

AWS re:Invent

NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

CON210

What's new and what's next with Amazon ECS

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AWS

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Agenda

- The basics
- What's new?
- How are customers using it today?
- What's next?
- More resources!

Amazon ECS is a serverless container orchestrator



Managed by AWS, no cluster versions, no data store to maintain or scale, free to use with Amazon EC2 or AWS Fargate



Orchestrates containers on different “compute” types, including AWS Fargate

Where do your containers run?

Control Plane

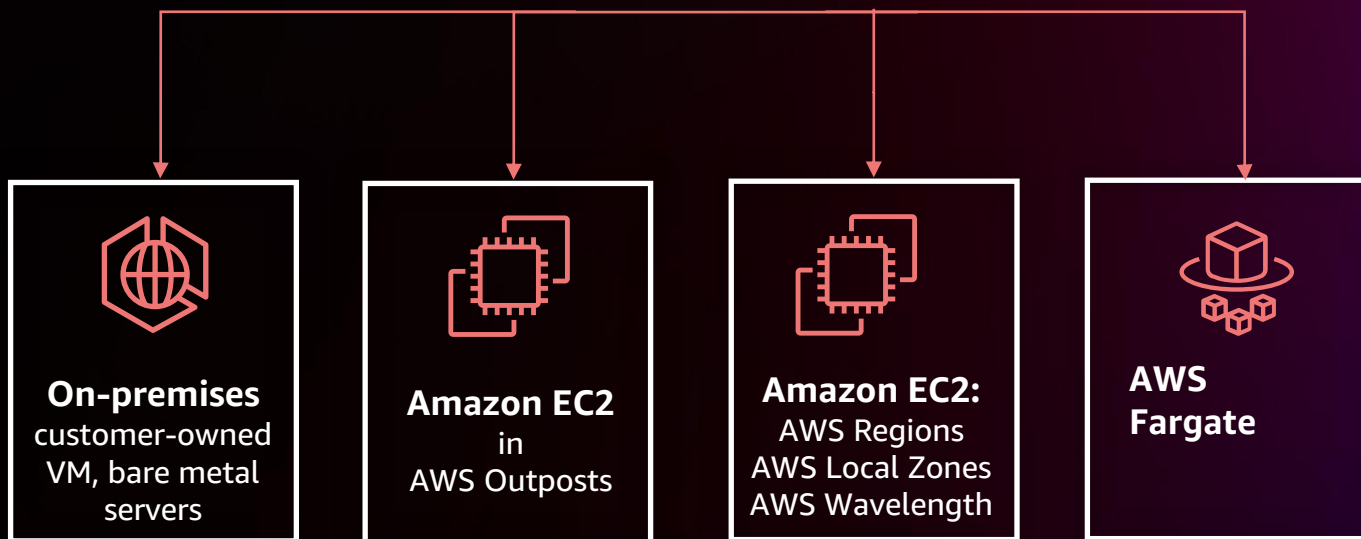
Deployment, scheduling, scaling, and management of containerized applications



Amazon Elastic Container Service (Amazon ECS)

Compute Engine

Where the containers run



On-premises

Managed in the cloud



Fargate is a serverless compute engine for containers



Managed by AWS, no AMIs to maintain, no EC2 instances to provision, scale, or manage, pay for what you need



AWS Fargate is where your containers will run. Customers don't interact with it directly

Amazon ECS + AWS Fargate



Look ma, no servers!

Serverless

Managed by AWS, no EC2 instances to provision, scale, or manage – simple operations model

Secure by default

Isolated, patched, and compliant for running the most sensitive workloads

Savings

Elastic on-demand pricing model with granular resource allocations giving customers the ability to procure only the vCPU and memory needed when they need it without the excess

