

AWS RE:INVENT

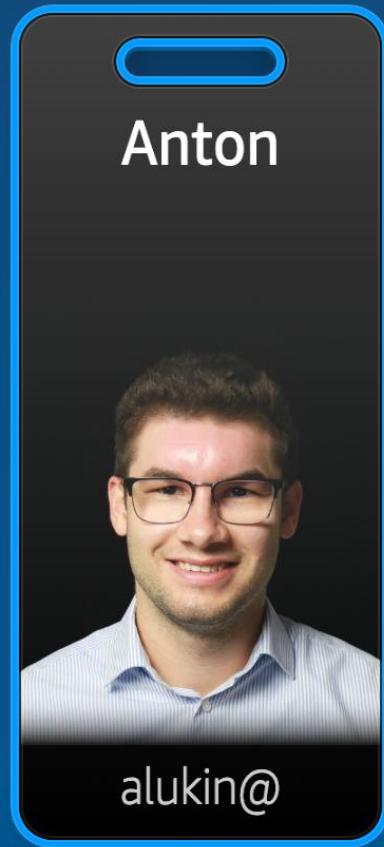
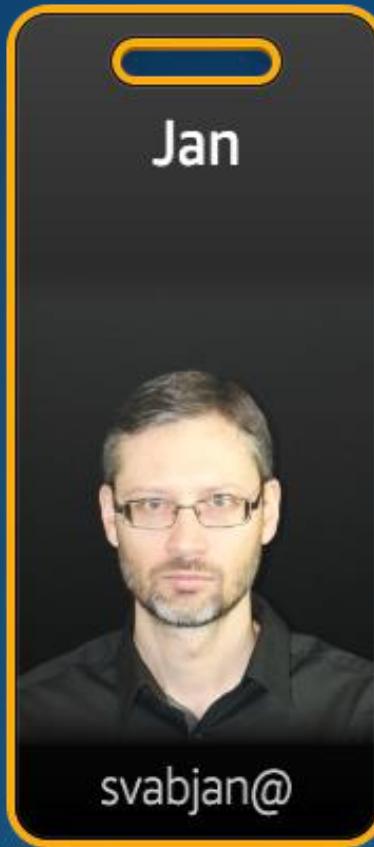
RE:CAP



About Us

- Jan Šváb, Senior Solutions Architect @ AWS
 - Almost 6 years working for Amazon
 - Most of the time as an SDE in Vancouver, BC
-

- Anton Lukin, Solutions Architect @ AWS
- IT Consultant, Tech Lead, Developer, Analyst...
- F1 fan, Golfer, Former Professional Hockey Player



AWS
re:Invent

The world is **asynchronous**



AWS re:Invent is a learning conference hosted for the global cloud computing community with in-person and virtual content.

2000+ Technical Sessions

50,000+ Attendees

100+ Announcements

Agenda

Compute

Storage

Networking

Security

Serverless

Builder Experience

AI/ML & Analytics

Other

Compute



NEW

AWS Nitro v5

Custom Silicon built by Annapurna Labs

2x

Transistors

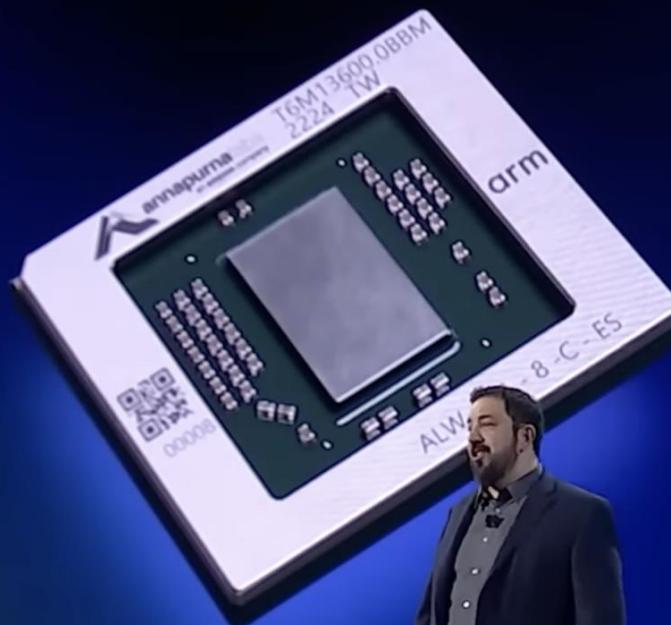
50%

Faster DRAM
Speed

2x

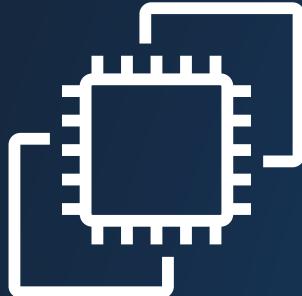
More PCIe
Bandwidth

GENERALLY AVAILABLE TODAY



Next Generation Nitro System - Nitro v5

CUSTOM SILICON BUILT BY ANNAPURNA LABS



AWS Nitro System

- 2x Transistors
- 50% Faster DRAM Speed
- 2x More PCIe Bandwidth
- 60% Higher PPS
- 30% Lower Latency
- 40% Better Performance per Watt

New Graviton3E instance - C7gn

LATEST-GENERATION EC2 INSTANCE WITH ENHANCED NETWORKING, POWERED BY GRAVITON AND NITRO V5



C7gn instance

- 200Gbps Networking Bandwidth
- Up to 50% better Packet Processing Performance (compared to C6gn)
- 2x Higher PPS/vCPU (compared to C6gn)

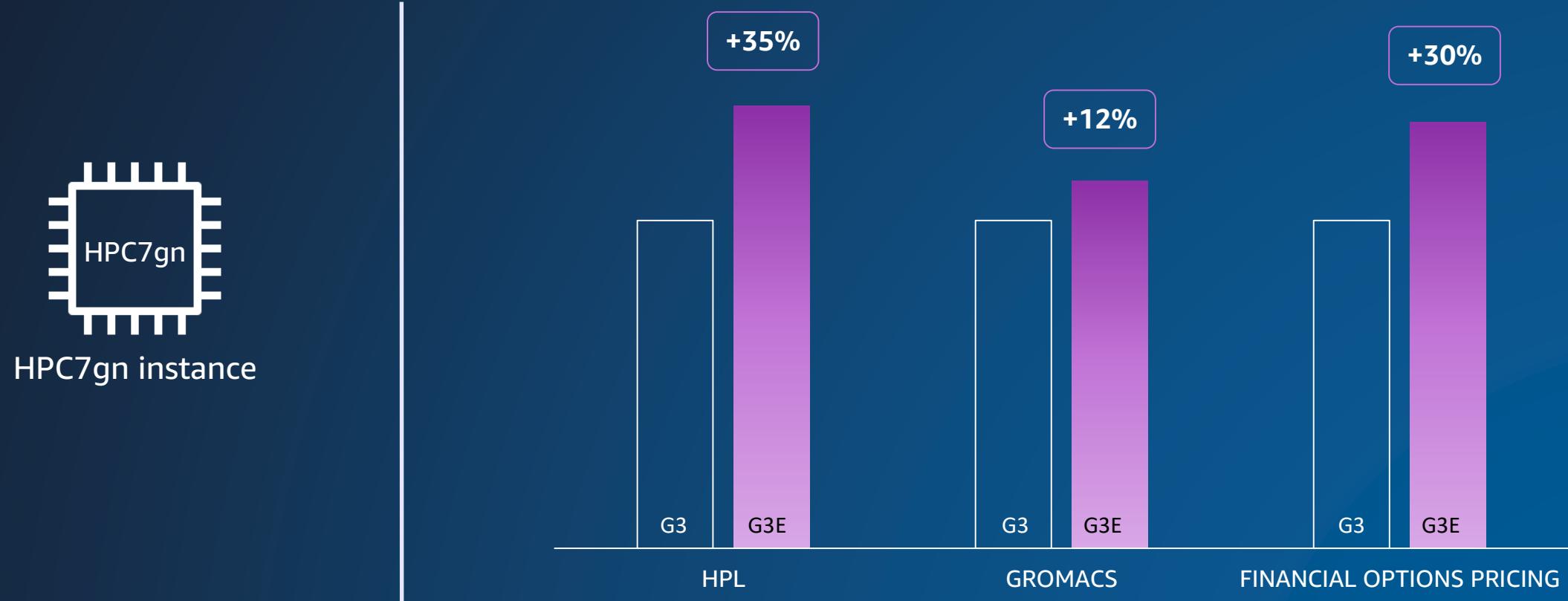
Sign up for the C7gn preview at <https://aws.amazon.com/ec2/instance-types/c7g/>



