
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

TLC306

DISH's 5G wireless deployment on AWS: From Region to edge

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Agenda

The journey to a cloud-native 5G Network on the AWS cloud

DISH cloud-native 5G network vision

DISH 5G deployed from AWS Regions to the edge

Key industry differentiators observed during development

DISH business outcomes

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The journey to a cloud-native 5G Network on AWS

Sep 2019
DISH and AWS Telecom teams meet

Jan 2020
DISH released Telecom RFI/RFP for standalone 5G network buildout

Feb 2020
DISH kick starts Proof of Concept (POC) using an AWS Outpost in a DISH data center

Jul 2020
DISH closes $1.4B acquisition of Boost Mobile, becomes MVNO with 9M+ wireless customers

Sep 2020
First test call completed using AWS Outpost

Apr 2021
DISH selected AWS as its preferred cloud provider, will construct its 5G network on AWS

Sep 2021
DISH successfully completed telecom industry's first 5G voice call on Public Cloud

Mar 2022
Friendly market launch

Jun 2022
Commercial launch, 20% of US population coverage target – 25 launch markets

Jun 2023
70% US population coverage target

Jun 2025
75% coverage target per licensed area

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dish wireless

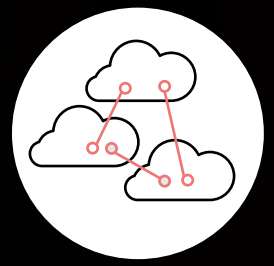
We’re reimagining connectivity through new platforms, new business models, and new ways of thinking to **meet the convergence of wireless, data analytics, AI, and the cloud** to reinvent the customer experience

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DISH Wireless vision

America's first cloud-native 5G network from core to edge that empowers customers to rapidly instantiate and adapt network services to their specific needs



