
AWS
re:Invent

CMP305

Virtual workstations for content creation with G4 instances

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CG Supervisor, Creative Tools

AWS

AWS re:Invent

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Agenda

About our team

Cloud basics

Virtual workstations

Getting started

Success stories



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About our team



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What does Creative Tools do?



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Academy Software Foundation

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Cloud basics



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Burst workforce and compute



Spotlight

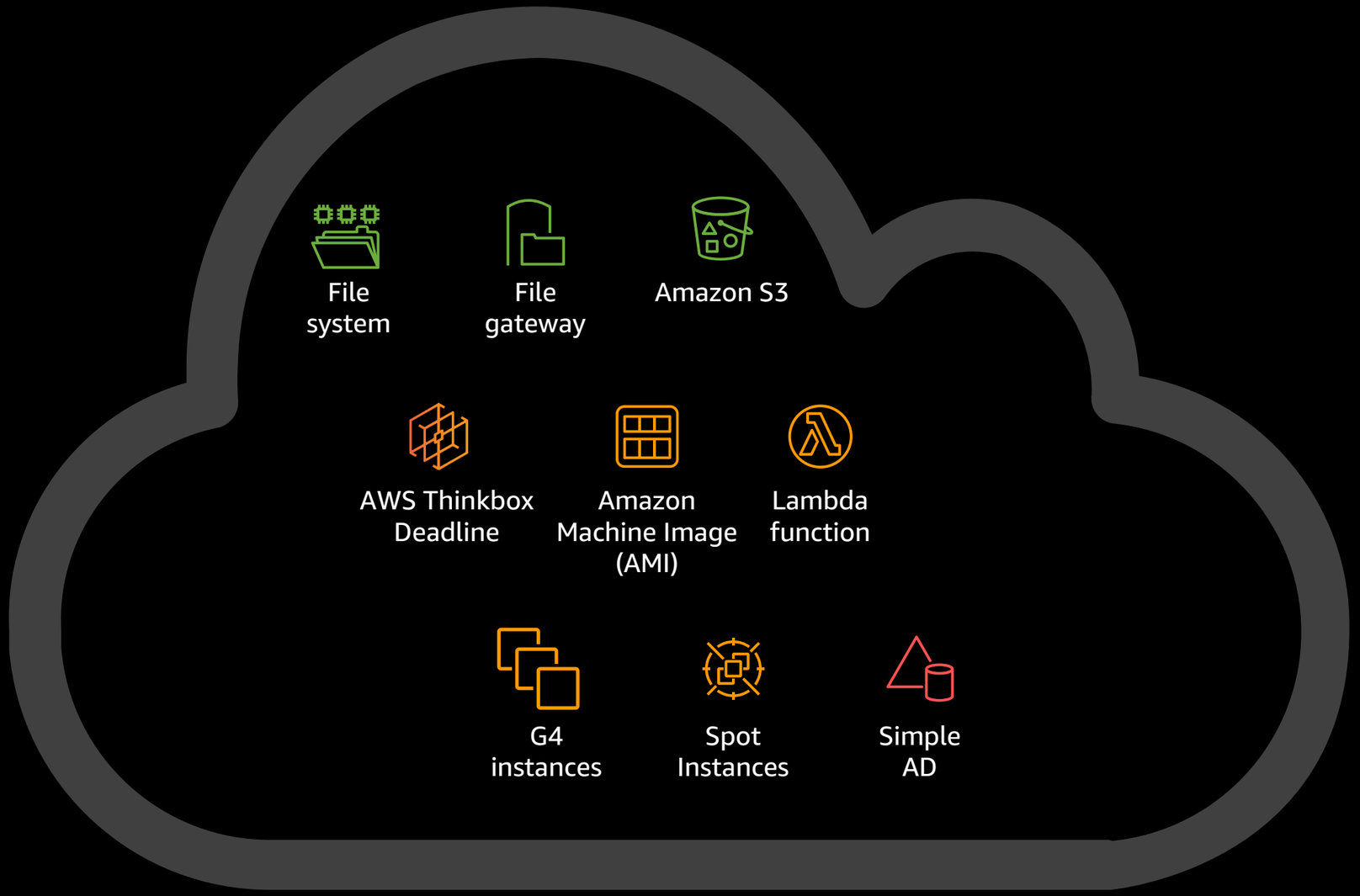
HIVE VFX

“It can take some time to wrap your head around the cloud, and a lot of people don’t realize how accessible it is with AWS. I am by no means an IT person, and I was able to migrate my entire workflow to AWS, in the middle of a project, in about a month. The process was very user-friendly, and I would encourage anyone considering the cloud for VFX to just test it.”

