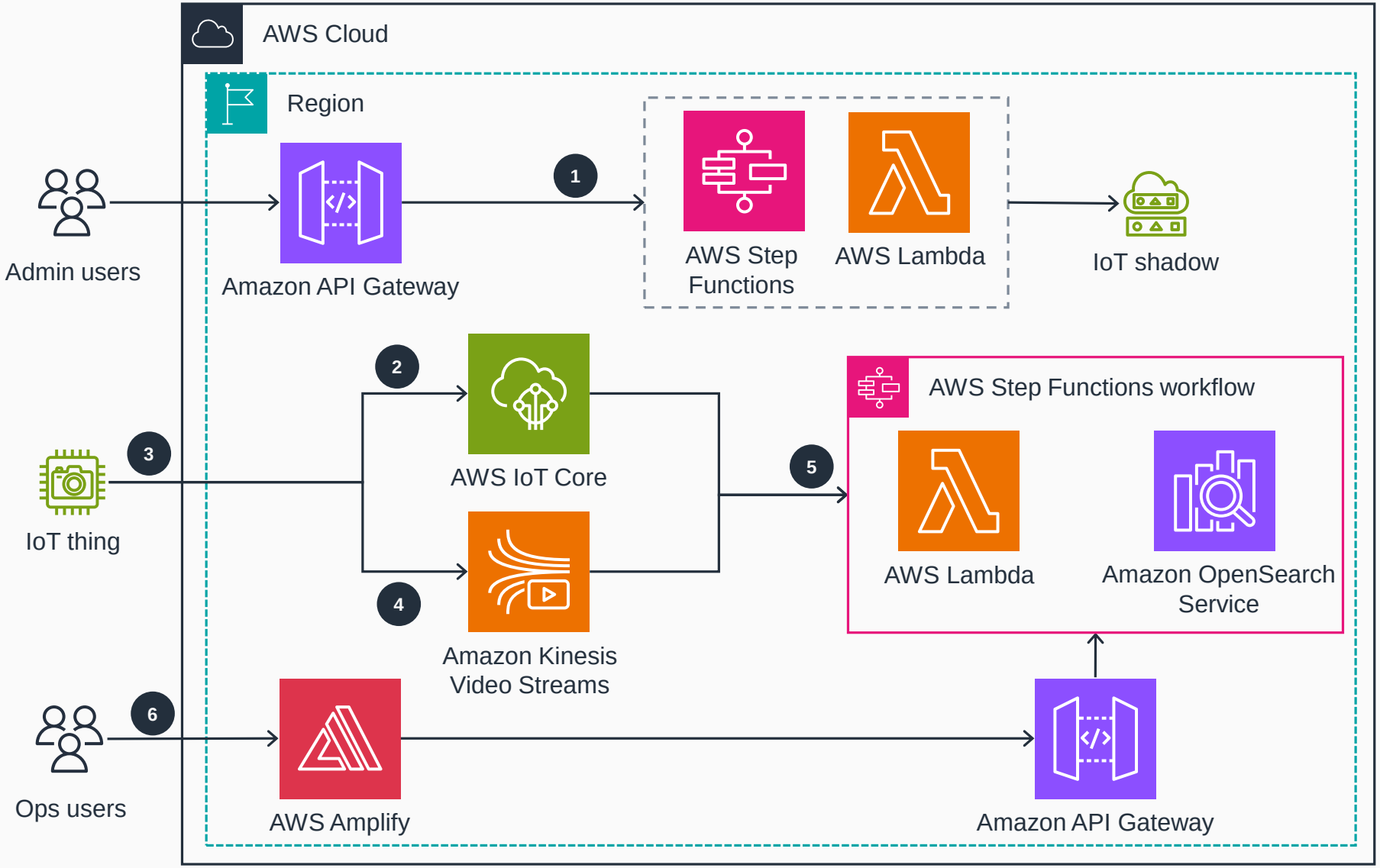
Guidance for Video Analysis as a Service on AWS

This architecture diagram illustrates a comprehensive video analysis as a service approach on AWS, enabling automated IoT device management, event processing, and fleet-wide video monitoring through a serverless architecture.



1. The admin user registers a new IoT thing through **Amazon API Gateway**. A state machine controls different states of device registration, allowing for asynchronous registration. Additional device configurations and preferences are stored as an IoT shadow. The IoT thing is registered on **AWS IoT Core**.
2. The IoT thing connects to **AWS IoT Core** using MQTT. The device finishes provisioning and downloads configurations and forwarding rules.
3. The IoT thing applies configurations—forwarding rules based on AI events—and creates MQTT subscriptions for updates and actions.
4. When an event occurs, the IoT thing sends the event's metadata and thumbnail to **AWS IoT Core** and video streams to **Amazon Kinesis Video Streams**.
5. An **AWS Step Functions** workflow processes, indexes, and organizes events and video streams. The workflow invokes an **AWS Lambda** function and persists the information on **Amazon OpenSearch Service**.
6. The ops user accesses event timelines, video footage, and advanced event search across multiple devices in a fleet using an **AWS Amplify** UI and **API Gateway**.

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AWS Reference Architecture