SOLUTION BRIEF

ACCELERATE DELIVERY OF VISUAL SERVICES

SUPERMICRO SOLUTION FOR SERVICE PROVIDER VISUAL CLOUD DELIVERY NETWORK (VCDN) VERIFIED BY INTEL

Drive Visual Services Innovation

Supermicro, Intel, and Red Hat have partnered to develop a first-in-class services delivery platform based on industry-leading Supermicro SuperServer® and SuperStorage technologies, 3rd Gen Intel® Xeon® Scalable processors, and either CentOS or Red Hat Enterprise Linux. Using this innovative solution, communications service providers can rapidly add visual services in their networks to:

- **Offer emerging visual services** like cloud gaming, virtual reality, and volumetric video are driving the need for more network capacity, higher bandwidth, and ultra-low latency.
- **Streamline infrastructure procurement and deployment** with a low total cost of ownership (TCO) while ensuring high-quality services for consumers by utilizing pre-configured and pre-tested offerings.
- **Reduce the risk of advanced technology** with a proven hardware and software reference design that lets you select exactly the best configuration for your application, scaling naturally as your needs expand.

Supermicro Solution Overview

The Intel Select Solutions for Visual Cloud Delivery Network (VCDN) consists of optimized hardware resources and an open-source software stack residing within a virtualized infrastructure. The solution stack uses the most common and popular open source CDN caching frameworks such as NGINX, Apache Traffic Server (ATS), and Varnish. It also leverages open source media libraries such as FFmpeg and Scalable Video Technology for media transcoding. Acceleration is built into the system for key functions such as cryptography, data compression, and transcoding.

The verified Supermicro solution for Service Provider VCDN provides high-performance, well-balanced server systems and flexible configuration options to meet diverse requirements. The solutions utilize NUMA-balanced I/O for maximum throughput and consistent latency. They also feature new memory and storage solution options for improved scalability, reduced latency, and cost savings. Refer to Tables 1 - 3 for configuration details.

SUPERMICRO

As a global leader in high-performance, high-efficiency server technology, and innovation, we develop and provide end-to-end green computing solutions to the data center, cloud computing, enterprise IT, big data, HPC, and embedded markets. Our Building Block Solutions® approach allows us to provide a broad range of SKUs and enables us to build and deliver application-optimized solutions based upon your requirements.

RED HAT

Red Hat is the world's leading provider of open source enterprise IT solutions. We're here to help you address change with open principles so that you can navigate today's need for transformation and prepare for the future. With engineers connected to open source communities, the freedom of our subscription model, and a broad portfolio of products that are constantly expanding, Red Hat is here to help you face your business challenges head-on.

INTEL

Intel is an industry leader, creating world-changing technology that enables global progress and enriches lives. Inspired by Moore's Law, we continuously work to advance the design and manufacturing of semiconductors to help address our customers' greatest challenges. In addition, by embedding intelligence in the cloud, network, edge, and every kind of computing device, we unleash the potential of data to transform business and society for the better.

Supermicro Solutions for VCDN Performance Configurations

SYS-120U-TNR Ultra

Ingredient	Base Configuration (DP)	Plus Configuration (DP)
Server	Supermicro Ultra SYS-120U-TNR	Supermicro Ultra SYS-120U-TNR
Processor	2x Intel® Xeon® Gold 5318N processor (2.1 GHz 24C/48T, 150W), or 20C/40T @135W, or higher core count/frequency	2x Intel® Xeon® Gold 6338N processor (2.2 GHz 32C/64T, 185W), or higher core count/frequency
DRAM	256GB required	
Intel® Optane™ Technology	2-1-1-1 128GB (512GB Total) recommended; or, 3x Intel® Optane™ DC SSD P5800X series (400GB) recommended	2-1-1-1 128GB (1TB Total) required
Intel Ethernet Network Adapters	1x 100GbE Intel® Ethernet 800 series network adapter Total: 100 Gbps	2x 100GbE Intel® Ethernet 800 series network adapter Total: 200 Gbps
Accelerator	1x Intel server GPU recommended	
Storage Capacity	6x Intel® SSD D7-P5510 series (3.84TB) required; or, 6x Intel® SSD D5-P5316 series (7.68TB) required	10x Intel® SSD D7-P5510 series (7.68TB) required; or, 10x Intel® SSD D5-P5316 series (15.36TB) required
Storage Boot Drive	2x SATA SSD S4510 @480GB required	

Table 1: Hardware configurations for dual-processor Supermicro Solution for VCDN

SSG-110P-NTR10 SuperStorage

Ingredient	Base Configuration (UP)	Plus Configuration (UP)
Server	Supermicro SuperStorage SSG-110P-NTR10	Supermicro SuperStorage SSG-110P-NTR10
Processor	1x Intel® Xeon® Gold 6312U processor (2.4 GHz 24C/48T, 185W), or higher core count/frequency	1x Intel® Xeon® Platinum 8351N processor (2.4 GHz 36C/72T, 225W), or higher core count/frequency
DRAM	256GB required	
Intel® Optane™ Technology	1x 400GB P5800X Intel® Optane™ SSD recommended	4x 400GB P5800X Intel® Optane™ SSD recommended
Intel Ethernet Network Adapters	1x 25GbE Intel® Ethernet 800 series network adapter Total: 50 Gbps	1x 100 GbE Intel® Ethernet 800 series network adapter Total: 100 Gbps
Storage Capacity	4x Intel® SSD D7-P5510 series (3.84TB) required; or, 4x Intel® SSD D5-5316 series (7.68TB) required	6x Intel® SSD D7-P5510 series (3.84TB) required; or, 6x Intel® SSD D5-P5316 series (7.68TB) required
Storage Boot Drive	2x SATA SSD S4510 @480GB required	

Table 2: Hardware configurations for single-processor Supermicro Solution for VCDN

Media Acceleration Library	Intel® Media SDK	
Media Framework	FFmpeg	
Containers Platform	KVM	
OS Support	Linux	
Media Codecs	Encode and Decode	AVC, HEVC, MPEG2, VP9

Table 3: Media Platform Components

VERIFIED PLATFORMS:

X12 DUAL PROCESSOR ULTRA ALL-FLASH NVME SUPERSERVERS

- 12 U.2 NVMe drives in 1U
- Offers unrivaled performance, flexibility and serviceability
- Optimized for Enterprise applications and workloads

X12 SINGLE PROCESSOR ALL-FLASH NVME SUPERSTORAGE

- 10 U.2 NVMe drives in 1U
- Optimal choice for small to midsize workloads
- Cost-optimized single-processor design
- Lowest power consumption

Dual-Processor and Single-Processor Base and Plus Configurations

Supermicro offers carefully designed hardware platforms that meet or exceed the Intel Visual Cloud Delivery Network (VCDN) reference design guide's requirements to deliver performance and efficiency for exponentially growing consumer streaming media-based applications. Reflecting the flexibility of platforms based on the 3rd Generation Intel Xeon Scalable processor, both dual- and single-processor solutions are offered, each with Base and Plus configurations available. This breadth of offerings by Supermicro gives customers control over the value-performance tradeoffs for different use cases.

Learn more at: www.supermicro.com