Bernie Kimbacher
Founder, Hive VFX



Virtual private cloud



File systems

Amazon FSx

Fully managed, high-performance cloud file system for Windows and Linux workloads



Partner

Mix of Windows and Linux clients; scales to billions of files



Partner

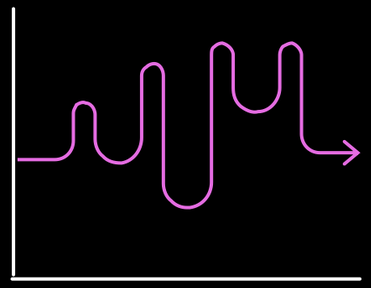
High performance for HPC can leverage Amazon S3 or Amazon S3 Glacier



Amazon Elastic Compute Cloud (Amazon EC2)

On-Demand

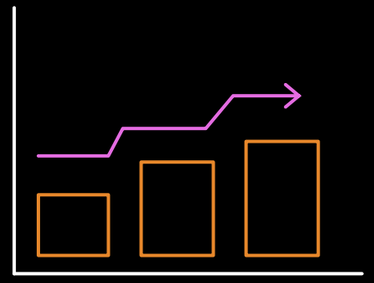
Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads to define needs

Reserved Instances

Make a 1- or 3-year commitment and receive a **significant** **discount** off On-Demand prices



Committed and steady-state usage

Spot Instances

Spare Amazon EC2 capacity **at savings of up to 90%** off On-Demand prices



Fault-tolerant, flexible, stateless workloads

Virtual workstations

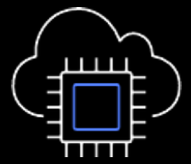


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Virtual workstations

BENEFITS



High-performance graphics



Scale at speed



Do more of what you do best



Simplify data management



Use your favorite tools

Virtual workstations

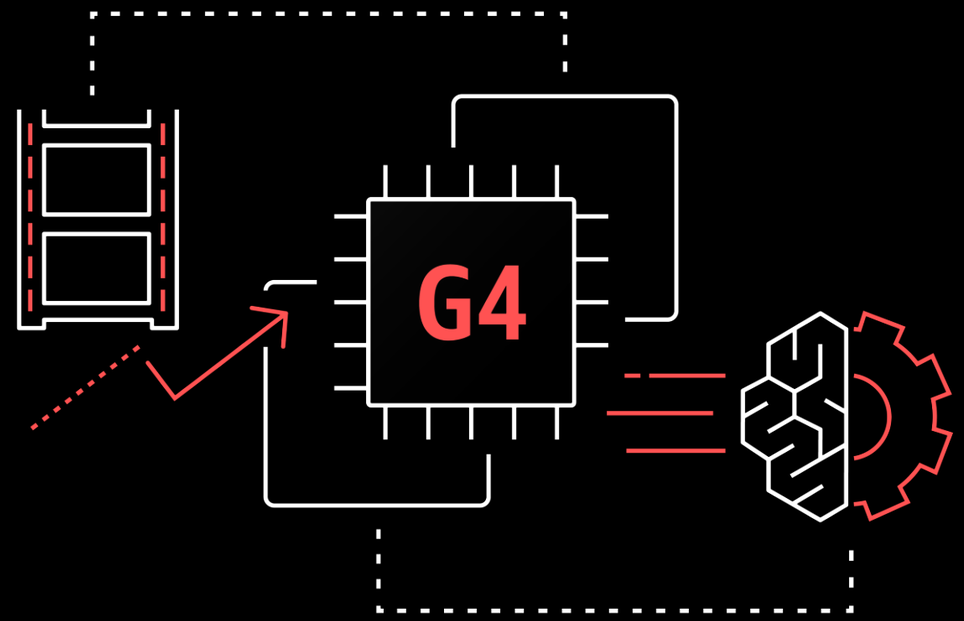
AMAZON EC2 G4 INSTANCES

Machine learning inference

Graphics-intensive applications

Video transcoding

Highly cost-effective compute in the cloud for running machine learning inference and graphics-intensive applications



