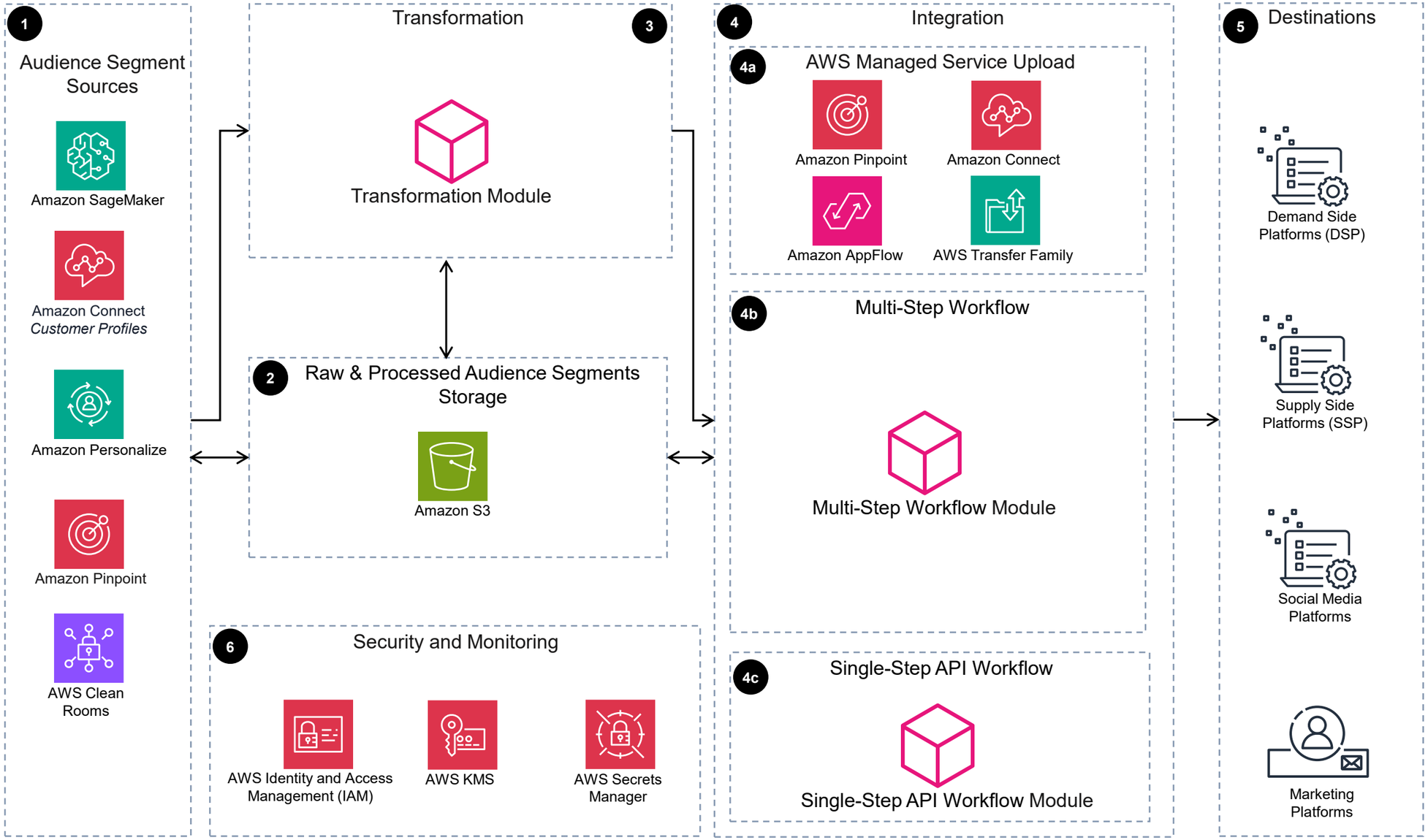
# Guidance for Audience Segments Uploader to Advertising & Marketing Platforms on AWS

This architecture diagram shows integration patterns for uploading audience segments built or stored in AWS services to advertising and marketing platforms.

