Solution Brief
Intel® Xeon® processor E5 v3 Family
Intel® Solid-State Drive Data Center Family

Operational Insight at the Speed of Business

Enjoy up to triple the performance for Splunk Enterprise* using the Intel® Xeon® processor E5-2600 v3 product family and the Intel® Solid-State Drive Data Center Family.

Businesses today generate massive amounts of operational data from their applications, infrastructure, machines, and sensors. This data contains a definitive record of operations that can be mined and analyzed to optimize almost any business process, from managing and securing IT to understanding service trends and optimizing customer interactions. Yet operational data remains fragmented and isolated for most businesses, delivering just a small fraction of its potential business value.

Splunk Enterprise* running on servers powered by the Intel® Xeon® processor E5 v3 product family and the Intel® Solid-State Drive (Intel® SSD) Data Center Family provides a powerful platform for exploring and analyzing all that data—structured and unstructured, streaming and stationary. With easy-to use search and analytics tools and radically simplified integration with virtually any data source, users can begin to realize value almost immediately.

There is no need to create complex data models. Everyone from business users to data analysts can find and correlate previously undetectable events and trends, create dashboards and alerts, and quickly drill down to uncover additional information and insights. They can also take advantage of a wide range of Splunk apps that provide out-of-the-box support for critical areas of interest, such as application and IT operations management, security and compliance, business analytics, and more.

High Speed Analytics at Any Scale

Servers based on the Intel Xeon processor E5 v3 product family and the Intel SSD Data Center Family for PCIe* are ideal for the fast, high-volume data processing demands of Splunk Enterprise. The Intel Xeon processor E5 v3 product family provides up to 36 cores, 72 threads, and 90 MB of cache per server and supports high-speed DDR4 memory. The Intel SSD Data Center Family for PCIe brings extreme data throughput directly to Intel® Xeon® processors with Intel estimates indicating up to six times faster data transfer speeds than 6 Gbps SAS/SATA SSDs.[1] These drives are capable of reading data at up to 2.8 GB/s and 460,000 IOPS, and writing data at up to 2.0 GB/s and 175,000 IOPS.

With these high-performance processors and solid-state drives, a single server provides a powerful engine for operational analytics. As your needs grow, you can scale Splunk Enterprise across any number of servers and across multiple geographies, data centers, and clouds to index tens of terabytes of data per day.

Proven Performance across Diverse Workloads

Intel and Splunk tested the performance of Splunk Enterprise on the latest Intel Xeon processors and Intel SSDs. The test workload included both "dense" searches, which have a large number of matching events and are CPU-intensive, and "rare-term" searches, which have few matching events and are I/O-intensive. The two workload types were run separately to provide unambiguous results. The test results showed:

- **1.32X higher performance for dense searches,**[2] such as those used in reporting and long-term trending. Splunk Enterprise was hosted on two servers, one based on the Intel Xeon processor E5 v3 product family and the other on the previous-generation Intel Xeon processor E5 v2 family. The newer server provided 1.32X the performance of the previous-generation server for faster time-to-results and better per-server scalability (see Figure 1).

- **3.12X higher performance for rare-term searches,**[3] such as those used in threat detection and ad hoc analysis. Both servers in these tests were based on the Intel Xeon processor E5 v3 product family. One was configured with Intel SSD Data Center S3700 Series drives; the other with the newer Intel SSD Data Center P3700 Series drives. The server with the newer Intel SSDs demonstrated 3.12X the performance of the server with the previous-generation Intel SSDs (see Figure 2), providing dramatic performance gains for time-critical searches, such as those used to manage fraud, threats, and service-level agreements.

