Vale Builds Cloud Recommendation Engine for Streaming Service Guide

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Executive Summary

Vale is a software development firm that builds solutions to improve modern content consumption. The company's primary goal is to make it easier for people to find and watch content that they love. Vale does this by reducing friction caused by outdated authentication approaches, clunky search functions, legacy business models, and more.

Vale recently decided it wanted to leverage AI/ML technology to create a better social networking platform around popular movie and TV streaming services. The goal of the project was to provide a simple interface for building watchlists and sharing recommendations. A crucial part of the initial Proof of Concept (PoC) of the service came to fruition thanks to ClearScale's AI/ML expertise.

> "We wanted to build a recommendation engine to provide targeted suggestions to viewers and deeper data insights to media partners. ClearScale used Amazon Personalize to build and train our solution, allowing us to differentiate our service with tailored content across streaming platforms."
>
> **Gabriel Unruh - CTO,** The Streaming Guide

The Challenge

Vale wanted to validate its streaming guide service idea with a PoC that could:

- Make relevant recommendations to viewers
- Employ social networking elements related to movie watching
- Identity new viewers and advise them about updates

The main challenge of deploying a scalable recommendation solution was getting up to speed with modern AI/ML technology. As a startup, Vale had limited time and capacity for this work. As a result, the company decided to partner with an AI/ML cloud expert recommended by Amazon Web Services (AWS) — ClearScale.

ClearScale is an AWS Premier Tier Services Partner with 11 AWS competencies, including the Machine Learning competency. ClearScale has helped organizations across all industries build, train, and deploy powerful AI/ML models, including those that drive recommendation engines.

Given ClearScale's resume, Vale asked the company to create a title recommendation feature for its Streaming Guide API, along with improving search results based on data generated by user engagement.

The ClearScale Solution

ClearScale used Amazon Personalize as the foundation for The Streaming Guide's title recommendation function. Amazon Personalize is a fully managed cloud service that makes it easy for developers to train and tune custom ML models for a variety of applications. In this case, Amazon Personalize was critical for training models to make accurate predictions regarding what viewers would enjoy across a multitude of streaming platforms.

Model retraining was performed with AWS Step Functions and event Lambda triggers once per week on a scheduled basis. ClearScale then applied this data with the Amazon Personalize engine to create several models. Next, ClearScale evaluated and compared the models against one another to identify the best algorithm for Vale's use case.
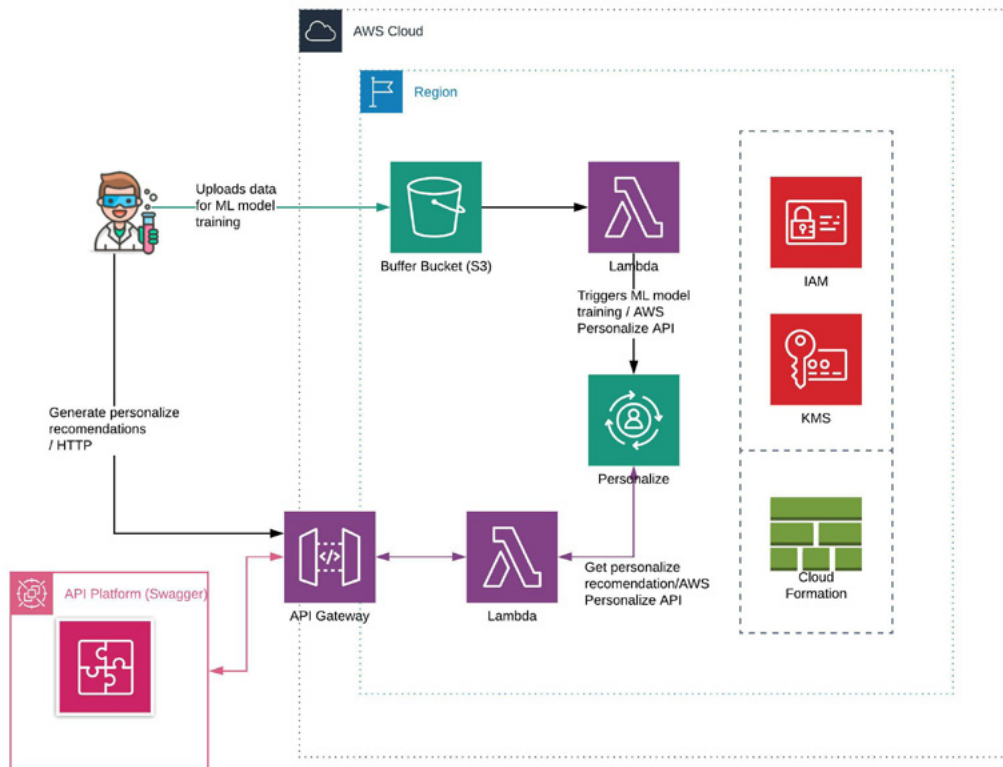
ClearScale also set up a REST API to deliver convenient "bought with" item prediction results and a reproducible REST API endpoint using Infrastructure as Code (IaC). Vale wanted the REST API service to be able to generate the recommendations going forward.

ClearScale also used the following AWS technologies in the PoC:
- AWS CloudFormation for the Infrastructure as Code implementation
- Amazon API Gateway for the API interface
- AWS Key Management Service (KMS) for encryption key management
- AWS Identity and Access Management (IAM) for setting access controls

Together, these services gave Vale the PoC it needed to confidently move forward with a full-scale version of its Streaming Guide application.

Architecture Diagram

The Benefits

Vale now has a differentiated platform for making content recommendations to users and partners based on real-time data inputs. As people engage with The Streaming Guide, the ML model receives more data and gets smarter over time. This means Streaming Guide subscribers and partners get better recommendations across many streaming platforms, increasing the likelihood that they find enjoyable content and share it with their peers.

ClearScale played an instrumental role in validating Vale's idea. The startup is well-positioned to grow its reputation in the marketplace as a developer of compelling technology solutions for the media and entertainment industry.