An overview is displayed in this diagram with Steps 1-3 explained. See the next slide for more details on Steps 4-6.




1. You can generate audience segments using the below services on AWS:
   - **Amazon SageMaker** and **Amazon Personalize** generate marketing segmentation, such as Recency, Frequency and Monetary (RFM), churn, and product segmentation.
   - **Amazon Pinpoint** provides first-party audience engagement and customer journey segmentation.
   - **AWS Clean Rooms** provides enriched segmentation through multi-party data collaborations.
   - Amazon Connect Customer Profiles provides customer interactions-based segments.

2. The raw audience or segmentation output is stored in an **Amazon Simple Storage Service (Amazon S3)** bucket.

3. The transformation module workflow coordinates the advertising platform-specific data transformation, normalization, and anonymization of personally identifiable information (PII) using hashing techniques, like SHA256.

   Follow Steps 4-6 on the next slide for the integration patterns and destinations.

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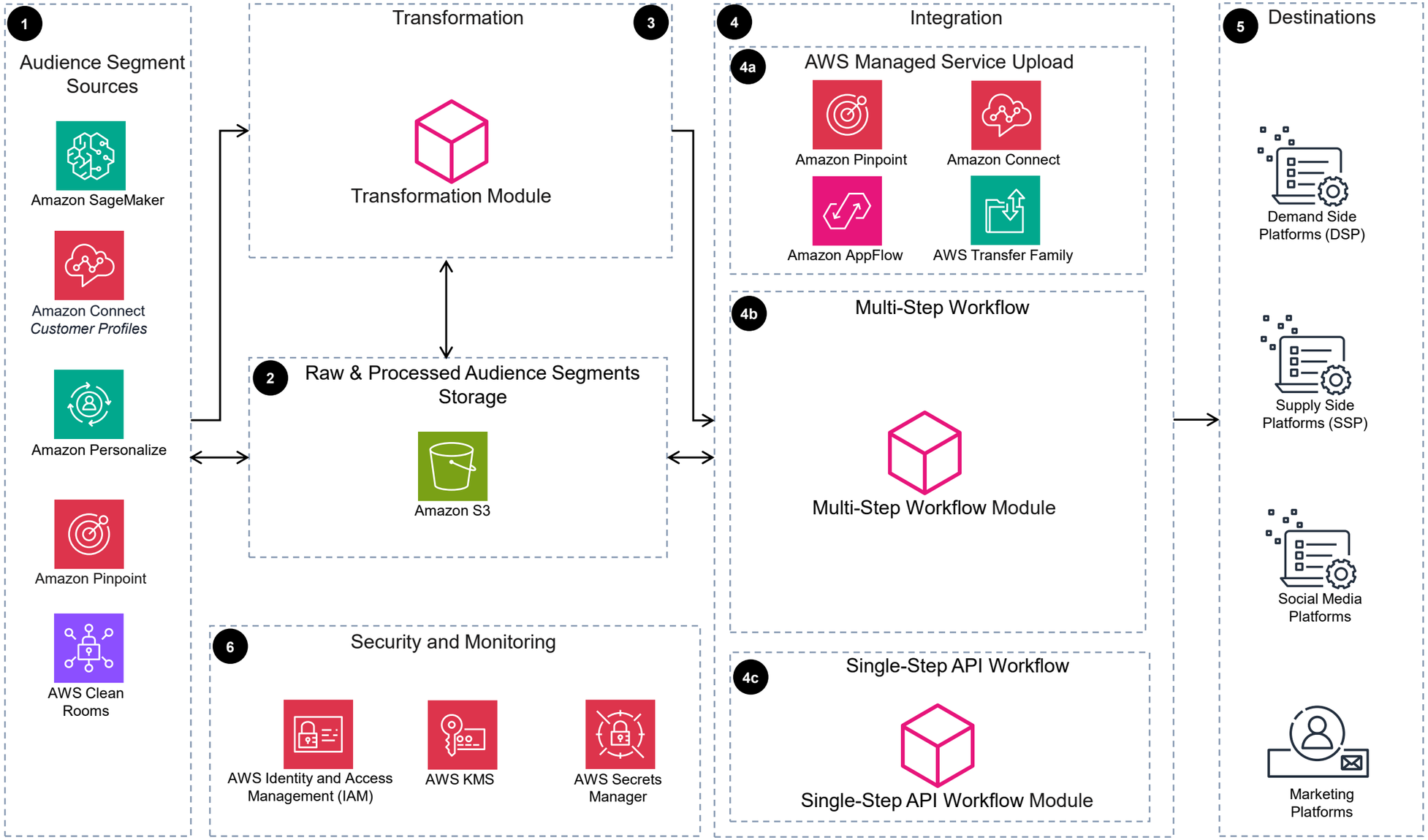
Overview continued with Steps 4-6 explained.




