



AWS Edge Solutions and Case Studies

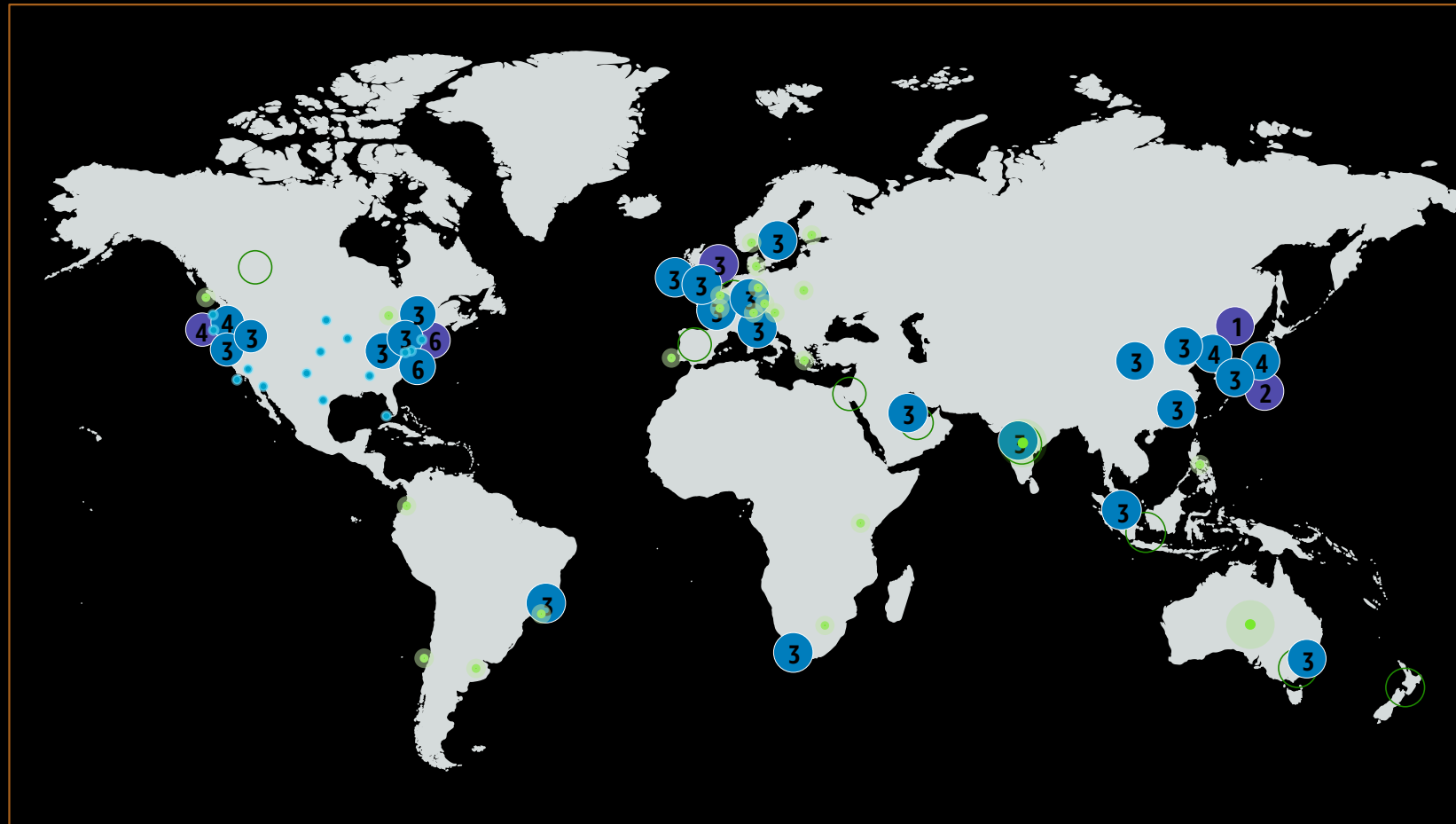
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AWS Edge Continuum



AWS global presence



Announced Regions

Australia, Canada, India, Indonesia, Israel, New Zealand, Spain,
Switzerland, United Arab Emirates (UAE)

● Region & Number of Availability Zones

US East

N. Virginia (6)
Ohio (3)
GovCloud (3)

US West

N. California (3)
Oregon (4)
GovCloud (3)

Canada

Central (3)

South America

São Paulo (3)

Europe

Frankfurt (3)
Ireland (3)
London (3)
Milan (3)
Paris (3)
Stockholm (3)

Asia Pacific

Hong Kong (3)
Mumbai (3)
Osaka (3)
Seoul (4)
Singapore (3)
Sydney (3)
Tokyo (4)

