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Choosing Amazon EC2 Memory-Optimized R6i Instances over R5n Instances Improves Decision Support Performance by up to 1.36x
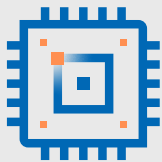
Spark

Complete Decision Support Queries up to 1.27x as Fast with 8vCPU R6i Instances

vs. R5n Instances

Complete Decision Support Queries up to 1.28x as Fast with 16vCPU R6i Instances

vs. R5n Instances

Complete Decision Support Queries up to 1.36x as Fast with 64vCPU R6i Instances

vs. R5n Instances

Instances Featuring 3rd Gen Intel® Xeon® Scalable Processors Completed DSS Queries Faster than Instances with Older Processors

Decision support system (DSS) workloads collect raw data and translate it into insights that companies use to make vital business decisions. Because more current data translates to better-informed decision-making, speed is of the essence for these workloads. When running DSS workloads in the cloud, you can attain this speed by choosing an Amazon EC2 R6i instance that carries out queries quickly.

A series of tests measured the speed of two types of Amazon EC2 instances when completing a set of DSS queries. At three different instance sizes, memory-optimized R6i instances featuring 3rd Gen Intel® Xeon® Scalable processors ran the queries up to 1.36x faster than R5n instances featuring 2nd Gen Intel® Xeon® Scalable processors. This greater speed means that by choosing the newer instances, your company could get actionable information earlier, which may improve business decisions. You could also reduce your cloud expenditures by paying for less instance uptime.

Small R6i Instances Executed Queries Faster

Testing used a TPC-DS-derived benchmark that simulates a decision support system. As Figure 1 shows, small 8vCPU memory-optimized R6i instances enabled by 3rd Gen Intel Xeon Scalable processors completed the set of DSS queries 1.27x as fast as than 8vCPU R5n instances enabled by older processors.

Small Instances: Relative Speed to Complete Queries on a 1TB Dataset
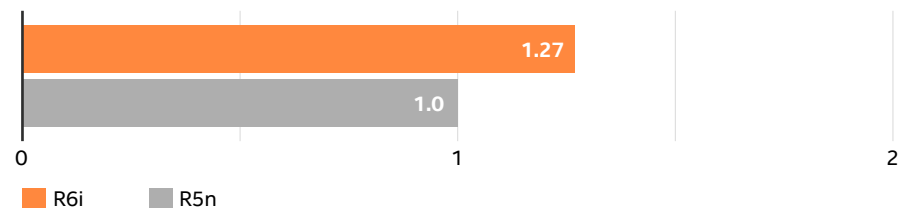
Relative speed | Higher is better

Figure 1. Relative speed to complete DSS queries using the 8vCPU Amazon EC2 R6i and R5n instances. Higher is better.

Intel Workload Proof Series: DSS Performance on Amazon EC2 R6i vs. R5n Instances

See backup for workloads and configurations. Results may vary.

Medium R6i Instances Executed Queries Faster

As Figure 2 shows, medium 16vCPU memory-optimized R6i instances enabled by 3rd Gen Intel® Xeon® Scalable processors completed the set of DSS queries 1.28x as fast as 16vCPU R5n instances enabled by older processors.

Medium Instances: Relative Speed to Complete Queries on a 1TB Dataset
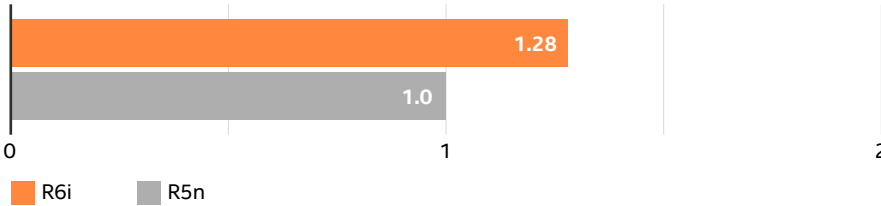Relative speed | Higher is better

R6i: 1.28
R5n: 1.0

■ R6i   ■ R5n

Figure 2. Relative speed to complete DSS queries using the 16vCPU Amazon EC2 R6i and R5n instances. Higher is better.

Large R6i Instances Executed Queries Faster

As Figure 3 shows, large 64vCPU memory-optimized R6i instances enabled by 3rd Gen Intel Xeon Scalable processors completed the set of DSS queries 1.36x as fast as 64vCPU R5n instances enabled by older processors.

Large Instances: Relative Speed to Complete Queries on a 1TB Dataset
Relative speed | Higher is better

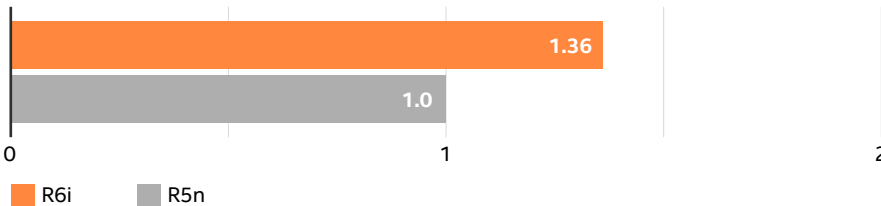R6i: 1.36
R5n: 1.0

■ R6i   ■ R5n

Figure 3. Relative speed to complete DSS queries using the 64vCPU Amazon EC2 R6i and R5n instances. Higher is better.

Conclusion

Selecting cloud instances that process DSS queries more quickly can enable you to make better data-driven business decisions and can even reduce your cloud spending. At three different sizes, Amazon EC2 R6i instances with 3rd Gen Intel Xeon Scalable processors outperformed R5n instances with older processors on DSS workloads.

Learn More

To begin running your DSS workloads on Amazon EC2 memory-optimized R6i instances with 3rd Gen Intel Xeon Scalable processors, visit https://aws.amazon.com/ec2/instance-types/r6i/.

For complete test details and results, read the report at https://facts.pt/Tx8rPBZ.

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