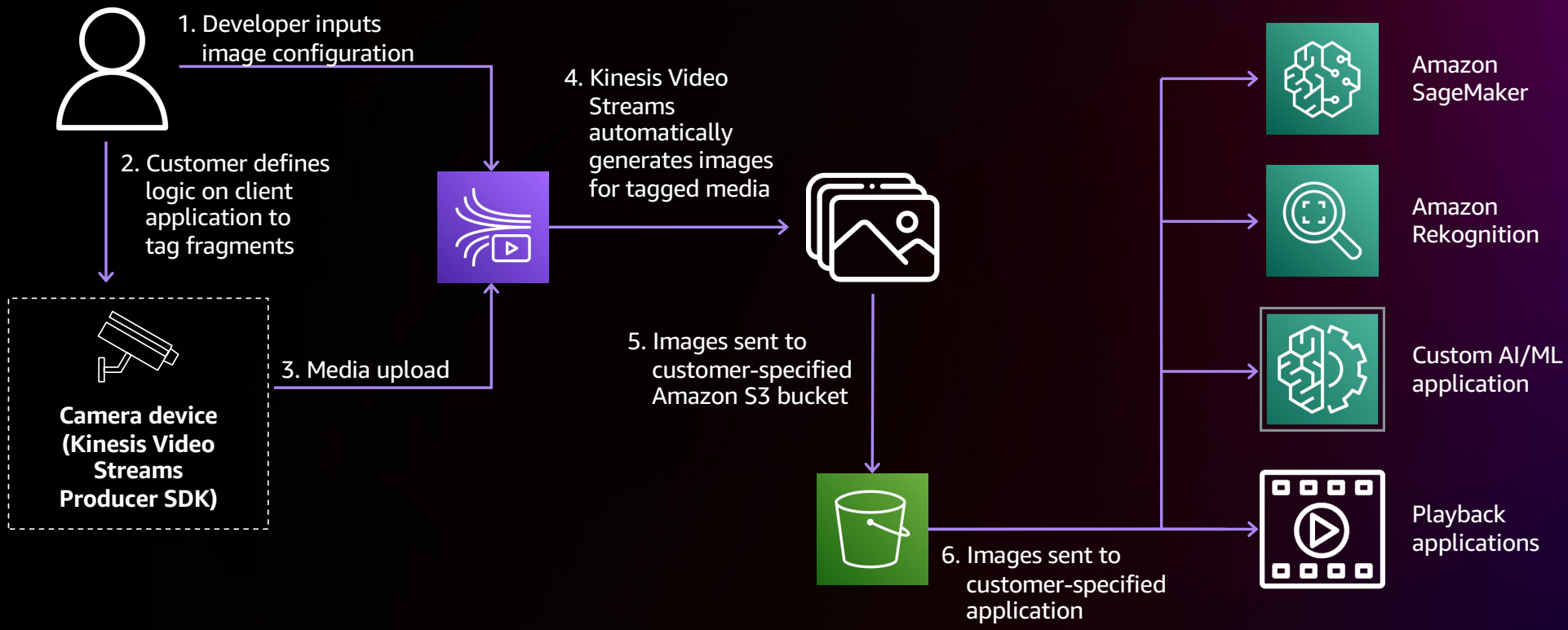
New Features

Kinesis Video Streams images – Automated image generation



Amazon Rekognition Streaming Video Events (SVE)

Usability Enhancements

Adaptive Streaming

KVS now supports adaptive streaming during playback via HLS. Changes in codec private data (resolution or bitrate) between video fragments in a segment will not impact streaming performance.

Backfilling support

Media received by KVS out of order can now be replayed in chronological order.

Notifications

You can now configure KVS to notify you when ingested media fragments are ready for consumption.