Middle East

Bahrain (3)

China

Beijing (3)
Ningxia (3)

Africa

Cape Town (3)

- Local Zones

- **Announced Local Zones**

● Wavelength Zones

Cloud continuum

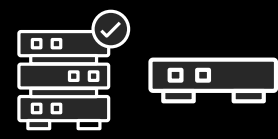
AWS – DELIVERING CLOUD WHERE YOU NEED IT

AWS REGIONS



For most use cases

On premises



AWS Outposts

Metro centers



AWS Local Zones

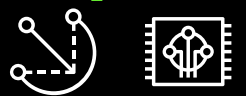
5G networks



AWS Wavelength

For low-latency, local data processing and data residency

AWS IoT Greengrass and FreeRTOS



AWS Snow Family



Cloud continuum

Cloud continuum solutions

Microcontrollers
& IoT devices



FreeRTOS



AWS IoT Greengrass



IoT



Amazon Kinesis
Video Streams



Amazon SageMaker
Neo

Networked
environments



AWS IoT SiteWise



AWS RoboMaker

5G telco networks



AWS Wavelength

Rugged edge



AWS Snowball Edge



AWS Snowcone

On-premises



AWS Outposts



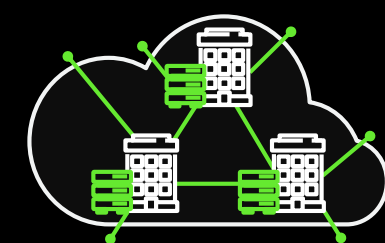
AWS Storage Gateway

Metro centers

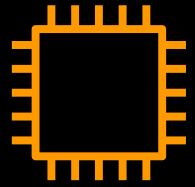


AWS Local Zones

PoPs & Regions
(AWS Cloud)



AWS Snow family



Edge computing

Bringing AWS services and capabilities to the disconnected edge

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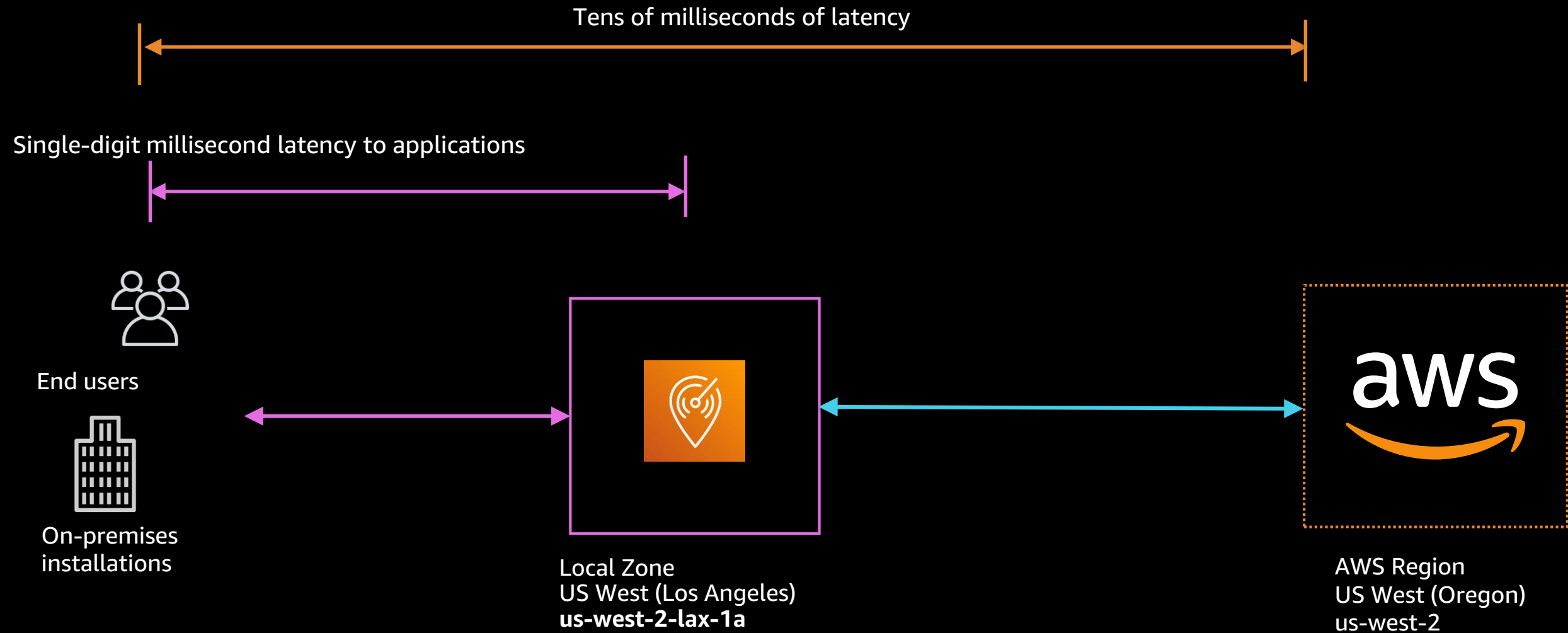