Virtual workstations

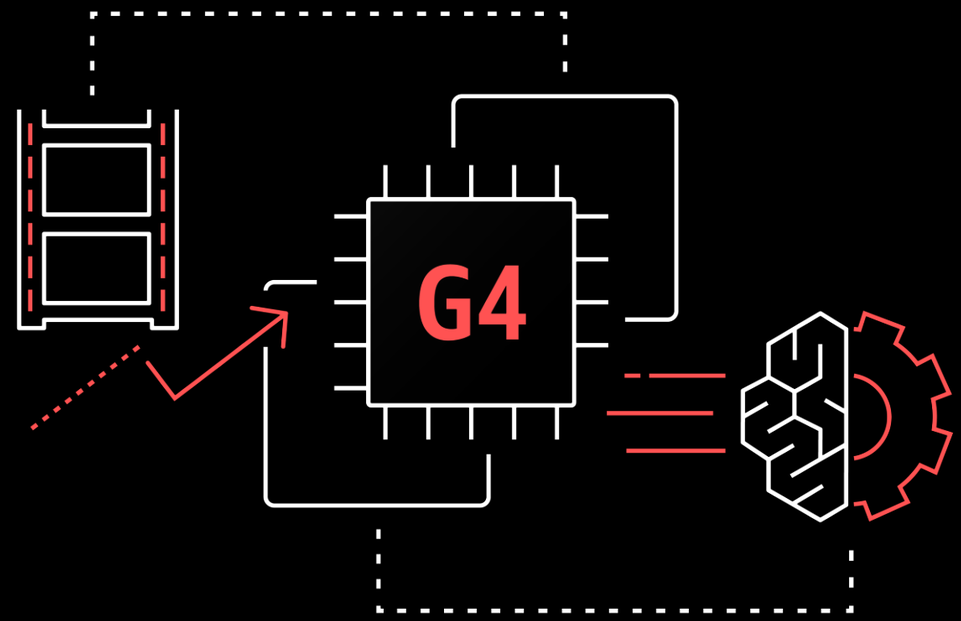
AMAZON EC2 G4 INSTANCES

Machine learning inference

Graphics-intensive applications

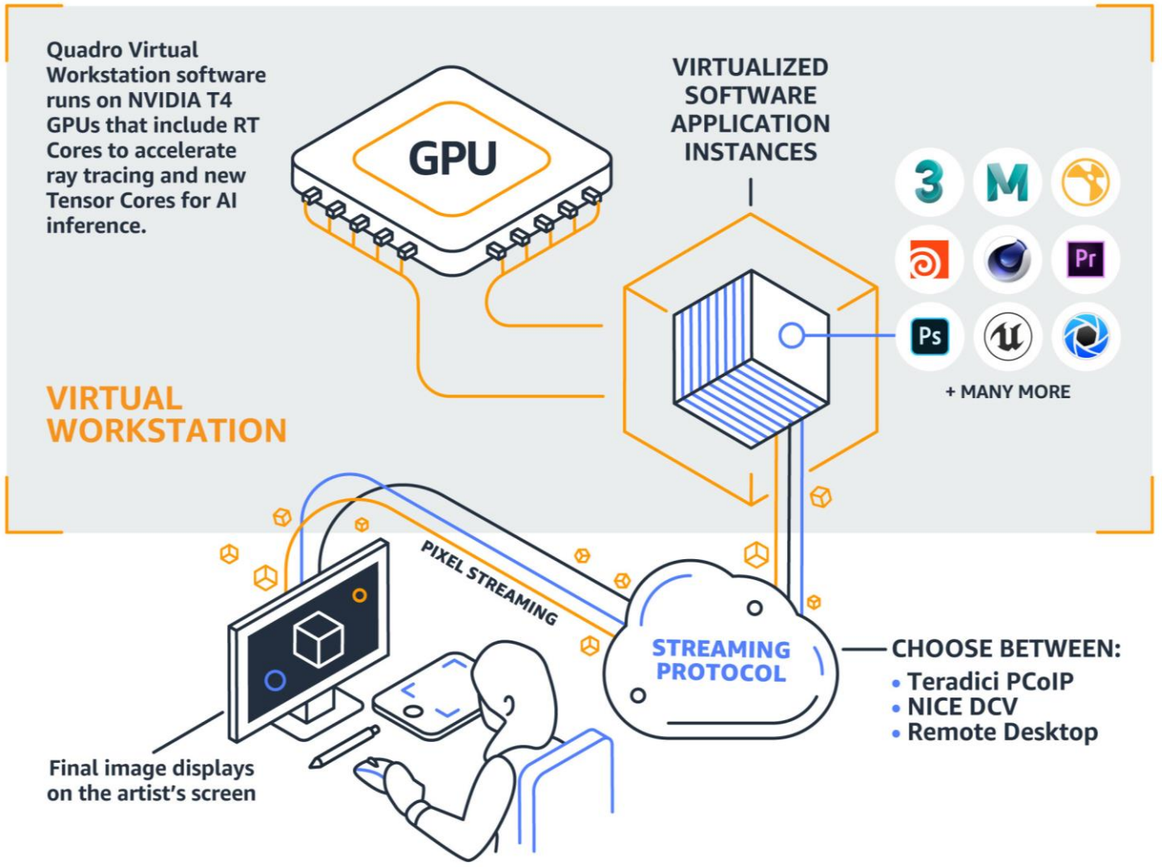
Video transcoding

- NVIDIA T4 Tensor Core GPUs
- Up to 1.8 TB of local NVMe storage
- Up to 100 Gbps of networking throughput