Amazon ECS Anywhere



Hybrid

Bare metal, consistent tooling Exec, awslogs role*



GPU at edge

Launched on Oct 8



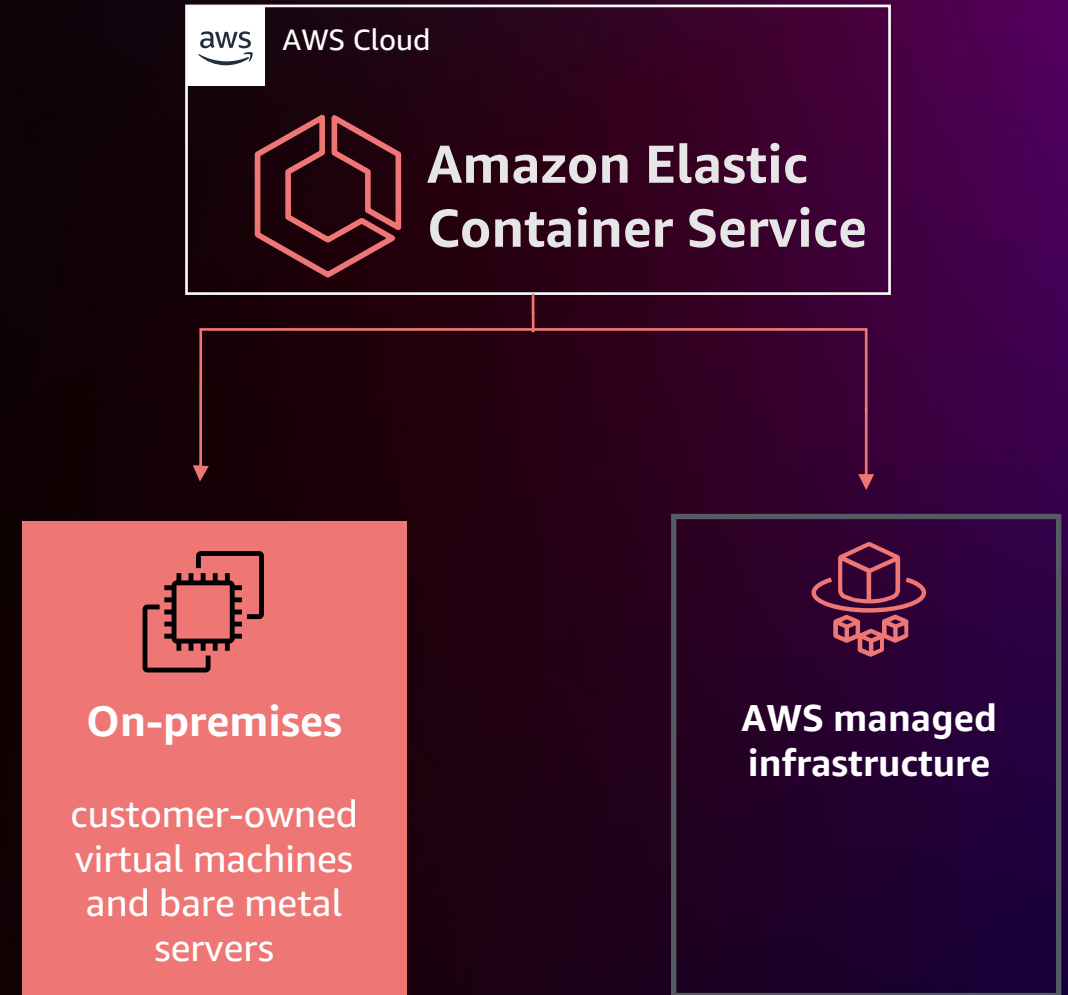
Verticals

Works even on Raspberry Pi

*Q4 launch



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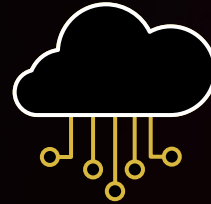


