To stay ahead of the competition in a fast-paced, cost-driven cloud services marketplace, LeCloud must innovate new services and revenue streams to retain customers and drive profit. By using future-forward data center solutions from Intel, LeCloud is able to reduce latency in its video transcoding and improve the user experience when streaming new 4K and H.265 real-time video services to millions of customers concurrently.

Challenge

The competitive and aggressively priced Cloud Services marketplace in China offers plenty of choice to enterprises and consumers but creates profitability challenges for Cloud Service Providers (CSPs). Global cloud ecosystem provider LeCloud must innovate new products and services frequently to retain customers and grow marketplace share. Meanwhile, cost-conscious customers and strong competition mean that LeCloud needs to deliver its services at a keen price point. With these competing demands, LeCloud needed to build a cloud infrastructure capable of supporting new high-performance, next-generation cloud services, while seeking the lowest possible total cost of ownership (TCO).

Solution

LeCloud sought to maximize the performance capabilities of its newest video transcoding cloud services while remaining able to supply customers at a more competitive price than alternative cloud service providers. To balance performance and price and establish the most cost-efficient hardware and software combination, LeCloud evaluated the new Intel® Xeon® Platinum 8180 processor against currently available solutions from Intel¹.

Result

With the Intel® Xeon® Platinum 8180 processor, LeCloud delivers video transcoding services with a 1.51X performance boost compared to previous generation Intel Xeon processor E5-2699 v4. The new processor allows LeCloud to reduce latency in video transcoding and deliver a smoother user experience for its millions of customers. Through specific software optimizations, LeCloud also uses Intel® AVX-512 – new to the Intel® Xeon® processor Scalable family - to deliver a further 22 percent performance improvement of its video transcoding solution over the previous generation Intel Xeon processor².
Differentiated Cloud Services Demand Next-Generation Platform for Innovation

The Cloud Services marketplace is growing rapidly around the world but nowhere more so than in China, where the compound annual growth rate (CAGR) for the cloud computing industry is estimated at around 40 percent. Globally, analysts expect that spending on public cloud infrastructure will top USD 246.8 billion in 2017. In spite of this growth, a highly competitive market and cost-conscious buyers create challenges for CSPs keen to deliver services profitably and retain their customer base across billing cycles. Growing revenue and marketplace share requires CSPs to innovate new, differentiated services to satisfy the evolving needs of their customer base.

China-based CSP LeCloud continuously innovates to build marketplace share, launching differentiated services for its enterprise and consumer customers with a focus on video and media cloud. LeCloud subsidiary LeTV* is one of the largest video content providers in China and this content is delivered by LeCloud. To stay ahead of the competition, LeCloud needed to deliver intensive 4K and H.265 video content to its customers in real time without affecting media performance for any of the millions of concurrent users of its services. To ensure it retained its existing customers as well as driving new revenue with these services, the company needed to provide its innovative video cloud offerings at the lowest possible price point.

Balancing Performance and Price

In order to establish the most effective hardware/software combination to deliver its new 4K and H.265 video services cost-effectively, LeCloud evaluated the Intel Xeon processor Scalable family against the previous generation Intel Xeon processor E5-2699 v4. LeCloud also actively collaborated with Intel to take advantage of Intel AVX-512 instructions within its video transcoding solution to boost performance. LeCloud’s video transcoding solution is critical to delivering high-definition video content to customers in real time, without latency which can negatively impact the customer experience. The performance tests revealed that LeCloud can achieve a 51 percent performance boost using the Intel Xeon Platinum 8180 processor. Further software optimizations leveraging Intel AVX-512 yielded an additional 22 percent performance improvement over Intel AVX2 instructions, dramatically speeding up the video transcoding process.

The evaluation allowed LeCloud to understand the benefits of upgrading its data center to the latest Intel Xeon processor Scalable family.

Delivering Real-Time Video Transcoding

By running its video transcoding solution on the Intel Xeon processor Scalable family, LeCloud takes advantage of more cores and a higher memory bandwidth compared to the previous platform. This means that once LeCloud deploys the Intel Xeon processor Scalable family across its data centers, it will potentially be able to serve more customers with demanding high-quality video content using the same hardware configuration.

Find the solution that is right for your organization. Contact your Intel representative or visit intel.com/cloud.

Spotlight on LeCloud

As a subsidiary of Le Holdings Beijing Co., Ltd., LeCloud Computing Co., Ltd. (LeCloud) is committed to creating and providing a global cloud ecosystem centered on life, business and society. It wants to build a vertically integrated Eco-as-a-Service (EaaS) cloud model and to deliver brand new value based on industry chain reconstruction.

LeCloud provides professional and leading video cloud services (i.e. CDN, Cloud-on-demand, Cloud live and Data+), industry cloud services (i.e. Radio, TV, education and sports), shared cloud services (i.e. content sharing, distribution and live broadcasting of commercial events), VR and self-service cloud platforms. These are all accessible from around the world. With 680 CDN nodes deployed in over 60 countries and regions and 20 Tbps available bandwidth, LeCloud implements more than one million cloud live events per year, and facilitates hundreds of millions of device accesses per day, and millions of concurrent users per second. Also, it serves hundreds of thousands of global enterprise users and billions of users in total. In addition, LeCloud fully supports new-generation 4K and H.265 video technologies and is the world’s first cloud platform that supports 360-degree panoramic and real-time VR live broadcasting.

Case Study | LeCloud boosts video performance for smoother, seamless user experiences

1Software 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 complete information visit www.intel.com/benchmarks and http://www.intel.com/content/www/us/en/benchmarks/resources-benchmark-limitations.html

2LeCloud Business Analytics*: OS: CentOS* 7.3.1611 Linux* kernel 4.9.8. Testing by Intel May 2017. BASELINE: 2S Intel® Xeon® processor E5-2699 v4, 2.2GHz, 22 cores, turbo and HT on, 128GB total memory, 8 slots / 16GB / 2400 MT/s / DDR4 RDIMM, s3700 800G SSD. ICC version: v17.0.2 NEW: Intel® Xeon® Platinum processor 8180, 2.5GHz, 28 cores, turbo and HT on, 192GB total memory, 12 slots / 16GB / 2666 MT/s / DDR4 RDIMM, Intel® Solid State Drive Data Center S3700 800GB. ICC version: v17.0.2 Performance metric: Total throughput of the transcoding, fps (frame per second), higher is better.

3Bain & Company, 2015

4Gartner, 2017

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. For more complete information about performance and benchmark results, visit http://www.intel.com/performance. No computer system can be absolutely secure.

Normalized performance is calculated by assigning a baseline value of 1.0 to one benchmark result, and then dividing the actual benchmark result for the baseline platform into each of the specific benchmark results of each of the other platforms, and assigning them a relative performance number that correlates with the performance improvements reported.

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.

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