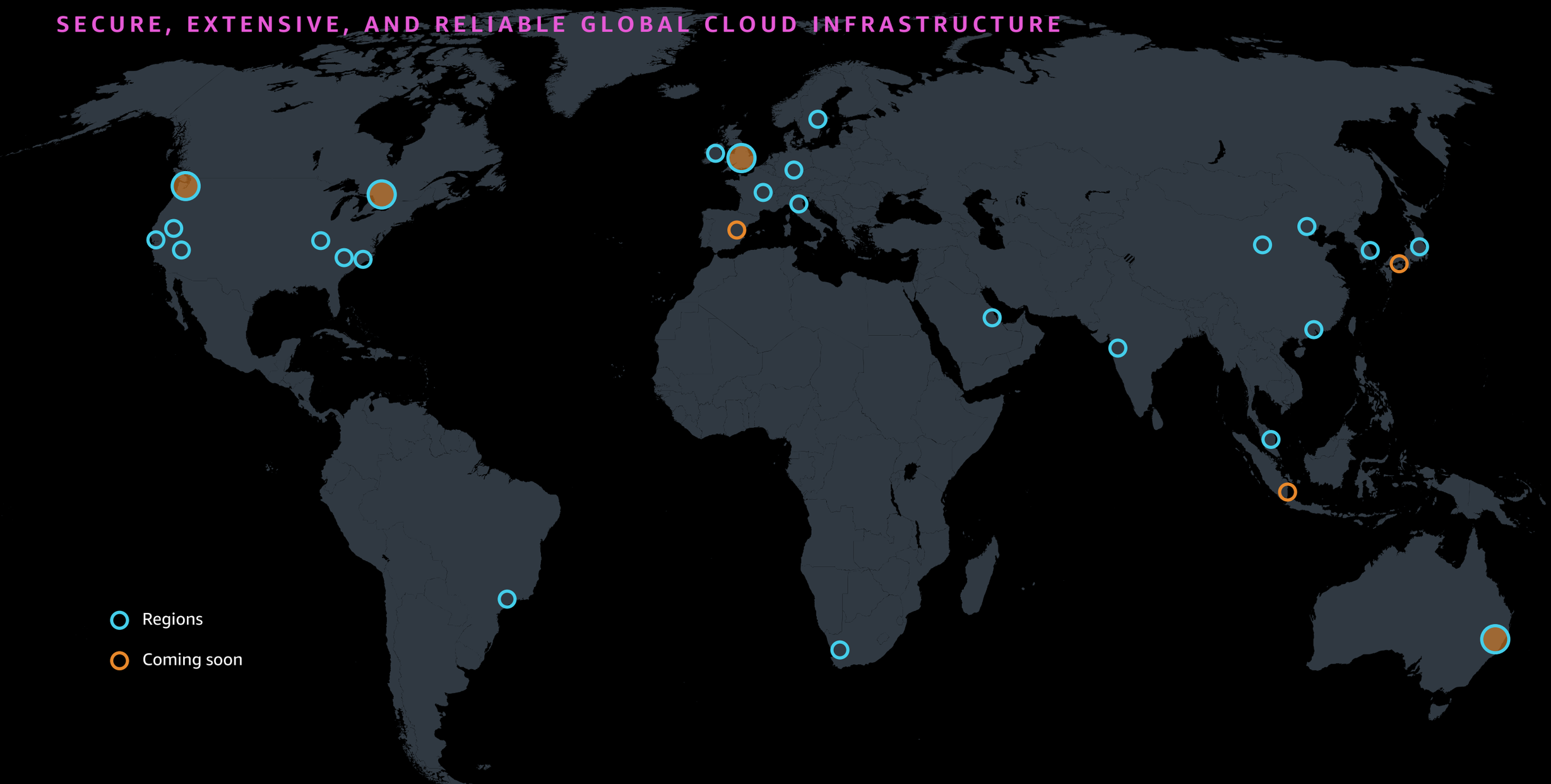
Virtual workstations

HOW IT WORKS



AWS global infrastructure

SECURE, EXTENSIVE, AND RELIABLE GLOBAL CLOUD INFRASTRUCTURE




HOLLYWOOD

AWS global infrastructure

LOCAL ZONES

- New type of AWS infrastructure deployment
- Places compute, storage, database, and other services closer to users
- For demanding applications that require single-digit latencies