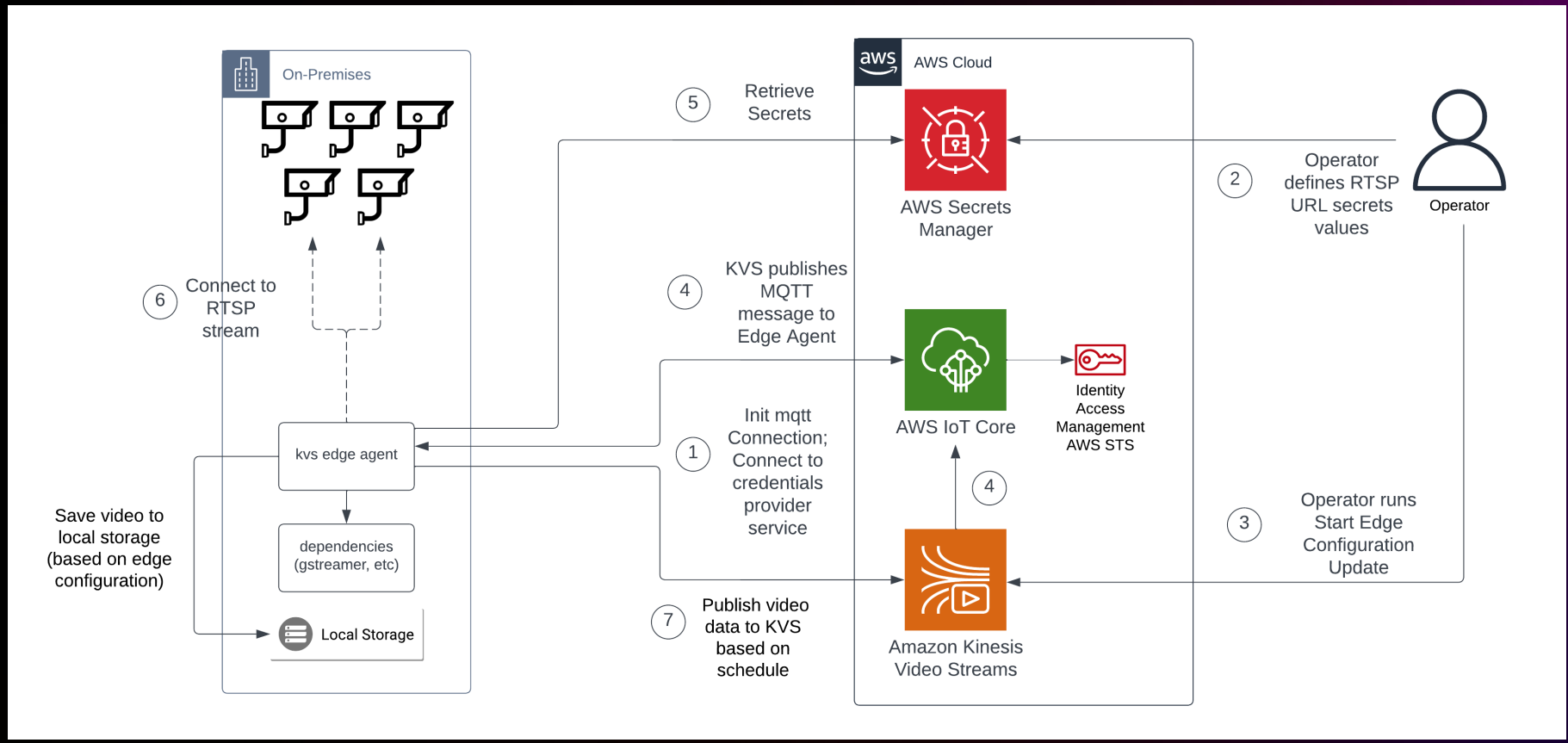
KVS Edge Agent (Preview)

- Simple, efficient and cost-effective way to connect to IP cameras on customer premises,
- Locally record and store video from those cameras, and stream videos to the cloud on a customer-defined schedule for long-term storage, playback, and analytical processing.
- Deploy on
  - As a AWS IoT Greengrass V2 component
  - On AWS Snowball Edge
  - On a native AWS IoT deployment

