
AWS
re:Invent

STG219

Edge computing innovation with AWS Snowcone and AWS Snowball Edge

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AWS

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Agenda

Continuum of AWS services from edge to cloud

AWS Snow Family for edge computing – AWS Snowcone and AWS Snowball Edge

Edge computing workflows with AWS Snow Family

- Factory IoT
- Healthcare IoT
- Private LTE / 5G networks
- Autonomous vehicles

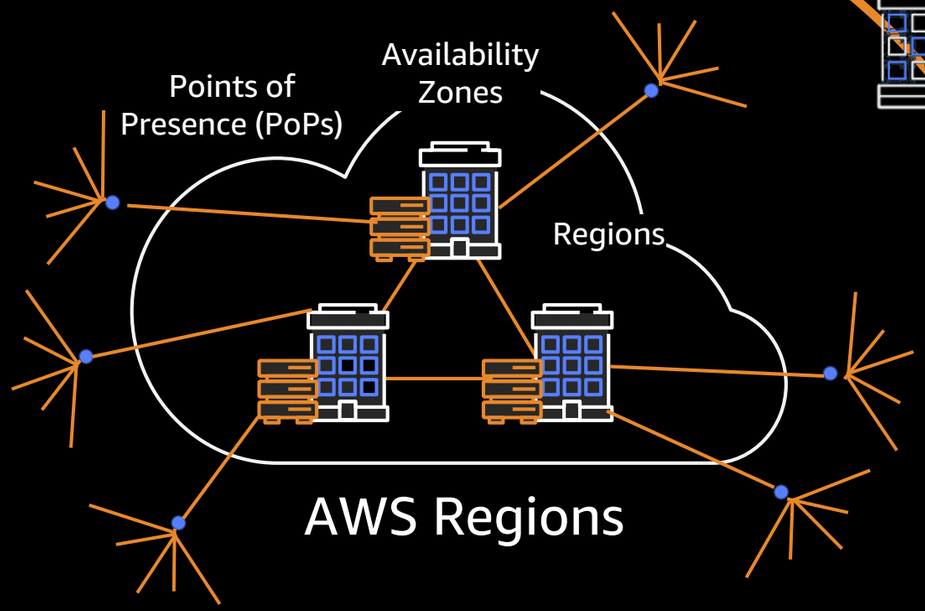


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Cloud-to-edge continuum

For most use cases

For low latency, local data processing, and data residency



On premises

AWS Outposts

Metro centers

AWS Local Zones

5G networks

AWS Wavelength

IoT / robotics

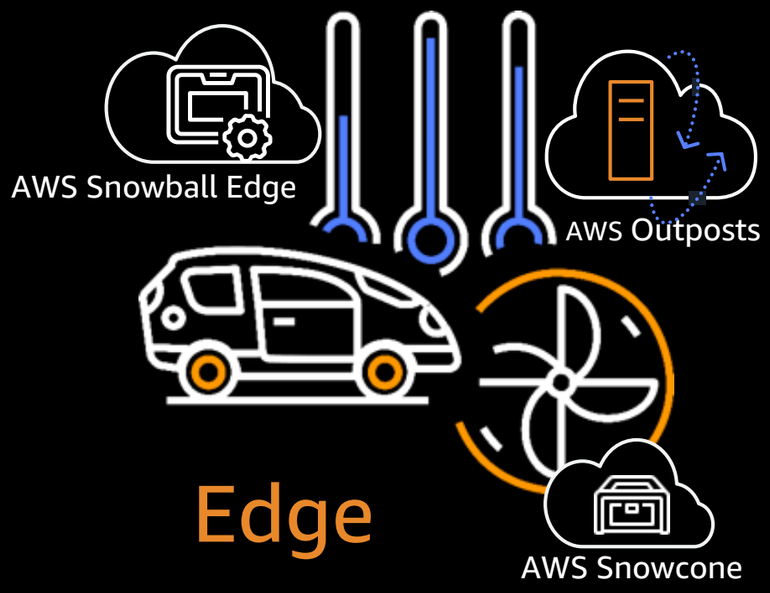
AWS IoT Greengrass
AWS IoT SiteWise
FreeRTOS
AWS RoboMaker