Scalable through automation and AI to meet demand



Versatile spectrum and virtualization to save cost



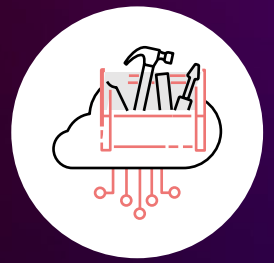
Network slicing to support use cases



O-RAN Innovation



Open source & open Interface to speed deployment



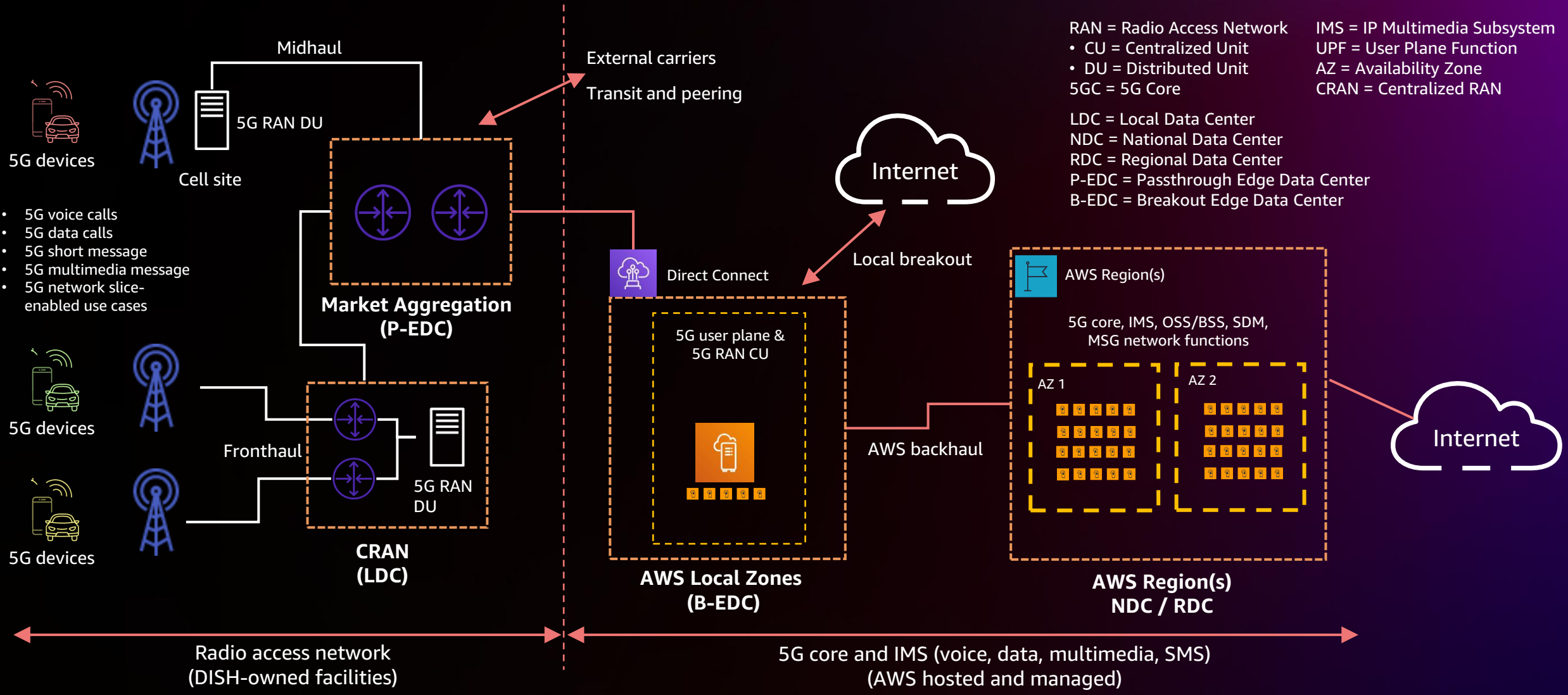
Software-based and programmable

Now, lets see how AWS helped DISH fulfill their vision!

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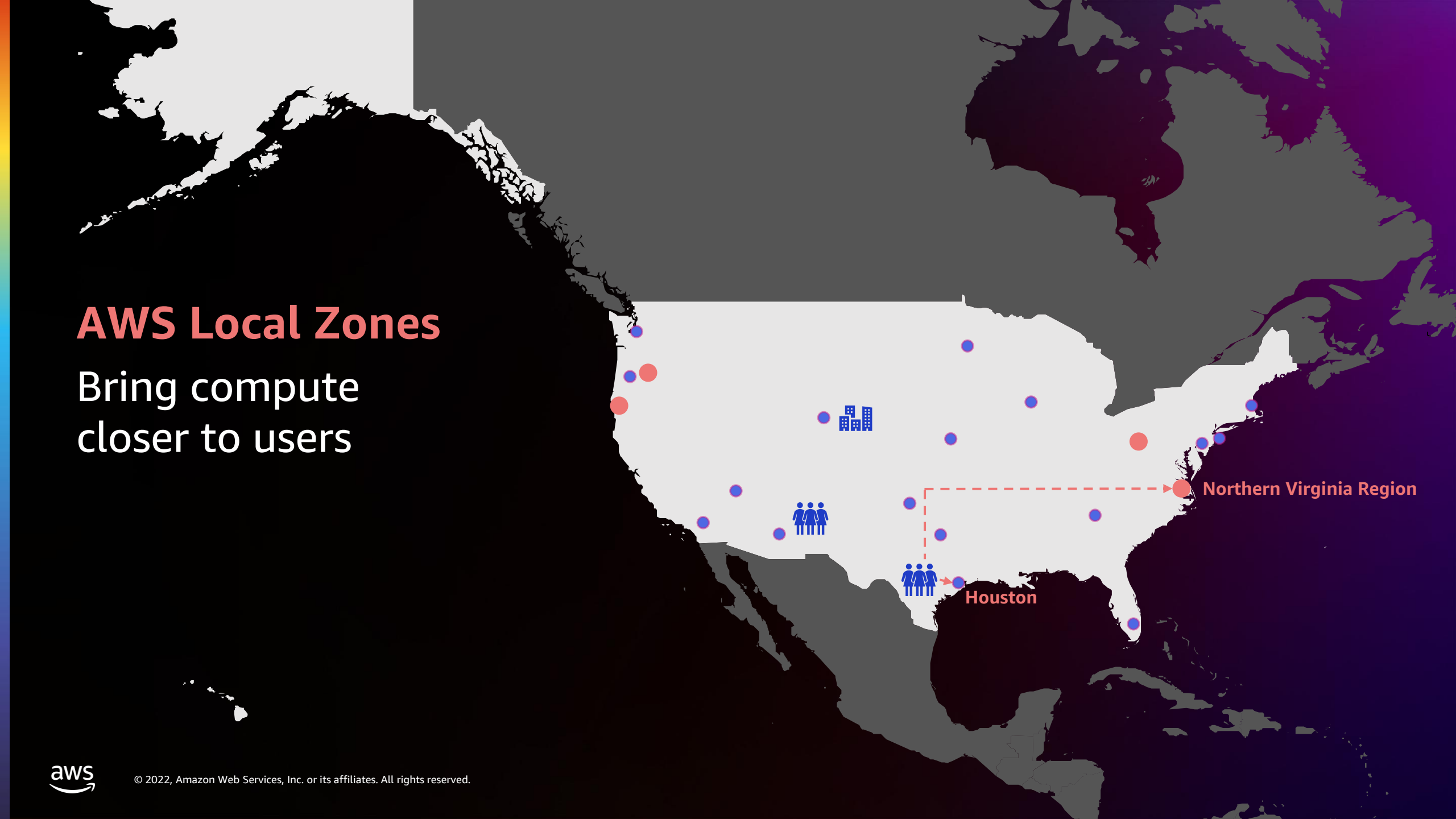
DISH 5G deployed from AWS Regions to the edge



