AWS re:Invent

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Hands-on with AWS Graviton2-based Amazon EC2 instances

Arthur Petitpierre (he/him)
Amazon EC2 Graviton2 Sr. Specialist SA
Amazon Web Services

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About me

- Arthur Petitpierre
- Amazon EC2 Graviton Specialist SA
- Joined AWS in 2016 – Paris, France
- Background in IT infrastructure, HPC, performance
- Based out of Seattle, WA



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To build a workshop, you need a team

A big thanks to:

- Marcin Bednarz, AWS Sr. SA, coordinating the workshop development
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What is AWS Graviton2?

Second-generation AWS Graviton processor

64-bit Arm Neoverse cores

~30B transistors

7 nm technology

Up to 3.5 times more power efficient than x86-64



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AWS Graviton2-based instances

Up to 40% better price-performance over comparable x86-based instances

M6g	T4g	C6g	R6g	C6gn	X2gd
	Free trial				New
General purpose workloads	Burstable general purpose workloads	Compute-intensive workloads	Memory-intensive workloads	100 Gbps networking 38 Gbps EBS	Memory optimized Lowest $/GiB of RAM

Available now!

Local NVMe-based SSD storage options are also available:
general purpose (M6gd), compute-optimized (C6gd), and memory-optimized (R6gd and X2gd)

M, C, R, and X instance types also have bare-metal options:
(M6g.metal, M6gd.metal, C6g.metal, C6gd.metal, R6g.metal, R6gd.metal, X2gd.metal)

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Graviton2 ease of adoption

AS A RULE, THE MORE CURRENT YOUR SOFTWARE STACK, THE BETTER

Difficulty	Workload	Actions
Virtually no effort	Amazon RDS, Amazon Aurora, Amazon ElastiCache, Amazon OpenSearch Service, and MemoryDB	Upgrade to latest and enjoy
Super easy	Amazon EMR	Typically, just works
Pretty easy	AWS Lambda	Typically, just works with Lambda-managed runtimes or base images Watch: JNI or Python-native modules
Quite easy	Linux – Interpreted and JIT'd languages (e.g., Java, PHP, Node.js, Python)	Select arm64 AMI and install – bonus if using containerized Watch: JNI or Python-native modules
More involved	Linux – Compiled languages (e.g., C/C++, Go)	Select arm64 AMI and compile Watch: port any intrinsics or assembly
Some work, high reward	Microsoft Windows – .NET	Migrate to Linux and .NET core on arm64

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Key information (1/2)

Labs instructions: https://graviton2-workshop.workshop.aws/

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About the menu

- We have tried to make it broad, to fit everyone's needs

- There are easier labs: containers, databases, Amazon OpenSearch Service, big data
- And there's a more complex lab: performance engineering

- There's not enough time to do them all!
- But we can support you on all of them

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Key information (2/2)

- Labs instructions: https://graviton2-workshop.workshop.aws/en/
- Workshop dashboard: https://dashboard.eventengine.run
- Event Hash:

db64-1e9f93bf34-1b

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AWS Graviton2 getting started guide on GitHub

https://github.com/aws/aws-graviton-getting-started

- This guide has been assembled by our Graviton team and is designed to help customers transition and optimize their applications
- It covers various languages and libraries and includes tips and tricks for each
- In general, using latest versions of operating systems, compilers, and language runtimes will provide access to latest arm64 improvements and optimizations

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Thank you!

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