Data movement

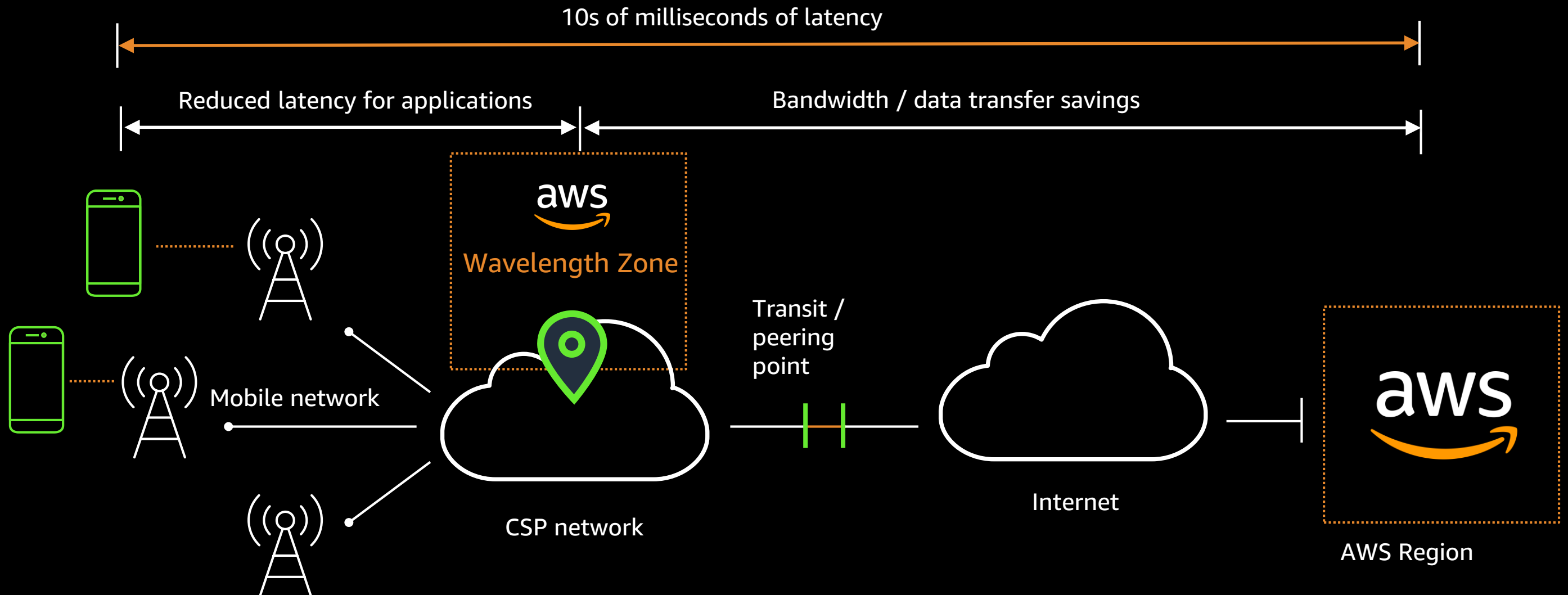
Providing secure and fast data collection, processing, and data movement to the AWS cloud, both on and offline