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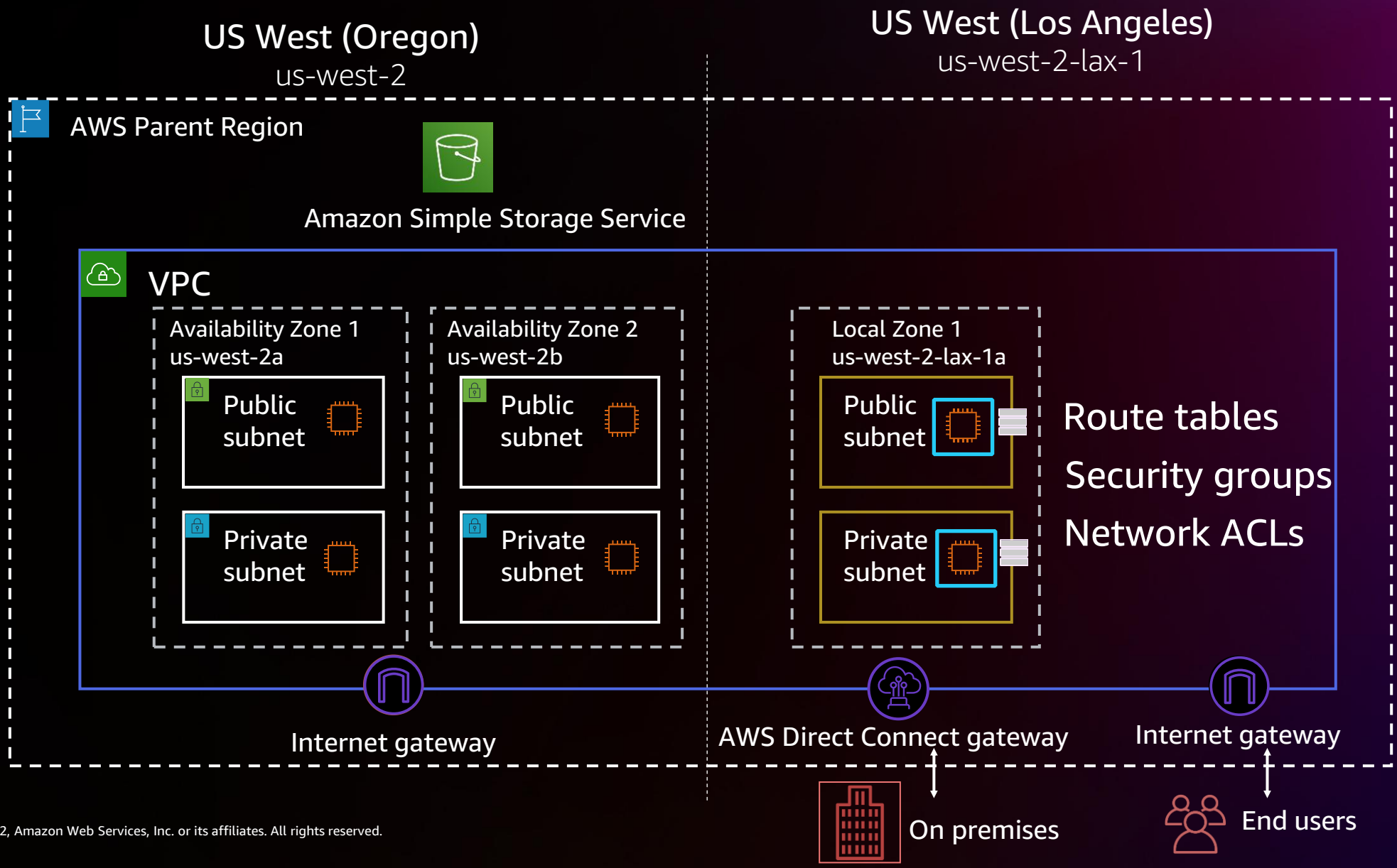
AWS Local Zones