Rugged / Austere edge

AWS Snowball
AWS Snowcone
AWS DataSync

Cloud continuum

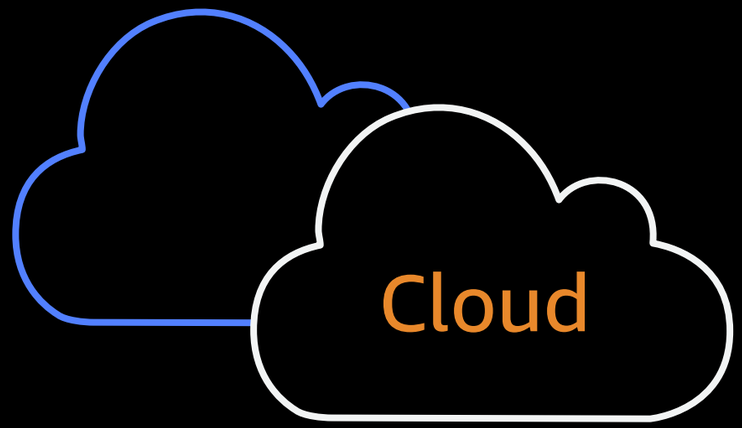
Running workloads at the edge is challenging



Law of
physics

Law of
economics

Law of
the land



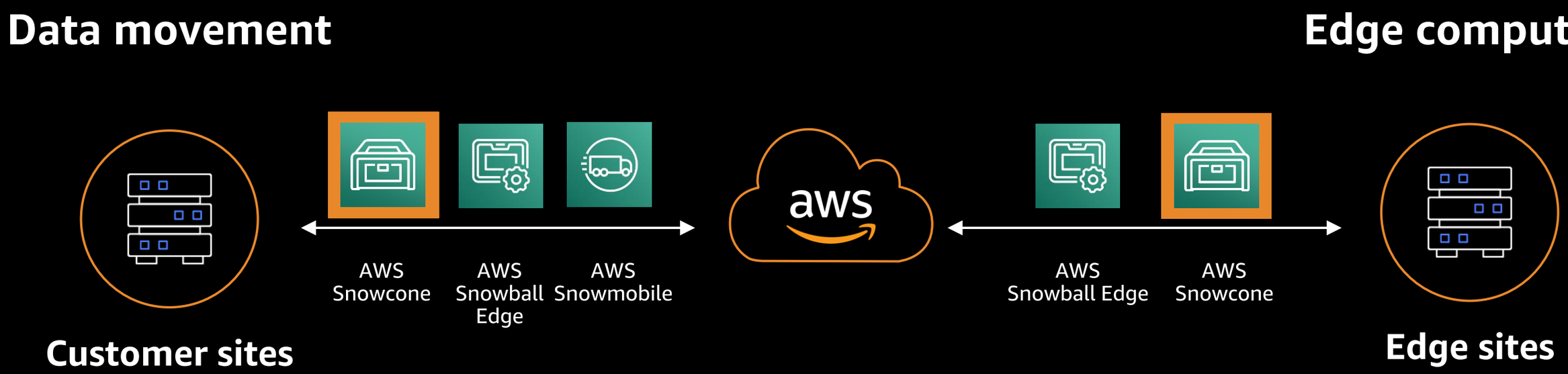
AWS Snow Family for edge computing



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AWS Snow Family

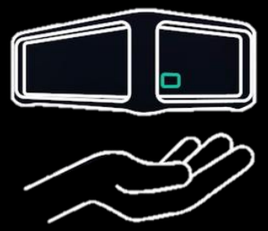


- Set of services and functionality on partially to fully disconnected and secure edge
- Enables data collection, data processing, and data movement from edge to AWS

AWS Snowcone for mobile workflows

SMALL, ULTRA-PORTABLE, RUGGED, AND SECURE EDGE COMPUTING AND DATA TRANSFER DEVICE



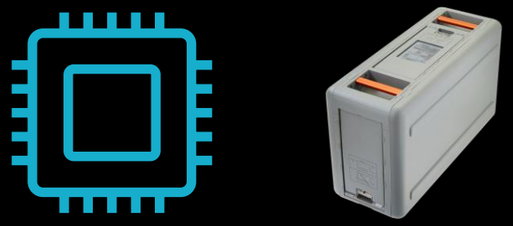


- Encryption, tamper-evident
- 4.5 pounds (2.1 kg)
- Portable computing, anywhere
- Withstands harsh environments
- 8 TB of storage
- 2 CPUs, 4 GB of memory
- Online data transfer with AWS DataSync