Preview

New Graviton3E instance - HPC7g

THE BEST PRICE/PERFORMANCE FOR TIGHTLY COUPLED COMPUTE-INTENSIVE HPC



Coming Soon

Amazon EC2 Inf2

HIGHEST INFERENCE PERFORMANCE AT THE LOWEST COST IN AMAZON EC2



Second-generation AWS inferential accelerator



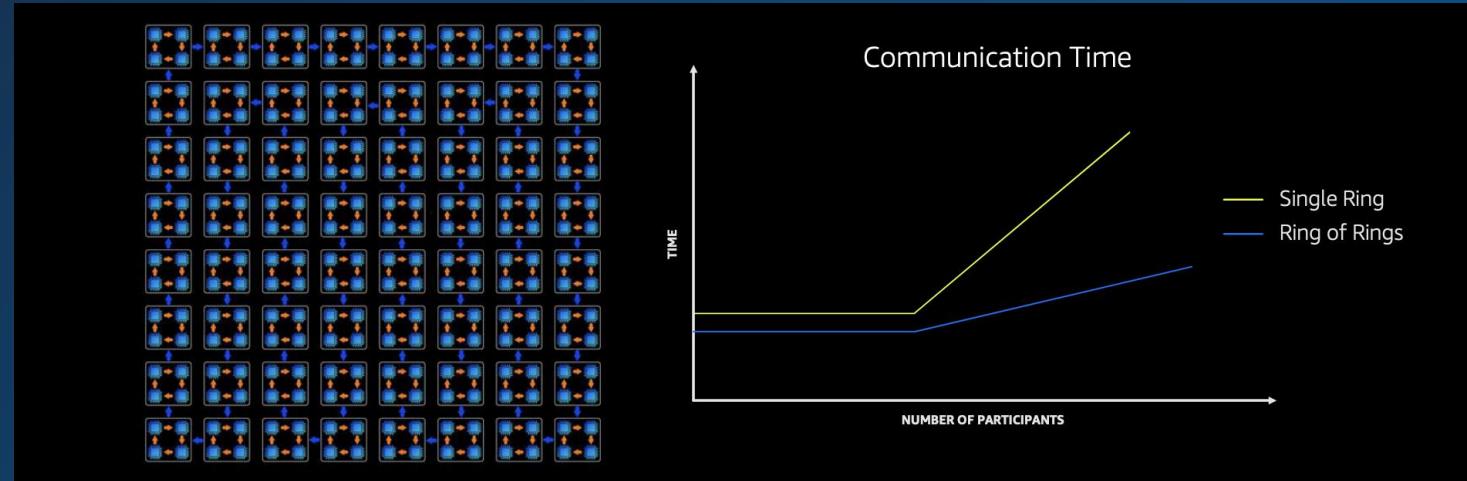
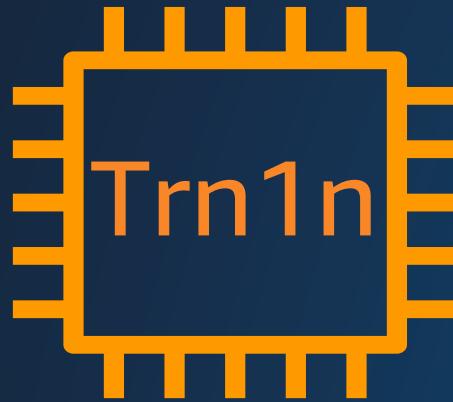
3x higher computer performance, 4x higher accelerator memory, up to 4x higher throughput and up to 10x lower latency compared to Inf1



Optimized for complex models such as large language models and vision transformers

Amazon EC2 Trn1n

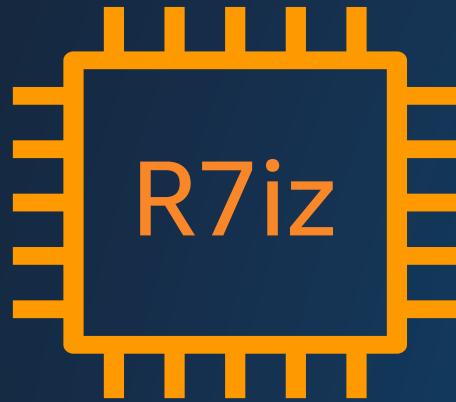
HIGHEST MACHINE LEARNING PERFORMANCE IN AMAZON EC2



Enhanced network performance version of Trn1 instance with AWS Tranium chip for AWS machine learning

Low latency EFA-optimized network with up to 1.6 Tbps

Amazon EC2 R7iz



Memory-optimized instances with high clock frequency CPUs
Powered by 4th generation Intel Xeon Scalable Processor
(Sapphire Rapids) running at up to 3.9GHz with all cores turbo

- Up to 128 vCPUs and 1,024 GiB of memory
- Up to 50Gbps network bandwidth
- Up to 40Gbps EBS bandwidth

Highest performance of any X86-based instance, up to 20% faster than z1d instances

Amazon EC2 M6in, M6ind, R6in, R6ind



General-purpose and memory-optimized instances with high clock frequency CPUs and high network performance

3rd generation Intel Xeon Scalable Processor running at up to 3.5GHz with all cores turbo

Up to 200Gbps network bandwidth

Up to 80Gbps EBS bandwidth

Up to 128 vCPUs and 512 GiB of memory for M6in and M6ind

R6in, R6ind up to 128vCPU, 1,024GiB memory

M6ind, R6ind with 7.6TB NVMe SSD

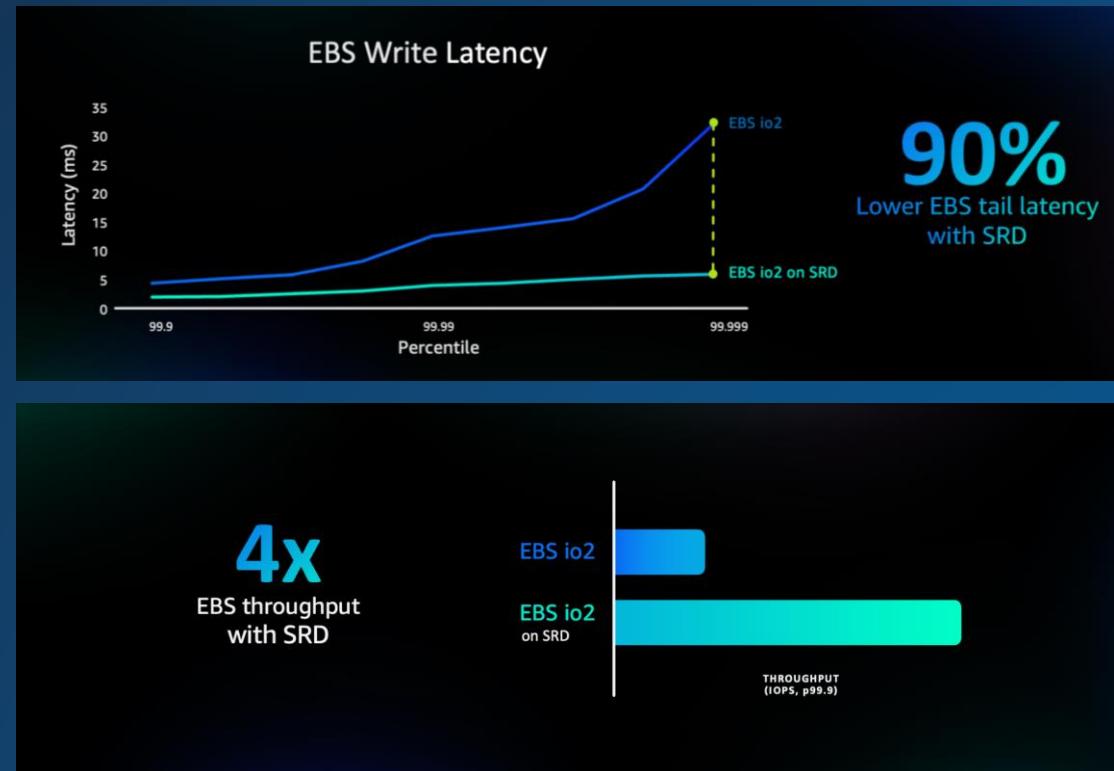
Storage & Networking

Amazon EFS Updates



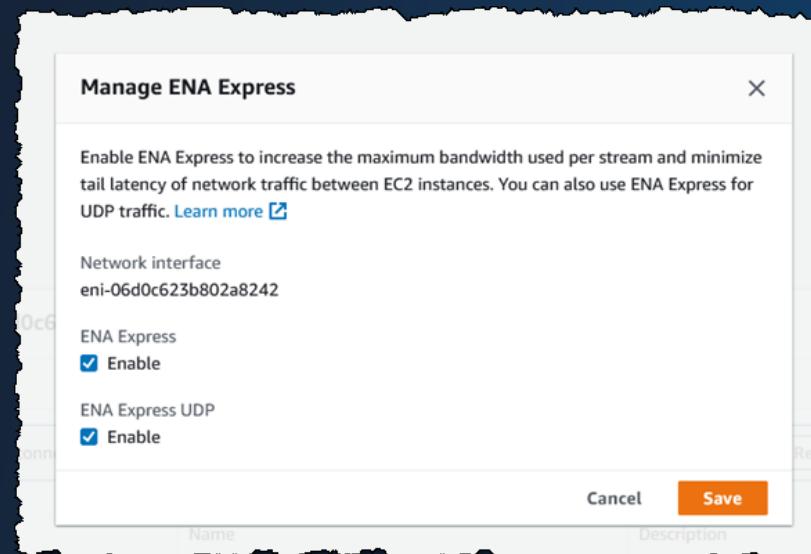
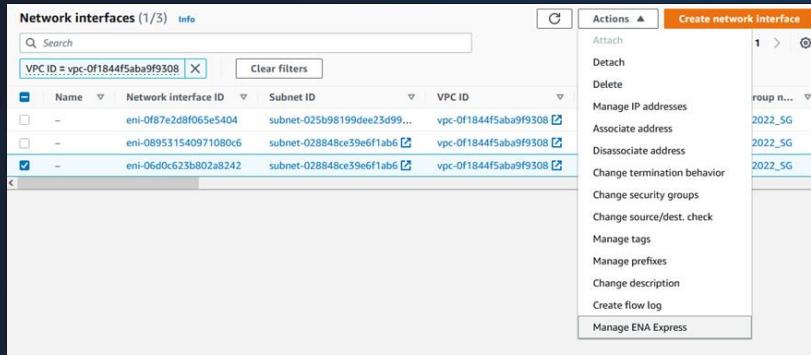
- **Elastic Throughput** - Provides as much throughput as needed on a pay-as-you-go basis
- **New Lifecycle Policy** - 1 day can be set in addition to the existing 7, 14, 30, 60, and 90 days
- **Performance Improvements**
 - **Reads:** Up to 60% lower latency
(frequently-accessed data and metadata)
 - **Writes:** Up to 40% lower latency
(files 64 KB or smaller and metadata)

Amazon EBS io2 SRD support in 2023



- By applying SRD, write latency is improved by up to 90%, especially in long-tail areas such as P99.999. Throughput is also improved by 4X.