Three reasons customers choose Amazon ECS



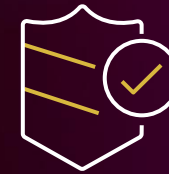
Faster time to market

Low operations overhead
Upgrade-free, easy-to-learn control plane



Lower costs

Pay-as-you-go with Fargate
Scale from zero to massive



Secure and compliant

Defined security models and compliance
AWS integrations

Amazon ECS – Unprecedented scale



Over 2.25 billion

Tasks launched every week

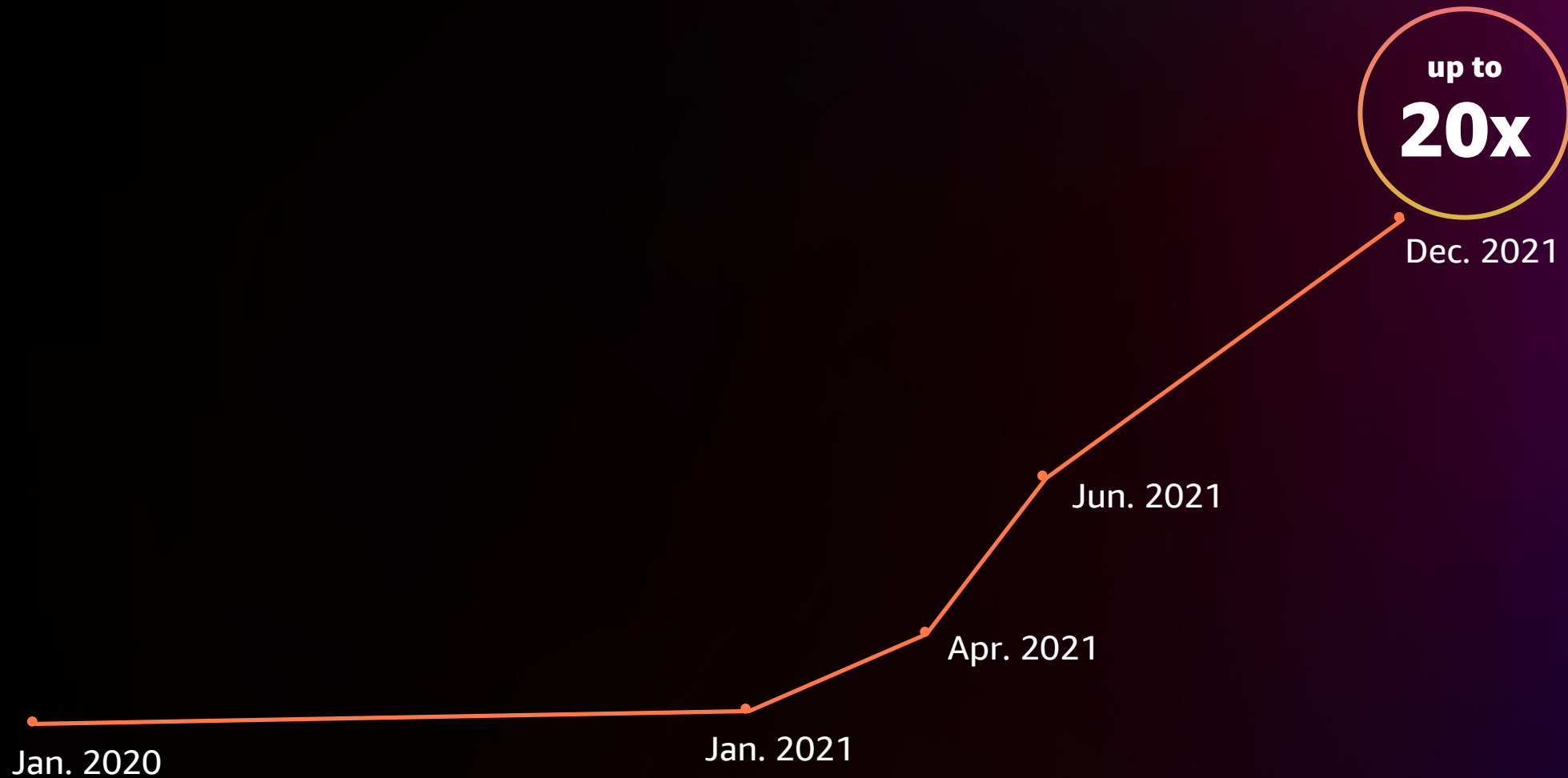
All AWS Regions, 6 continents

Global presence

**65% of all new AWS
containers customers**

Use ECS

Unprecedented task and service start rate



Security, certifications out-of-the-box

Certified



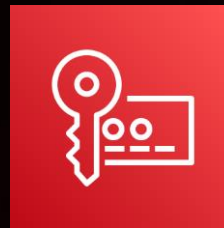
Least access



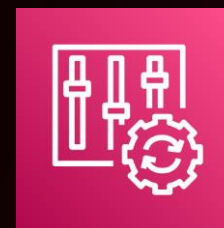
AWS Identity and
Access Management
(IAM)



AWS Secrets
Manager



AWS KMS



AWS Config

Container isolation by design



AWS Fargate task



AWS Fargate task

Amazon ECS powers Amazon



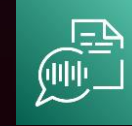
Amazon Redshift



Amazon OpenSearch Service



Amazon RDS



Amazon Transcribe



AWS Elemental
MediaLive



Amazon.com's
recommendation



Amazon Lex



Amazon Polly



AWS Batch



Amazon SageMaker



Amazon Translate

Amazon ECS is a building block for many services at Amazon

Tested for security, reliability, availability, and scale

Rich partner network

Foundation



Monitoring & logging



DevOps / CI CD



Security & networking



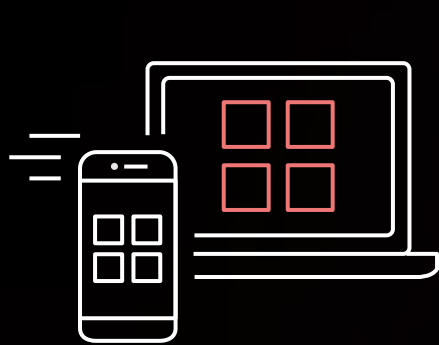
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What's new?



