CAR-5050 from CASwell Accelerates Delivery of Visual Cloud Delivery Workloads

CASwell CAR-5050 provides next-generation content delivery network (CDN) services as a verified Intel® Select Solutions for Visual Cloud Delivery Network.

Video streaming services have grown exponentially, and communications service providers (CommSPs) are anticipating continued market expansion with rise of new OTT services, richer content and the growing popularity of new visual cloud network services offering augmented reality and virtual reality. To help CommSPs develop next-generation content delivery network (CDN) services to deliver this content with high quality, CASwell has verified the CAR-5050 as an Intel Select Solution for Visual Cloud Delivery Network.

The CAR-5050 utilizes an optimized hardware design based on the 2nd generation Intel® Xeon® Gold processor that incorporates the most common and popular open source CDN caching frameworks such as NGINX* and Apache Traffic Server (ATS)*. It also incorporates open source

media libraries such as FFmpeg*, Media Service Studio*, and Scalable Video Technology* for media transcoding.

Acceleration is built into the system for key CDN workload functions such as cryptography, data compression, and transcoding. The CAR-5050 utilizes non-uniform memory access (NUMA)-balanced I/O for maximum throughput and consistent latency. It also features new memory and storage solution options for improved scalability, reduced latency, and cost savings.

The CASwell CAR-5050 verified for Intel Select Solution for VCDN is based on two 2nd Generation Intel® Xeon® Scalable processors like the Intel Xeon Gold 6230N with 20 cores but can also be configured with Intel Xeon Platinum CPUs with up to 28 cores depending on customer's requirements. Combined with 384 GB or more DDR4-2666 main memory, two Intel® SSD DC P4510 with at least 2.0 TB each, two dual-port Intel XXV710 Ethernet Controllers for 25GbE SFP28 and various Ethernet connections with up to 100Gbps through CASwell's own network modules, this system provides both high performance and flexible configurations.

Additionally, the CAR-5050 can be equipped with Intel® Optane™ DC persistent memory for fast caching and storage plus giving customers higher capacities for the applications they need. Intel® QuickAssist Technology (Intel® QAT) can be provided by an Intel QAT 8960 or 8970 adapter card to accelerate cryptographic applications, compression and decompression algorithms.

Optimized for Visual Cloud Workloads

CDN servers need both high throughput and low latency to deliver smooth and consistent real-time content demanded by consumers. The CAR-5050 utilizes several Intel technologies to deliver this performance. These include:

- 2nd generation Intel Xeon Gold processors feature up to 24 cores per socket with frequency up to 2.3 GHz for optimized visual computing performance. 2nd generation Intel Xeon Gold processors also feature impactful platform technologies such as Intel® Virtualization Technology (Intel® VT) for full isolation of multiple virtualized workloads and Intel® Boot Guard technology for boot integrity.
- Intel Optane DC persistent memory helps to addresses memory constraint challenges for latency-sensitive CDN use cases such as live streaming because it can offer lower per-Gigabyte memory cost and similar performance as DRAM.
- Intel® Visual Compute Accelerator 2 (Intel® VCA 2) is an optional hardware accelerator card that provides high-density video transcoding capability. The Intel VCA 2 enhances the Intel Xeon Scalable processor for powerful media performance and Intel® Quick Sync Video for ultra-fast media transcode performance.

- Intel® Solid State Drive Data Center Family (Intel® SSD Data Center Family) offers outstanding quality, reliability, and advanced manageability and serviceability. When used for caching, Intel Optane DC SSDs provides high endurance and can increase scale by accommodating more capacity than DRAM-based memory technologies.
- Intel® QuickAssist Technology is a hardware acceleration technology that provides lookaside cryptographic and compression/decompression co-processing services for the CPU.

CAR-5050 Specifications

The CASwell CAR-5050 is optimized for video on demand (VOD) applications. Table 1 shows more detailed system specifications.

Item	Ingredient
Server Name	CAR-5050
Processor	2x 2nd Gen Intel® Xeon® Gold 6230N Scalable Processors or higher (20+ core)
DRAM	384 GB DDR4-2666 ECC RAM (12x 32 GB)
Intel® Optane™ DC memory	optional
Network Controllers	2x dual-port Intel XXV710 Ethernet Controllers XXV710 for 25GbE; Up to 48x Ethernet Ports via CASwell's own Network modules
Intel® QAT	optional
Visual Cloud Accelerator Card	optional
Intel® 3D NAND SSDs	2x Intel® SSD DC P4510 with 2.0+ TB (NVMe)
LAN on Motherboard	For Management & Console
SOFTWARE	
Operating System	Linux Kernel
Caching Frameworks	NGINX*, Apache Traffic Server (ATS)
Media Libraries	FFmpeg, Media Service Studio*, Scalable Video Technology
OTHER HARDWARE / SOFTWARE	1x CF Socket 1x M.2 SSD 2280 (PCIe) 800W CRPS Redundant PSU

Table 1: Detailed configuration and specifications for CAR-5050.

Conclusion

With the CAR-5050 verified as an Intel Select Solutions for Visual Cloud Delivery Network, CASwell is delivering a workload optimized solution that has been verified by Intel to achieve benchmarked results and meet the rapidly emerging needs for content delivery networks. Delivering scale, flexibility and high performance, this solution running on 2nd generation Intel Xeon Scalable processors is designed to accelerate visual services at the edge of the network.

About CASwell

CASwell, Inc. was founded in 2007 by a group of engineers with a desire to create dynamic system solutions for embedded applications. While CASwell is a young company, it has proved itself to its customers with advanced technology, professional service and superior design and manufacturing capability by delivering a great portfolio of solutions based on Linux®. In 2014, the well-known IPC manufacturer Ennoconn Corporation (subsidiary of Foxconn Technology Group) decided to invest in CASwell, becoming the largest shareholder. CASwell has since become the subsidiary of Ennoconn, a member of Foxconn Technology Group. CASwell is dedicated to providing its customers with an unparalleled one-stop shopping experience for their network security and management needs.

Learn More

To find out more about the CASwell CAR-5050, please visit cas-well.com/products/network-security-and-management/2u-network-appliance/car5050vcdn.html.

Intel Select Solutions: intel.com/select

Intel Select Solutions are supported by the Intel Builders program: https://builders.intel.com