Elastic Network Adapter (ENA) Express



Enables the benefits of Scalable Reliable Diagrams (SRD) to be applied to general workloads

Users do not need to be aware of SRD and can implement it using normal TCP/UDP communication

Throughput of up to 5-25 Gbps available on a single stream

Amazon VPC Lattice

Service-aware networking



Simplifies the way developers connect, secure, and observe communication, with application layer networking between services

Connectivity

- Cross-account, cross-VPC connections to services
- Application-aware routing

Consistency across compute services

- Integration with Amazon EC2, Amazon ECS, AWS Lambda, and Amazon EKS/Kubernetes

Observability and traffic control

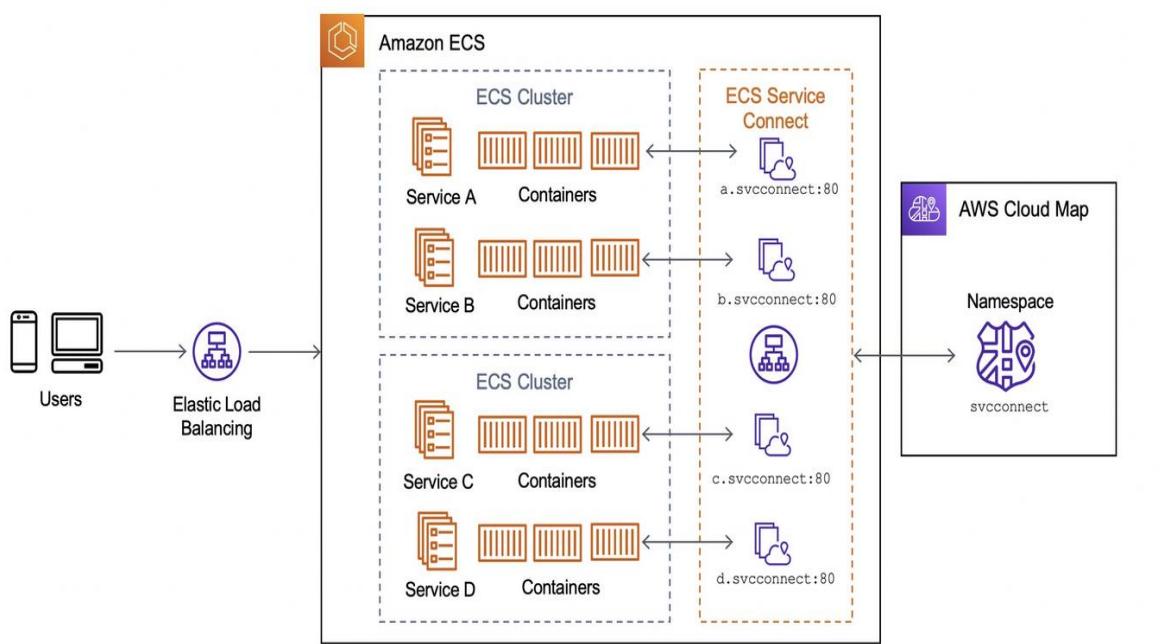
- Logs or metrics export to Amazon S3, Amazon CloudWatch, and Amazon Kinesis Data Firehose
- Advanced layer 7 routing and resiliency controls

Security

- Access policy for Zero Trust architectures
- Centralized control of inbound and outbound traffic

Amazon ECS Service Connect

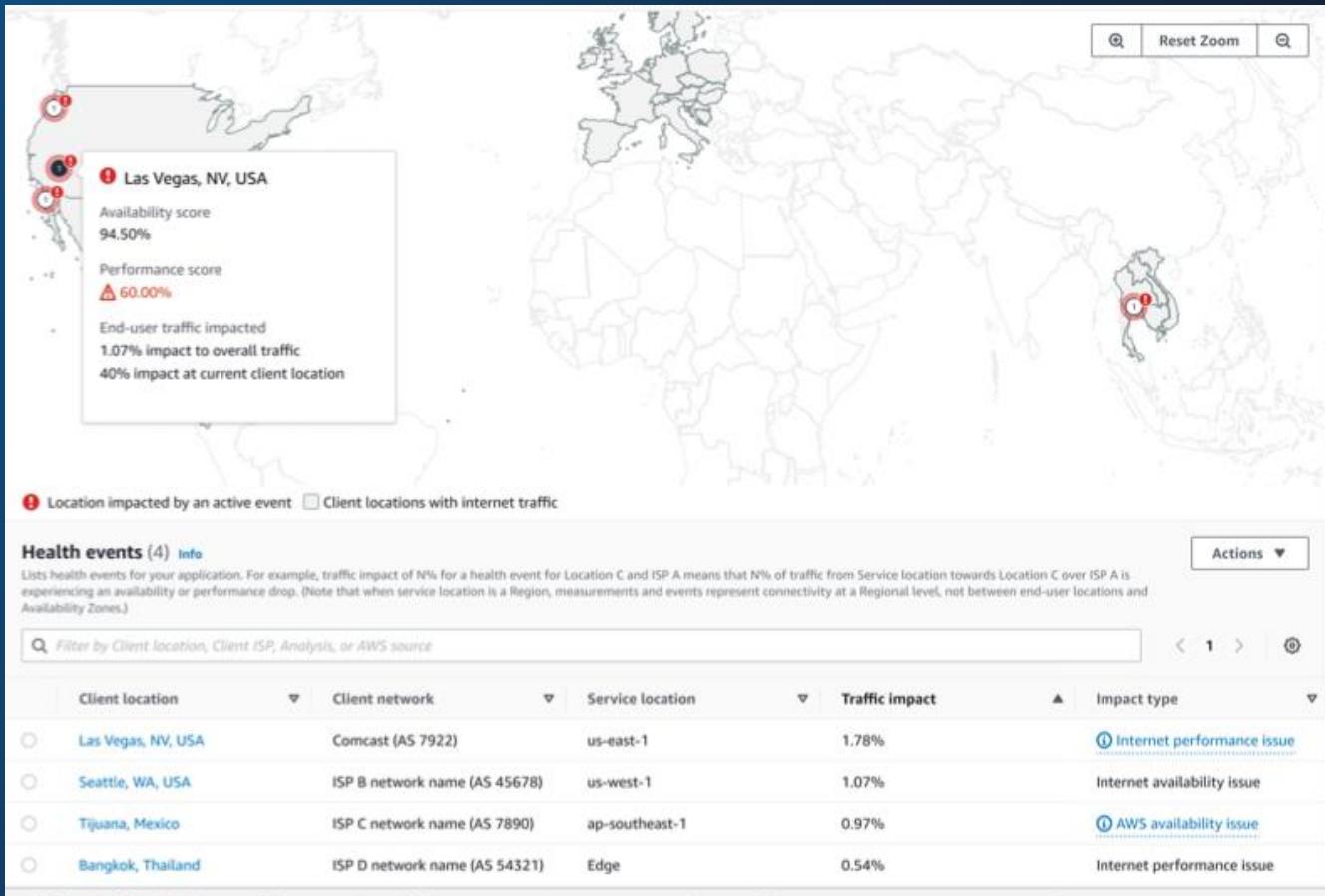
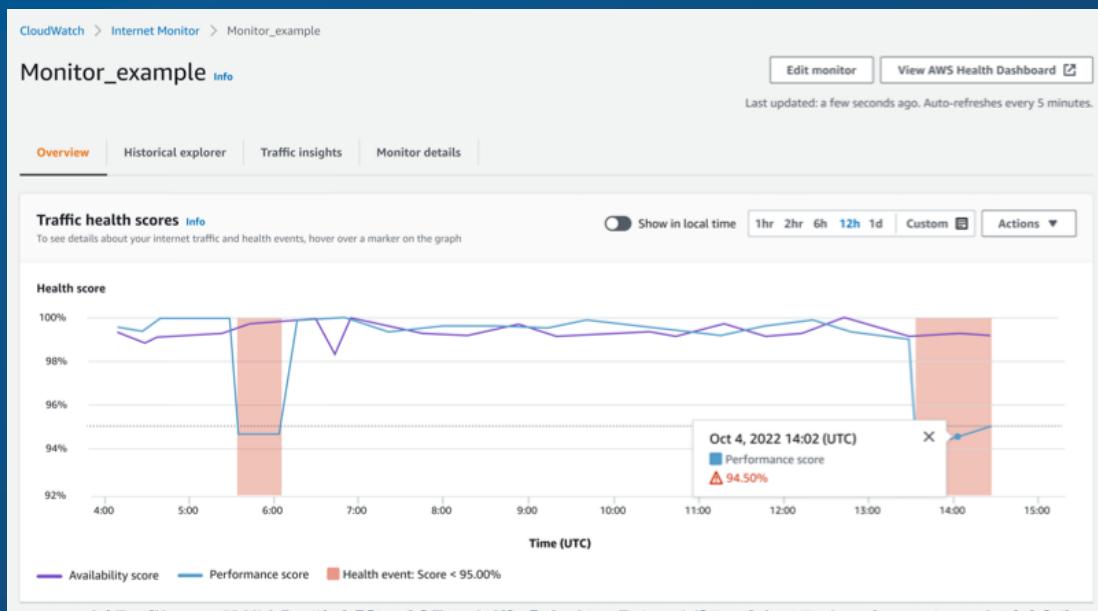
- SIMPLIFY SERVICE DISCOVERY, CONNECTIVITY AND TRAFFIC OBSERVABILITY FOR AMAZON ECS



- Focus on application code while ECS Service Connect handles service-to-service communication, service discovery and observability
- Provides easy network setup and seamless service communication deployed across multiple ECS clusters and VPCs

Amazon CloudWatch Internet Monitor

Provides visibility into how an internet issue might impact the performance and availability of your applications.

