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Process up to 1.38x More PostgreSQL Transactions on AWS EC2 R5 instances vs. AWS EC2 R4 instances

PostgreSQL

Support 1.38x the PostgreSQL transactions per minute with 8-vCPU R5 VMs

vs. R4 VMs

Support 1.36x the PostgreSQL transactions per minute with 16-vCPU R5 VMs

vs. R4 VMs

Support 1.32x the PostgreSQL transactions per minute with 64-vCPU R5 VMs

vs. R4 VMs

Boost Database Performance with newer R5 instances featuring 2nd Gen Intel® Xeon® Scalable processors

Transactional databases are behind many important applications across all industries and businesses. From tracking inventory to backing CRM software, transactional databases are often the lifeblood of a company. When you choose cloud instances for your PostgreSQL transactional databases, make sure you're getting the performance and value you need by choosing AWS R5 instances featuring Intel Xeon 2nd Gen Scalable processors.

These memory-optimized R5 instances offer 8 GB of memory per vCPU and range from 2 to 96 vCPUs, perfect for all transactional database needs, regardless of size. In PostgreSQL testing running a HammerDB TPROC-C workload against three sizes of AWS instances, newer R5 instances with 2nd Gen Intel Xeon Scalable processors delivered up to 1.38x the number of transactions per minute (TPM) compared to R4 instances with previous-generation Intel Xeon processors.

With more TPM, your PostgreSQL-backed applications can do more work, better support user growth, and handle peak usage periods more easily. Additionally, at the time of our testing, the R5 instances cost slightly less than the older R4 instances, meaning you could save money while gaining performance.

Better performance for small databases

Databases come in all sizes and even when they don't need a lot of hardware resources, they must still meet performance requirements. In our testing, a small database running on an 8-vCPU AWS r5.2xlarge instance featuring 2nd Gen Intel Xeon Scalable processors handled 1.38x the TPM of the same size database on an AWS r4.2xlarge instance.

Relative PostgreSQL database performance
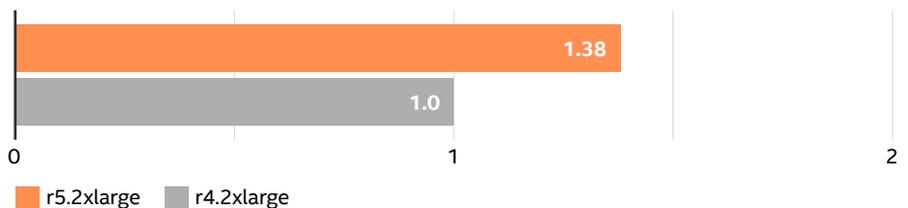
8-vCPU instances | Transactions per minute

Figure 1. Relative test results comparing PostgreSQL database TPROC-C performance of the AWS r5.2xlarge instance to the AWS r4.2xlarge instance.

Intel Workload Proof Series: : PostgreSQL on AWS EC2 R5 vs. EC2 R4

Increase medium-sized PostgreSQL database transactional performance

Should your database require more resources than the 8-vCPU instances offer, you could choose the 16-vCPU r5.4xlarge instance enabled by 2nd Gen Intel® Xeon® Scalable processors to support your PostgreSQL database and receive 1.36x the TPM of the r4.4xlarge instance.
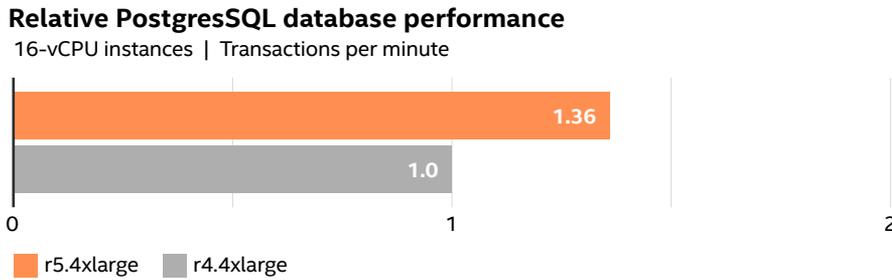
Relative PostgreSQL database performance

16-vCPU instances | Transactions per minute

Figure 2. Relative test results comparing PostgreSQL database TPROC-C performance of the AWS r5.4xlarge instance to the AWS r4.4xlarge instance.

Improve the performance of your large databases

For databases that require a lot of resources to keep your applications running smoothly, take a look at the 64-vCPU AWS r5.16xlarge instance featuring 2nd Gen Intel Xeon Scalable processors. In our PostgreSQL tests, the r5.16xlarge instance offered up to 1.32x the transactions per minute of the r4.16xlarge instance.

If your company hosts PostgreSQL databases in the cloud, invest in AWS R5 instances enabled by 2nd Gen Intel Xeon Scalable processors to get better value.
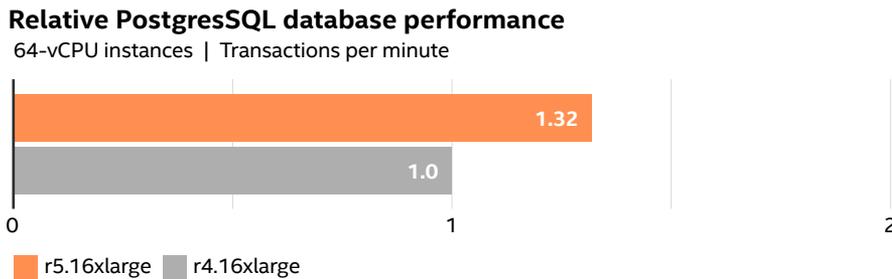
Relative PostgreSQL database performance

64-vCPU instances | Transactions per minute

Figure 3. Relative test results comparing PostgreSQL database TPROC-C performance of the AWS r5.16xlarge instance to the AWS r4.16xlarge instance.

Learn More

To begin running your database on AWS R5 instances with 2nd Gen Intel Xeon Scalable processors, visit www.intel.com/aws .

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