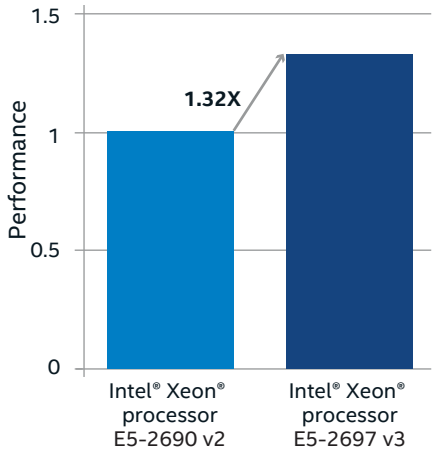

Figure 1. The Intel® Xeon® processor E5 v3 product family delivered up to 1.32X the performance for the kind of dense queries used in reporting and long-term trending.

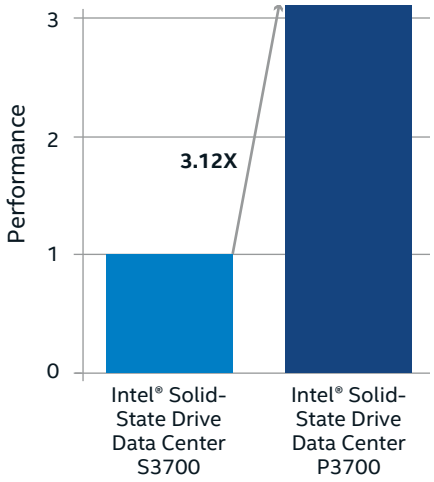

Figure 2. The Intel® Solid-State Drive Data Center P3700 Series delivered up to 3.12X the performance for rare-term search queries, such as those used in fraud and threat detection.

Get Started Today

With Splunk and Intel, you can make your move to operational analytics quickly and with almost no risk. Start with free trial software on your laptop, go into production on a single server to prove value, and then expand your platform cost effectively and almost without limit as your needs grow.

Learn More

Splunk Enterprise: **www.splunk.com/view/splunk/SP-CAAAG57**

Intel Xeon processor E5 v3 product family:
www.intel.com/content/www/us/en/processors/xeon/xeon-processor-e5-family.html

Intel SSD Data Center P3700 Series:
www.intel.com/content/www/us/en/solid-state-drives/intel-ssd-dc-family-for-pcie.html

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.

[1] Comparison of storage throughput for the Intel® Solid-State Drive Data Center P3700 Series versus the Intel® Solid-State Drive Data Center S3700 Series. Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

[2] Source: Splunk Enterprise* testing at Intel Labs, September 2014. Baseline Configuration and Benchmark Score: Intel production server with 2 x Intel® Xeon® processor E5-2697 v2 (2.7 GHz), 64-GB DDR3 @ 1333 MHz memory, Intel® Solid-State Drive Data Center P3700 Series, Splunk 6.0 (build 182037), CentOS* 6.3. Score: 5.674 dense queries per second with 99 percent CPU utilization. Test Configuration and Benchmark Score: Intel production server with 2 x Intel Xeon processor E5-2697 v3 (2.6 GHz), 64-GB DDR4 @ 2134 MHz memory, Intel Solid-State Drive Data Center P3700 Series, Splunk 6.0 (build 182037), CentOS 6.3. Score: 7.495 dense queries per second with 99 percent CPU utilization.

[3] Source: Splunk* Enterprise testing at Intel Labs, September 2014. Baseline Configuration and Benchmark Score: Intel production server with 2 x Intel® Xeon® processor E5-2697 v3 (2.6 GHz), 64-GB DDR4 @ 2134 MHz memory, Intel® Solid-State Drive Data Center S3700 Series, Splunk 6.0 (build 182037), CentOS* 6.3. Score: 5.044 rare queries per second with CPU utilization as low as 10 percent. Test Configuration and Benchmark Score: Intel production server with 2 x Intel Xeon processor E5-2697 v3 (2.6 GHz), 64-GB DDR4 @ 2134 MHz memory, Intel Solid-State Drive Data Center P3700 Series, Splunk 6.0 (build 182037), CentOS 6.3. Score: 15.745 rare queries per second with CPU utilization as low as 10 percent.

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