Telefónica advances public Cloud exploration for Cloud RAN with AWS and Nokia

PUBLISHED MAR 5, 2025
BY TELEFÓNICA

Telefónica today announced the successful completion of Europe's first 5G SA call utilizing on-premises and public cloud architecture. The milestone was achieved with Nokia's Cloud RAN solution on Amazon Web Services (AWS) cloud infrastructure. Telefónica is collaborating with Nokia and AWS to bring the benefits of the cloud to next generation 5G Radio Access Networks (RAN). The three parties have evaluated and validated the hosting of Nokia Cloud RAN workloads using on-premises AWS services at Telefónica's Madrid headquarters as well as in the AWS Region in Spain (Aragón). This hybrid architecture enables Telefónica to explore a new paradigm by leveraging the cloud continuum of AWS services that spanning from AWS Regions to RAN sites.

The three companies will continue exploring the operational benefits of the cloud-based solution such as Amazon Elastic Kubernetes Service (Amazon EKS) combined with Nokia's advanced 5G network capabilities. The companies will also explore new cloud technologies to reduce operational complexity and enhance network assurance. Using AWS and Nokia management and observability solutions, Telefónica will explore simplifying the network configuration and lifecycle maintenance with common automation and observability across the network stack.

This hybrid architecture delivers low-latency and high bandwidth for real-time Nokia RAN workloads running on AWS cloud services that offer on-demand elastic cloud infrastructure, along with security, unified APIs, observability, and resiliency enabled on Telefónica premises.

Telefónica is currently running Nokia's RAN Distributed Unit (DU) software in an Amazon Elastic Compute Cloud (Amazon EC2) instance powered by Graviton, an Arm based CPU from AWS.

Telefónica will work with AWS to validate AWS Outposts servers based on Graviton 3 CPU for on-premises deployment at RAN sites.

Thanks to the portability of the containerized network function software from Nokia, the RAN Centralized Unit (CU) is running on an Amazon EC2 instance in the AWS Spain Region, located in Aragón. This allows the radio network to be deployed across a cloud architecture spanning on-premises as well as public cloud locations covering hundreds of kilometers.

Since AWS is delivering the same set of APIs, services, observability, and resilience it gives Telefónica the flexibility to place workloads at different locations based on the latency requirements of the underlying transport infrastructure. The cloud architecture allows Telefónica to have a common CI/CD pipeline to ease the operational burden, reduce integration costs and maximize feature velocity across these different locations extending all the way to the edge of the network reaching the RAN sites.

José Luis Esplá, Director of Access & Devices at Telefónica, said:

> RAN represents the final frontier for cloudification and the most critical workload for our mobile networks. Exploring the AWS cloud provides an opportunity to evolve 5G networks to achieve more flexibility and programmability by simplifying our network assets. By collaborating with thought leaders like AWS and Nokia in this domain, our goal is to validate the hybrid cloud infrastructure.

Amir Rao, Director for Telco 5G at AWS, said:

> AWS is committed to helping our customers accelerate the cloud transformation of Radio Access Networks. By working closely with industry leaders like Telefónica and Nokia, we're demonstrating how AWS's cloud infrastructure can support the demanding requirements of 5G RAN workloads. This collaboration showcases how AWS's comprehensive suite of cloud services, from on-premises edge computing to regional data centers, can support the full spectrum of RAN operations.

Aji Ed, Head of Cloud RAN at Nokia, said:

> This innovative project with Telefónica is another example of

our anyRAN approach where we work with strategic partners such as AWS to bring together best-in-class partner solutions to offer true flexibility and scalability to our customers. Nokia is helping its customers on their cloudification journey by leading the fusion of AI, RAN, and Cloud which is helping to drive innovation and new business models supporting monetization.

Telefónica, AWS, and Nokia will together continue to push the boundaries of a software-centric, cloud-based network to build a more centralized, agile, resilient network that delivers the best end mobile user experiences of 5G and beyond.

Press release distributed by Wire Association on behalf of Telefónica, on Mar 5, 2025. For more information subscribe and follow us.

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