operating System
- Intel® 4 Port GE Ethernet Cards
- Dual HBA FC Cards
- 50TB storage consolidated on EMC's VNX* Fiber Channel Storage, in which the storage network is built using dual redundant FC switches
- VMware* based hypervisor to virtualize the infrastructure
- Resilient Network with array load balancers and Fortinet* Unified Threat Management Appliances for secure and enhanced application access and user experience
- Centralized, managed storage infrastructure with enhanced data protection features
- Based on ITIL Framework and Governance Model

NxtGen consolidated REDL's expansive IT infrastructure by virtualizing it. This has allowed the entire infrastructure to be consolidated to facilitate Massively Multi-Player Online Gaming and movie hosting for user consumption across media, including Smart TVs and tablets. While the solution reduced the infrastructure REDL required and subsequently the cost of ownership, it increased the compute capability by 40%[1]. The solution also gave REDL the flexibility they required to scale up or down, depending on the demand they face at any given point of time.

The Power of Intel – Making a Big Difference

NxtGen provided higher value for REDL by virtualizing REDL's data centers and adding automation, ultimately driving down costs and delivering new data-driven services more quickly and efficiently. Intel® Xeon® processor-based servers provided the foundation for this transformation.

To enable the new cloud-based services for REDL, NxtGen deployed 8 physical servers running 120 virtualized workloads based on the Intel® Xeon® processor E5 product family, Intel® Server Board S4600LH2, and Dual Port Intel® Gigabit Ethernet Adapters.

The greater memory-handling capacity and additional hardware enhancements for virtualization of the Intel® Xeon® processor E5 product family were key factors in driving the solution and delivering more performance, higher availability, and scaling resources on demand.

The server hardware based on Intel® architecture was specially designed to suit REDL's requirements and optimally configured to provide the best energy efficiency across data centers. The solution provided the required scalability &

Key Highlights of ECS

- With built-in flexibility, it allows the customer to enjoy similar advantages as public cloud in terms of the provision it provides to add & remove resources.
- As a robust infrastructure, it comes with physical infrastructure that has self-healing capabilities backed by the highest level of support from OEMs.
- The resources are dedicated, ensuring predictability of performance, so the customer has all the necessary flexibility to decide how to commit resources for each application.
- It supports REDL's Massively Multi-Player Online Gaming requirements.

Spotlight on Nxtgen

NxtGen, based in Bangalore, India, delivers central IT platform as a service, including data center. It provides data center & cloud services from its own High Density Data Center (HDDC) facilities and also deploys centrally managed On Premise Data Center (OPDC) at the customer end.

Spotlight on REDL

Reliance Entertainment Digital Limited, the digital arm of Reliance Entertainment (ADA Group) is a cluster of leading multi-brand consumer digital company in India. Today, Reliance Digital encompasses digital entertainment viz. gaming and Video On Demand (VOD) across all prominent platforms such as online and mobile.

responsiveness, essential for a cloud deployment. Another critical factor for an effective cloud deployment is the security consideration and the Intel® Xeon® processor E5 product family provides built-in security through Intel® Security Technologies that include Intel® Secure Key, Intel® Advanced Encryption Standard New Instructions, Intel® Trusted Execution Technology, etc. These are built into the chips and hardware, and help provide security beyond the OS to prevent malwares from entering the system.

Find the solution that's right for your organization. Contact your Intel representative, visit Intel's Business Success Stories for IT Managers (**www.intel.com/Itcasestudies**) or explore the Intel IT Center (**www.intel.in/itcenter**).

Bringing Unmatched Benefits

The deployment not only brought technical advantages, but also delivered great business benefits to REDL. The cloud-based solution brought about a huge reduction in the number of servers by up to 70%[1], which resulted in bringing down the total operating costs by up to 30%[1].

The pressing needs for REDL was to implement a highly flexible IT infrastructure that meets the dynamic needs of the users without affecting the end user experience. The Intel® powered solution from NxtGen delivered exactly what REDL was looking for. Driven by the powerful processing capability of the Intel® Xeon® processor E5 product family, REDL was able to deliver amazing customer experience through enhanced efficiency.

Solution Provided By:

1 Benchmark results & data are based on internal assessments done by NxtGen & REDL.
System Configurations
Previous Setup: HP DL385G7 SERVER (29 Nos.) – 2 x AMD* Opteron 6282SE 2.6 Ghz 16 Core Processor; 120GB RAM; 2 x 300GB SAS HDD RAID 01; Dual port FC HBA; VMware* Enterprise + 5yr 24x7 Support.
Current Setup: Consolidated to 9 Nos. Intel® Server System R2304LH2HKC Rack 2U System supporting 4 x3.5 Ds, 48 DIMMs, includes integrated Dual Port Intel® Ethernet Controller I350 (1GbE), 2 1600W AC Platinum Efficiency Redundant PSU, Fan Board, Power Distribution Board and 2 Risers. Addons: Intel® Xeon® Processor E5-4640 (20M Cache, 2.40 GHz, 8.00 GT/s Intel® QPI); Quad Port Intel® I350-AE4 GbE I/O Module AXX4P1GBPWLIOM; 8GB Memory ECC Registered; Intel® SSD 520 Series 120GB; Emulex* 8GB/S 2-Port FC, PCI EXPRESS HBA SW DIAG OPTICS
Orchestration Server: Intel® Xeon® Processor E5-2650 (20M Cache, 2.20 GHz, 8.00 GT/s Intel® QPI) Intel® Server System integrated in a 2U chassis supporting 8x3.5* Hot-swap drives, 24 DIMMs, 2 750W Redundant Power Supplies, enterprise class IO, Intel® Remote Management Module 4 (AXXRMM4R), and RKSATA8 RAID Upgrade Key Intel® Integrated RAID Module RMS25CB080, SIOM Connector, LSI2208 ROC, 8P Internal SAS, Mega RAID SWStack, 1GB DDR3, R0,1,10,5,50,6,60. Addons: Intel® Xeon® Processor E5-2650 (20M Cache, 2.00 GHz, 8.00 GT/s Intel® QPI); Quad Port Intel® I350-AE4 GbE I/O Module AXX4P1GBPWLIOM; 8GB Memory ECC Registered; Intel® SSD 520 Series 120GB; Emulex 8GB/S 2-Port FC, PCI EXPRESS HBA SW DIAG OPTICS.