

# Intel® Select Solutions for VMware vSAN\*

Intel® Select Solutions | Version 2

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## Challenge

Modern businesses need infrastructure designed to handle the needs of data-hungry workloads in the data center. In-memory databases, complex analytics applications, and high-density virtual desktop infrastructure (VDI) deployments all require infrastructure that provides scalability, performance, security, and manageability.

## Solution

Intel® Select Solutions for VMware vSAN\*:

- **Preconfigured solutions**, optimized by VMware\* and Intel, that are built on high-performing infrastructure designed to handle demanding, latency-sensitive use cases, specifically facilitating performance for memory-constrained workloads
- **Power VMware vSAN and VMware vSphere\* deployments** with Intel® Optane™ DC Solid State Drives (SSDs), Intel® 3D NAND SSDs, 2nd Generation Intel® Xeon® Scalable processors, Intel® Ethernet Network Adapters, and other Intel® technologies
- **Available with Intel Optane DC persistent memory** with VMware approval, which can help overcome the cost and capacity limitations of DRAM for performance-critical use cases
- **Certified for VMware vSAN ReadyNode\*** and tightly specified by Intel and VMware to deliver out-of-the-box high performance

## Benefits

- Offer organizations high availability, security, and performance
- Simplify operations and reduce total cost of ownership (TCO)
- Seamlessly integrate with VMware vSphere as a native hyperconverged infrastructure solution for business-critical apps, consolidated VDI, mixed-workload infrastructure, and more
- Deliver performance that is optimized specifically for VMware vSAN
- Serve as a critical building block for the software-defined data center and for private and public cloud deployments

With these solutions, businesses can quickly deploy reliable, comprehensive VMware vSAN hyperconverged infrastructure built on a performance-optimized platform that offers high-capacity memory for demanding applications and workloads.

## Intel® Technologies

### Intel® Optane™ DC persistent memory:

- Represents a new class of memory and storage technology that allows organizations to maintain larger amounts of data closer to the processor with consistent, low latencies and near-DRAM performance.
- Can be used to cost-effectively expand the capacity of memory available to support higher quantities of “hot” data available for processing with in-memory databases, analytics, and other demanding workloads.

### 2nd Generation Intel® Xeon® processors:

- Offer high scalability that is cost-efficient and flexible, from the multi-cloud to the intelligent edge.
- Provide hardware-enhanced platform protection and threat monitoring.<sup>1</sup>

## What Are Intel® Select Solutions?

Pre-defined, workload-optimized solutions designed to minimize the challenges of infrastructure evaluation and deployment.

Solutions are validated by OEMs/ODMs, certified by ISVs, and verified by Intel.

Every Intel Select Solution is a tailored combination of Intel® data center compute, memory, storage, and network technologies that delivers predictable, trusted, and compelling performance. Each solution offers assurance that the workload will work as expected, if not better, while saving the individual business from investing the time and resources that might be required to evaluate, select, and purchase the necessary hardware components to gain that assurance themselves.

↑ At least **25%**  
higher virtual-machine (VM) density<sup>2</sup>

↑ Up to **30%**  
Cost reduction per VM, as measured by the modified VMmark 3.1\* benchmark scores<sup>2</sup>

**Table 1.** Hardware and firmware components for Intel® Select Solutions for VMware vSAN\* “Base” and “Plus” configurations—the Base configuration provides an optimized balance of price and performance in a mainstream configuration, and the Plus configuration is designed for high-density deployments or more demanding, latency-sensitive environments

INGREDIENT	INTEL® SELECT SOLUTIONS FOR VMWARE VSAN* BASE CONFIGURATION	INTEL SELECT SOLUTIONS FOR VMWARE VSAN PLUS CONFIGURATION
MASTER/HEAD NODE	4-node configuration	4-node configuration
PROCESSOR	2 x Intel® Xeon® Gold 6230 processor (2.10 GHz, 20 cores), or a higher number Intel Xeon Scalable processor	2 x Intel Xeon Gold 6252 processor (2.10 GHz, 24 cores), or a higher number Intel Xeon Scalable processor
MEMORY	384 GB (12 x 32 GB 2,666 MHz DDR4 DIMM)	128 GB (8 x 16 GB 2,666 MHz DDR4 DIMM) 512 GB (4 x 128 GB Intel® Optane™ DC persistent memory)
BOOT DRIVE	240 GB or larger Intel® SSD DC S3520 or higher series	240 GB or larger Intel SSD DC S3520 or higher series; RAID 1 configuration**
STORAGE	<b>Cache tier:</b> 2 x 375 GB Intel Optane SSD DC P4800X, or larger <b>Capacity tier:</b> 6 x 2 TB Intel SSD DC P4510, or larger	<b>Cache tier:</b> 2 x 375 GB Intel Optane SSD DC P4800X, or larger <b>Capacity tier:</b> 6 x 2 TB Intel SSD DC P4510, or larger
DATA NETWORK	10Gb Intel® Ethernet Converged Network Adapter X710-DA2/DA4 or 10Gb Intel® C620 Series Chipset with integrated Intel® Ethernet Network Connection X722 and Intel Ethernet Network Connection OCP X527-DA2/DA4	25Gb Intel Ethernet Network Adapter XXV710-DA2 or 40Gb Intel Ethernet Converged Network Adapter XL710-QDA2

\*\*Recommended, not required

## Learn More

Intel Xeon processor advisor:

<https://xeonprocessoradvisor.intel.com/exodus/page?eventType=11&targetPageId=129014903&defaultFlag=1>

Full configuration:

[intel.com/content/www/us/en/products/solutions/select-solutions/cloud/vmware-vsan.html](https://intel.com/content/www/us/en/products/solutions/select-solutions/cloud/vmware-vsan.html)



<sup>1</sup> No product or component can be absolutely secure.

<sup>2</sup> Intel internal testing as of April 2, 2019. **Base configuration:** four nodes, 2 x Intel® Xeon® Gold 6130 processor, Intel® Server Board S2600WFT, total memory: 384 GB, 12 slots/32 GB/2,666 megatransfers per second (MT/s) DDR4 RDIMM, Intel® Hyper-Threading Technology (Intel® HT Technology) enabled, Intel® Turbo Boost Technology enabled, storage (boot): 1 x 240 GB Intel® SSD 540s Series M.2 SATA, storage (cache): 2 x 375 GB Intel® Optane™ SSD DC P4800X Series PCIe\* with NVMe Express\* (NVMe\*), storage (capacity): 4 x 2 TB Intel SSD DC P4500 Series PCIe with NVMe; network devices: 2 x dual-port 10 Gb Intel® Ethernet Converged Network Adapter X710, network speed: 10 GbE, ucode: 0x043, OS/software: VMware vSphere 6.7.0<sup>1</sup>, build 8169922. **Plus configuration:** four nodes, 2 x Intel Xeon Gold 6252 processor, Intel® Server Board S2600WFT, total memory: 128 GB (8 x 16 GB 2,666 MHz DDR4 DIMM), 512 GB (4 x 128 GB) Intel Optane DC persistent memory, Intel HT enabled, Intel Turbo Boost Technology enabled, storage (boot): 240 GB Intel SSD S3520, storage (cache): 2 x 375 GB Intel Optane SSD DC P4800X, storage (capacity): 6 x 2 TB Intel SSD DC P4510; network devices: 2 x dual-port 25Gb Intel Ethernet Network Adapter XXV710-DA2, network speed: 25 GbE, ucode: 0x043, OS/software: vSphere 6.7.0, build 8169922.

Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

Software 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 [intel.com/benchmarks](https://intel.com/benchmarks).

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

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