Use cases

Industrial IoT, healthcare IoT, content distribution, content aggregation, data migration, logistics, autonomous vehicles, and transportation

Two Snowball Edge options



Compute Optimized

- 42 TB usable Amazon S3-compatible storage
- 52 vCPUs and 208 GiB of memory
- Optional NVIDIA Tesla V100 GPU
- Amazon EC2 sbe-c and sbe-g instances (equivalent to C5, M5a, G3, and P3 instances)

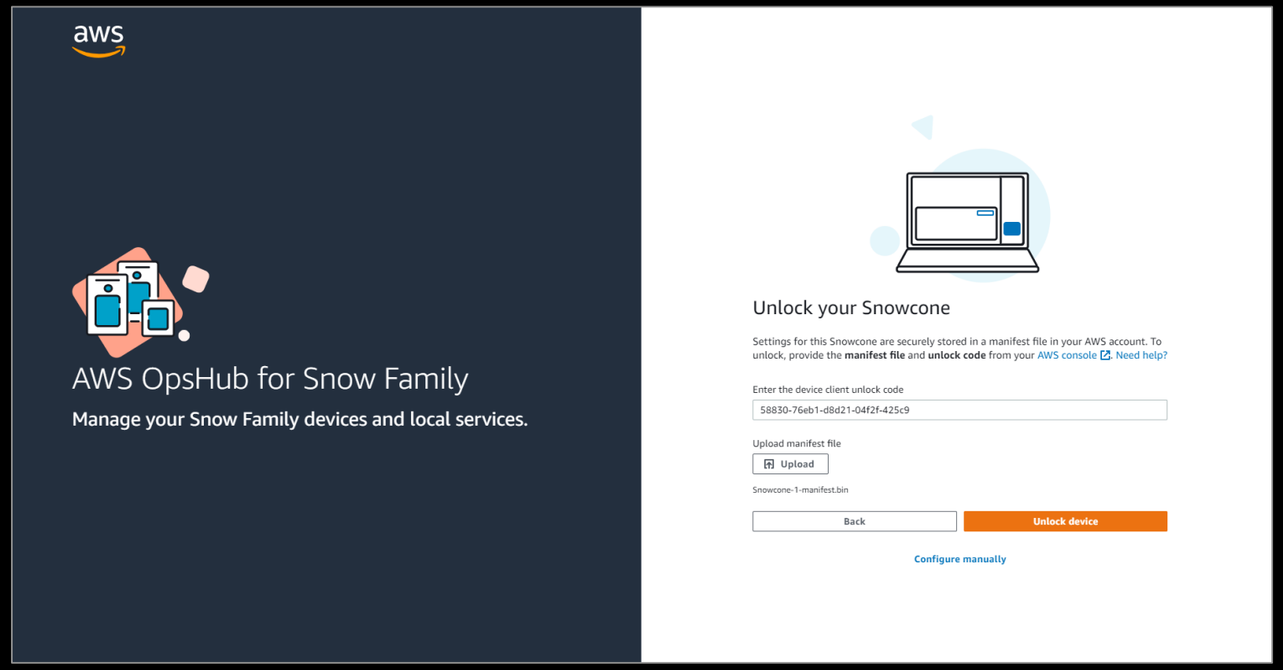


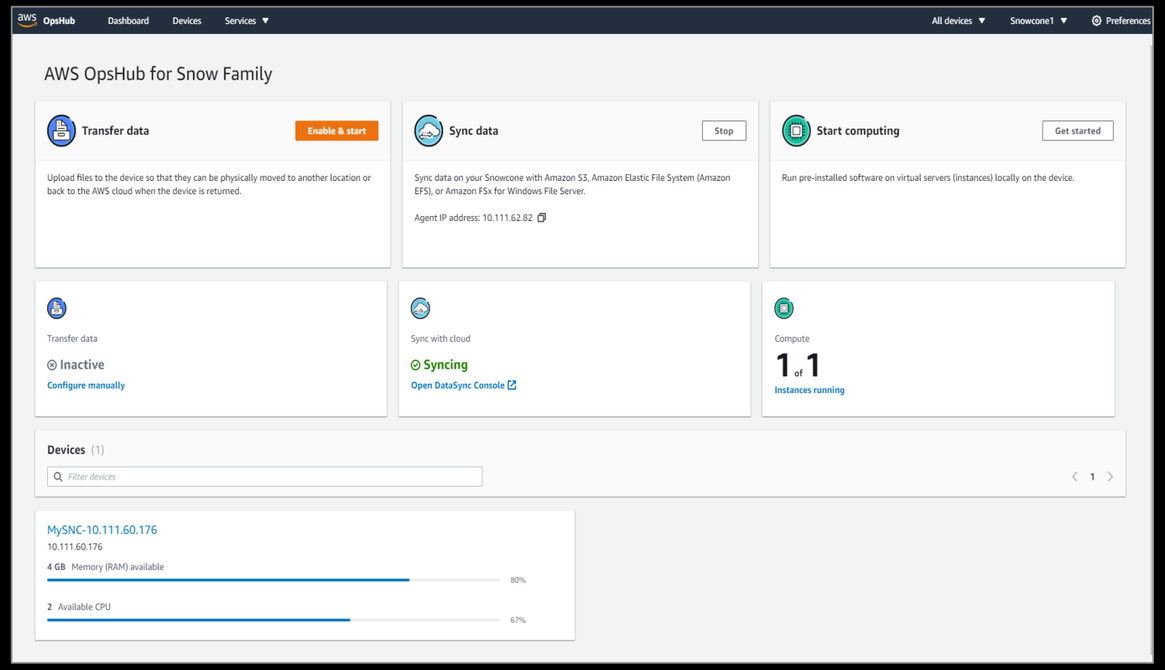