Bring compute
closer to users



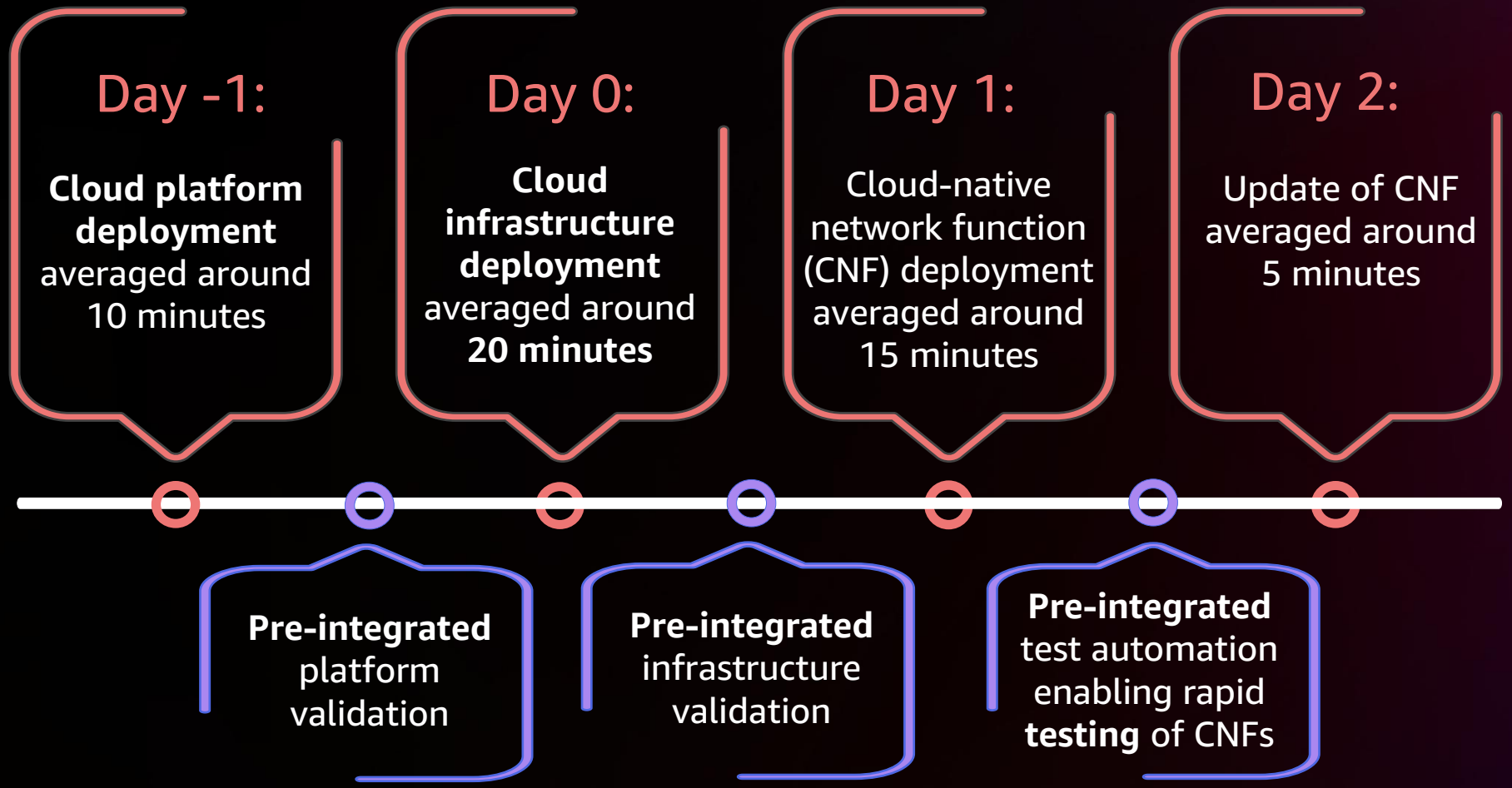
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AWS Local Zones architecture