KVS Edge Agent (Preview) – New APIs

Control Plane	Data Plane
DescribeEdgeConfiguration	StartEdgeConfigurationUpdate
DescribeStream	

KVS Edge Agent (Preview)



Kinesis Video Streams Limits

- Control-plane API limits
  - CreateStream – 50 TPS [s] – 10,000 streams per account by default
  - ListStreams – 50 RTPS [h]
  - GetDataEndpoint – 300 TPS [h]; can be cached for up to 45 minutes
- Media and archive-media API limits
  - PutMedia – 5 TPS [h] (stream level)
  - GetMedia – 5 TPS [h] (stream level); only three clients can concurrently receive content from the media stream at any moment in time.
  - GetHLSStreamingSessionURL – 25 TPS [h] (stream level)
  - GetMediaForFragmentList – 1,000 Max number of Fragments [h]; Five fragment-based consuming applications can concurrently get media.

Thank You

Appendix

Complexity

- Support multiple media streaming technologies
- Support multiple devices and development environments
- Build and operate infrastructure for secure and reliable streaming
- Elastically scale the infrastructure to support millions of devices
- Build engineering teams with video streaming expertise

Kinesis Video Streams Producer SDK

EASILY CONNECT AND STREAM FROM CAMERA SOURCES

Producer SDK offers

- Flexible SDK for integration with on-device hardware media pipelines
- Out-of-the-box integration with AWS auth mechanism: SigV4 / AWS IoT certs
- Handles streaming Put API to stream continuously in a reliable manner
- Add metadata to video fragments applied by the device directly

… that enables developers to

- Build custom integrations with diverse camera and device types
- Secure authN and authZ to connect devices w/ image sensors to AWS
- Stream video data based on the preferred transmission scenario
- Annotated video fragments enable cloud-based analytics and advanced indexing

KVS – Pricing and Cost Optimization

Kinesis Video Streams Pricing

Kinesis Video Streams

- Volume of data ingest, stored, and consumed
  - Data Ingested (per GB)
  - Data Consumed (per GB)
  - HLS / DASH Data Consumed (per GB) for playback
  - Data Stored (per GB)
- Data out charges

Kinesis WebRTC

- Active Signaling channels (per channel / per month)
- Signaling messages (per million)
- TURN Streaming minutes (per thousand)

Cost Optimization considerations

Quality of streaming – param tweaking

Frame rate

Kinesis Video Streams – Best Practices

Kinesis Video Streams – Things to remember

- Supports 10 HLS + 10 DASH concurrent sessions per stream
- 3 – 10 secs of latency
- A 3 min audio+video clip @25 fps takes about 66MB
- Transport protocol used is custom HTTP streaming (not RTSP or RTMP)
- Number of Streams per account 2500/1000/100,000
- Data retention from 1 hr – 99 yrs

Kinesis Video Streams vs Elemental

	KVS	Elemental Live
Service Description	Securely stream video from connected devices to AWS	Broadcast-grade live video encoding service for broadcast, streaming, and over-the-top video offerings.
Applications	Real-time and batch-driven machine learning (ML), video playback, analytics, and other processing.	High-quality video streams for delivery to broadcast televisions and internet-connected multiscreen devices, like connected TVs, tablets, smart phones, and set-top boxes.
Target Use cases	Machine-vision based applications that power smart homes, smart cities, industrial automation, security monitoring, and more.	Media and entertainment industry, including film and TV studios, broadcast networks, pay TV channels, programming distributors, internet service providers, online video platforms, and professional sports leagues and teams

Storing and Indexing Media

- Video streams - managed resource for ingesting media with time-indexed storage.
- Easily monitor and audit usage. Apply access control and authentication policies.
- Easy APIs to apply retention policies, and retrieve live and recorded media
- Encrypted in-transit and at-rest

Amazon Kinesis Video Streams

GOP