**4** The prepared audience data is then uploaded to advertising and marketing activation platforms following one of the three integration patterns as displayed in Steps 4a, 4b, and 4c.

**4a** The AWS Managed Service Upload pattern uses ready-to-deploy integrations to activate the audience data:

- In **Amazon Pinpoint**, use custom channel features to upload data to advertising platforms.
- In **Amazon Connect**, use the same integration flows for ingestion and single customer view to upload data to advertising platforms.
- Use **Amazon AppFlow** software-as-a-service (SaaS) application integrations to upload audiences to advertising platforms.
- In an enterprise setting with numerous file-based integrations, use **AWS Transfer Family managed workflows** to centralize and automate the secure-file transfer protocol (SFTP) file integrations and upload data to advertising platforms.

**4b** The Multi-Step Workflow pattern uses third-party integration requirements.

**4c** The Single-Step API Workflow pattern is best suited for non-batch, transactional, and streaming activations.

**5** The patterns are applicable to audience segment uploads to demand side platforms (DSP), supply side platforms (SSP), or social media platforms. These patterns are also applicable to audience segment uploads to customer relationship management (CRM) applications, marketing platforms, and other SaaS products used for improving the customer experience.

**6** Use **AWS Identity and Access Management (IAM)** to securely manage identities and access to AWS services and resources.

Use **AWS Secrets Manager** to store advertiser ID and access tokens. Configuring the uploader integration module accesses this service at run time.

Use **AWS Key Management Service (AWS KMS)** to store customer managed encryption keys. Use these keys to encrypt data at rest and in transit.