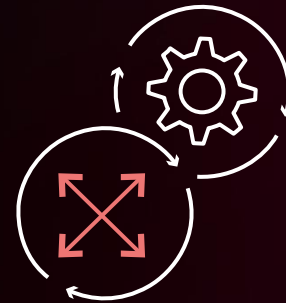
Working backwards from our customers



Build applications,
not infrastructure



Customize
infrastructure to meet
requirements



Scale quickly
and seamlessly



Security and
isolation by design

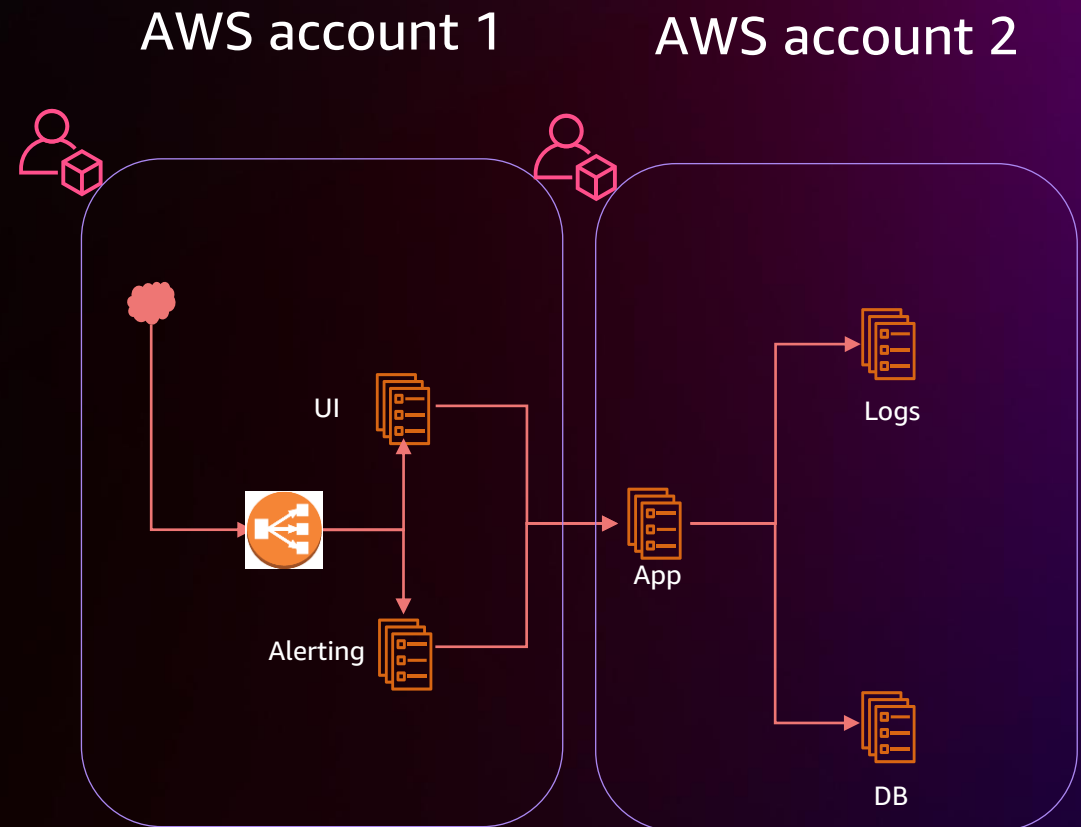


ECS Service Connect simplifies inter-service communication within and across clusters

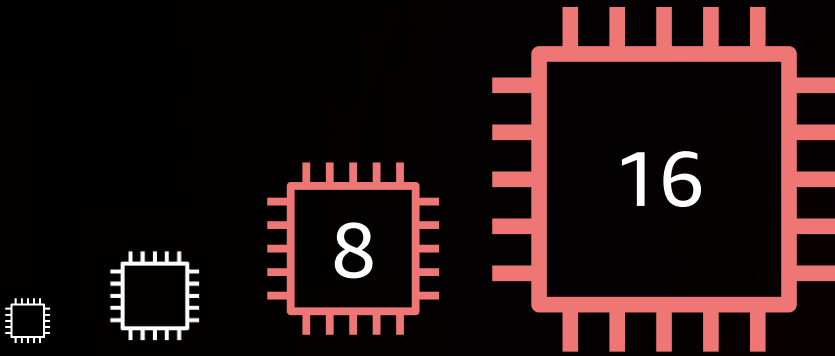
Built-in service discovery

Visibility with traffic telemetry for service-to-service communication

Higher application availability with resilient network

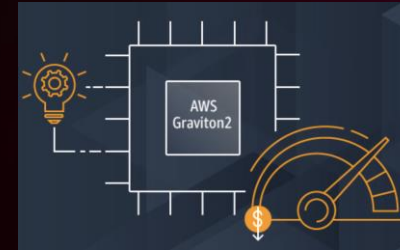


Larger tasks on Fargate

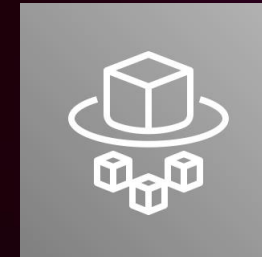


More CPU and Memory
available.

New! Graviton2



GPU on Roadmap



AWS Fargate

Amazon ECS Console with simplified workflows

Easier onboarding with discovered complexity

Workflow optimized and customizable, in order to reduce time to deploy

OpenTelemetry and logging with one click

Step 1
Configure task definition and containers

Step 2
Configure environment, storage, monitoring, and tags

Step 3
Review and create

Configure task definition and containers

Task definition configuration

Task definition family [Info](#)
Specify a unique task definition family name.

Up to 255 letters (uppercase and lowercase), numbers, hyphens, and underscores are allowed.

Container - 1

[Info](#) Essential container Remove

Container details

Specify a name, container image, and whether the container should be marked as essential. Each task definition must have at least one essential container.

Name	Image URI	Essential container
<input type="text" value="wordpress"/>	<input type="text" value="repository-url/image:tag"/>	Yes ▼

Port mappings

[Info](#)

Add port mappings to allow the container to access ports on the host to send or receive traffic.