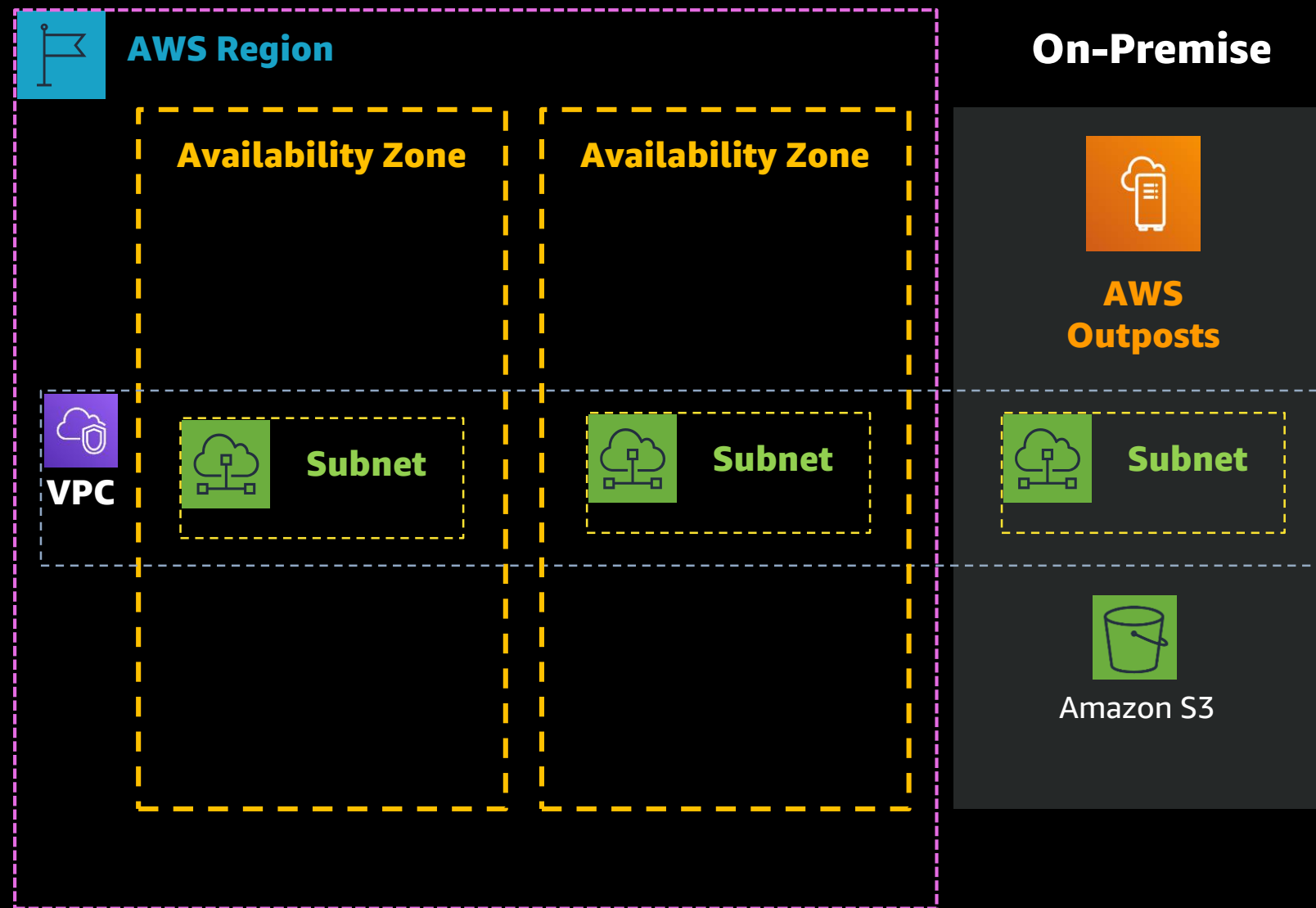
AWS Local Zone



AWS Wavelength



AWS Outpost



Run AWS infrastructure and services on premises for a truly consistent hybrid experience

