



You're (Probably) Ready for AWS Graviton

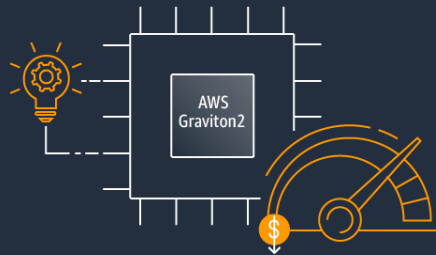
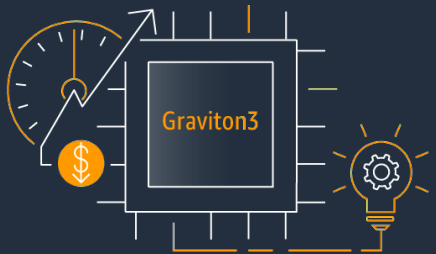
Michael Fischer

Principal Specialist Solutions Architect
EC2 Graviton

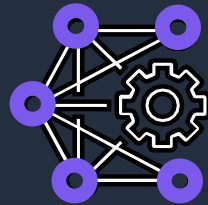
Vishal Manan

Sr. Specialist Solutions Architect
EC2 Graviton

AWS Graviton Processors



Custom AWS silicon with 64-bit Arm processor cores



Targeted optimizations for cloud-native workloads



Rapidly innovate, build, and iterate on behalf of customers

Why AWS Graviton?



Up to **40% better price-performance** for scale-out workloads



Up to **20% less expensive*** than x86 compute



Improved sustainability: up to **60% more energy efficient** than x86 compute

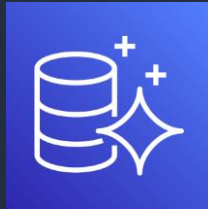
How to use Graviton

- AWS Managed Services
- AWS Lambda Functions
- AWS Fargate
- Amazon EC2 Instances

AWS Managed Services



Amazon DocumentDB



Amazon Aurora



Amazon RDS



Amazon ElastiCache



Amazon MemoryDB



Amazon Neptune



Amazon
OpenSearch Service

AWS Lambda: Smooth sailing

- Most Lambda functions are scripts or Java JARs
- No ZIP file changes
- Create a new function with Architecture set to arm64



Ease of Adoption

Difficulty	Workload	Actions
Quite easy	Linux – Interpreted and JITd languages (such as Java, Python, PHP, Node.js)	Use an arm64 or multi-arch base image, then use Docker Buildx or Podman build and copy in scripts, libraries, JARs ⚠ Check for JNI, shared objects, or native modules
More involved	Linux – Compiled languages (such as C/C++, Go)	Requires cross-compilation before building container or native/emulated compilation during container build ⚠ Port any intrinsics, assembly, or native modules
Some work, high reward	Microsoft Windows – .NET	Migrate to Linux + .NET core on arm64 before or during container migration
Not yet	Microsoft Windows	Microsoft Windows Server not yet available for arm64

AWS Fargate (for Amazon ECS)

- Managed containers on Amazon ECS
- Unified control plane for container lifecycle
- Easy to deploy on Graviton
 - Only requires Arm64 or multi-architecture image
 - Set CPU architecture to ARM64 in RuntimePlatform of Task Definition