Container port	Protocol	
<input type="text" value="80"/>	TCP ▼	Remove

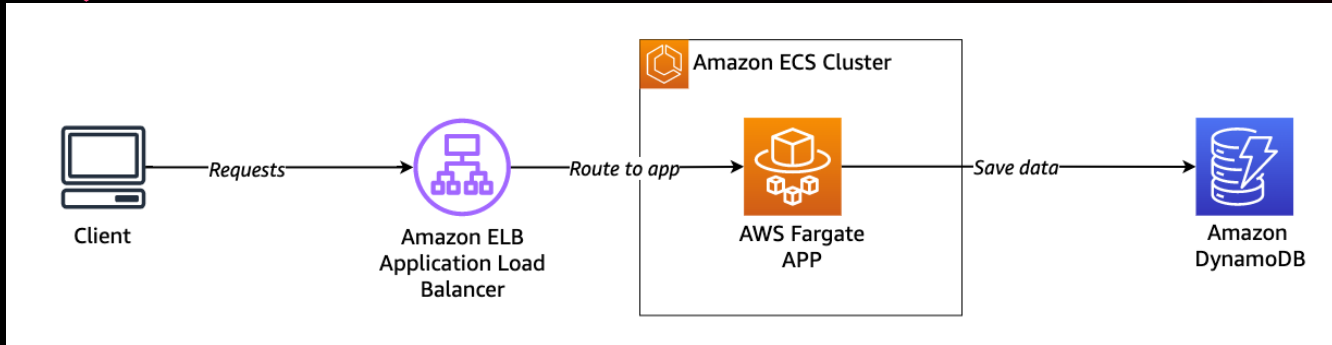
Add more port mappings

► **Environment variables - optional** [Info](#)

+ Add more containers

Cancel Next

Application-first interfaces to develop on Amazon ECS



1. ECS Blueprints

Terraform templates to deploy apps in minutes

2. Amazon ECS CDK extensions

Program architecture patterns in your choice language

3. AWS Copilot CLI

Configuration-ready experience for common cloud architectures.

Preconfigured continuous delivery pipeline with auto scaling, metrics, alarms, and logs

2022 Feature Launches – ECS & Fargate

Richer Compute

- Graviton2 Arm Instances (M6g, C6g),
- GPU instances (P4) and Inferentia (Inf1)¹
- Fargate: Larger tasks
- Bigger clusters – 5k default
- ASG warm pools
- Windows in Fargate and ECS-Anywhere

Faster scaling

- Higher task launches per second
- Target tracking scaling policy with Capacity providers
- Higher TPS and launch rates
- Enhanced deployments
- Fargate: Higher # task as defaults

Regions etc.

- Regions and new ECS Optimized AMIs
- Enhanced metadata for tasks
- Fargate: vCPU based limits
- Fargate enhanced logging with FluentBit

Customer Story





Product Line

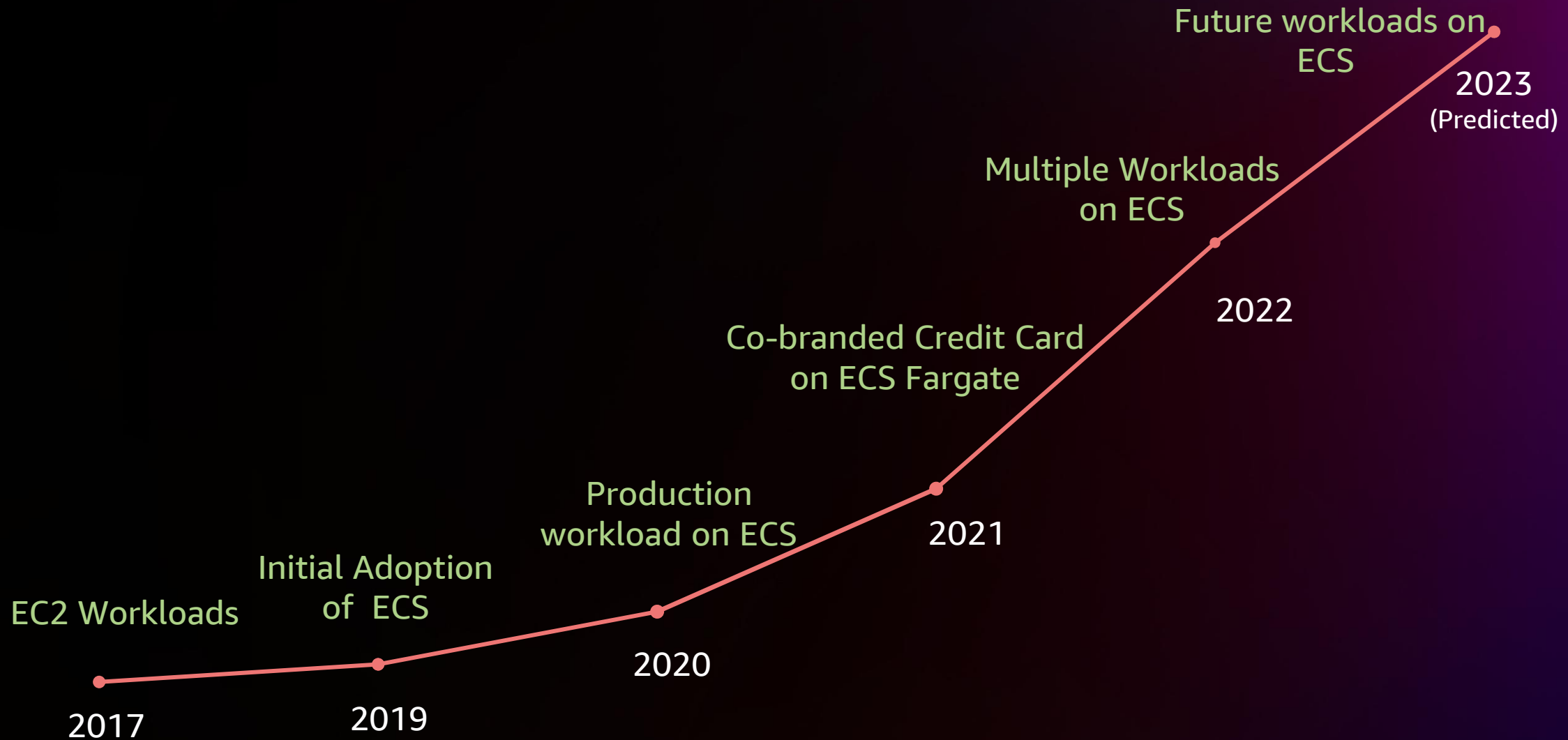
Goldman Sachs has a direct-to-consumer proprietary product business called Marcus where we offer products such as a high-yield Online Savings Account as well as an Embedded Consumer Finance business where we partner with clients to develop products that live in their ecosystems to grow and better serve their end customer base including credit card partnerships.