AWS Outpost configuration

Industry standard **42U rack**

Fully assembled, ready to be rolled into final position

Installed by AWS, simply plugged into power and network

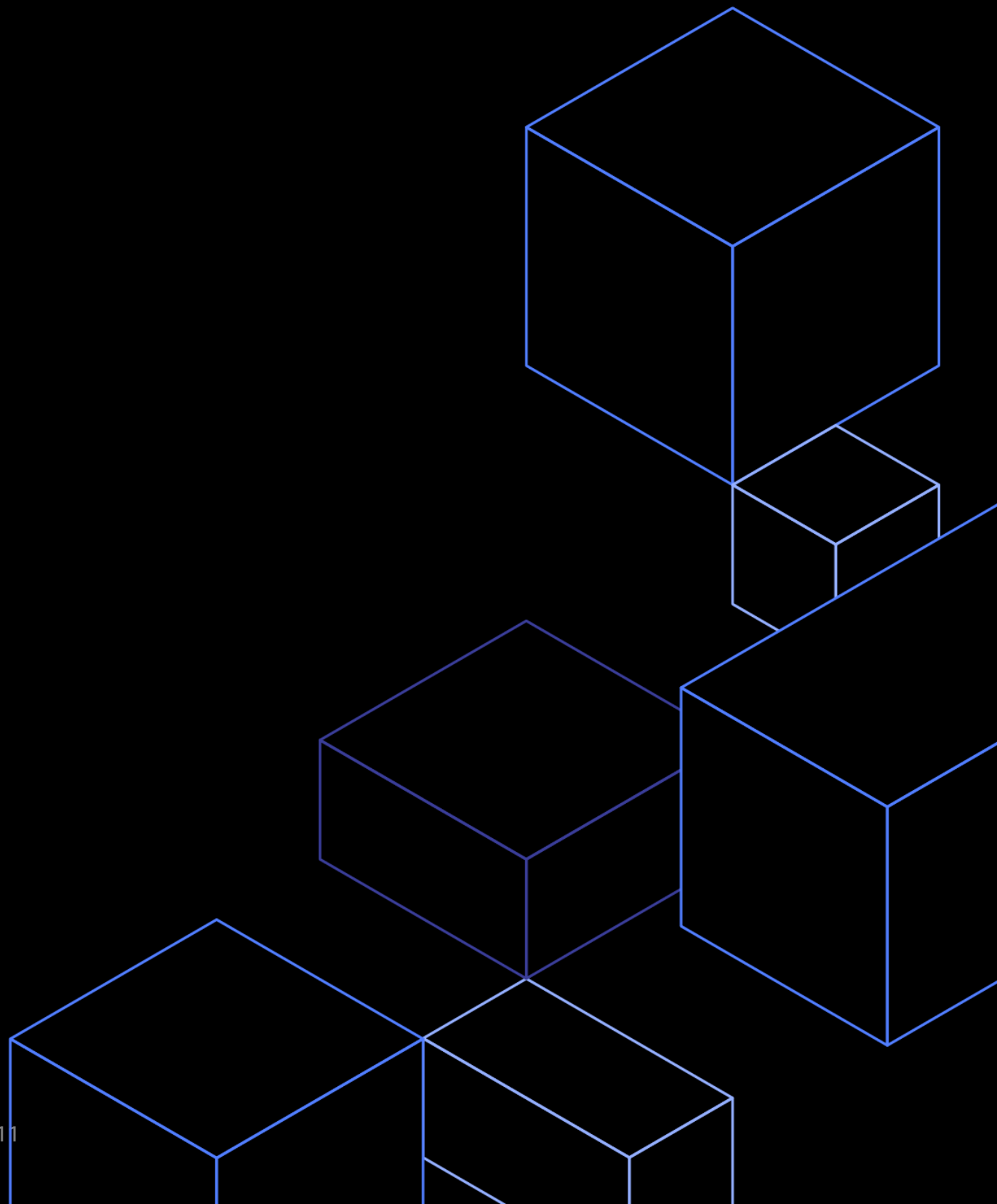
Centralized redundant power conversion unit and DC distribution system for higher reliability, energy efficiency, easier serviceability

Redundant active components including top of rack switches





AWS Case Studies



Manufacturing – Quality control automation

TCS is a global System Integrator at the forefront of digital transformation, driving business and operational efficiencies across various industries.

CHALLENGE



Driving factory floor automation by transforming mission critical on-premise assembly line applications under the umbrella of Industry 4.0.

SOLUTION



New approach leveraging low latency 5G network and Edge Computing for automating quality control at fast moving assembly line using AI/ML based Inference.

BUSINESS OUTCOME



Improved economics by offloading to Edge; Increased pace of transformation and innovation.



AWS Wavelength



“With critical GPU workloads rendered from AWS Wavelength coupled with 5G’s bandwidth, we can achieve the low latency and increased connectivity to deliver a pathway to truly connected factories, where data flows seamlessly between machines and cloud to enable AI powered real time decisioning at the edge”..

Shanky Viswanathan, CTO Communication, Media and Information Service Business Group, TCS

Healthcare – Real time diagnostics over 5G

Avesha has developed AI inferencing system for detecting polyps during routine colonoscopy procedure and working on deploying this at 5G edge for real time diagnosis.

CHALLENGE



Introducing new healthcare applications that do not require integration with the on-premise IT infrastructure and the communication network.

SOLUTION



New approach leveraging 5G network and Edge Computing for performing video processing and AI/ML based inference for aiding healthcare professional with real time diagnosis.

BUSINESS OUTCOME



Improved efficiencies and accuracy with the AI from image detection and workflow tool; Scalability; Faster setup time for trials and experimentation.



AWS Wavelength

AVESHA

"AWS Wavelength on Verizon's 5G Edge provides that intelligence to doctors during the exam improving the patient experience and potential outcomes, and fundamentally changing the diagnostic process."

Raj Nair, Chief Executive Officer, Avesha

Low latency gaming anywhere

CHALLENGE A global launch for Riot's new Valorant game, under tight deployment timelines

Competitive multiplayer titles require consistent, low-latency to end users

Ensure engaging, high-quality experience for all players in countries or metro areas far from AWS regions



SOLUTION



Outposts provides low-latency compute and storage services in a location the customer chooses

Deployed Outposts in 4 cities across 3 countries globally to support the game release

BUSINESS OUTCOME



Riot was able to rapidly move production workloads to the Outposts with no changes to their server application because Outposts uses the same AWS infrastructure, services, APIs, and tools as AWS Regions



AWS Outposts



"Using AWS Outposts, we were able to reduce Valorant latency by 5-10 ms for players in strategic regions during the COVID-19 epidemic. Rapidly lowering latency for hard to reach areas without the need to deploy and manage hardware was a huge win."

