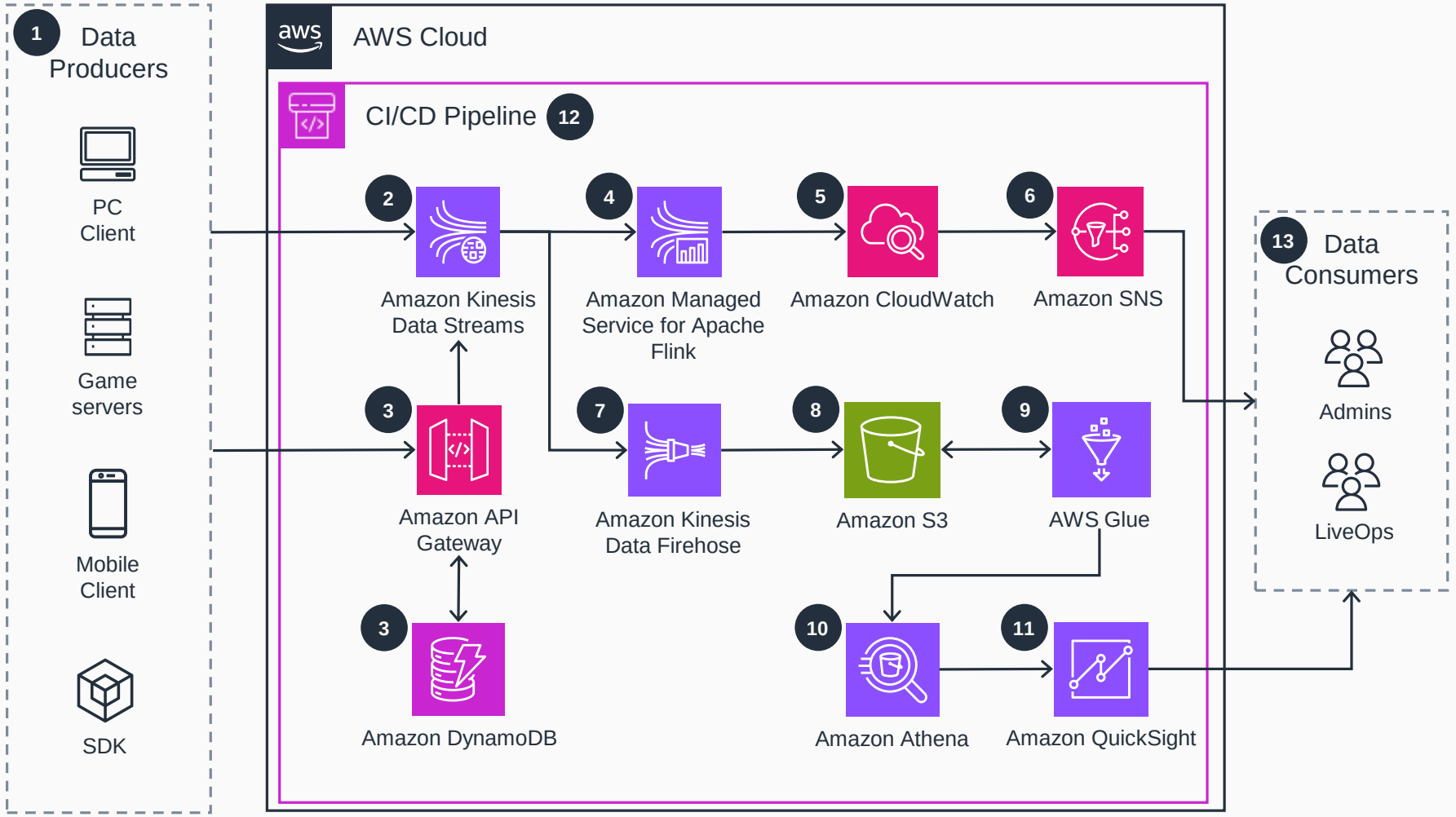
Guidance for Game Analytics Pipeline on AWS

Architecture

This architecture diagram shows a modernized DataOps pipeline for centralized game analytics on AWS.



1. Send game telemetry events to the AWS Cloud from data producers.
2. Capture streaming data from the game with **Amazon Kinesis Data Streams**, and process data in near real-time with **Amazon Kinesis Data Firehose** and **Amazon Managed Service for Apache Flink**.
3. Provide REST API endpoints with **Amazon API Gateway** to register data producers. Store game configurations and API access keys in **Amazon DynamoDB**.
4. Capture streaming event data in **Amazon Managed Service for Apache Flink**. Publish custom metrics in **Amazon CloudWatch**.
5. Create operational dashboards and alarms from custom metrics in **CloudWatch**.
6. Deliver critical alarm notifications to data consumers with **Amazon Simple Notification Service (Amazon SNS)**.
7. Process batched telemetry data with **Kinesis Data Firehose**.
8. Store both raw and processed telemetry data in **Amazon Simple Storage Service (Amazon S3)**.
9. Extract, transform, and load (ETL) stored telemetry data for analysis with **AWS Glue**.
10. Interactively query and analyze prepared data with **Amazon Athena**.
11. Visualize business intelligence (BI) data with **Amazon QuickSight**.
12. Deploy and operationalize the codified application using a continuous integration and continuous deployment (CI/CD) pipeline.
13. Provide LiveOps with BI, data visualizations, and machine learning (ML) capabilities from game telemetry data to generate key business insights..