Partnership with AWS

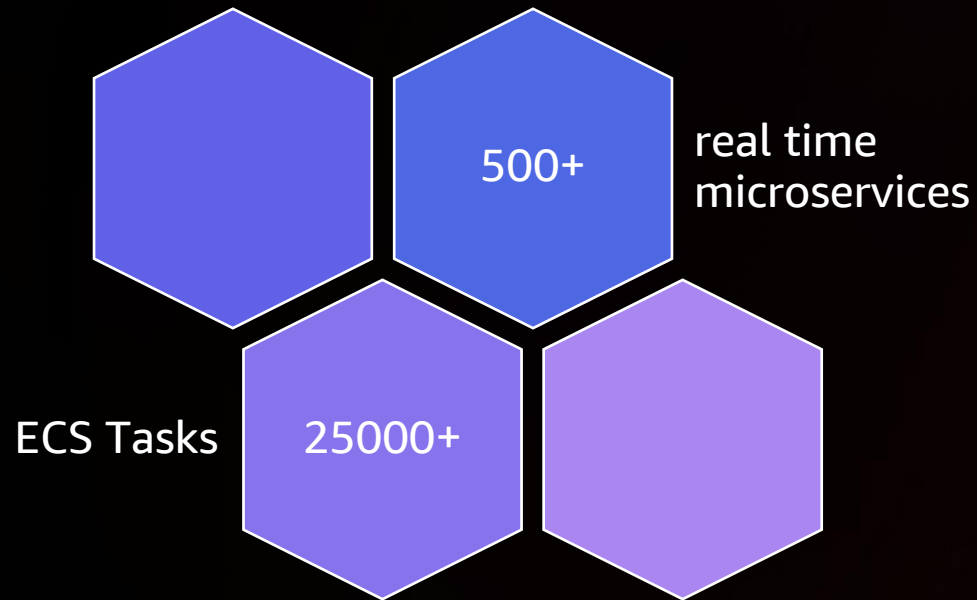
Goldman Sachs uses AWS to enhance how they help customers achieve their financial goals and live healthier financial lives while providing services that allow businesses to build financial capabilities into their workloads. Using the cloud, Goldman Sachs has transformed the way it deploys and runs applications at Scale.



Consumer Banking Journey with ECS Fargate



Accelerated go-to-market with reduced operational overhead

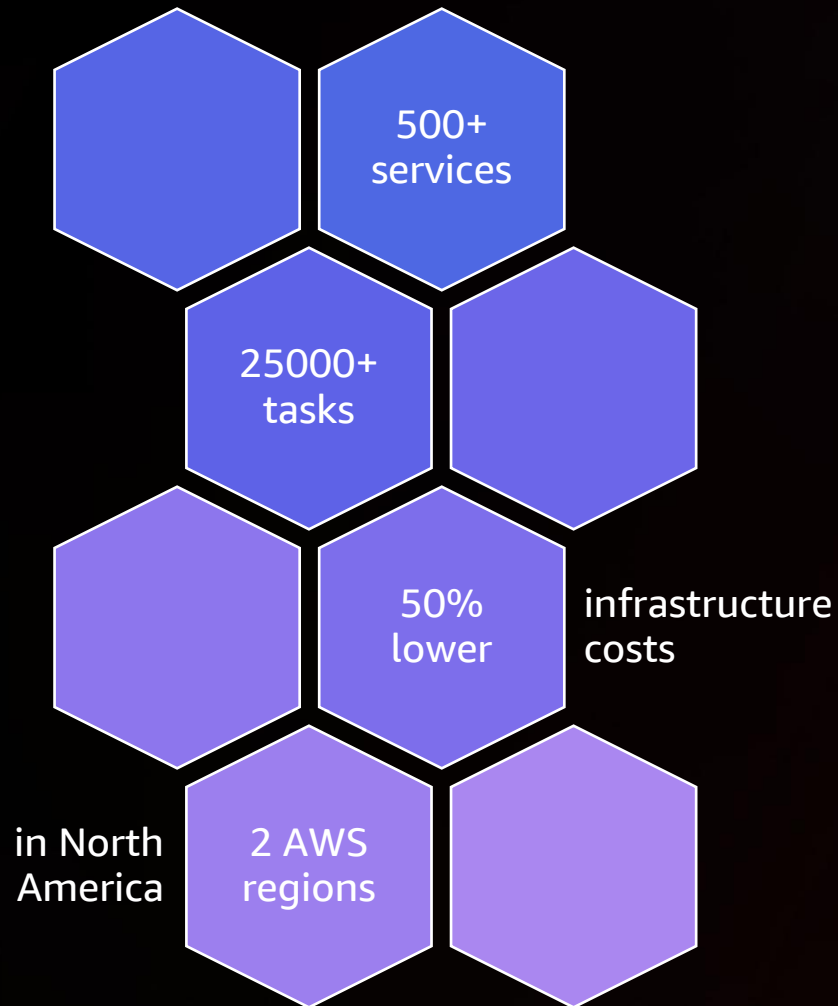


Team could get more done faster due to reduced overhead of managing infrastructure