Storage Optimized

- 80 TB usable Amazon S3-compatible storage
- Amazon EC2 sbe1 instances (equivalent to C5)
- Up to 40 vCPUs, 80 GiB of memory, and 1 TB SATA SSD
- Object storage clustering available

AWS OpsHub for Snow Family

GUI FOR CUSTOMERS TO MANAGE SNOW FAMILY DEVICES





Visit the AWS Snowcone Resources page to learn more about AWS OpsHub

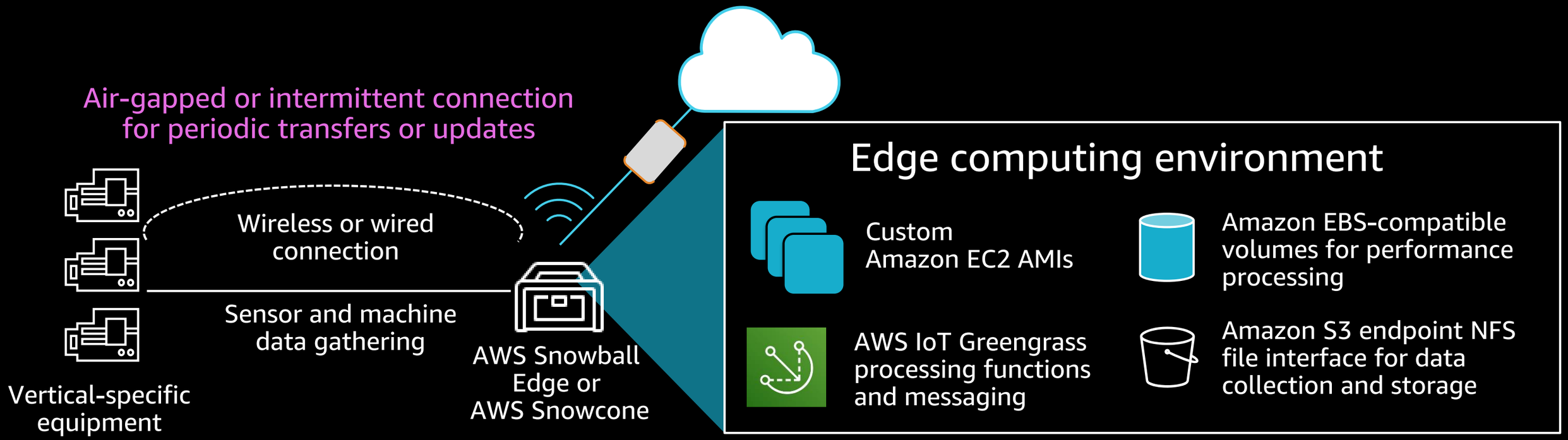
Edge computing workflows with AWS Snow Family