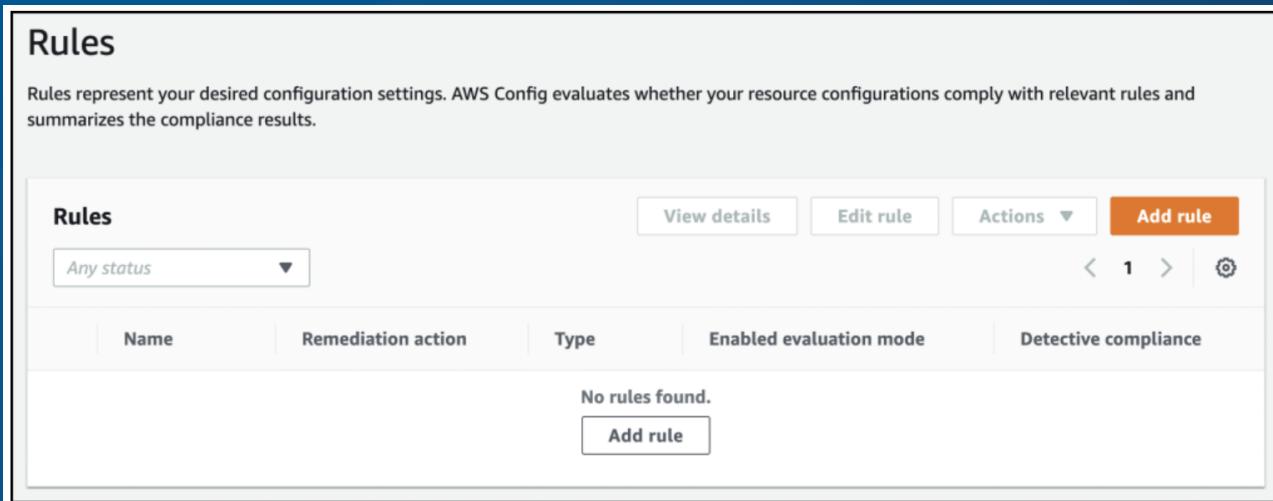


Preview

Security



AWS Config Proactive Compliance



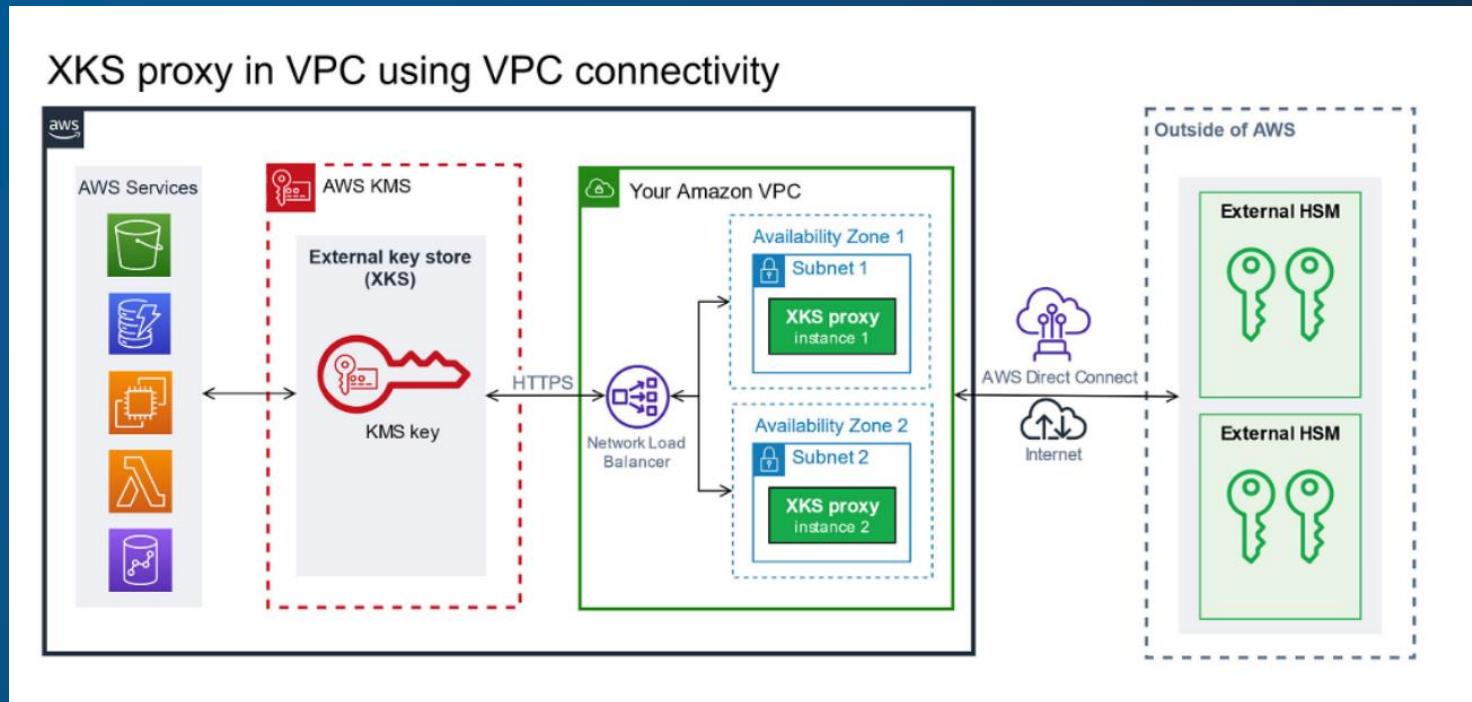
- Proactively check for compliance with AWS Config rules prior to resource provisioning
- Run rules at any time before provisioning, saving time spent remediating non-compliant resources
- Incorporate AWS Config rules into infrastructure-as-code CI/CD pipelines to identify non-compliant resources before provisioning
- Use the AWS console or APIs to enable rules to run proactively

AWS Organizations – Delegation of Administrative accounts



In organizational units with different operational policies
Sub-administrators can be authorized and easier to implement individual policies.

AWS KMS External Key Store (XKS)



- Extends existing AWS KMS custom key store feature beyond AWS CloudHSM (customer controlled, single-tenant HSM inside AWS datacenters) to keys in on-premises HSM

Amazon Inspector for Lambda Functions

AUTOMATED CONTINUAL VULNERABILITY MANAGEMENT AT SCALE



- Quickly discover and assess running Lambda functions for software vulnerabilities
- Automatically map vulnerabilities detected in software dependencies used in AWS Lambda functions to the underlying Lambda layers
- Consolidate your vulnerability management solutions for EC2, Lambda functions, and ECR container images into one fully managed service

Serverless





AWS Lambda

First Serverless Computing Service

LAUNCHED IN 2014

100+

NEW FEATURES

1 million+

ACTIVE
CUSTOMERS

10 trillion+

REQUESTS
PER MONTH

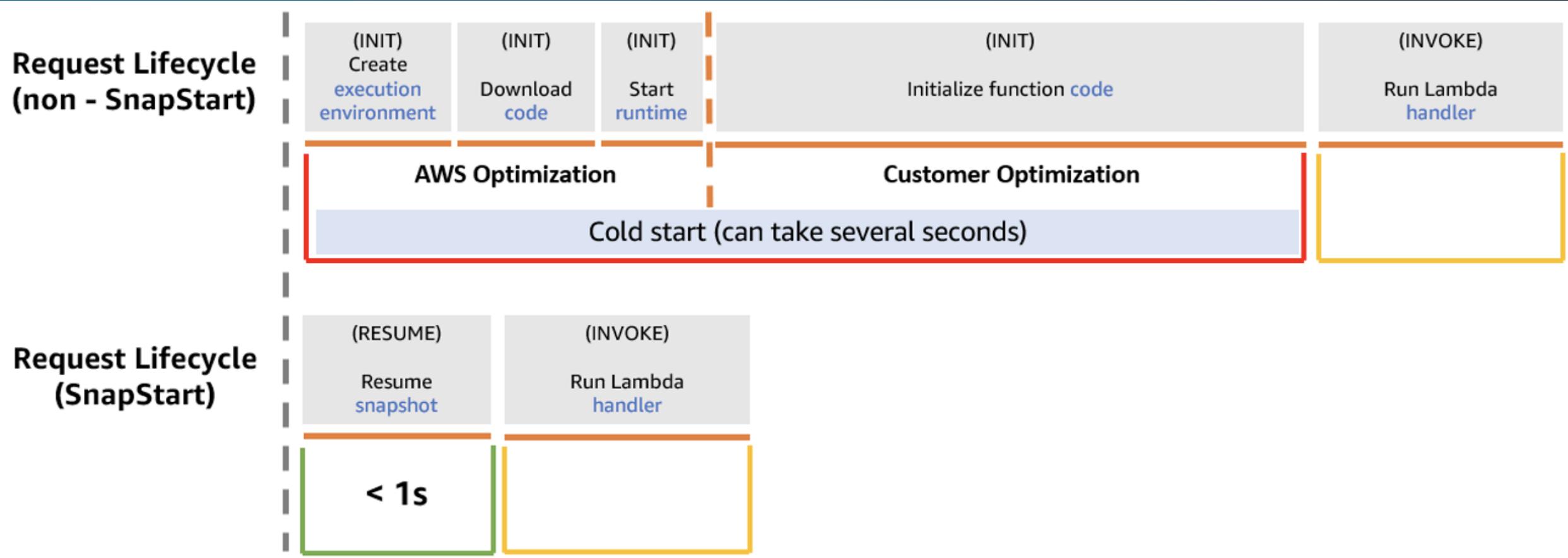


AWS Lambda SnapStart



- Reduces Java “Cold Starts” by 90%
- Designed to reduce the ‘init’ phase of function invocation
- Available for Corretto Java11 runtime.
- No extra charge