Reviewed for technical accuracy November 14, 2023

AWS Reference Architecture

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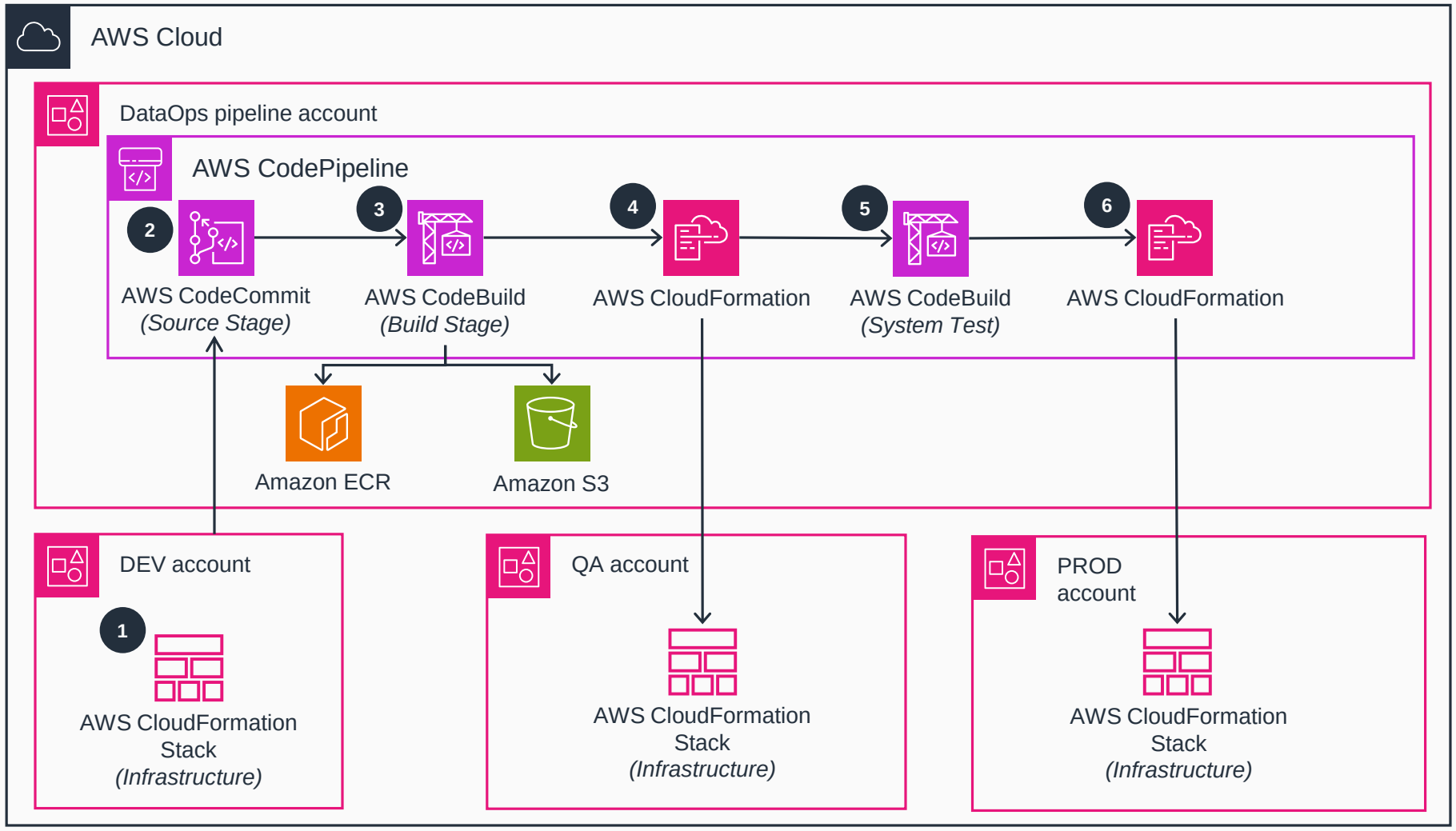
DataOps CI/CD Pipeline

This architecture diagram shows the DataOps CI/CD pipeline for centralized game analytics on AWS.



1. Build and test the codified infrastructure using the **AWS Cloud Development Kit (AWS CDK)** to synthesize an **AWS CloudFormation** template.
2. Initiate the CI/CD pipeline when infrastructure code changes are committed to the **AWS CodeCommit** repository.
3. Store compiled infrastructure assets, such as a Docker container and **CloudFormation** templates, in **Amazon Elastic Container Registry (Amazon ECR)** and **Amazon S3**.
4. Deploy the infrastructure for integration and system testing into the quality assurance (QA) AWS account using the **CloudFormation** Stack.
5. Run automated testing scripts to verify that the deployed infrastructure is functional inside an **AWS CodeBuild** project.
6. Deploy the tested infrastructure into the Production (PROD) AWS account using the **CloudFormation** Stack.

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