See our Tech Talk at <https://www.youtube.com/watch?v=iwSQLzDwHA>

Container base images

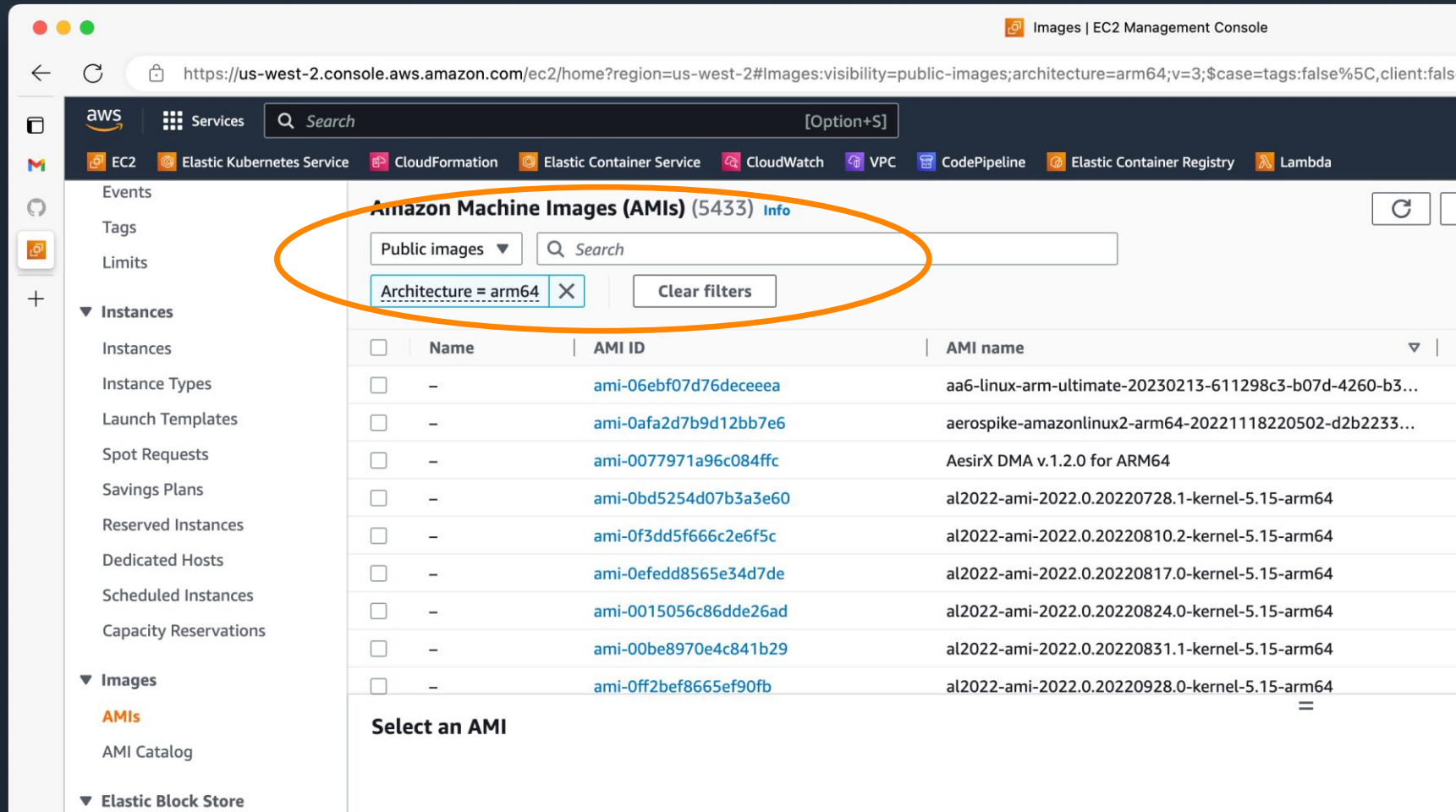
The screenshot shows the Amazon ECR Public Gallery interface. At the top, there's a search bar with the text "Find artifact repositories". Below the search bar, the main heading reads "Amazon ECR Public Gallery" with the subtitle "Share and deploy container images, publicly and privately". On the left side, there are filter sections: "Filters" with a "Clear all" link, "Verification" with a "Verified account" checkbox, "Operating Systems" with "Linux" and "Windows" checkboxes, and "Architectures" with "ARM", "ARM 64" (checked), "x86", and "x86-64" checkboxes. The "Repositories" section on the right shows "Showing 1 - 20 results (of 2551)". Two repositories are visible: "cloudwatch-agent/cloudwatch-agent" (4.1B+ downloads) by Amazon Cloudwatch Agent, and "datadog/agent" (930M+ downloads) by datadog. Both are marked as "Verified Account".

gallery.ecr.aws

The screenshot shows the Docker Hub interface. At the top, there's a search bar with the text "ubuntu". Below the search bar, the main heading reads "dockerhub". On the left side, there are filter sections: "Filters (1) Clear All", "Products" with "Images" and "Plugins" checkboxes, "Trusted Content" with "Docker Official Image", "Verified Publisher", and "Open Source Program" checkboxes, "Operating Systems" with "Linux" and "Windows" checkboxes, and "Architectures" with "ARM", "ARM 64" (checked), "IBM POWER", and "IBM Z" checkboxes. The search results section on the right shows "1 - 25 of 2,165 results for ubuntu." and a filter for "ARM 64". Three results are visible: "ubuntu" (DOCKER OFFICIAL IMAGE), "ubuntu/nginx" (VERIFIED PUBLISHER), and "ubuntu/cortex" (VERIFIED PUBLISHER).

hub.docker.com

Amazon EC2 AMIs



Porting Advisor for Graviton





Thank you!

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