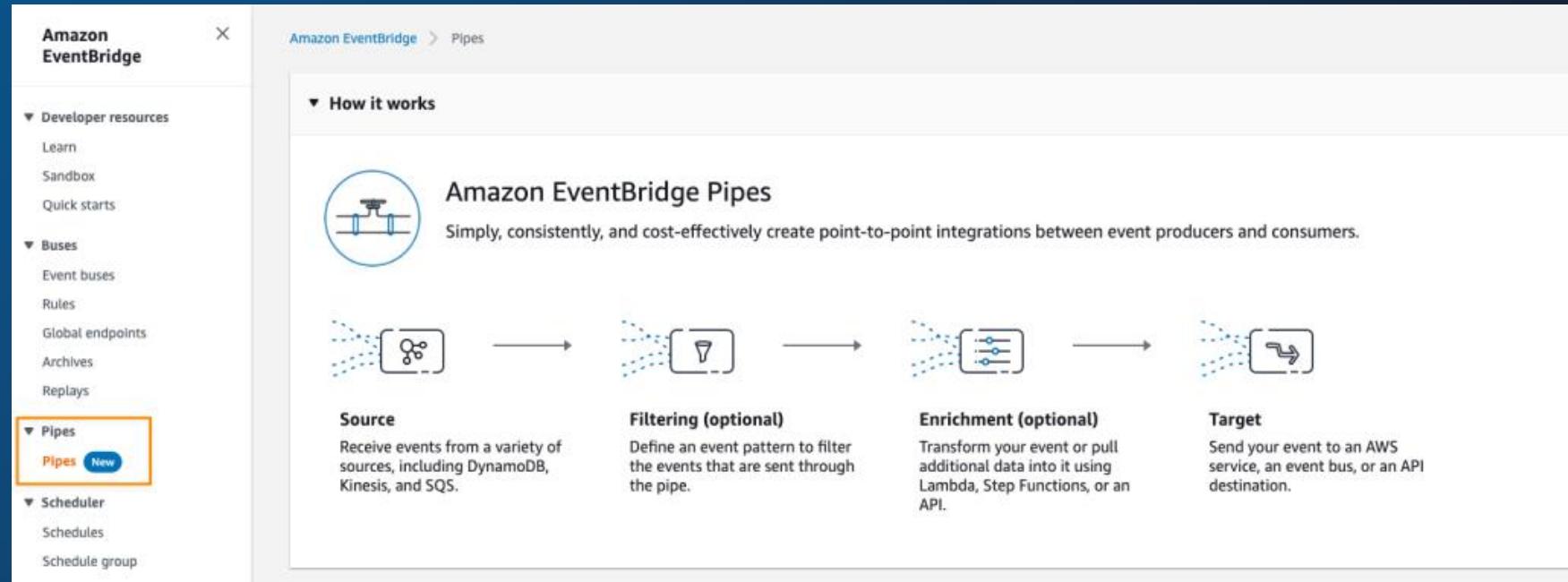
AWS Lambda SnapStart Lifecycle



Amazon EventBridge Pipes

CREATE POINT-TO-POINT INTEGRATIONS BETWEEN EVENT PRODUCERS AND CONSUMERS

- Removes the need to write undifferentiated “glue code”
- Simplest pipe consists of a source and target
- Can include filtering & enrichment as needed



AWS OpenSearch Serverless

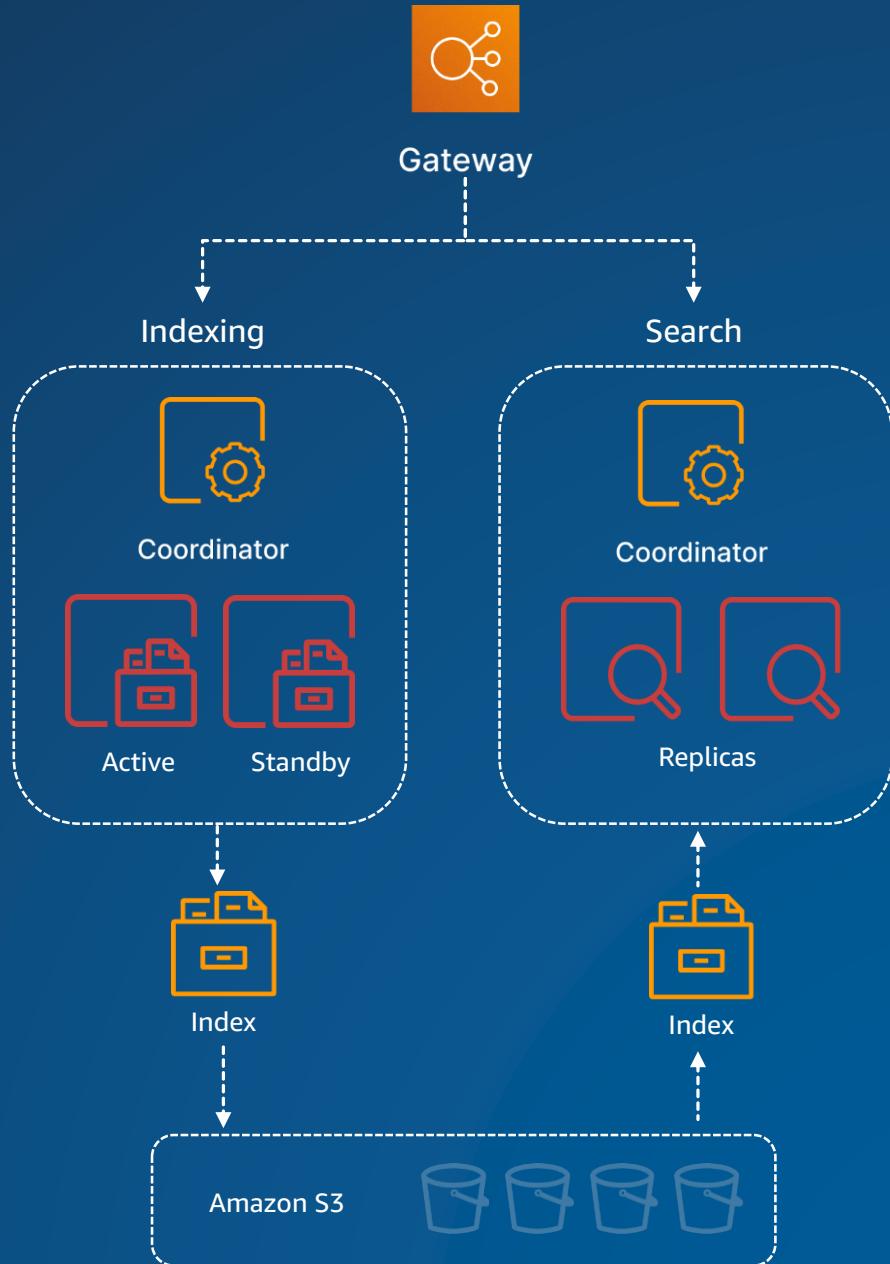
REAL-TIME SEARCH, MONITORING, AND ANALYSIS OF BUSINESS AND OPERATIONAL DATA



- Automatically provisions and scales the underlying resources to deliver fast data ingestion and query responses.
- Decouples compute and storage and separates the indexing (ingest) components from the search (query) components
- supports the same ingest and query APIs as OpenSearch so you can get started in seconds with your existing clients and applications

Technical innovations

- Storage and compute decoupled
- Separate indexing and search pipelines
- Built-in hot-warm tier
- Active-standby data nodes
- Secure service mesh
- Serverless Dashboards