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Snow edge computing example workflow

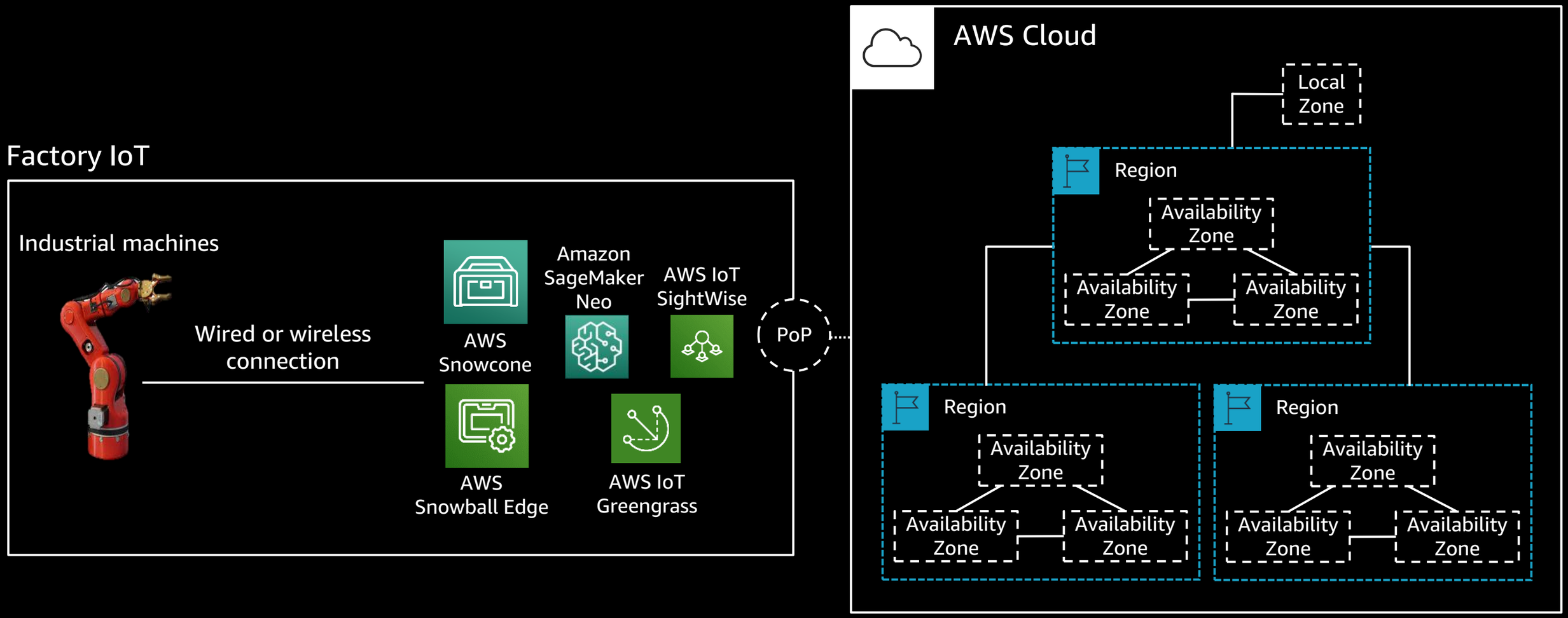


Key benefits

- Hardened, secure, and highly performant computing outside of the data center suitable for hot factories and facilities with variable security
- Collect, analyze, and enable local actions faster
- Consistent programming and DevOps model – develop and test in-cloud, run at the edge
- AWS delivery model – hardware-as-a-service