Zach Blitz, Head of Infrastructure, Riot Games

DISH Vision

America's first cloud-native 5G network from Core to Edge

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 redefine the customer experience



Versatile spectrum
and virtualization to
save cost



Network slicing to
support use cases



O-RAN
Innovation



Open source &
Open interface to
speed deployment

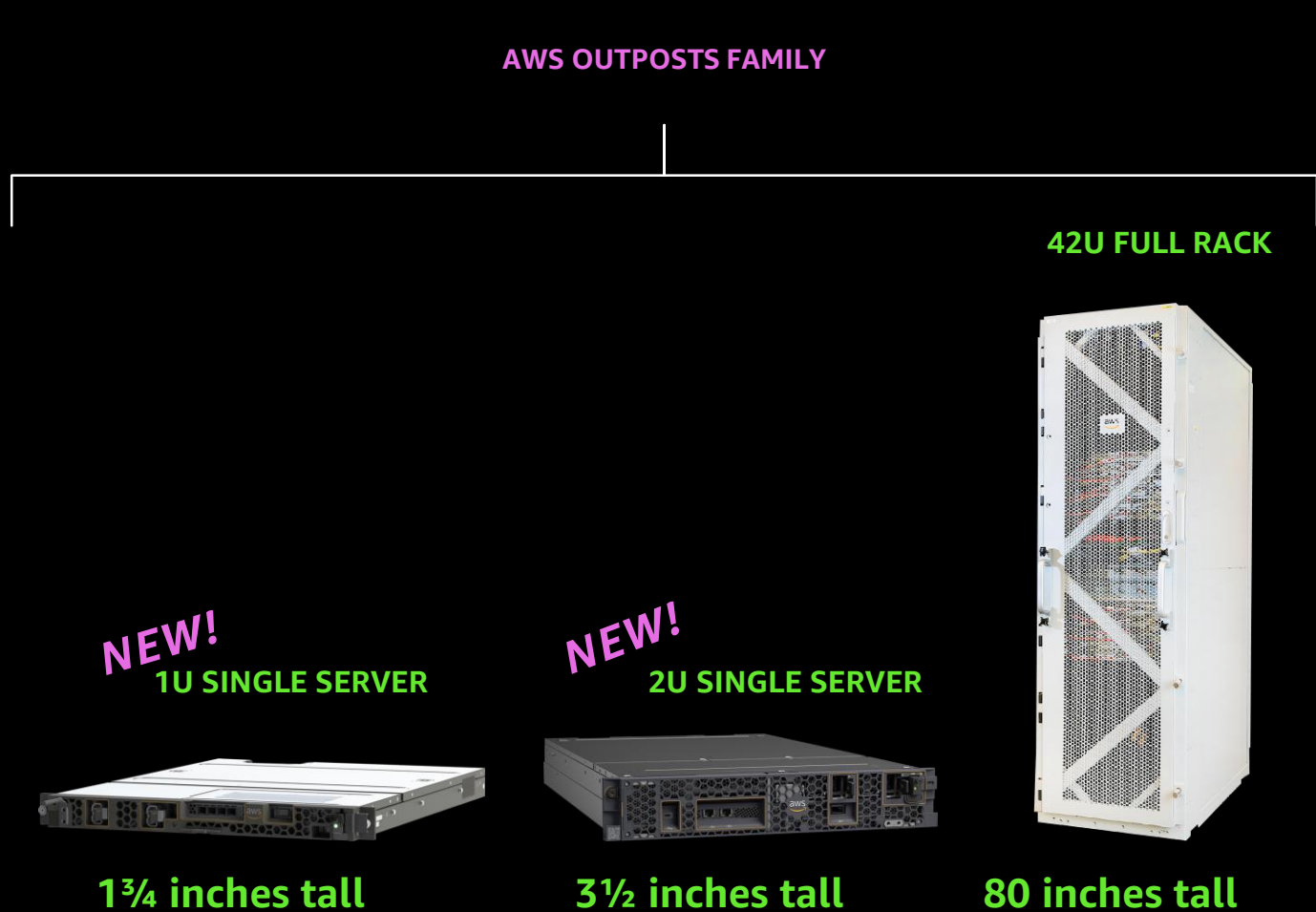
dish



New AWS Edge Solutions

Introducing: AWS Outposts servers

RUN AWS OUTPOSTS IN LOCATIONS WITH LIMITED SPACE OR CAPACITY REQUIREMENTS



Offers the same AWS infrastructure, services, APIs, and tools on premises, now with a smaller form factor

