
Anuncio

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InterSystems IRIS on Arm-Based AWS Graviton2 Processors

AWS launched their first generation of Amazon EC2 A1 instances last year, powered by Arm-based AWS Graviton processors. At AWS re:Invent 2019, Amazon announced the second-generation AWS Graviton2 processors and associated Amazon EC2 M6g instance type, boasting up to 40% better price performance over current generation Intel Xeon based M5 instances.

The AWS Graviton2-based M6g instances are currently in preview, and InterSystems jumped on the opportunity to measure their performance with the InterSystems IRIS Data Platform. InterSystems is excited to announce that we 've seen truly impressive results, and we plan to support Arm-based Amazon EC2 instances powered by AWS Graviton2 processors in 2020!

We tested two different workloads, representing common use-cases across the InterSystems IRIS customer base. The first workload is pure data ingestion for a financial application based on InterSystems IRIS Data Platform. The second is a healthcare interoperability workload, based on InterSystems IRIS for Health. We compared performance of Amazon EC2 M6g vs. M5 on each workload.

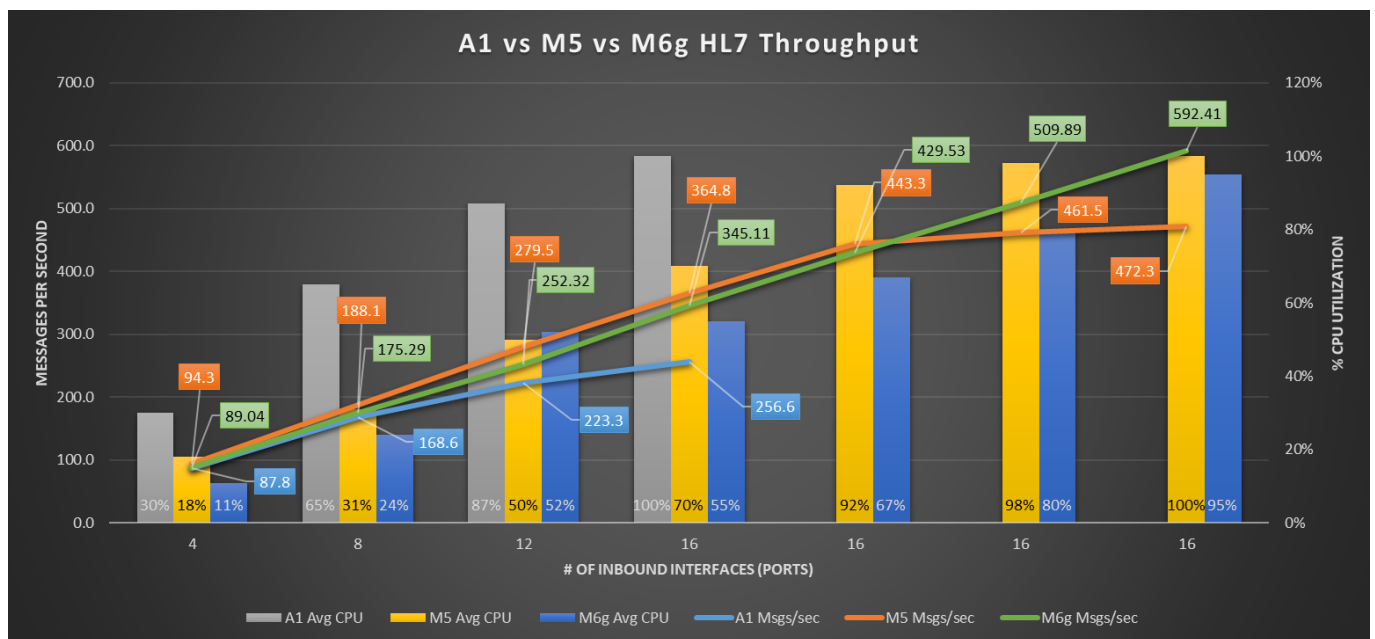
Workload #1: Data Ingestion Throughput on InterSystems IRIS Data Platform

We tested identical workloads to simulate NYSE data processing (Order/Fill) on InterSystems IRIS running on a two-node sharded cluster. The benchmark compared performance between m5.2xlarge and AWS Graviton2 based m6g.2xlarge Amazon EC2 instances, each with 8 vCPU 's and 32 GB RAM. The only configuration differences were the processor and AMI operating system image. The compared configurations had the same EBS volumes, iops, VPC configuration, and IRIS parameters such as global buffers. In both cases, we used pre-released versions of InterSystems IRIS - IRIS-2020.1.0L.188.0-Inxrharm64 and IRIS-2020.1.0L.188.0-Inxrh64.

The m5.2xlarge system was able to process on average 98 thousand records per second, and the m6g.2xlarge showed close to 120 thousand records/second. That 's over 20% performance improvement on the same number of vCPUs!

Workload #2: Healthcare Interoperability Throughput on InterSystems IRIS for Health

We tested identical workloads to simulate HL7 message ingestion, routing, and transformation on an InterSystems IRIS for Health Interoperability production. The benchmark compared an m5.2xlarge and an m6g.2xlarge (both with 8 vCPU 's, and 32 GB RAM), again with the exact same configuration aside from their processors, tested on pre-released versions of InterSystems IRIS (2020.1). We 've also included the same test run against the first-generation AWS Graviton based A1 instance types to show the quantum leap in performance provided by AWS Graviton2. Here are the results:



The left side axis is our primary measure of performance for this workload, which is messages per second processed by the application. The x-axis represents the increasing volume thrown at the application by the benchmark driver. As we move from left to right, we increase the applied workload, first by increasing the number of inbound interfaces up to 16, then holding that steady while increasing the driver burst rate. The columns represent CPU utilization measured on the right-side axis, where as we near 100% CPU utilization, we can see the maximum capability of each instance type.

As you can see, the AWS Graviton2 based M6g instances scale linearly, and clearly outperform the M5 instances at high workloads. The M6g instances maintain lower CPU utilization for the same workload, and continue scaling after the M5 instances reach their maximum utilization. The M6g instances ultimately performed 28% better in messages throughput compared to the same sized M5 instances. This is an impressive win for AWS Graviton2 processors!

Price Performance:

In addition to the clear performance gains we see comparing same-sized AWS Graviton2 based M6g and M5 instances, there is further benefit when we consider instance pricing where the Amazon EC2 M6g instances are 20% lower cost compared to the current generation Amazon EC2 M5 instances:

m5.2xlarge On-Demand: \$0.384 per hour

m6g.2xlarge On-Demand: \$0.308 per hour

In Conclusion:

InterSystems strives to provide customers with platform freedom of choice. We at InterSystems are very excited to see the performance gains and cost savings that AWS Graviton2 processors will provide to InterSystems IRIS customers. We anticipate that these combined benefits will drive significant adoption of Arm-based platforms among IRIS customers, and we look forward to providing support in 2020!

Want to Learn More?

<https://aws.amazon.com/ec2/graviton/>

<https://aws.amazon.com/ec2/instance-types/m6/>

<https://www.intersystems.com/products/intersystems-iris/>

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