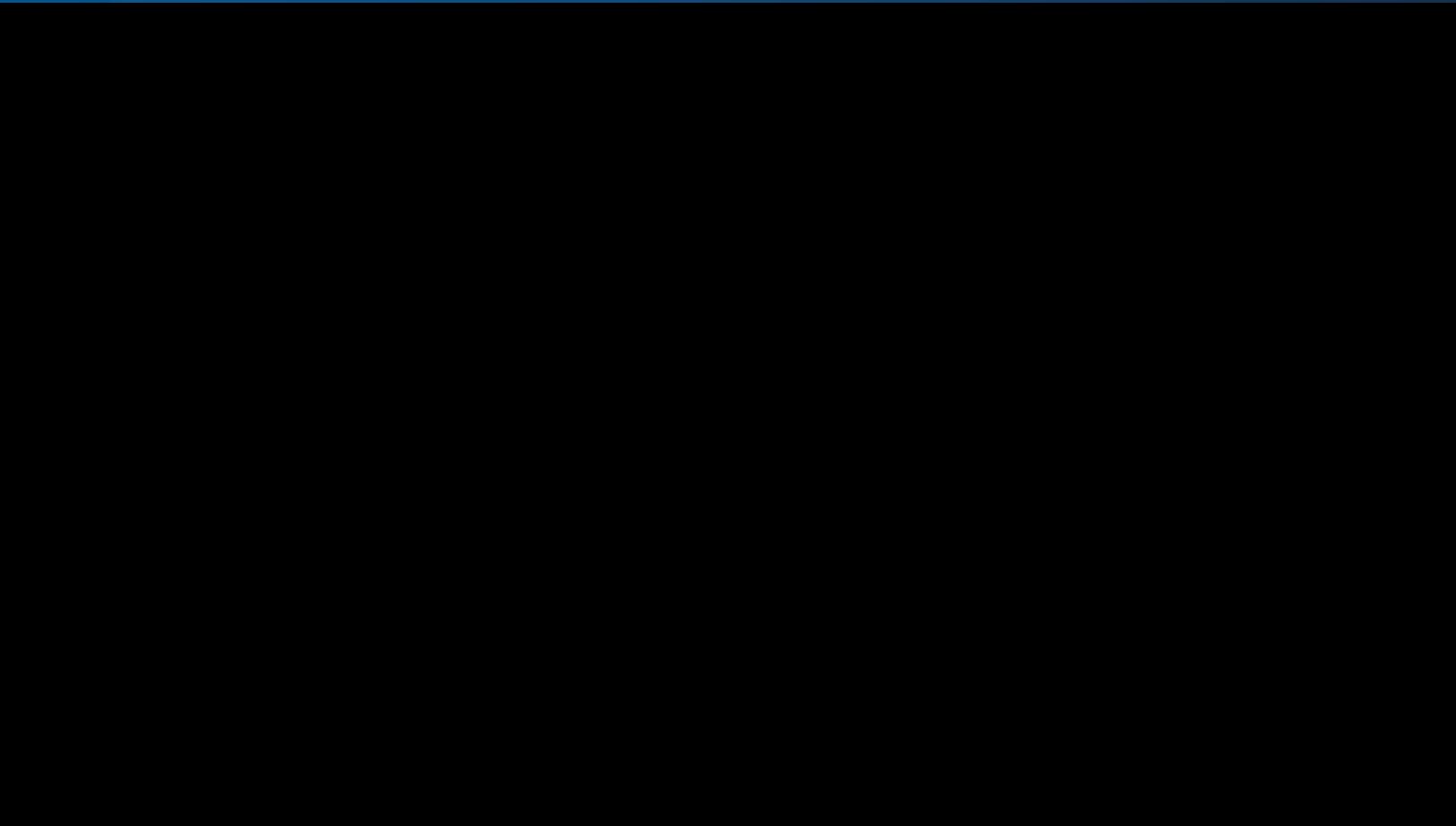


AI/ML & Analytics



Next Generation SageMaker Notebooks

NEW FEATURE – INCREASE EFFICIENCY ACROSS THE ML DEVELOPMENT WORKFLOW



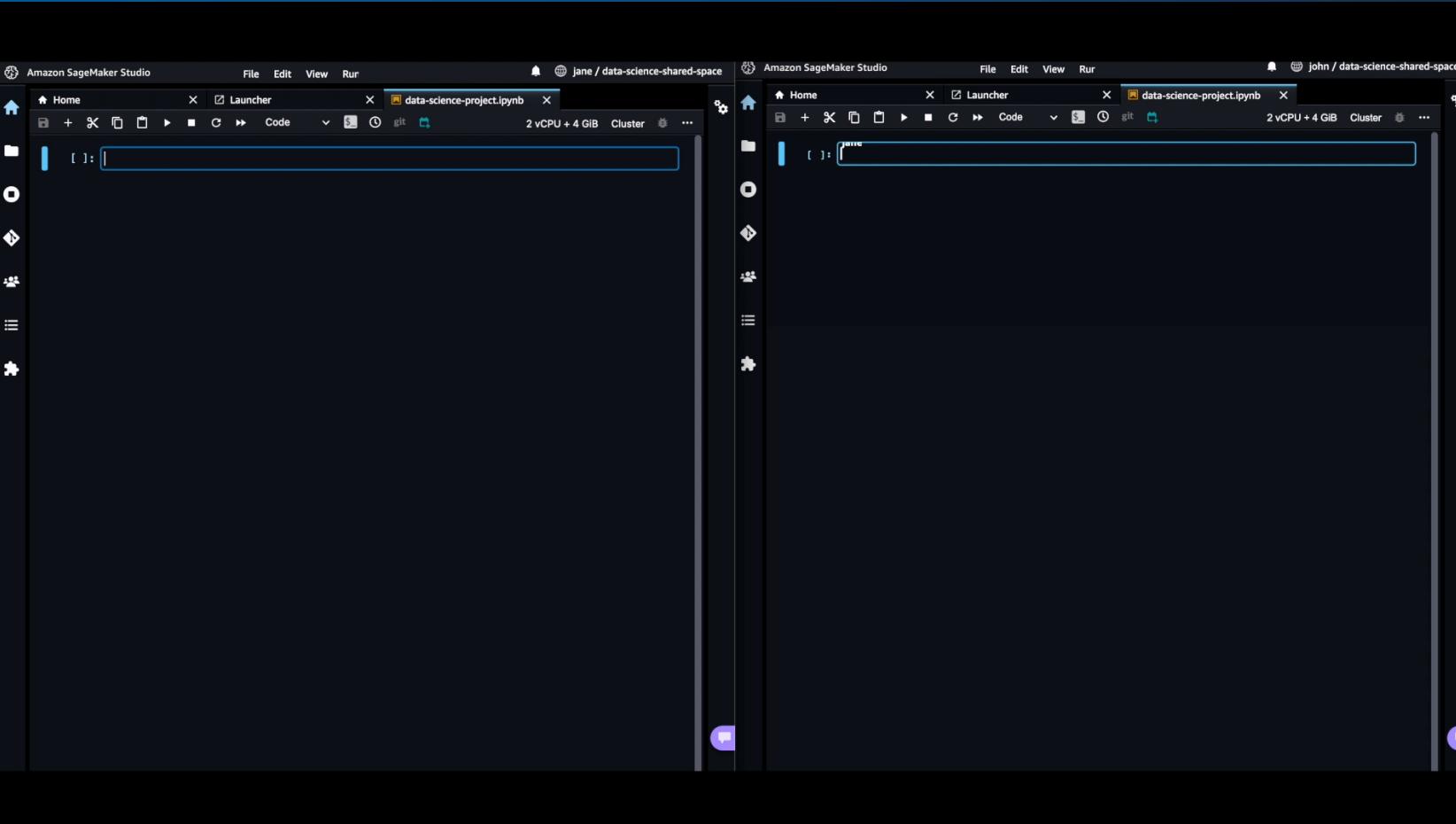
Built-in Data preparation in SageMaker Studio Notebooks



GA

Next Generation SageMaker Notebooks

NEW FEATURE – INCREASE EFFICIENCY ACROSS THE ML DEVELOPMENT WORKFLOW



Shared spaces that give data science and ML teams a workspace for real-time collaboration

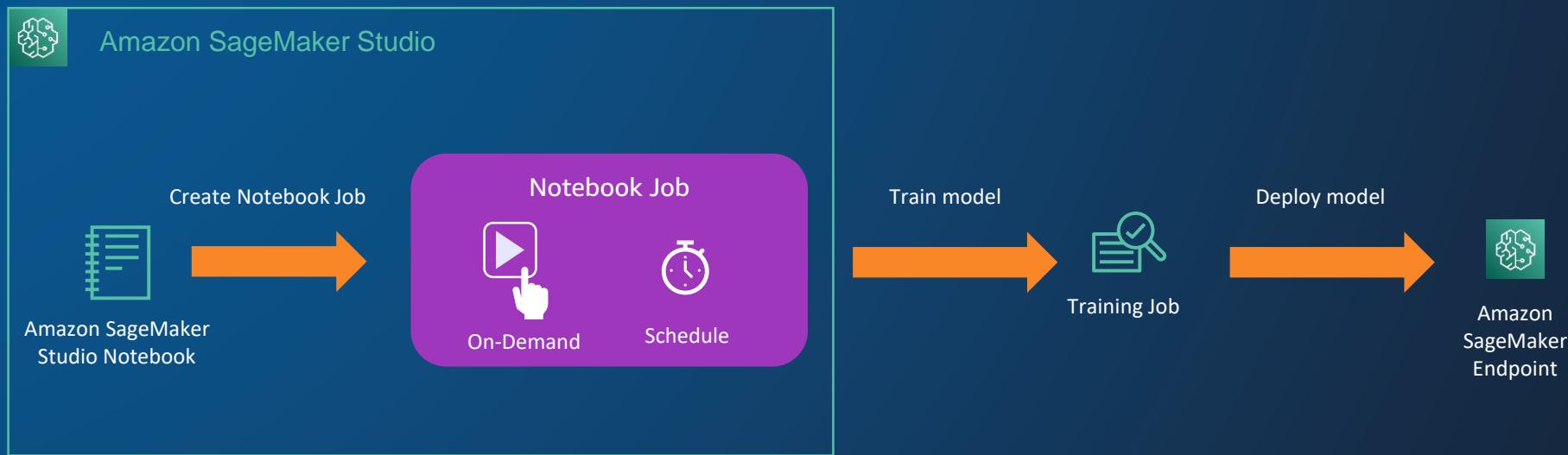


GA

Next Generation SageMaker Notebooks

NEW FEATURE – INCREASE EFFICIENCY ACROSS THE ML DEVELOPMENT WORKFLOW

Automate a Notebook as a job that can run in a Production environment



Amazon Athena for Apache Spark

BUILD INTERACTIVE SPARK APPLICATIONS



Interactive Spark applications start under a second and run faster with our optimized Spark runtime



Harness Spark for complex, powerful analytics using the expressive power of Python along with its wide ecosystem

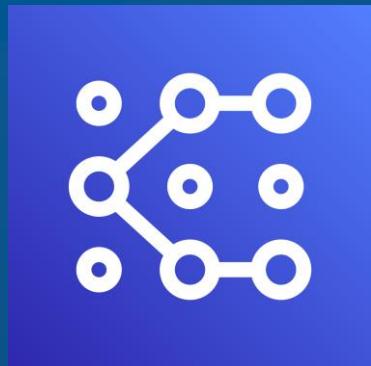


Build applications without managing resources or configuring software with Athena