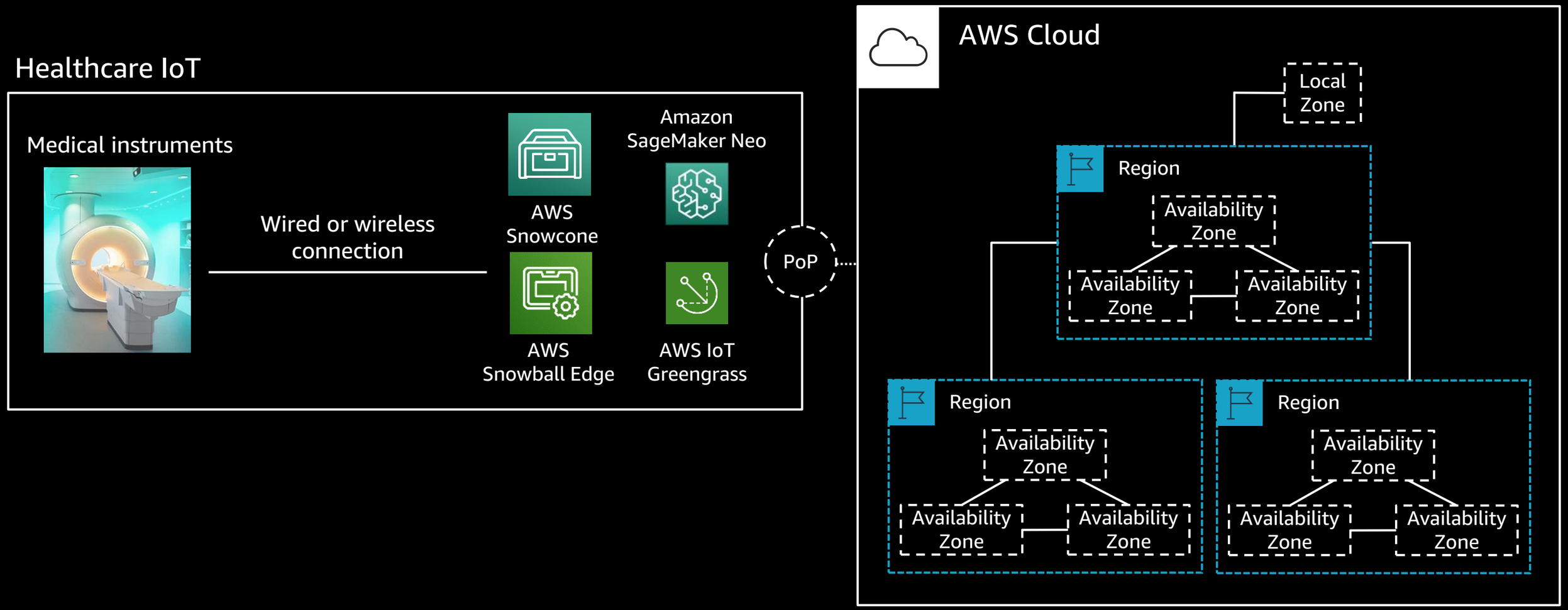


Snow Family for Factory IoT





Snow Family for Healthcare IoT



Private LTE / 5G networks with Snowcone

IDEAL FOR SENSOR NETWORKS WITH LOWER THROUGHPUT REQUIREMENTS

Option 1 – connected to Cloud mode

AWS Region

AWS Systems Manager

AWS Config

Amazon CloudWatch

AWS Auto Scaling

AWS CloudFormation

AWS CloudTrail

Amazon S3

VPC

SAS

Provisioning and subscriber

Management tools

Mobile Core – Control Plane

Private venue – warehouse, campus, factory

SGi (optional)

Mobile Core – User Plane

Radio network

Radio network



Private LTE / 5G networks with Snowcone

IDEAL FOR SENSOR NETWORKS WITH LOWER THROUGHPUT REQUIREMENTS

Option 2 – disconnected to Cloud mode

aws AWS Region

AWS Systems Manager

AWS Config

Amazon CloudWatch

AWS Auto Scaling

AWS CloudFormation

AWS CloudTrail

Amazon S3

VPC (optional)

SAS or CSP Spectrum

Management tools (optional)

Private venue – mines, oil rigs, on a robot

SGi (optional)

Mobile Core – User and Control Planes

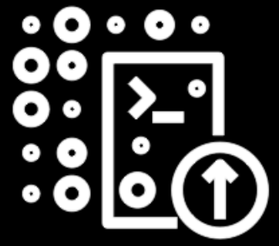
Radio network

Radio network



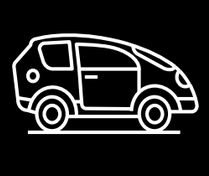
AWS solves autonomous vehicle challenges

