



Inspur NF5280M5 VCDN-based Intel® Select Solution

Inspur Launches NF5280M5 for Visual Cloud Delivery Network

NF5280M5 provides next-generation content delivery network (CDN) services as a verified Intel® Select Solutions for Visual Cloud Delivery Network.

Real-time streaming services have grown exponentially, and communications service providers (CommSPs) are anticipating continued market expansion with rise of new OTT services, richer content and new visual cloud network services offering augmented and virtual reality. To help CommSPs develop next-generation content delivery network (CDN) services with high quality, Inspur has verified NF5280M5 as an Intel® Select Solutions for Visual Cloud Delivery Network.

NF5280M5 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. NF5280M5 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.

Inspur NF5280M5 provides a new platform with the best performance, high reliability, and strong scalability. Its full modular design provides flexible combination of storage, IO and heterogeneous modules. It provides 30+ configurations to meet a variety of business demands, and it is equipped with intelligent management techniques for large-scale data center management. The NF5280M5 also supports Intel® Xeon® Scalable processor family.



Inspur NF5280M5

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. NF5280M5 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 address 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 a hardware accelerator card that provides high-density video transcoding capability. The Intel VCA 2 enhances the Intel Xeon Scalable processor with P580 Iris® Pro graphics 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 (Intel® QAT) is a hardware acceleration technology that provides lookaside cryptographic and compression/decompression co-processing services for the CPU.
- Intel® Ethernet 700 Series Network Adapters support 25GbE network connections and deliver validated performance that meets quality thresholds for data resiliency and

service reliability with broad interoperability.¹All Intel Ethernet products are backed by worldwide pre- and post-sales support and offer a limited lifetime warranty.

NF5280M5 Specifications

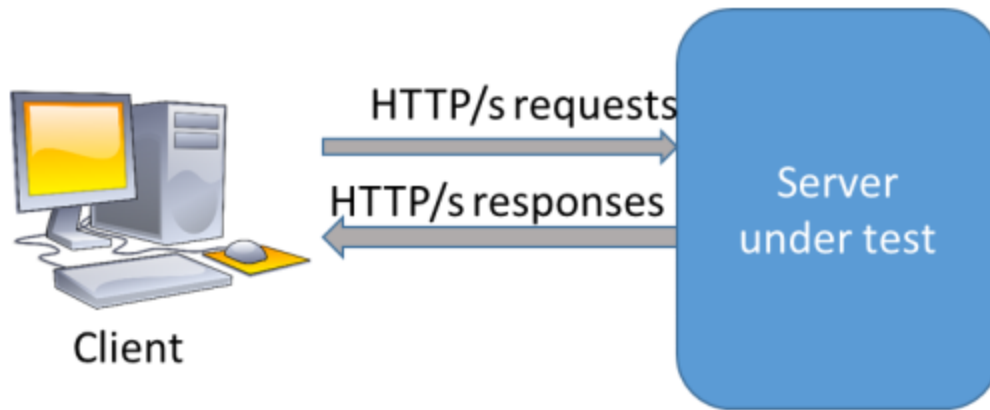
We used two configurations for the Intel® Select Solutions for Visual Cloud Delivery Network scheme verification: Intel® Xeon® Gold 6230 processor at 2.1 GHz for Base solution and Intel® Xeon® Gold 6252 processor at 2.1 GHz for Plus solution. Table 1 shows more detailed system specifications.

Item	Ingredient
Server Name	NF5280M5
Processor	Intel® Xeon® Gold 6230 processor at 2.1 GHz for Base/ Intel® Xeon® Gold 6252 processor at 2.1 GHz for Plus
DRAM	12x32 GB DDR4 at 2666 MHz (384 GB Total)
Network Controllers	2*25GbE Dual Port Intel® Ethernet Controller XXV710 SFP28+
Visual Cloud Accelerator Card	Intel® VCA 2 VCA1585LMV (VCA 2 transcoding accelerator card, PCIe Gen 3 x16)
Intel® 3D NAND SSDs	4*INTEL® SSD DC P4510 SERIES 4.0 TB NVMe NUMA aligned
LAN on Motherboard	1 Gbps for Management NIC
SOFTWARE	
Operating System	RHEL 7.6
Caching Frameworks	NGINX*
Media Libraries	FFmpeg, Scalable Video Technology

Table 1: Detailed configuration and specifications for NF5280M5.

Nginx* Performance Test Setup:

¹ The Intel® Ethernet 700 Series includes extensively tested network adapters, accessories (optics and cables), hardware, and software, in addition to broad operating system support. A full list of the product portfolio's solutions is available at intel.com/ethernet. Hardware and software is thoroughly validated across Intel® Xeon® Scalable processors and the networking ecosystem. The products are optimized for Intel® architecture and a broad operating system ecosystem: Windows*, Linux* kernel, FreeBSD*, Red Hat* Enterprise Linux (RHEL*), SUSE*, Ubuntu*, Oracle Solaris*, and VMware ESXi*. Supported connections and media types for the Intel Ethernet 700 Series are: direct-attach copper and fiber SR/LR (QSFP+, SFP+, SFP28, XLPP1/CR4, 25G-CA/25G-SR/25GLR), twisted-pair copper (1000BASE-T/10GBASE-T), backplane (XLAUI/XAUI/SFI/KR/KR4/KX/SGMII). Note that Intel is the only vendor offering the QSFP+ media type. The Intel Ethernet 700 Series supported speeds include 10GbE, 25GbE, 40GbE.



IP CDN performance:

Platform	Type Protocol	Configuration	benchmark	Performance
Base	http	P4510	12K users File size 1K	96K request per second
	https	P4510	4K users File size 1K	86K request per second
Plus	http	P4510	15K users File size 1K	87K request per second
	https	P4510	5K users File size 1K	66K request per second

Transcoding with SVT-HEVC performance:

Platform Type	Codec	Configuration	Performance
Base	h264	1080p 30fps	12 streams
	h264	4k 30fps	6 streams
	h265	1080p 30fps	12 streams
	h265	4k 30fps	4 streams
Plus	h264	1080p 30fps	20 streams
	h264	4k 30fps	6 streams
	h265	1080p 30fps	16 streams
	h265	4k 30fps	6 streams

About Inspur

<http://www.inspur.com/>

Learn More

To find out more about the Inspur NF5280M5, visit

<https://www.inspur.com/lcjtww/2315499/2315503/2316859/2460097/2461578/index.html>

Intel Select Solutions: intel.com/select

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