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AWS differentiators observed during development



On average, **80% reduction** in CNF deployment and updates when compared with traditional deployment models (**days** to **minutes**).

Multiple parallel scaled deployments supporting up to 40 CNFs.

Note that these are averages; actual times vary from application to application and based on ISV's implementation of their network functions

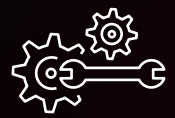
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5G on AWS – Key differentiators



Agility (Faster time to market)

- Agility on the deployment of recurring network functions (UPF and RAN CUs)
- Several parallel deployments possible using automation; assumes design for the RAN CUs is available
- 5G CNFs can be deployed in couple of hours



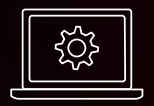
Scalability and flexibility (auto scaling)

- Near real-time scaling on AWS; Compute/Storage/Network HW resources are already ready to be used
- Use hyper scalability and elasticity in AWS
- Cost-efficient edge deployments



Rich native services

- AWS services like Amazon ECR (container security), Amazon CloudWatch (logging), among others



Fully managed Kubernetes (Amazon EKS)

- Amazon EKS is a proven production grade K8s deployment serving many industry verticals



Robust partner ecosystem

- Partner solutions from companies like CrowdStrike or NetScout among others have been certified with Amazon EKS service



Use reusable Automation constructs

- AWS-built, reusable constructs that help expedite pipelines, enabling rapid automation



Resiliency (HA/GR)

- AWS has Geo Redundancy with Regions and local redundancy with Availability Zones, enabling Telco resiliency



AWS Local Zones

- AWS purpose-built infrastructure deployment that places compute, storage, database, and other select AWS services close to large populations and industry centers

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DISH business outcomes



Cost savings (TCO)

What is it?
Infrastructure buildout and deployment savings using existing AWS footprint

>50% reduction in TCO



Staff productivity

What is it?
Efficiency improvement by function

Reduction in Opex (FTE's)



Operational resilience

What is it?
Improved SLAs, reducing unplanned outages, using a proven, secure infrastructure

Increased service availability/redundancy



Business agility

What is it?
Accelerate deployment of new features and applications providing agile business models to customers on demand

4-6X faster Time to market

We're reimagining connectivity through new platforms, new business models, and new ways of thinking to meet the convergence of wireless, data analytics, AI, and the cloud to reinvent the customer experience

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Thank you!

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