

SHOW YOUR CUSTOMERS HOW TO GET THE MOST FROM THEIR SERVERS

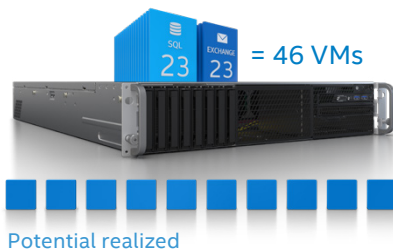
See how server component selection is critical to overall server performance



UNLEASH SERVER POTENTIAL

Compute, storage, and network functions directly impact overall server performance. New advances in processor speed and capabilities need to be supported by equal advances in storage and networking to deliver the maximum performance of the processor. It's time to Scale IT Up and get the best server platform experience.

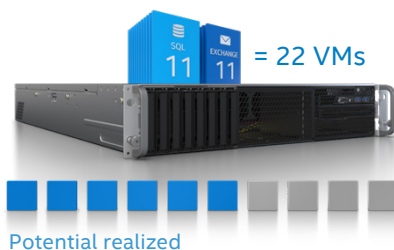
Maximize server performance by upgrading all three component subsystems.



OPTIMAL

Intel® Xeon® Platinum 8180 Processor
Intel® SSD DC P4600 Series
25GbE Intel® Ethernet Adapter XXV710

After upgrading to 10GbE, performance improves, but storage becomes the bottleneck.



BETTER

Intel® Xeon® Gold 6148 Processor
Intel® SSD S4500 Series
10GbE Intel® Ethernet Adapter X710

Processor and storage performance potential is constrained by 1GbE network.



GOOD

Intel® Xeon® Silver 4114 Processor
SAS HDD
1Gb Ethernet

CONFIDENTLY STEER CUSTOMERS THROUGH UPGRADE PROGRESSION

- Replace storage with NVMe SSDs
- Upgrade to 10GbE—an easy transition with little to no changes in cabling
- Upgrade to Intel Xeon Platinum platform to maximize application responsiveness and VM density for an agile platform

Compare configurations with the Storage and Connectivity Comparison Tool for Intel® Xeon® Scalable Platforms.

Try it today at scaleitup.intel.com



ELIMINATE BOTTLENECKS THROUGH INFORMED COMPONENT UPGRADES

COMPUTE

Scale up the processor to deliver more cores, increase frequency per core, and increase cache.



Select the processor that's right for your customer's workload. See the processor advisor tool: xeonprocessoradvisor.intel.com

Processor selection should trigger a review of storage and network components to unleash processor potential.

STORAGE

Scale up SATA* and SAS to NVMe*-based storage for exceptional increase in supported VMs, orders per minute, and email users.

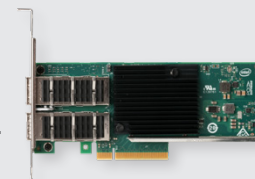


Scaling up to NVMe eliminates SATA and SAS bus limitations.

Storage upgrades should also trigger review of customer's network to ensure a minimum of 10GbE. 1GbE does not provide sufficient bandwidth for NVMe.

NETWORK

Scale up 1GbE networks to 10/25/40GbE to reduce latency and improve server responsiveness.



Scale up network components whenever you upgrade processor or storage.

Staying at 1GbE can result in:

- Processor underutilization
- Poor application response times
- Lost productivity due to latency

SCALE IT UP PRODUCT LINEUP

PROCESSOR

Intel® Xeon® Scalable Processors

Exceptional performance.

- High performance and scalability with up to 28 cores
- Larger memory capacities for real-time analytics
- Handles mission-critical workloads with more uptime

STORAGE

Intel® SSD DC S4500, S4600, P4500, and P4600 Series

Accelerated caching for many workloads.

- Up to 3.2 TB capacity
- Increased server utilization optimized for cloud storage architectures
- Advanced manageability and serviceability

NETWORK

Intel® Ethernet 700 Series Network Adapters

One architecture. Multiple speeds.

- Flexible solutions for 10/25/40GbE
- Better price/performance at lower cost per Gbps
- Broad interoperability, critical performance optimizations, and increased agility

For more information, visit scaleitup.intel.com

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.

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 to learn more at intel.com.

Performance results are based on testing as of September 2018 and may not reflect all publicly available security updates. See configuration disclosure for details. No product can be absolutely secure.