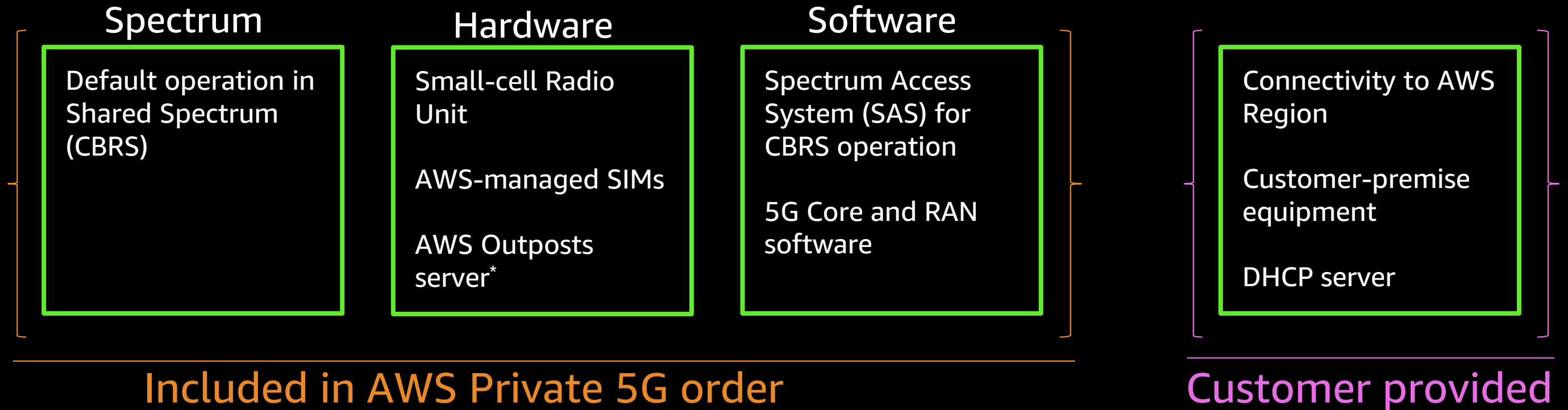
Choose between a 1U form factor with an AWS Graviton2 processor or a 2U form factor with an Intel processor

Run AWS services locally, including Amazon EC2, Amazon ECS, and edge services like AWS IoT Greengrass

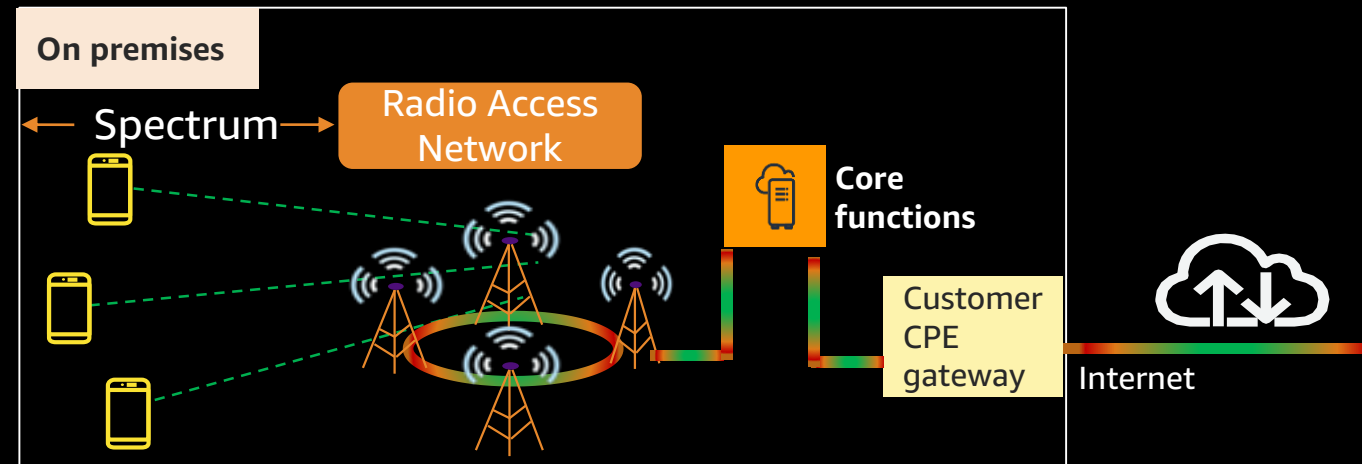
Ideal for workloads that require low latency and local processing needs

