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Process up to 1.18x More MySQL Transactions with AWS EC2 C5 Instances vs. AWS EC2 C5a Instances

Improve Performance per Dollar by 1.06x with AWS C5 Instances Featuring 2nd Gen Intel Xeon Scalable Processors

Selecting compute-intensive cloud instances to host MySQL databases can help ensure top ecommerce performance for your customers, but different processor options exist even within those parameters. For medium- or large-sized OLTP databases, AWS C5 Instances enabled by 2nd Gen Intel® Xeon® Scalable processors can offer greater performance than C5a instances with AMD EPYC processors.

In HammerDB benchmark tests using an OLTP workload to compare multiple sizes of MySQL databases on AWS instances (see Figure 1), C5 instances featuring 2nd Gen Intel Xeon Scalable processors delivered 1.18x more transactions per minute than C5a instances.

AWS C5 instances also offered better value than C5a instances, providing 1.06x more performance per dollar at both 16 vCPU and 96 vCPU sizes. With C5 instances that do more database work per instance, you can help your bottom line by reducing the number of cloud instances you must pay for and manage to meet the needs of your ecommerce users.

Instance name		vCPU
C5 (2nd Gen Intel Xeon Scalable processors)	C5a (AMD EPYC processors)	
C5.4xlarge	C5a.4xlarge	16
C5.24xlarge	C5a.24xlarge	96

Table 1. Names of the tested AWS instances with their vCPU configurations.
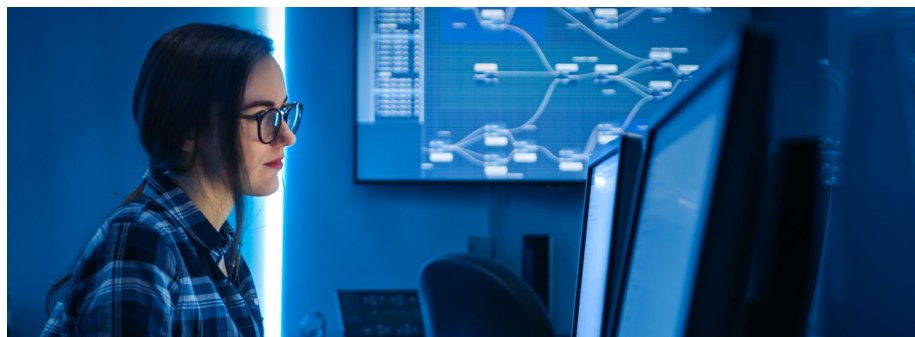
MySQL

Complete 1.18x more MySQL database transactions per minute on C5 instances with 2nd Gen Intel Xeon Scalable processors

vs. C5a instances

Get 1.06x more MySQL database performance per dollar on C5 instances with 2nd Gen Intel Xeon Scalable processors

vs. C5a instances

Intel Workload Proof Series: MySQL on AWS EC2 C5

Boost Performance for Medium- and Large Sized Databases on C5 Instances

As Figure 2 shows, C5 instances enabled by 2nd Gen Intel® Xeon® Scalable processors outperformed C5a instances at both 16 vCPU and 96 vCPU counts, handling a consistent 1.18x more MySQL database transactions per minute.
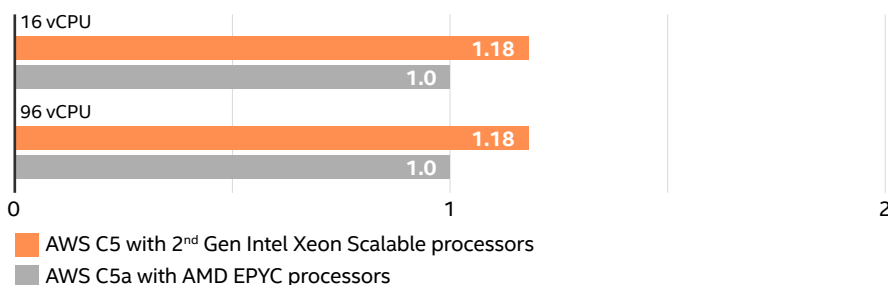
Relative MySQL Database Performance

- AWS C5 with 2nd Gen Intel Xeon Scalable processors
- AWS C5a with AMD EPYC processors

Figure 1. Relative results comparing the MySQL database transactions per minute of C5 instances vs. C5a instances at 16 vCPU and 96 vCPU instance sizes.

Get Better Overall Value for Medium- and Large-Sized Databases on C5 Instances

Performance isn't the only consideration to keep in mind when choosing the cloud instances to host your databases; cost is important as well. At both 16 vCPU and 96 vCPU instance sizes, C5 instances with 2nd Gen Intel® Xeon® Scalable processors provided up to 1.06x better database performance per dollar compared to C5a instances (see Figure 3).

These performance and value comparisons show that organizations hosting MySQL databases in the cloud could better meet performance goals as well as IT budgeting constraints by selecting compute-intensive AWS C5 instances enabled by 2nd Gen Intel Xeon Scalable processors over AWS C5a instances with AMD EPYC processors.

Relative MySQL Database Performance Per Dollar

- AWS C5 with 2nd Gen Intel Xeon Scalable processors
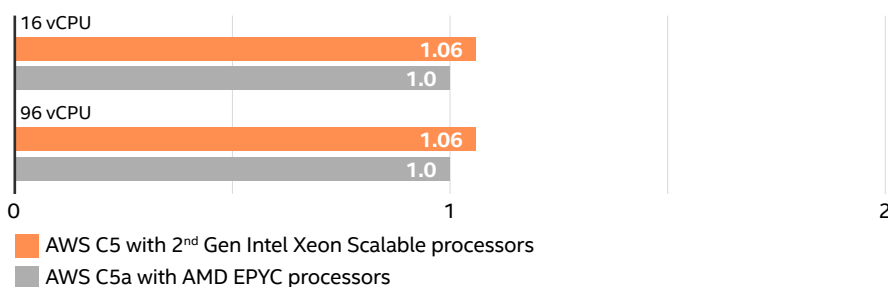- AWS C5a with AMD EPYC processors

Figure 2. Relative results comparing the MySQL database transactions per minute per dollar of C5 instances vs. C5a instances at 16 vCPU and 96 vCPU instance sizes.

Learn More

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

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