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System configurations: The following configurations were tested by HeadGear Strategic Communications (Pty) Ltd as of September 2018:

VM Host Server One: Processors tested in build Intel® Xeon® Gold 4114, 6148, 8160F, 8180 (CPUID 50654, Microcode Revision 0x200004D); Intel® Server Board S2600WFT (Board Model No. H48104-850, BIOS ID SE5C620.86B.00.01.0014.070920180847, BMC Version 1.60.56383bef, ME Version 04.00.04.340, SDR Package Revision 1.60); 512GB DDR4 2133MHz registered memory; one Intel® Ethernet Network Adapter XXV710-DA2; one Intel® Ethernet Converged Network Adapter X710-DA2; OS drive configuration: two Intel® SSD DC S3500 Series in Intel® RSTe RAID1 configuration; OS: Microsoft Windows® Server 2016 Data Centre Version 10.0.14393 Build 14393, Hyper-V Version 10.0.14393.0, Hyper-V Scheduler Type 0x3, installed updates KB4457131, KB4091664, KB1322316, KB3211320, KB3192137.

VM Host Server Two and VM Client Server: Two Intel® Xeon® Processors E5-2699v4 (CPUID 406F1, Microcode Revision 0xB00002E); Intel® Server Board S2600WTTR (Board Model No. G92187-371; BIOS ID SE5C610.86B.01.01.0027.071020182329, BMC Version 1.53.11210, ME Version 03.01.03.050, SDR Package Revision 1.17); 384GB DDR 4 2133MHz registered memory; two Intel® SSD DC S3500 Series in Intel® RSTe RAID1 configuration; OS: Microsoft Windows Server 2016 Data Centre Version 10.0.14393 Build 14393, Hyper-V Version: one Intel® Ethernet Converged Network Adapter X710-DA2, Hyper-V Version 10.0.14393.0, Hyper-V Scheduler Type 0x3, installed updates KB4457131, KB4091664, KB1322316, KB3211320, KB3192137.

Email Virtual Machine Configuration: Microsoft Windows Server 2012 Data Centre Version 6.2.9200 Build 9200; four vCPUs (two logical threads per core); 12GB system memory; BIOS Version/Date: Microsoft Hyper-V Release v1.0, 2012, 11/26; SMBIOS Version 2.4; Microsoft Exchange® Server 2013; workload generation via VM clients running Microsoft Exchange Load Generator® 2013, application version 15.00.0805.000.

Database Virtual Machine Configuration: Microsoft Windows Server 2016 Datacentre Version 10.0.14393 Build 14393, 4 x vCPU (1 Logical Thread per Core) 7.5GB System Memory; BIOS Version/Date: Microsoft Corporation Hyper-V Release v1.0, 2012, 11/26; SMBIOS Version 2.4, Microsoft SQL® Server 2016 Workload generation DVDStore Application (<https://www.dell.com/downloads/global/power/ps3q05-20050217-Jaffe-OE.pdf>).

Storage Server 1: Intel® Server System R2224WFTZS; Intel® Server Board S2600WFT (Board Model Number H48104-850, BIOS ID SE5C620.86B.00.01.0014.070920180847, BMC Version 1.60.56383bef, ME Version 04.00.04.340; SDR Package Revision 1.60); 64GB DDR4 2133MHz Registered Memory, one Intel® Ethernet Network Adapter XXV710-DA2; one Intel® Ethernet Converged Network Adapter X710-DA2; OS drive configuration: two Intel® SSD DC S3500 Series in Intel® RSTe RAID1 configuration. Storage configuration: eight Intel® SSD DC P4600 Series (2.0TB) configured as RAID 5 Volume using Intel® VRAC (Volume Configuration RAID 5, 8K); 16 Intel® SSD RAID 10 configuration via Intel® RAID Module RMS3AD160F; Microsoft Windows® Server 2016 Data Centre Version 10.0.14393 Build 14393; Hyper-V Version 10.0.14393.0, Hyper-V Scheduler Type 0x3, installed updates KB4457131, KB4091664, KB1322316, KB3211320, KB3192137.

Storage Server 2: Intel® Server Board S2600WTT (Board model number G92187-350, BIOS ID SE5C610.86B.01.01.0027.071020182329; BMC Version 1.53.11210, SDR Package 1.0); two Intel® Xeon® E5-2670v3; 32GB DDR4 2133 MHz Registered Memory; one Intel® Ethernet Converged Network Adapter X710-DA2. Storage configuration: 16 300GB SAS HDD (Seagate® Seagate Enterprise Performance 2.5" 300GB 12GB/s SAS 128MB cache @ 15000rpm) in RAID10 configuration via Intel® Integrated RAID Module RMS3AC160.

Network switches: 1/10GbE SuperMicro SSE-X3348S, Hardware Version P4-01, Firmware Version 1.0.7.15. 10/25GbE Arista DCS-7160-48YC6, EOS 4.18.2-REV2-FX.