

# Boost Splunk® Enterprise Performance by up to 5.13x with AWS EC2 C5 instances vs. AWS EC2 I3 instances

## Gain insight from machine data faster with C5 instances featuring 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors

The mission to turn the machine-generated data that comes from sensors and IoT devices into actionable insights that help business performance can be a challenging one. To help organizations make sense of that data, Splunk processes and analyzes that data into outputs that organizations can use to prevent IT incidents from impacting customers, monitor cloud applications, and improve security. For organizations running Splunk® Enterprise in the cloud, testing shows that choosing AWS C5 Instances enabled by 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors can offer better indexing and search performance for Splunk workloads at a better value as compared to I3 instances with older Intel Xeon processors.

Across two Splunk workloads, C5 instances featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors delivered up to 5.13x better Splunk performance than I3 instances and up to 5.55x better performance per dollar. With C5 instances, organizations can ingest, process, and analyze more data, faster, which could lead to lower cloud operating costs because they require fewer cloud instances to complete indexing work.

## Cut Through Machine Data Faster

The quicker your cloud instances can make sense of machine data, the sooner your organization can plan to act. As Figure 1 shows, 48-vCPU C5 instances enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors outperformed 32-vCPU I3 instances, by 5.13x on a medium indexing/search intensive workload and by 1.79x on an intensive indexing/search medium workload.

### Relative Splunk performance

Higher is better

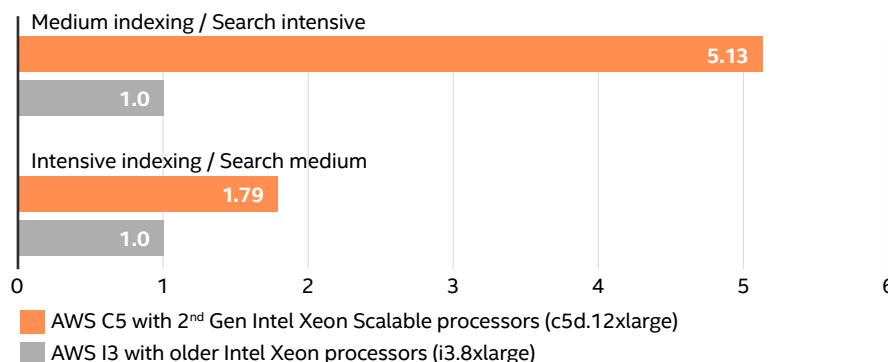


Figure 1. Relative results comparing the Splunk performance of C5 instances vs. I3 instances.

**Index data up to 5.13x faster with 48-vCPU C5 instances**  
*vs. older 32-vCPU I3 instances*

**Get up to 5.55x more performance per dollar with 48-vCPU C5 instances**  
*vs. older 32-vCPU I3 instances*



## Get a Better Value for Your Cloud Investment

AWS C5 instances with newer processors didn't just outperform the older hardware, they delivered strong performance for a significantly better value.

As Figure 2 shows, 48-vCPU AWS C5 instances with 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors offered 5.55x better performance per dollar for medium indexing/search intensive and 1.93x better performance per dollar for intensive indexing/search medium Splunk workloads than I3 instances with older processors.

One way to shrink your cloud operating budget is to reduce your overall hardware footprint. By selecting AWS C5 instances enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors that can do more work per instance and deliver better performance per dollar over AWS I3 instances with older processors, your organization can make sense of your machine-generated or dark data faster and get more value per cloud expenditure.

## Learn More

To begin running your Splunk workloads on AWS C5 Instances with 2<sup>nd</sup> Gen Intel Xeon Scalable processors, visit <http://intel.com/aws>.

### Relative Splunk performance per dollar

Higher is better

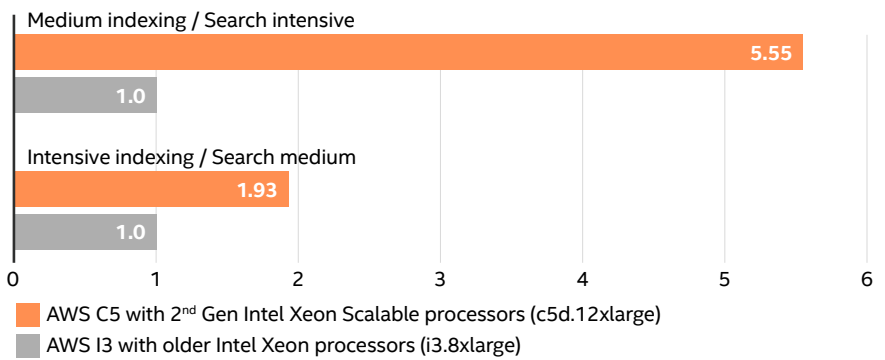


Figure 2. Relative results comparing the Splunk performance per dollar of C5 instances vs. I3 instances.

Tests performed by Intel in March 2021 on AWS in region us-west-2. Tested three iterations and selected median for result. Software used: CentOS 7.9.2009 with kernel 3.10.0-1062.12.1.el7.86x\_64, splunk-8.1.0-f57c09e87251-Linux-x86\_64, and SBK v2. Medium Indexing-Search Intensive workload details: Run Type: SmartStore, Indexing Rate: 1TB, Replication: 3X, Search Type: index=test every1 earliest=-1m, #Searches: 25, #Forwards: 10, #ForwardingProcesses: 15, batch\_search\_max\_pipeline: 8, #index Pipelines: 1. Intensive Indexing-Medium Search workload details: Run Type: SmartStore, replication factor: 3X, Indexing rate: 5TB, Search Type: index=test every10 earliest=-60s latest=-50s, #searches: 25, #forwards: 10, #forwarding processes: 15, #Index Pipelines: 4; other configuration details to follow. C5d.12xlarge: 48 vCPUs, 96GB memory, 2 x 900 NVMe SSD, 12 Gbps Network BW, Intel Cascade Lake CPU. C5d.12xlarge test environment: #Indexers - x5 (c5d.12xlarge), #Search Heads - x3 (c5.9xlarge), #Forwarders - x10 (c5.4xlarge), #Controller - x1 (c5.2xlarge), #Master x1 (c5.4xlarge). i3.8xlarge: 32 vCPUs, 244GB memory, 4 x 1900 NVMe SSD, 10 Gbps Network BW, Intel Broadwell CPU. I3.8xlarge test environment: #Indexers - x5 (i3.8xlarge), #Search Heads - x3 (c5.9xlarge), #Forwarders - x10 (c5.4xlarge), #Controller - x1 (c5.2xlarge), #Master x1 (c5.4xlarge). Pay-as-you-go pricing as of 4/6/2021: c5d.12xlarge - \$2.304; i3.8xlarge - \$2.496.



Performance varies by use, configuration and other factors. Learn more at [www.Intel.com/PerformanceIndex](http://www.Intel.com/PerformanceIndex).

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure. Your costs and results may vary.

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