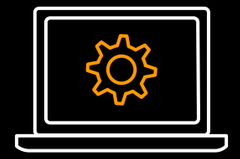
AWS infrastructure at the edge



Local compute, storage, database, and other services



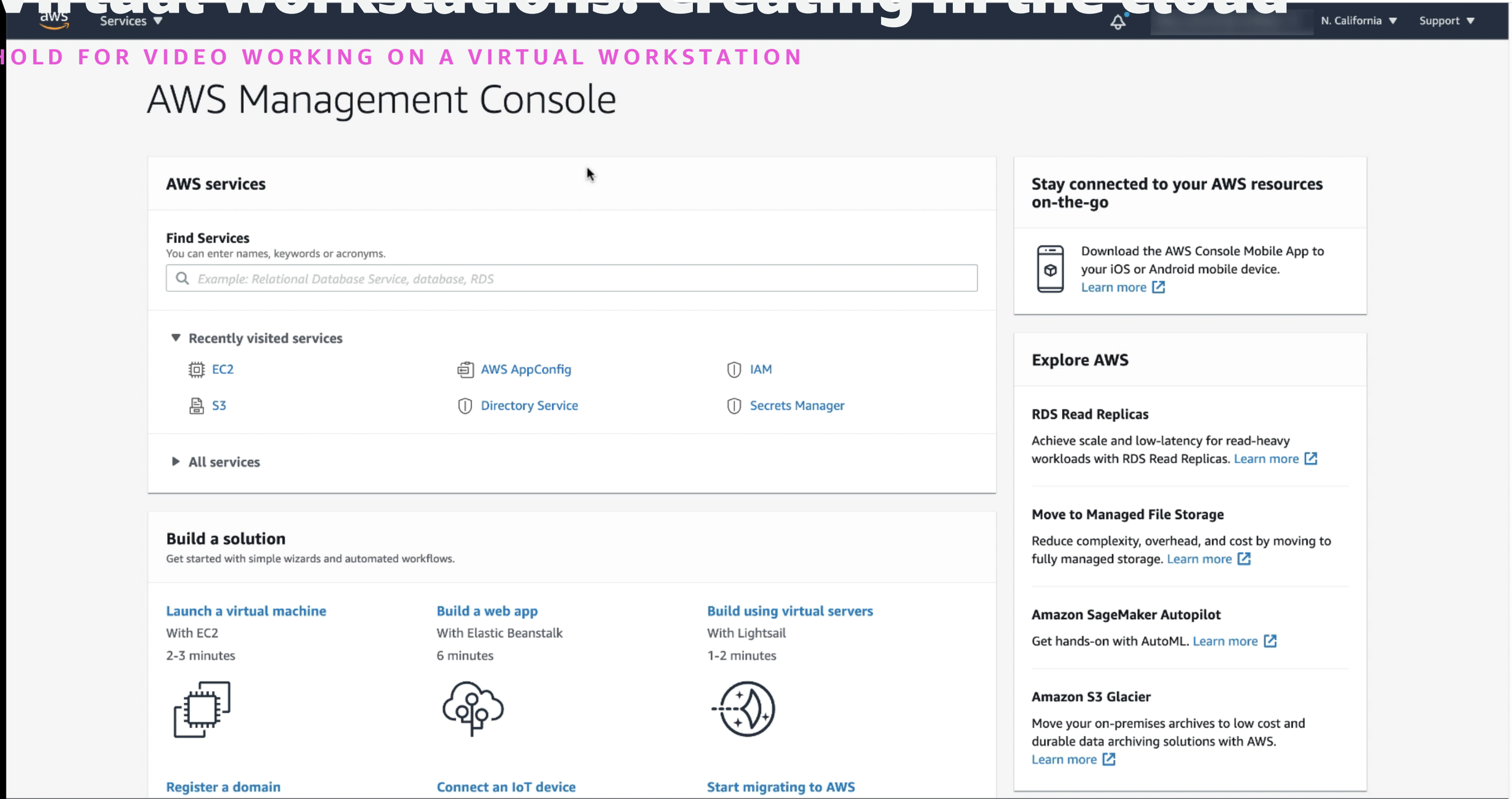
Connect to services in AWS Regions



Deliver new low-latency apps

Virtual workstations: Creating in the cloud

HOLD FOR VIDEO WORKING ON A VIRTUAL WORKSTATION



Spotlight

THE MOLECULE

“We are using Teradici to give artists access to dedicated, powerful, and secure AWS machines to work off of files on our server. This is set up for Nuke, Maya, Houdini, Mocha, SynthEyes, Krita, Resolve, Mari, and Substance Painter. We spin up the AWS instances in the morning and then down again after the workday is over … It’s been relatively seamless.”

Blaine Cone
Head of Production, The Molecule




Ready!



Getting started



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Getting started

1. DIY: Build your own studio in the cloud
2. Deploy with AWS CloudFormation templates



Getting started

1. **DIY: Build your own studio in the cloud**
2. Deploy with AWS CloudFormation templates



Build your own studio in the cloud

Who is this for?

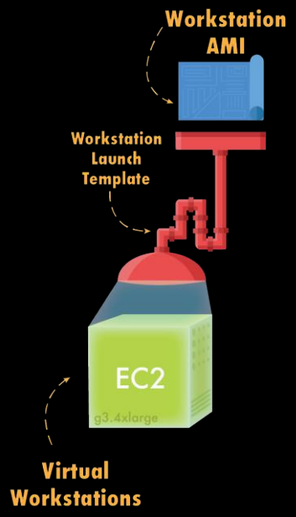
Studios that are prepared to dive in and build their own studio in the cloud from scratch

How does it work?

