CREATIVE TECHNOLOGY

Presents you

An AWS Batch solution todo batch processing using docker containers on Fargate

Why?

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AWS Batch can be used to perform computationally intensive workloads, the likes of

1. High Performance Computing (Simulations, Scientific Research)
2. Data Processing and Transformation (ETL Pipelines, Log Processing)
3. Media Processing (Video Rendering, Image Processing)
4. Machine Learning and AI (Model Training, Inference Jobs)

Infrastructure

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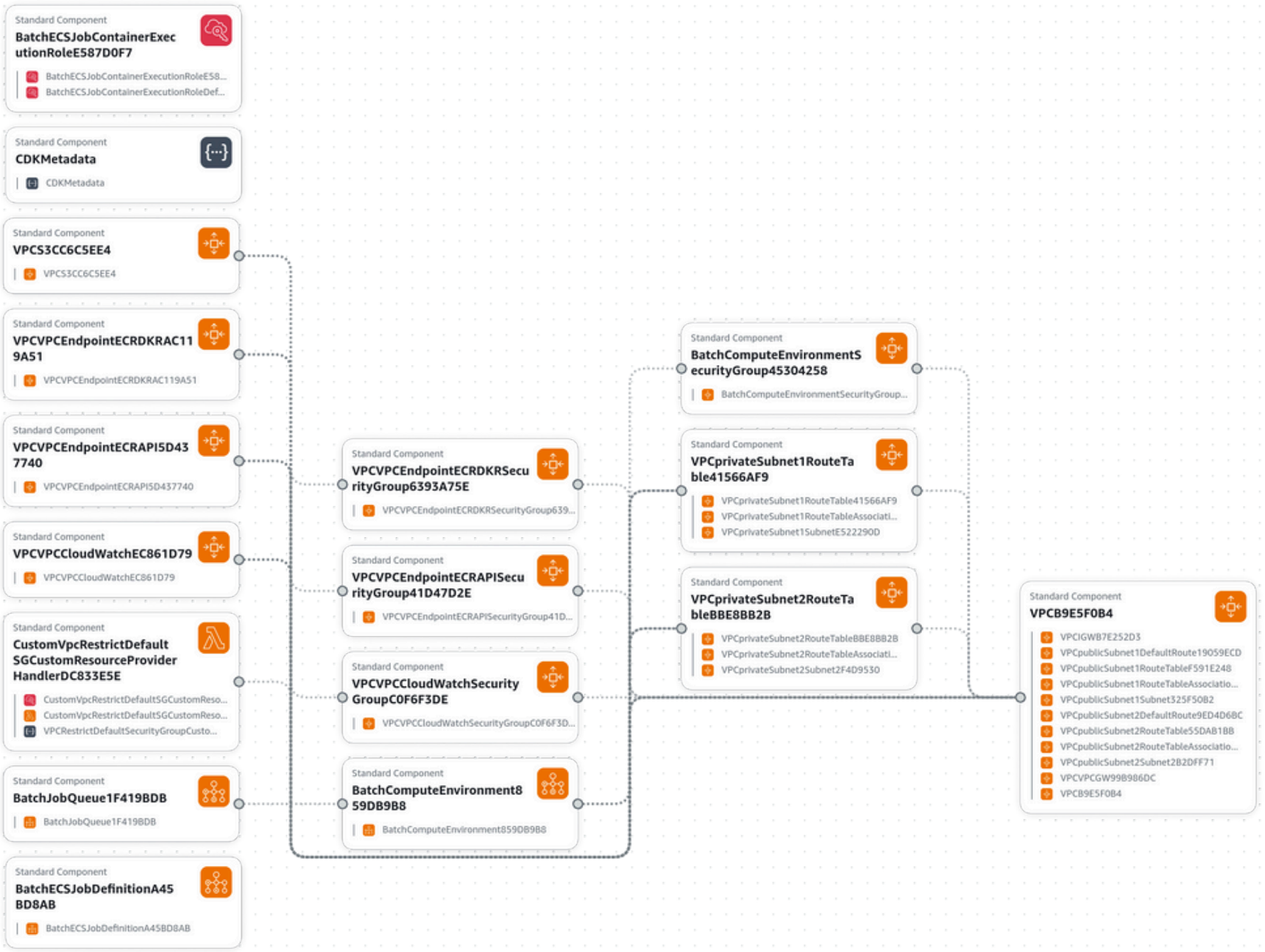

Zoom In to view the cloud formation stack

Description

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The cloud formation stack in the previous slide uses the following services

1. **AWS Batch** - On AWS batch we are creating a compute environment which uses AWS Fargate. AWS Fargate is a serverless compute engine. This means you don't have to manage the provisioning of EC2 instances. To be able to submit batch jobs a **Job Queue** is required, this is where jobs are submitted in a FIFO order. We also create a **Job Definition.** A job definition specifies the container image, platform which can be Fargate, Amazon EC2 or EKS. It also specifies the operating system and the CPU architecture.
2. **VPC -** We create a Virtual Private Cloud where our containers will run in. The containers will run in private subnets. Since the containers are running in private subnets we need a VPC Endpoint to access **Elastic Container Registry** where our docker image is stored. We also need a VPC Endpoint access to **CloudWatch** for a batch job to write it's logs.
3. **IAM -** A service role for AWS Batch is created on IAM. The role **AWSServiceRoleForBatch** gives AWS Batch permissions to services like EC2, ECS, IAM. For instance it needs to get information about ECS tasks launched by AWS Fargate. A **AWSServiceRoleForECS** is also created because **AWS Fargate** uses **Elastic Container Service (ECS)** under the hood to run containers.

Links

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Watch video on YouTube

Github repo