Reduced Deployment times

Powered Co-branded credit card launch

Application scales dynamically



Infrastructure elastically scales to meet growing business needs

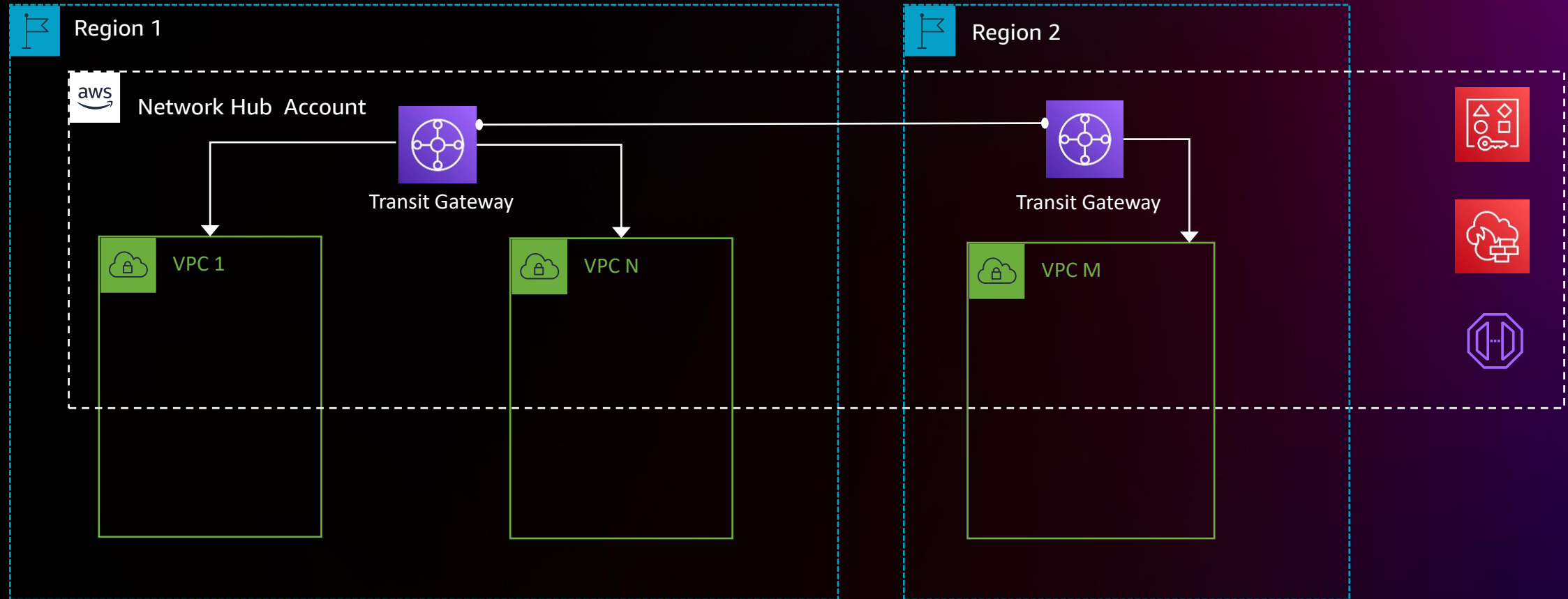
Meets all Security Objectives

Achieved cost efficiencies

Architecture - Networking Management

Marcus:
by Goldman Sachs®

CENTRAL NETWORK HUB ACCOUNT WITH SECURITY CONTROLS



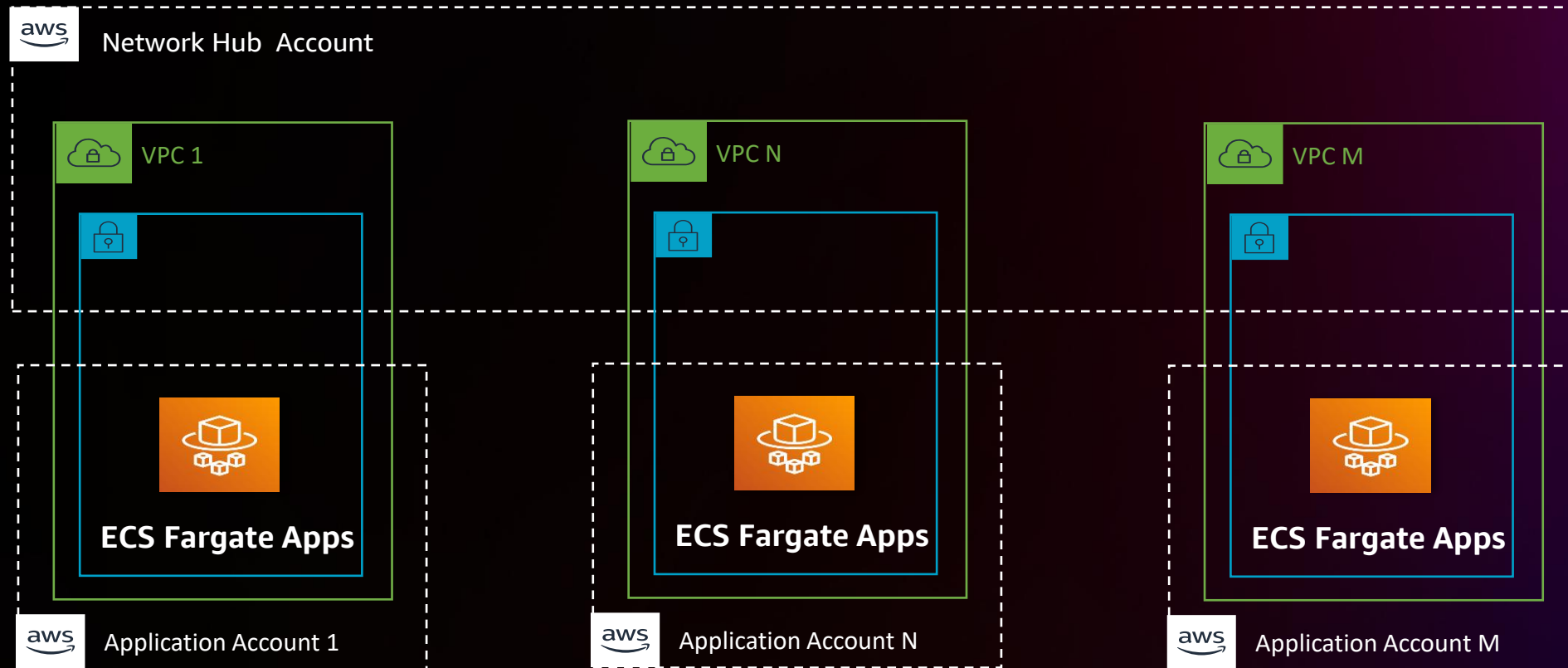
Helped solve for Service to Service communication across multiple accounts and VPCs

Architecture - Developer Experience

Marcus:
by Goldman Sachs®

Separate Application Accounts per team

Helped solve for strict isolation between applications and tasks



Application teams interact through Developer Portal

images

Service Name ▾ ▾	Cluster Name	Health ⓘ	Running Tasks	Desired Tasks	Details	Actions
adhoc OR ue-per ▾	▾	▾	▾	▾	▾	
<input type="checkbox"/> prod-ue-adhoc	prod_ue_cluster	UNHEALTHY	0	1	View Events More Details	Scale Restart Stop
<input type="checkbox"/> prod-c2-ue-per-ro	prod_ue_cluster	HEALTHY	Consolidated View	20	View Events More Details	Scale Restart Stop
<input type="checkbox"/> prod-c2-ue-per	prod_ue_cluster	HEALTHY		20	View Events More Details	Scale Restart Stop
<input type="checkbox"/> prod-c1-ue-per-ro	prod_ue_cluster	HEALTHY		20	View Events More Details	Scale Restart Stop
<input type="checkbox"/> prod-c1-ue-per	prod_ue_cluster	HEALTHY		20	View Events More Details	Scale Restart Stop

Helped solve for cross account view of services for administration

Recap: Key Wins

- ✓ Accelerated Go to Market
- ✓ Reduced Operational Overhead
- ✓ Increased Developer Productivity