A series of artist-friendly tutorials explain step by step how to create a VPC, spin up virtual workstations, configure storage, build a render farm, and add users with Active Directory



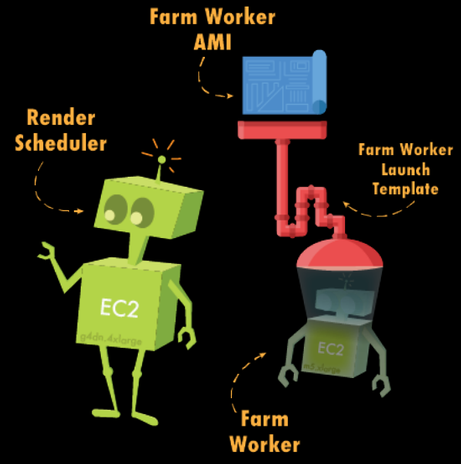
Create VPC



Spin up virtual workstations



Configure storage

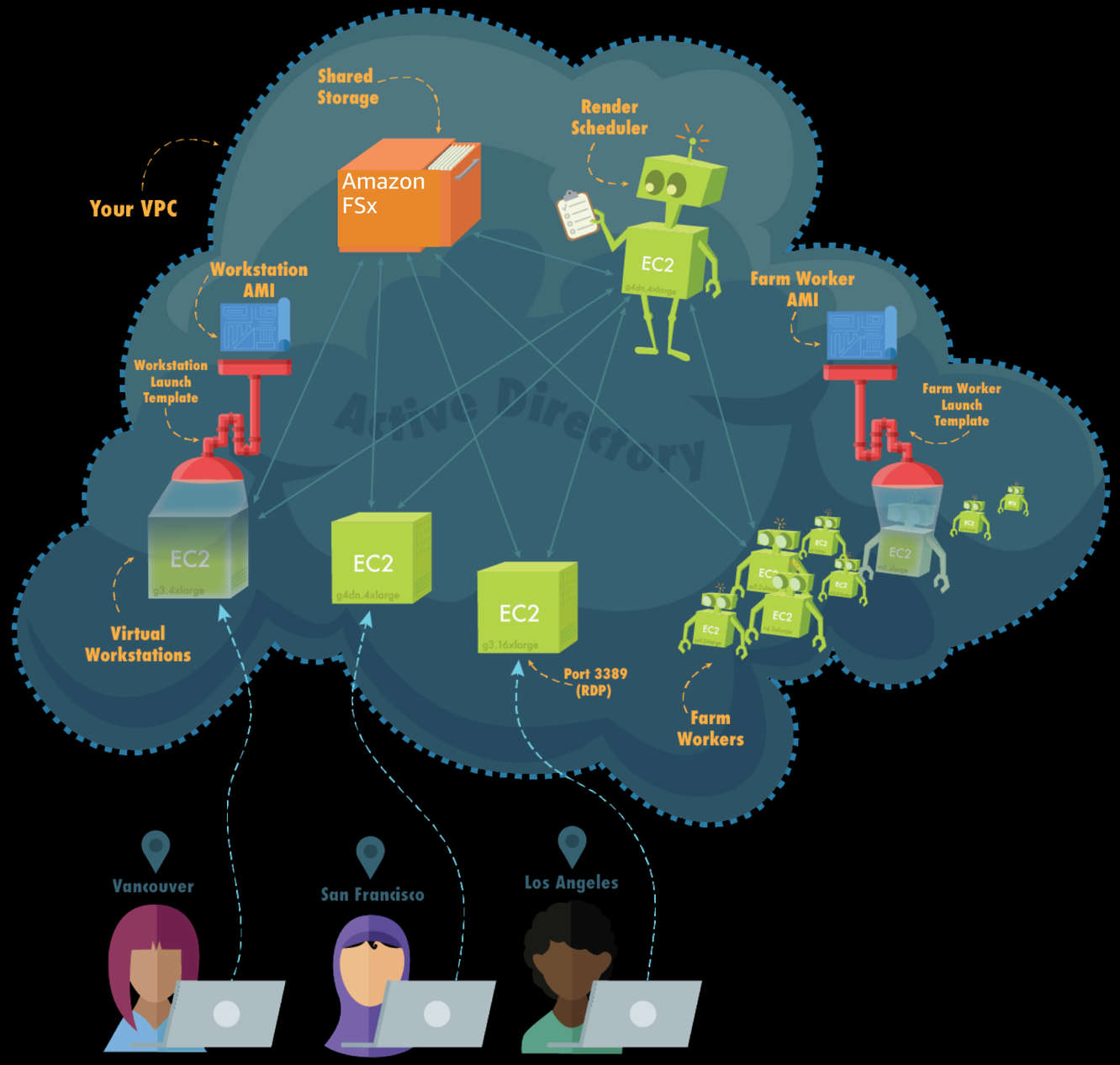


Build a render farm



Add users

Build your own studio in the cloud



Getting started

1. DIY: Build your own studio in the cloud
2. **Deploy with AWS CloudFormation templates**



Deploy with AWS CloudFormation templates

Who is this for?

Studios that want to test a virtual workstation and understand what it's like to work in the cloud

How does it work?

