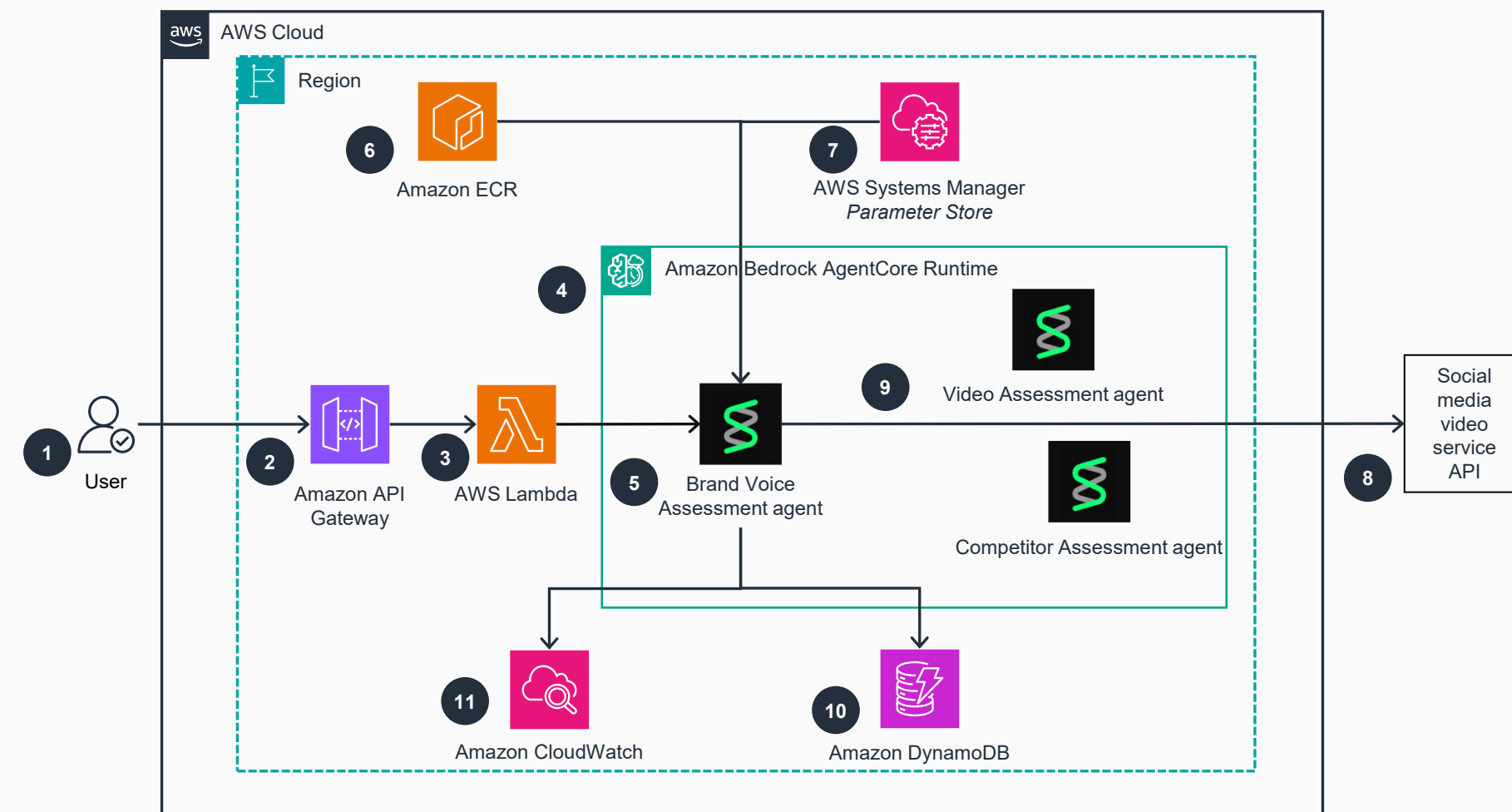


Guidance for Video Content Optimization Assistant on AWS

This architecture diagram shows how to analyze and improve social media video channel engagement using AI services on AWS. Multiple AI agents, each with specific focus, assess channel and video data to provide marketing and creative teams with actionable strategic insights on what is and is not working on the channel, and on other similar channels.



- 1 The user submits a channel name via the ReactJS-based web UI.
- 2 The **Amazon API Gateway** receives a REST request, authenticating a presented API key.
- 3 The **Amazon API Gateway** invokes an **AWS Lambda** function to call the relevant agent.
- 4 **Amazon Bedrock AgentCore Runtime** hosts agents, providing complete session isolation, security controls, and support for long-running video analysis tasks that can take up to 8 hours. This secures sensitive brand data while enabling comprehensive video content analysis.
- 5 Agents are written in **Strands Agents SDK**. Its `@tool` decorator easily converts the video service API into a tool that agents can use.
- 6 Agent are launched using Docker images uploaded to the **Amazon Elastic Container Registry (Amazon ECR)**.
- 7 The agent retrieves the configured video service API key from the **AWS Systems Manager Parameter Store's** secure storage.
- 8 The Brand Voice Assessment agent calls the video service API to retrieve video metadata and comments, assessing perceived brand voice.
- 9 Other agents follow a similar pattern. The Video Assessment agent analyzes factors distinguishing this channel's top vs. bottom performing videos, while Competitor Assessment compares this channel to others, recommending strategies.
- 10 The agents leverage **Amazon Bedrock AgentCore Memory** to maintain context across video analyses, while caching structured video service API responses in **Amazon DynamoDB** to optimize API usage.
- 11 **Amazon CloudWatch** stores logs and operational metrics. **Amazon Bedrock AgentCore Observability** provides comprehensive monitoring dashboards to track agent performance, debug issues, and audit brand voice assessment.