Builder Experience



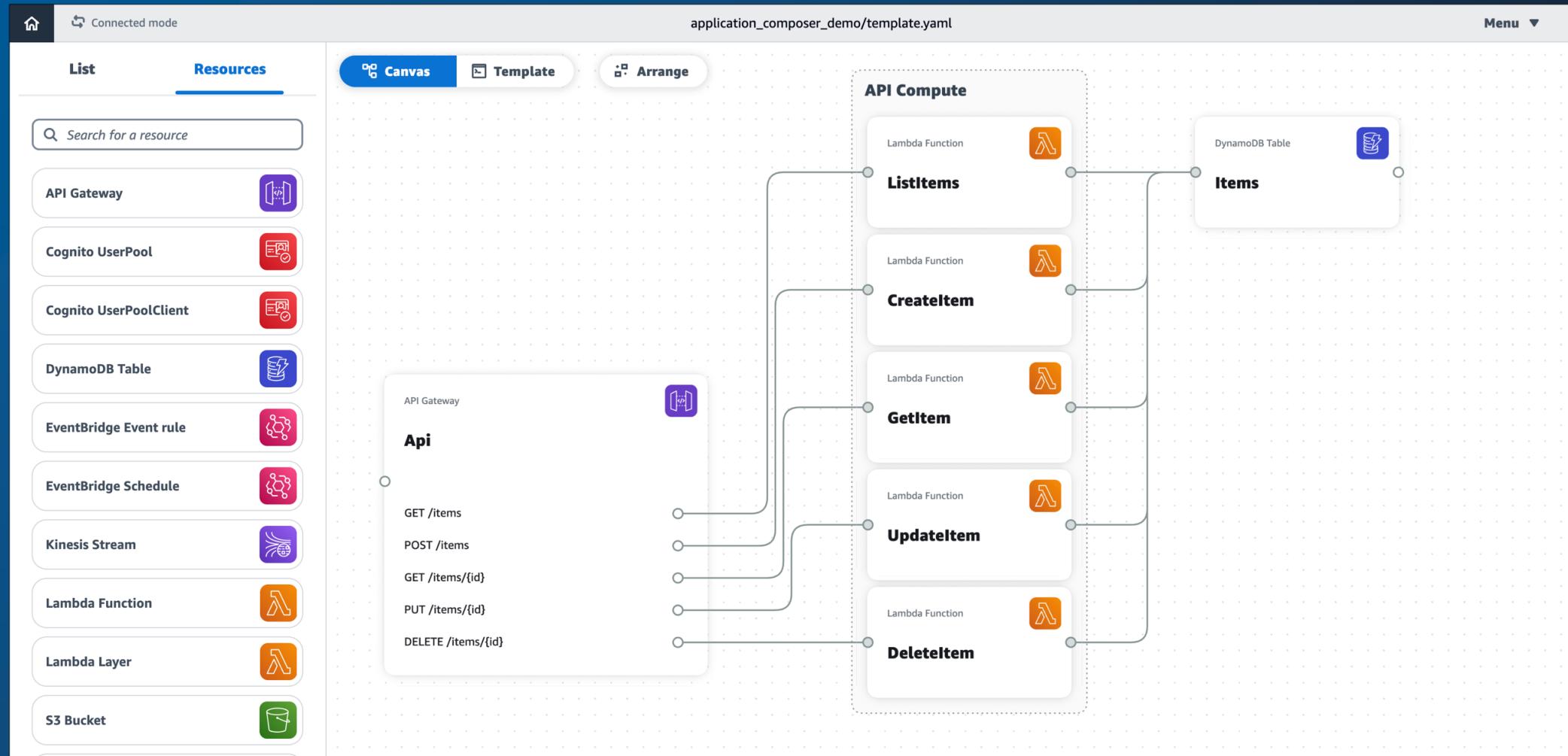
AWS Application Composer



AWS Application Composer

- Helps you **visually compose** and **configure** AWS services into serverless applications.
 - Backed by Infrastructure as Code (IaC)
 - **Visual builder** that makes it easier to design a serverless application architecture by:
 - Dragging
 - Grouping
 - Connecting
- AWS services in a visual canvas

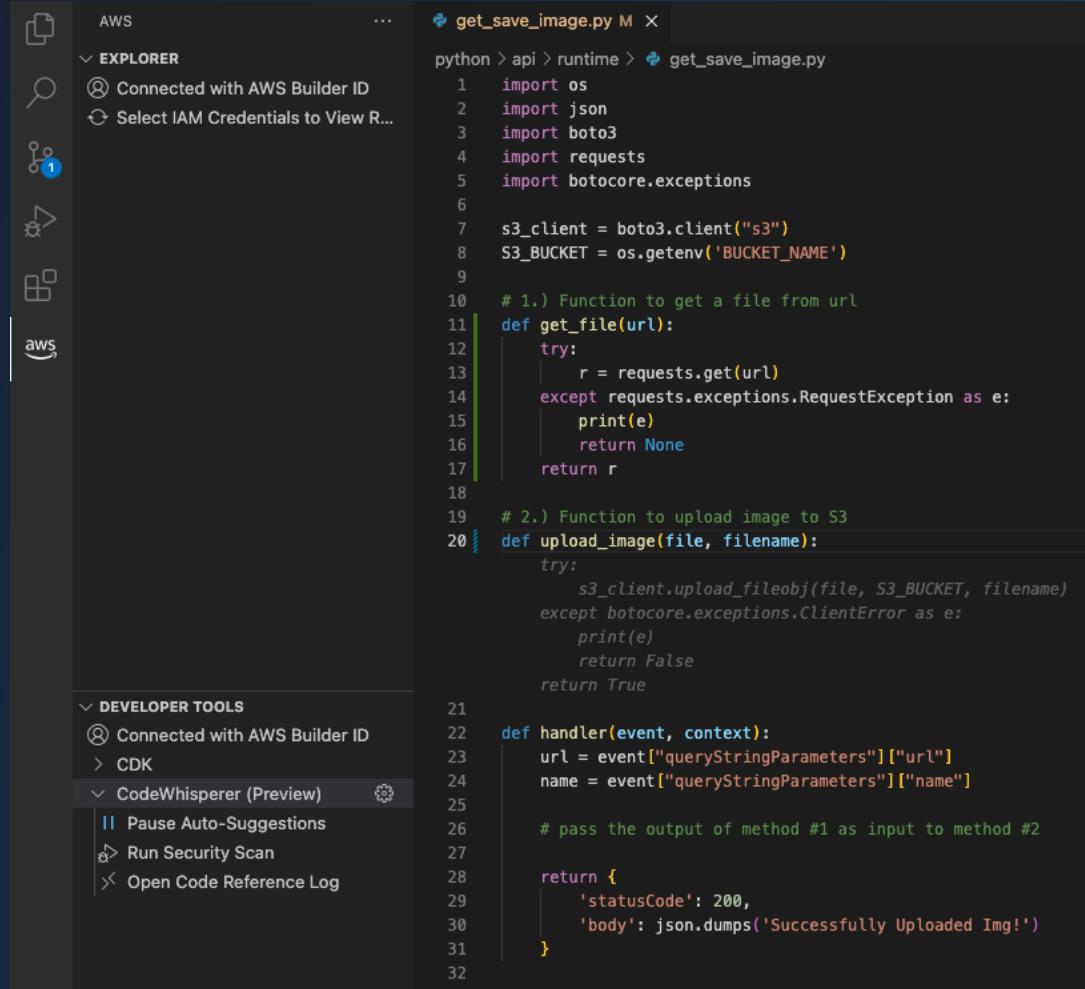
AWS Application Composer



Preview

Amazon CodeWhisperer

ENTERPRISE ADMINISTRATIVE CONTROLS, SIMPLE SIGN-UP, AND SUPPORT FOR NEW LANGUAGES



The screenshot shows the AWS Cloud9 IDE interface. On the left, the sidebar displays 'EXPLORER' with 'Connected with AWS Builder ID' and 'Select IAM Credentials to View R...', and 'DEVELOPER TOOLS' with 'CodeWhisperer (Preview)' which has 'Pause Auto-Suggestions', 'Run Security Scan', and 'Open Code Reference Log'. The main area shows a Python script named 'get_save_image.py' with the following code:

```
python > api > runtime > get_save_image.py
1 import os
2 import json
3 import boto3
4 import requests
5 import botocore.exceptions
6
7 s3_client = boto3.client("s3")
8 S3_BUCKET = os.getenv('BUCKET_NAME')
9
10 # 1.) Function to get a file from url
11 def get_file(url):
12     try:
13         r = requests.get(url)
14     except requests.exceptions.RequestException as e:
15         print(e)
16         return None
17     return r
18
19 # 2.) Function to upload image to S3
20 def upload_image(file, filename):
21     try:
22         s3_client.upload_fileobj(file, S3_BUCKET, filename)
23     except botocore.exceptions.ClientError as e:
24         print(e)
25         return False
26     return True
27
28 def handler(event, context):
29     url = event["queryStringParameters"]["url"]
30     name = event["queryStringParameters"]["name"]
31
32     # pass the output of method #1 as input to method #2
33
34     return {
35         'statusCode': 200,
36         'body': json.dumps('Successfully Uploaded Img!')
37     }
```



Preview

- Generates code recommendations based on the code and comments in your IDE
- Supports Python, Java, JavaScript, C#, TypeScript
- Available in popular IDEs - Visual Studio Code, JetBrains, AWS Cloud9, AWS Lambda
- Integrate with AWS IAM Identity Center or use AWS Builder ID