Automated deployment of a virtual private cloud (VPC) with public and private subnets, and a virtual workstation ready for content creation



Deploy with
AWS CloudFormation



Choose your
operating system



Amazon EC2 G4
virtual workstations



Connect
to Amazon S3



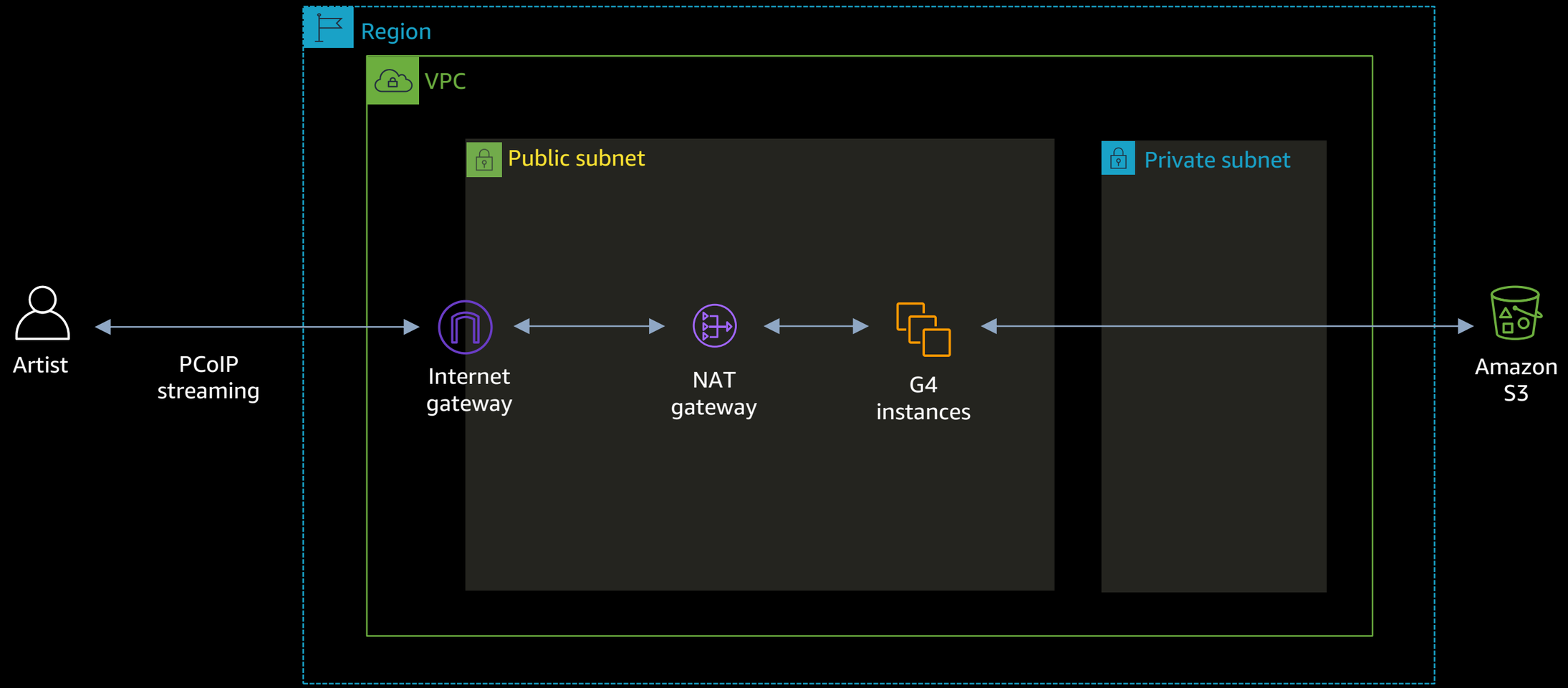
Stream
with Teradici



Create
with Blender

Deploy with AWS CloudFormation templates

REFERENCE ARCHITECTURE



ProServe

VFX Studios, new to AWS, might need assistance with onboarding its production environment so that it is **production ready** for content creation

ProServe creates a **Packaged Offer** to customize and deploy a solution relative to your existing infrastructure and helps you deploy and configure your setup



This is currently focused on VFX/Animation Studios, but it is equally relevant to Games Studios and CAD Studios

User success



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Spotlight

UNTOLD STUDIOS

First fully cloud-based creative studio forging reputation for innovative work



Dave – Professor X; image courtesy of Untold Studios

Problem statement

- Rethink what a creative studio can be
- Launch a new studio, as well as a community, that leverages the latest technology to focus more on creativity
- Do this without the typical upfront capital expenditure on infrastructure

Use of AWS

- Virtual workstations utilizing Amazon EC2 G4 instances
- Rendering with Amazon EC2 Spot Instances
- Storage on Amazon S3, leveraging WekaIO for file system throughput

Business benefits

- Launched a creative studio without big upfront capital expenditure
- Scaled team to more than 85 using virtual workstations on AWS, saving on new machines
- Can add new artists to the pipeline in minutes vs. waiting on new equipment
- Freedom to focus on creativity across disciplines (music, live sets, episodic entertainment, commercials, textiles, and more)

Spotlight

UNTOLD STUDIOS

First fully cloud-based creative studio forging reputation for innovative work

“Using AWS, we can work with an infinite number of people, including directors, designers, animators, copywriters, and script developers, so we’d love to keep adding to our arsenal as we take on new and exciting creative challenges in original content, advertising, music, and beyond.

