SOLUTION BRIEF

Retail Industry
Improved Load Times

Cost Effective Drop-In Solution for Workflow Bottlenecks

IKEA* Communications AB Creates Stunning Media and Powerful Content Using Intel® Cache Acceleration Software

Sebastian Ek
TD / 3D Specialist

Sarayu Achar
Technical Marketing Engineer

IKEA* is a value-driven company with a passion for life at home. Every product created by IKEA is designed to make home a better place. The IKEA Concept starts with the idea of providing a range of home furnishing products that are affordable to many people, not just the few. This is achieved by combining function, quality, design and value—always with sustainability in mind.

In Älmhult, Sweden, also known as the heartland of IKEA, IKEA Communications AB creates and produces communication that makes the IKEA story come to life—around the world. Being the in-house agency for IKEA, IKEA Communications AB produces stunning content for interiors and furniture which is used globally by IKEA and on all of its marketing platforms. At IKEA Communications AB, 3D artists create content that amounts to about 48,000 pictures per year, and together with other content exceeds most comparable set-ups. The content includes big textures, heavy files, pictures, motion media and mode. IKEA Communications AB team uses innovative and cost-effective technology solutions to create stunning and powerful content for consumption.

Challenge

One of the biggest technology challenges in 3D production is to meet the demand for huge volumes of rendered images and to render them fast. As the need for produced images and content increases exponentially, decreasing load times becomes important.

The 3D artists at IKEA communications use a model bank, which stores approximately 33,000 IKEA models and over 3,400 non-IKEA models (propping). They use Autodesk's 3ds Max*, 3D software for modeling and creating animation, and ChaosGroup's VRay* for rendering, to create the massive content and stunning scenes for visualization. The 3D artists connect their workstations, running Autodesk 3ds Max, over a storage area network (SAN) to the model bank and then search for and select the models and textures that need to be "imported" into the application.

3ds Max opens these models on the client/artist workstation from the network; this operation can take from one second to several minutes. When the load on the network gets heavy, this time exponentially increases, resulting in a negative impact on the efficiency and productivity of the artists.

Solution

To overcome this issue, the 3D specialists at IKEA Communications AB collaborated with the Intel Non-Volatile Memory Solutions Group (NSG) and the Dell* Precision team to accelerate IKEA's application (3ds Max) and workflow with Intel® Cache Acceleration Software - Workstation (Intel® CAS-W) to mitigate the performance bottlenecks and challenges they faced. Intel® Cache Acceleration Software is a drop-in solution to accelerate applications that requires no modification to the existing applications or back-end storage infrastructure. An Intel SSD with Intel CAS enables SSD-like performance as the software utilizes an SSD to cache the hottest data, from existing model-bank backend storage media (HDD, SAN, NAS), locally on the Dell Precision Workstation. Additionally, by bypassing the network and storage controller to access the hottest data, performance bottlenecks caused by network traffic is greatly reduced. The results are a cost-effective solution that quickly and easily provides a boost to read and write performance of applications and the content.

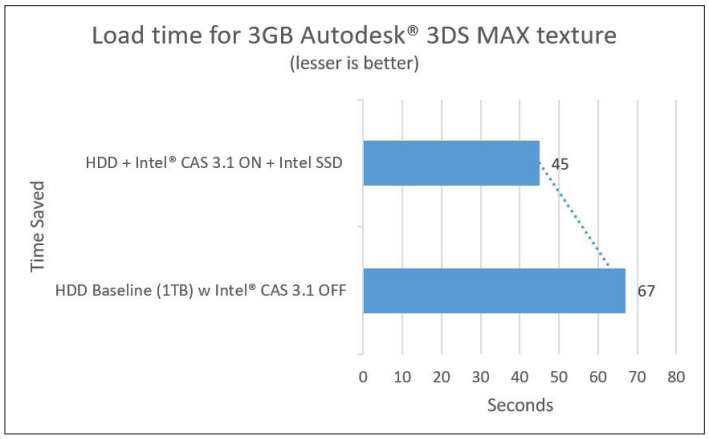

Figure 1. 22 seconds saved to load a 3GB Autodesk® 3DS MAX texture

IKEA Communications AB used Intel CAS-W 3.1 for Windows* Workstation with their existing Intel® SSD on a Dell* Fixed Precision Tower Workstation T7910 to reduce load times and speed up scenes loaded into Autodesk's 3ds Max application. The load time decreased from over 20 seconds per texture to <5 seconds using Intel® CAS-W. Without Intel® CAS, the load time for each scene, consisting of several textures, could differ from 5 minutes up to 20 minutes. For textures of 3GB in size, the users observed that a model which previously took 67 seconds to load could be loaded in 45 seconds with Intel CAS-W 3.1 (Figure1). This is an improvement of 33% to load just one model.

Since almost all of the images (scenes) used by IKEA in different communications consist of more than one texture, the cumulative time savings demonstrates valuable impact to the work environment with an increase in productivity. Additionally since a scene can be opened up to 10 times before archived, using Intel CAS means that the 3D artists can spend more time doing the actual work rather than waiting for a scene to load. The productivity across multiple textures, multiple scenes, and multiple users enabled IKEA to increase daily productivity for their artists by a factor of 2x once the solution was deployed across the entire organization.

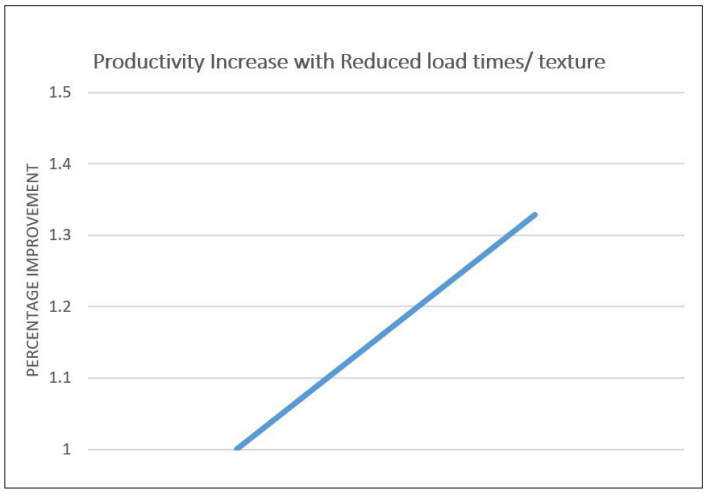

Figure 2. 33% increase in productivity with lower load times per texture

Conclusion

The combination of Intel Cache Acceleration Software Workstation with an Intel® SSD Pro 5400 Series (256GB), currently available on all Dell Fixed Precision Tower Workstations, offers an enterprise grade caching solution for Windows-based workstation professionals. Intel CAS-W 3.1 has enabled IKEA Communications AB to increase creativity and productivity of their 3D artists by 2x. The team uses Autodesk 3ds Max, media and entertainment software, and a SAN environment to work collaboratively to design and fabricate content that can be enjoyed by wide audiences in various walks of life.

System Configuration: Dell Precision T7910, CPU: Intel Xeon E5-2699 v3 x2 2.3GHz, RAM 192GB, HDD: ATA 1TB ST1000DM003-1ER1, CAS Disk: INTEL SSDSC2BF36 333.5G, GPU: NVIDIA Quadro K6000 x3

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.
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.
Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. Intel technologies may require enabled hardware, specific software, or services activation. Check with your system manufacturer or retailer.

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.
*Other names and brands may be claimed as the property of others. Copyright © 2017 Intel Corporation. All rights reserved. 0617/RT/NH/RA 335935-001US