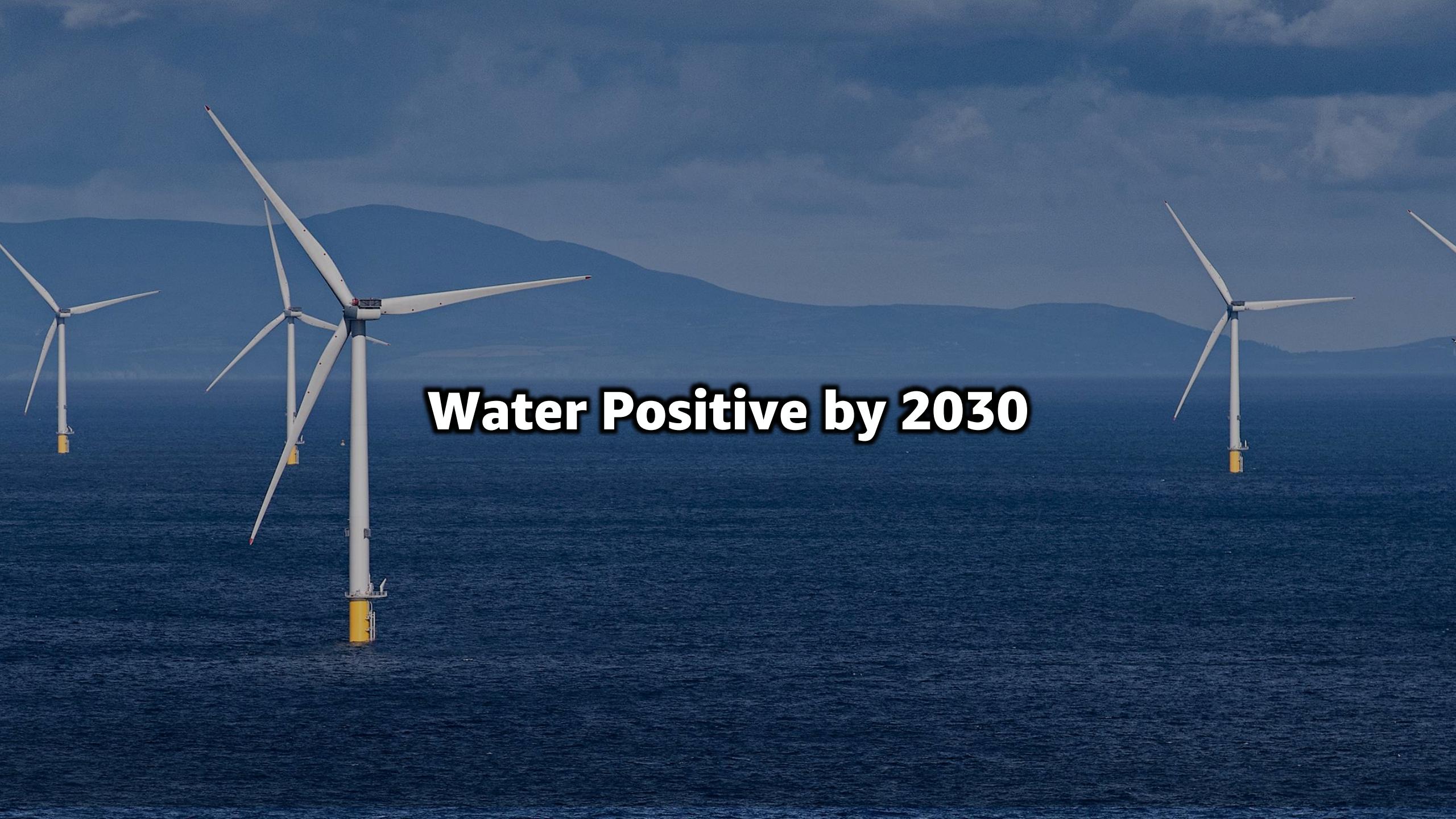
Other services and features

More new service and features

- Amazon Comprehend for IDP
- Amazon EFS Updates
- Distributed Map for AWS Step Functions
- AWS SimSpace Weaver
- Amazon RDS Blue/Green Deployments
- Geospatial ML with Amazon SageMaker
- Amazon Aurora Zero-ETL Integration
- AWS IoT Core – MQTT5
- Amazon Security Lake
- AWS Control Tower Account Factory Customization (AFC)
- Amazon Inspector for Lambda Functions
- Amazon CodeCatalyst
- Amazon GuardDuty RDS Protection
- AWS Wickr
- Amazon Braket Algorithm Library

The background image shows a vast offshore wind farm. In the foreground, a single wind turbine is prominent, facing right. Behind it, several more turbines are visible, some partially obscured by the horizon. The water is a deep blue, and the sky above is filled with soft, white clouds. Distant hills or mountains are visible on the horizon.

100% Renewable energy 2025

The background image shows a vast, calm blue sea under a sky filled with soft, white clouds. In the distance, a range of mountains is visible. Several white offshore wind turbines with yellow bases are scattered across the water. One turbine is prominently featured in the center-left, while others are visible along the horizon and right side.

Water Positive by 2030

Stay in touch and connect with the AWS Community





[https://www.meetup.com
/prague-aws-meetup/](https://www.meetup.com/prague-aws-meetup/)



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Events for Developers

Events hosted by AWS and the AWS Community to connect, collaborate, and learn from experts.

Filter by:

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Series

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- AWS Community Days
- AWS Dev Days
- AWS Summits
- AWS User Group Events
- Developer Advocate Workshop

Location

- North America

 Search resources

1-7 (7)

Event Date ▾

IN-PERSON EVENT LEVEL 200**Nepal**

AWS Community Day

With the overwhelming response & support from the community, we are proud to announce AWS Community Day in Nepal for the first time ever. AWS Community Day Nepal, the community's flagship event, will encompass success stories, use cases,

December 10, 2022 | 8 hours

IN-PERSON EVENT LEVEL 200**India | Pune**

AWS Community Day

AWS Community Days are community-organized cloud education events, featuring technical discussions and demos led by expert AWS users and industry leaders from around the world. Community-based learning is the best way to enhance the concepts being

December 10, 2022 | 9 hours

IN-PERSON EVENT LEVEL 200**India | Ahmedabad**

AWS Community Day

AWS User Group Ahmedabad (AWSUGAHM) is back with a bang to host the most awaited event, AWS Community Day Ahmedabad 2022, unveiling success stories, use cases & much more from industry leaders.

[Learn more »](#)

December 17, 2022



Welcome back!



aws.amazon.com/developer/events/

A screenshot of the AWS Developers Twitter profile. The header features a dark blue background with white line-art icons representing various AWS services like Lambda, S3, CloudWatch, and others. Below the header is a large circular profile picture of the AWS logo. To the right of the profile picture is a black "Follow" button with white text. The profile information includes the handle @awsdevelopers, a blue verified checkmark, and the word "Official". A bio message reads: "We're here to connect developers with AWS experts, share dev-focused content & resources, and celebrate the #AWSCommunity". It also shows the account joined June 2021, 191 Following, and 21K Followers. At the bottom, there are tabs for "Tweets" (selected), "Tweets & replies", "Media", and "Likes".

AWS Developers 

@awsdevelopers

Official

 We're here to connect developers with AWS experts, share dev-focused content & resources, and celebrate the **#AWSCommunity**

 Joined June 2021

191 Following 21K Followers

Tweets Tweets & replies Media Likes



twitter.com/awsdevelopers

The screenshot shows a Twitch video player interface. On the left, there's a video feed of a man wearing a NASA t-shirt and headphones, sitting at a desk with a laptop. On the right, a code editor window displays TypeScript code for a CDK stack named "dad-jokes-stack". The code defines a lambda function named "dadJokeLambda" that handles requests from an API endpoint. The video player has a progress bar at the bottom, showing it's at 00:49:22 of a 05:07:30 video. Below the video, the channel information is shown: "Build On Live @ AWS re:Invent 2022" posted 7 days ago, with 3,876 views. The AWS logo is present, indicating the video is from an AWS channel.

Chat on Videos

00:49:22 05:07:30

7 days ago
Build On Live @ AWS re:Invent 2022
Software and Game Development • 3,876 views

AWS last live 7 hours ago

46:38 ADARTA: Almost as useful as a todo app 😂

46:59 MarcCloudArc: Hey, we would like to see a test layer(unit) for the Infra part.

47:15 devopsjacquie: i SO HAPPY TO SEE THIS HAPPENING OMG

47:31 devopsjacquie: 10k not enough

47:41 derekawsanz: @Dennis_Traub I have one too - lol

48:18 developersteve_: Why do astronauts use Linux.... they can't open windows in space 😂

48:25 devopsjacquie: @Developer_Steve omg I love it

48:27 KunalB: lol

48:33 jakeprogramming: Lol

48:49 developersteve_: Does anyone know how to make a 4d printer? Take a 3d printer and give it some time 😂

48:54 CuriousOrbit: somebody has to build it right? 😄

48:54 MarcCloudArc: We would love to see that "JOKES_API_KEY" being called from an AWS Secret manager and integrated into this code(TS).

48:55 KunalB: What do you call a skinny ghost... a boolean!

48:59 devopsjacquie: what does a security team do on a boat for vacation?

49:17 developersteve_: @devopsjacquie haha what?

49:19 mokeymonkee: Pro wheel inventor club



twitch.tv/aws

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Build On AWS

@BuildOnAWS 1.42K subscribers

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Build to Better Communities | APAC Community Summit 2022

Build On AWS • 390 views • 1 month ago

We invited 130+ APAC & Japan (APJ) Community Leaders from AWS Heroes, Community Builders, User Groups and Dev/Cloud Alliance programs for a two day summit in Bangkok, Thailand between 15th...

APAC Community Summit 2022 2:32



youtube.com/@BuildOnAWS

Questions?

Thank you!

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alukin@amazon.cz

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Please complete
the session survey

<https://pulse.buildon.aws/survey/QC8JAGDM>