Challenge 1



Data

A comprehensive suite of data transit and storage tools

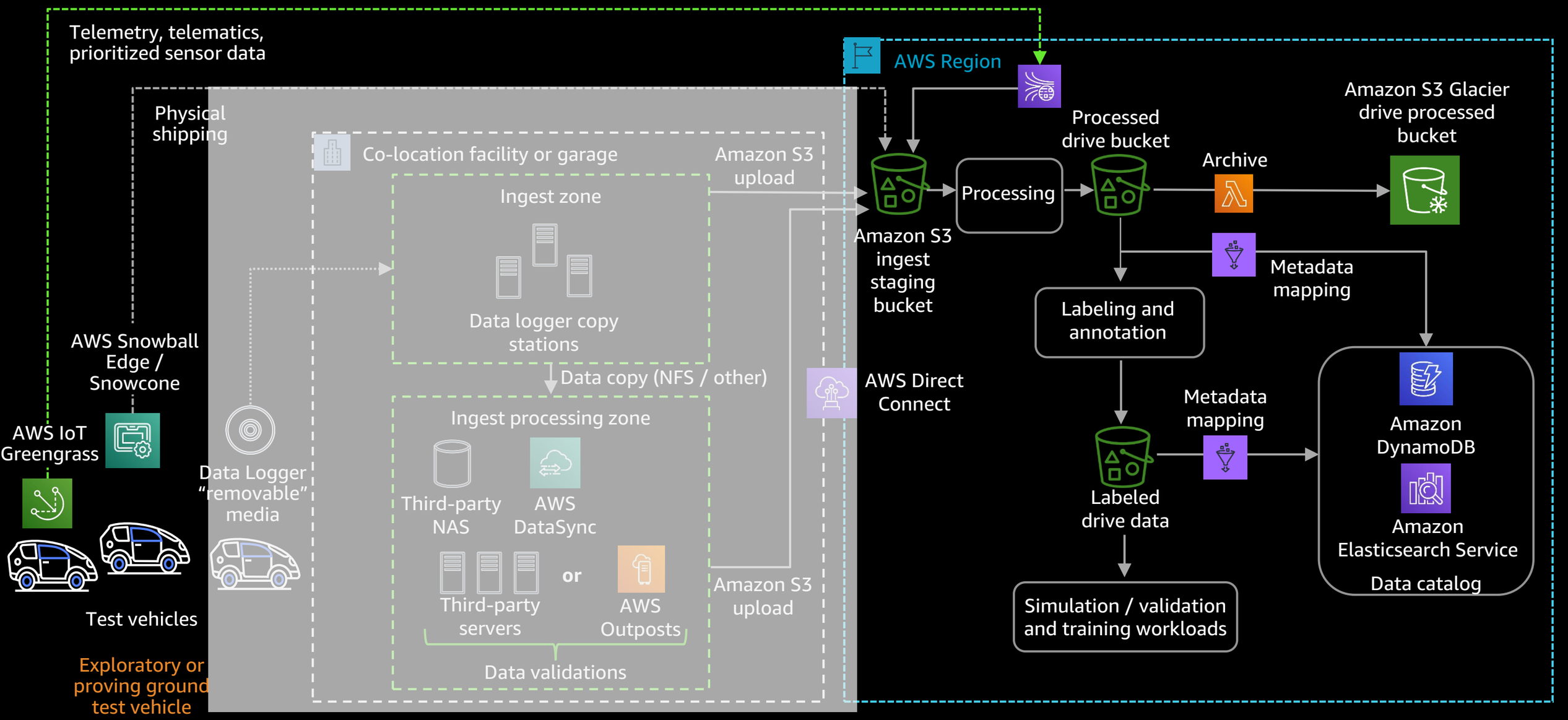







	Collect	Process	Ingest		Store	Label	Access
Services	AWS IoT Greengrass	Snowcone	Outposts	AWS Direct Connect	Snowball Edge	AWS Lake Formation	SageMaker	Amazon FSx Lustre
Global	43 compliance programs		97 DC locations		24 Regions		216 PoPs	
Expertise	aws automotive							
	aws partner network		aws professional services					
							DXC.technology	
							Elektrobit	NATIONAL INSTRUMENTS

Snow Family for autonomous vehicles




JIN

Thank you!



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