Simple device installation by either your own on-premises personnel or a third-party vendor

Introducing: AWS Private 5G

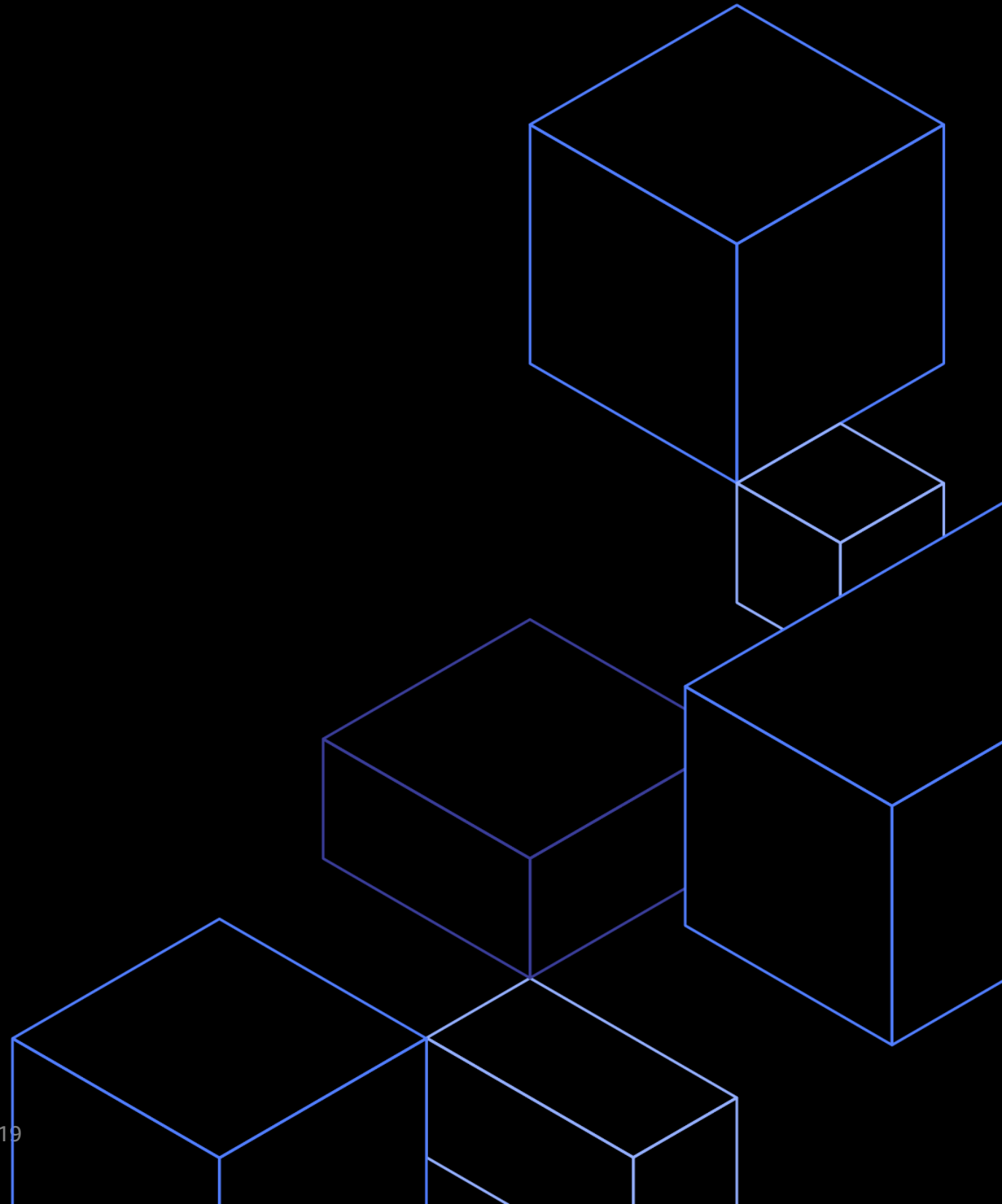


*Core on premises option






Summary



Addressing edge needs



**Emerging need for
low-latency, local
data processing,
and data residency**



**Customers want
the same experience
on-premises and
the cloud**



**AWS edge services
delivers the same
fully managed
infrastructure,
services, and APIs
as in the cloud**



**Simplifies IT,
grows IT efficiency
Amplifies developer
productivity
Accelerates pace
of innovation**

References

<https://aws.amazon.com/snow/>

<https://aws.amazon.com/wavelength/>

<https://aws.amazon.com/outposts/>

<https://aws.amazon.com/outposts/servers/>

<https://aws.amazon.com/private5g/>



Thank You

