AWS re:Invent:

Top 5 Takeaways

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Amazon Web Services (AWS) held its biggest annual conference, **re:Invent**, in Las Vegas in December. This year marked the **10th anniversary** of re:Invent. Our team was able to attend in person to catch up on all the latest announcements.

The United States lifted most of its entry bans early November, which allowed this year's event to reach an acceptable attendance rate. Whether you wanted to dive deep into one of the thousand technical sessions, network with your peers or enjoy one of the keynotes, the conference had plenty of options to keep you busy while following the mandatory health protocols.

Below you can find our top 5 takeaways of AWS re:Invent 2021.

Serverless everything

If we had to encapsulate what the cloud is in 2021, it would be **serverless**. The idea behind this concept is to abstract as much as possible the infrastructure behind a given service, allowing the customer to get started in no time, following a pay-as-you-go cost model.

Over the last few years, AWS' marketing team has been significantly trying to make serverless its flagship feature, and re:Invent did not escape that. Highly advertised during Werner Vogels' keynote, five new services now support serverless/on-demand capacity:

- **Amazon Redshift**
- **Amazon Kinesis Data Streams**
- **Amazon SageMaker Inference (Preview)**
- **Amazon EMR (Preview)**
- **Amazon MSK (Preview)**

It becomes clear that AWS eventually wants serverless services to become the norm. This will allow your engineering team to spend less time on configuring servers, and more time on focusing on your application features. This is particularly useful for startups and scale-ups.

CloudFormation is history

CloudFormation is both loved and hated by the community when it comes to Infrastructure as Code principles. Even though supported directly by the AWS team, it is then important to note that nothing new was announced for CloudFormation this year. On the other hand, a few other management services were improved:

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AWS Cloud Development Kit V2 is now in preview. By releasing a new major version of its development framework, Amazon is trying to make it easier to use by simplifying its components and libraries. **Construct Hub Developer** was also announced in parallel to act as a CDK hub for the community.

Following the steps of the Landing Zone, the **AWS Control Tower** now gets an **Account Factory for Terraform**. This is the first time AWS officially supports Terraform for one of its services, laying the foundation for a strong partnership with HashiCorp. Additionally, the Control Tower also now supports **Guardrails** for preventive and detective controls.

AWS SDK is not left behind: **Rust, Kotlin and Swift** are now also in Developer preview.

Those new services will further help businesses that are adopting Infrastructure as Code within their development workflow and choose not to use AWS CloudFormation.

AWS wants to go green for good

AWS is going greener! After announcing in 2020 that AWS wants to run fully on renewable power by 2025, the responsibility is now shared with the customer as Werner Vogels explained during its keynote via the "sustainability **of** =/= **in** the cloud" concept.

Similarly to the Shared Responsibility Model that you might be familiar with if you are trying to follow best practices for your AWS accounts, the customer should now also take responsibility. A new **Sustainability Pillar for AWS Well-Architected Framework** has been added, which will guide AWS customers around sustainability best practices when designing cloud infrastructures.

For better visualisation, an **AWS Customer Carbon Footprint Tool** service is now available in the console to assess the footprint of your AWS account and remediate accordingly.

This emphasis on sustainability and related services is a major milestone for AWS, as it is the first cloud provider worldwide to do so.

The race to Power

Every cloud provider is always trying to give us more power, and AWS is no exception. The AWS graviton processors are a good example of this, being liked by the community and having shown a reliable performance for their price. Now in preview, the **Amazon EC2 C7g Instances Powered by New AWS Graviton3 Processors** should fuel the race to performance even more.

EC2 also now supports **M1 Mac Instances.** Showcased on AWS On Air — an AWS official livestream that was covering the event, they are Mac minicomputers attached to the AWS Nitro System, which allows them to behave like any other EC2 instances.

When it comes to Machine Learning, SageMaker got a handful of new features this year as well. First, **Amazon SageMaker Canvas** now allows you to train your models easily without code. It is a full visual experience targeting developers that do not want any

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overhead thinking about the infrastructure behind it. Similarly, **AWS SageMaker Studio Lab** is also a new service that allows you to experience with ML without an AWS account nor cloud configuration knowledge. Without going into details, **AWS SageMaker Inference Recommender, SageMaker Training Compiler** and **SageMaker Ground Truth Plus** were also announced to improve the experience of using machine learning on AWS.

The global machine learning market is predicted to grow exponentially within the next decade, and this explosion of new services and more powerful compute capacities put AWS in a good place to lead this market.

AWS network is here to stay

Amazon has always been proud of its network capabilities, and AWS is now used by millions of users across the world. Businesses are always hungry for more features and faster connections, especially when they have workloads that run applications based on Machine Learning or heavy Data Analytics.

AWS now supports **Site-to-Site Connectivity with AWS Direct Connect SiteLink,** which will allow you to create connections between your on-premises networks, without having to rely on public internet. Over 30 new **Local Zones** outside North America were also announced.

To better manage your complex network, two new services were announced. The **Amazon VPC IP Address Manager** now makes network address management and auditing at scale easy, replacing third-party tools like Netbox. On the other hand, the new **Amazon VPC Network Access Analyzer** will further help you improve your network security with great visualizations using the console.

Finally, **AWS Private 5G** is now in preview. Amazon now helps enterprises set up a private 5G network within their on-premises datacenters and locations. This will be highly popular going forward, but it remains to be determined if this will be available outside the US borders.

This focus on new private network services is trying to solve the dilemma that businesses have when they want to leverage AWS infrastructure and capabilities but do not want to have their traffic go through public internet for security and compliance purposes.

Many good, needed services were announced and some of them like Graviton3, the Sustainability Pillar or AWS Private 5G will shape how businesses around the world will work with AWS throughout 2022 and beyond.

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