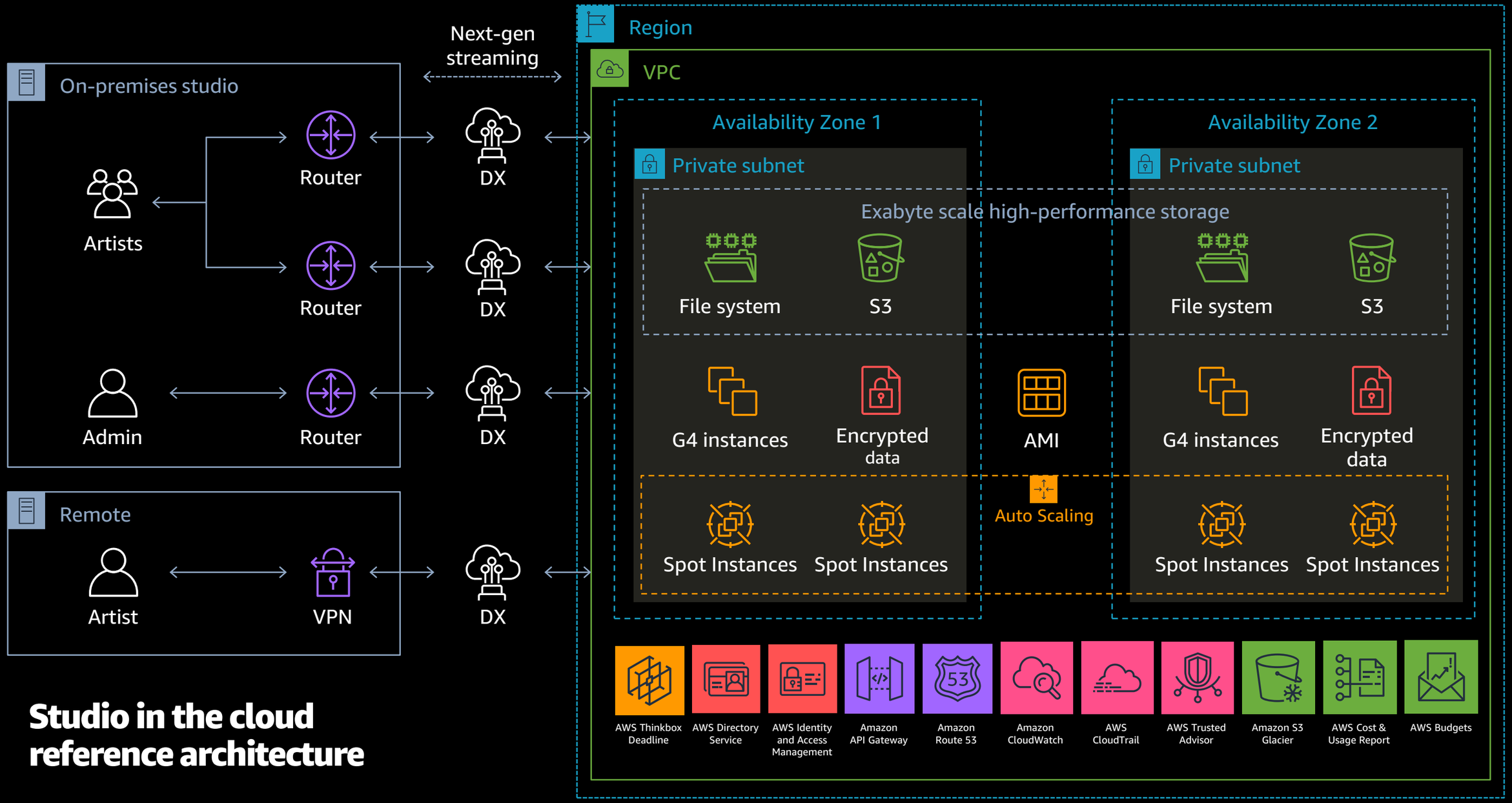
As digital content is becoming increasingly complex and bigger in data size, with shots taking longer to render and requiring more powerful machines, we’re well-suited to take on these formidable projects and can do so with no capital expenditure, simply chang[ing] a few lines of code.”

Sam Reid

Head of Technology, Untold Studios







Studio in the cloud reference architecture

Recap

About our team

Cloud basics

Virtual workstations

Getting started

User success



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Deploy a virtual workstation on AWS

github.com/aws-samples/content-creation-workstation

Build your own studio in the cloud

aws.amazon.com/getting-started/hands-on/studio-in-the-cloud

Contact us

www.awsthinkbox.com/sales

Thank you!



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