- ✓ Significant Cost Efficiencies
- ✓ Dynamic scaling
- ✓ Enhanced Security posture

What's next?



Upcoming features

Deployments

- ECS native blue/green and canary deployments

Storage

- FSx for Lustre support

Richer Fargate

- GPU workloads
- Improved performance

Orchestration

- Task scale-in protection (launched!)
- Task def deletion

Developer Experiences

- New ECS console
- AWS Copilot enhancements

Performance

- Faster cluster autoscaling
- Ease of managing EC2 capacity and AMI upgrades

Networking

- ECS-A LB support
- Service Connect encryption

Help us make ECS a wonderful experience!

Public roadmap on GitHub:
<https://s18s.io/github>

YouTube channel:
<https://s18s.io/CFTC>



Leverage your advocates!

ECS Developer Advocates

Jeramiah Dooley



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Jessica Deen



@jldeen

Nathan Peck



@nathankpeck

Maish Seidel-
Keesing



@maishsk

Scott Coulton



@scottcoulton

Other ECS and serverless containers sessions

- SVS210-L | Accelerating innovation with serverless on AWS
- CON207 | Your first container in the cloud
- CON307 | Protecting production with Amazon ECS security features
- CON308 | Reduce your operational and infrastructure costs with Amazon ECS
- CON309 | Build your application easily & efficiently with serverless containers
- CON320 | Run a hybrid cloud at the edge with Amazon ECS Anywhere
- CON406 | A close look at AWS Fargate and AWS App Runner
- CON407 | Scaling Containers from one user to millions
- STG303 | AWS storage for containers and serverless applications

Thank you!



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