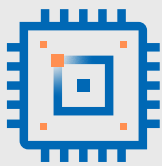intel

Downsize from 64 to 32 vCPUs and save money with AWS instances featuring new Intel Xeon Scalable processors

MySQL

Save on licensing with smaller instances featuring 2nd Gen Intel Xeon Scalable processors

vs. larger instances with older Intel processors

Save up to 25.5% of monthly uptime costs by upgrading and downsizing instances

vs. larger instances with older Intel processors

Cut Costs by Choosing R5n Instances Featuring 2nd Gen Intel® Xeon® Scalable Processors for your MySQL database work

Third-party testing from Principled Technologies (PT) has consistently shown that companies can significantly increase their cloud workload performance by upgrading to cloud instances that feature newer Intel processors.[1,2,3,4] Many companies will choose to upgrade to new instances that are the same size or larger than those they currently use to gain more performance. But there's another choice that can enable companies to save money while still achieving their current level of work: upgrading to new instances but reducing their size.

The idea may seem unintuitive to some who are used to physical data center planning where the aim is to select solutions that can handle years of projected growth. Because of the time, effort, and foresight required to plan and implement physical upgrades, organizations tend to purchase more than they need to ensure they have the resources ready to grow.

By contrast, upgrading cloud instances requires much less commitment: Cloud service providers such as Amazon offer pay-as-you-go pricing, and cloud instances typically require minimal setup to run workloads. What's more, if a company discovers that another type of instance better fits their needs, they can move their work with minimal time and hassle. Because cloud upgrades are much less time-consuming than physical upgrades, your company has more flexibility to choose hardware according to your current needs rather than your needs years in the future. Doing so could save money in the long run.

PT found that a new AWS instance featuring 2nd Generation Intel Xeon Scalable processors and 32 vCPUs performed almost the same level of online transaction processing (OLTP) work as a previous-generation instance that used 64 vCPUs. This type of upgrade/downsizing combination could lead to potential cost savings in two different areas: operating costs and licensing costs.

The benefits of a new CPU
However you choose to upgrade your cloud instances, newer processors typically have newer features that may help your organization improve its security, help meet its SLA agreements, and more. 2nd Generation Intel Xeon Scalable processors come with built-in AI acceleration, Intel Deep Learning Boost (Intel DL Boost), Intel Speed Select Technology, and more.

1 http://facts.pt/H9kHsIV
2 http://facts.pt/xHrpYj1
3 http://facts.pt/L5S3md0
4 http://facts.pt/30SQBuS

Intel Workload Proof Series: MySQL on Amazon AWS downsize R5n vs. M4

Save money on operating costs

In PT testing, smaller R5n instances achieved nearly the same MySQL database performance as older M4 instances with twice the vCPUs. At the time of writing, a 64vCPU M4 instance incurs an operating cost of $3.200 per hour, while 32vCPU R5n instances cost just $2.384 per hour—meaning that, by upgrading, your company could save up to 25.5 percent of the operating costs for each M4 instance it currently uses.

Running a single 64vCPU M4 instance nonstop for a month would cost a company up to $2,304 in uptime. A more efficient 32vCPU R5n instance, however, would cost just $1,716 per month, a savings of $588. If a company runs 10 M4 instances, they could save nearly $6,000 in monthly operating costs by upgrading to smaller R5n instances. A company that runs 25 instances could save almost $15,000 per month.

Maximum monthly uptime costs vs. number of instances running

Lower is better

Cost savings of 25.5%
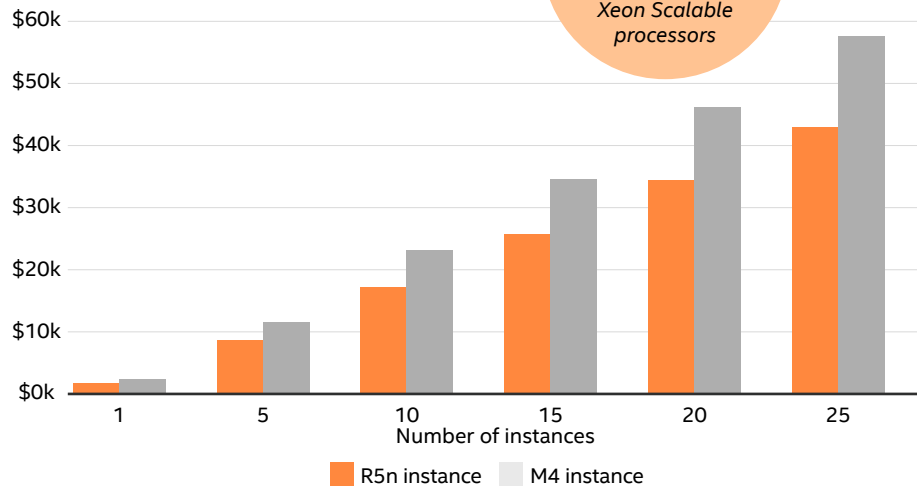*with smaller instances featuring 2nd Gen Intel Xeon Scalable processors*

Figure 1. Comparison of maximum monthly uptime costs for R5n instances with 32 vCPUs and M4 instances with 64 vCPUs. Note that PT chose to use R5n instances in order to keep the memory capacity the same between the two series.

Save money on per-core licensing costs

Applications such as Oracle Database or Microsoft SQL Server carry a per-CPU licensing cost. By downsizing cloud instances, a company can save money by reducing the number of CPU cores their work requires.

An IT department with a physical hardware mindset might believe that upgrading and downsizing or consolidating servers is not worth the risk of potentially having to upgrade early to keep up with business growth. But with the cloud, there's no need to agonize over the decision: You can simply downsize and save money now, and move your work to larger instances only when demand requires it.

Conclusion

Upgrading cloud instances is a much different beast than a traditional data center hardware upgrade. As third-party test results suggest, moving your work to newer, more powerful instances that feature 2nd Generation Intel® Xeon® Scalable processors and use fewer vCPUs may be a better upgrade path than choosing new VMs of the same size as those that currently power your workloads. By upgrading and downsizing, your organization could save money on operational costs—up to $588 per instance per month in the scenario from third-party test—and licensing costs. Upgrading to newer instances will also yield other benefits associated with hardware advances, such as increased security features.

Learn More

To begin running your MySQL workloads on AWS R5n Instances with 2nd Gen Intel Xeon Scalable processors, visit http://intel.com/aws. For more test details, visit http://facts.pt/v1bzcez.

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