Realtime Fraud Detection powered by Redis Enterprise Cloud

Make the most of the fully managed database-as-a-service (DBaaS) on AWS

The following diagram shows how Redis Enterprise Cloud on AWS can be used as both a primary database and as an online feature store for machine learning (ML) based fraud detection using both rule-based and ML-based approaches. Redis Enterprise Cloud offers Redis Modules that enrich the Redis core data structures with support for modern data models - such as JSON, Graph and Timeseries - to address a range of customer use cases, including fraud detection, real-time inventory, forecasting, leaderboards, session management, caching, customer relationship management, and claims processing.

An Amazon Simple Storage Service (Amazon S3) bucket contains historical datasets of credit card transactions.

An Amazon SageMaker notebook instance with different ML models will train on the datasets.

An AWS Lambda function that processes transactions from the historical datasets and invokes the two Amazon SageMaker endpoints that assign anomaly scores and classification scores to incoming data points.

End users (mobile and web clients) invoke Amazon API Gateway REST API for predictions using signed HTTP requests.

Amazon Kinesis Data Streams are used to capture real-time event data.

AWS Lambda function reads the stream and persists transactional data to RediSearch and RedisJSON enabled Redis Enterprise Cloud database.

AWS Lambda function also leverages Redis Enterprise Cloud as a feature store (no Redis modules are required for this functionality).

AWS Lambda function further persists the prediction results to Redis Enterprise Cloud database. Optionally, the results along with transactional details can also be stored to a timeseries database for further data visualizations using Grafana.

AWS Lambda function optionally can pass the prediction results via Amazon Kinesis Data Firehose which persists the data to an Amazon S3 bucket so that Amazon QuickSight can consume this data for visualizations and analytics.