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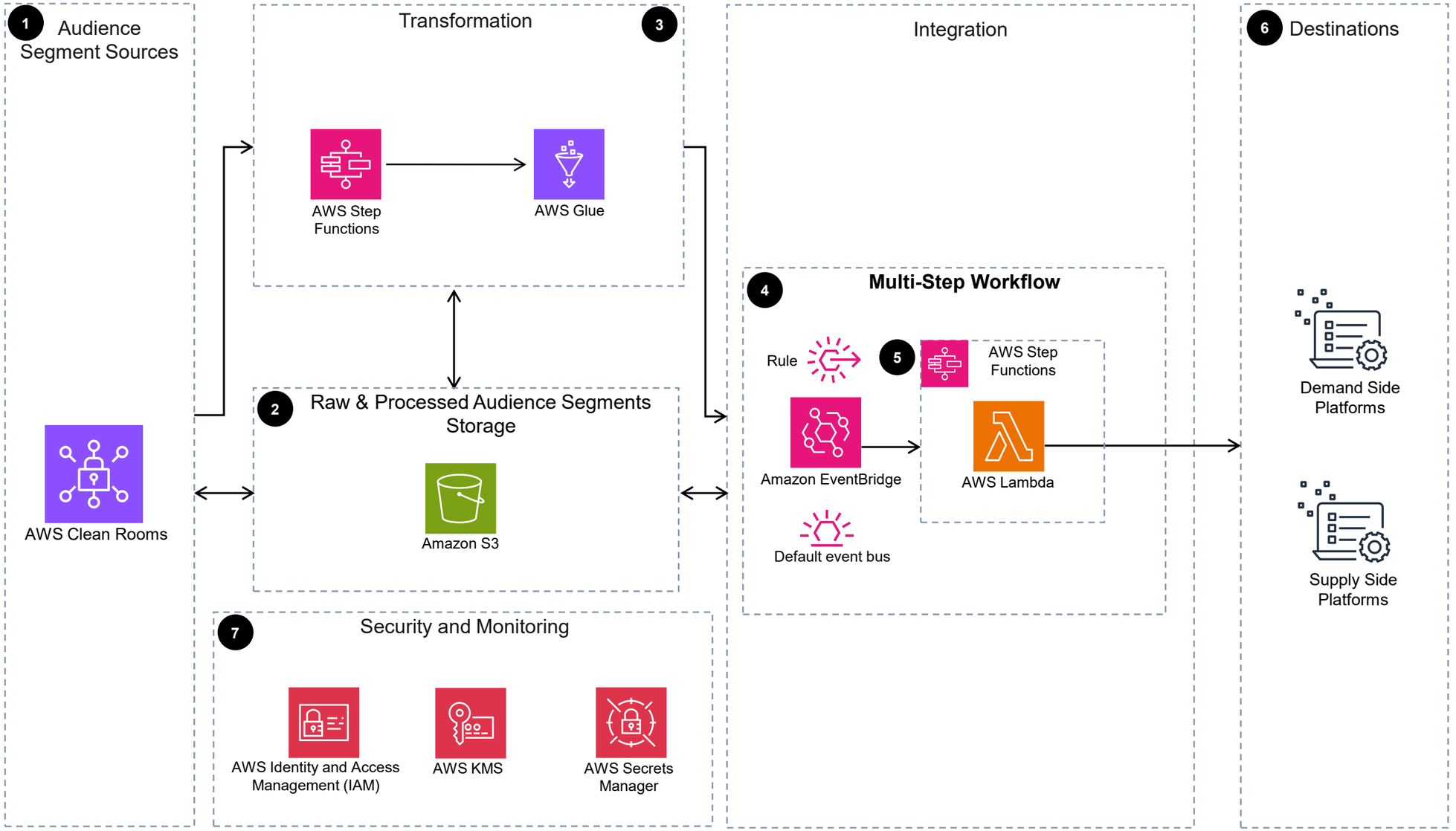
The Multi-Step Workflow pattern is shown here in more detail.




1. An **AWS Clean Rooms** query is used to generate a data export of audiences for activation.
2. The audience or segmentation output from the segmentation source is stored in an **Amazon S3** bucket.
3. An **AWS Step Functions** workflow coordinates the **AWS Glue** job for advertising platform-specific data transformation, normalization, and anonymization of personally identifiable information (PII) using hashing techniques, like SHA256.
4. The Multi-Step Workflow pattern uses an **Amazon EventBridge** rule, created on the AWS account default event bus, to respond to the object creation event in **Amazon S3**. A **Step Functions** state machine is invoked by the **EventBridge** rule and orchestrates a workflow of **AWS Lambda** functions. This workflow is built using third-party integration requirements.
5. **Step Functions** orchestrates a sequence of **Lambda** functions that make API calls to the advertising activation platform. This workflow is built using requirements specific to the advertising platforms. An example for a third-party CRM API is as follows:
   a) First, a **Lambda** function creates a segment using an API endpoint
   b) Then a second **Lambda** function creates a segment drop URL using another API endpoint.
   c) Finally, the third **Lambda** function reads the files from the **Amazon S3** bucket and publishes the segment data using another API endpoint with the drop URL as input.
6. This pattern is applicable to paid media ad platforms for online media targeting.
7. Use **IAM** to securely manage identities and access to AWS services and resources.

   Use **Secrets Manager** to store advertiser ID and access tokens. Configuring the uploader integration module accesses this service at run time.

   Use **AWS KMS** to store customer managed encryption keys. Use these keys to encrypt data at rest and in transit.

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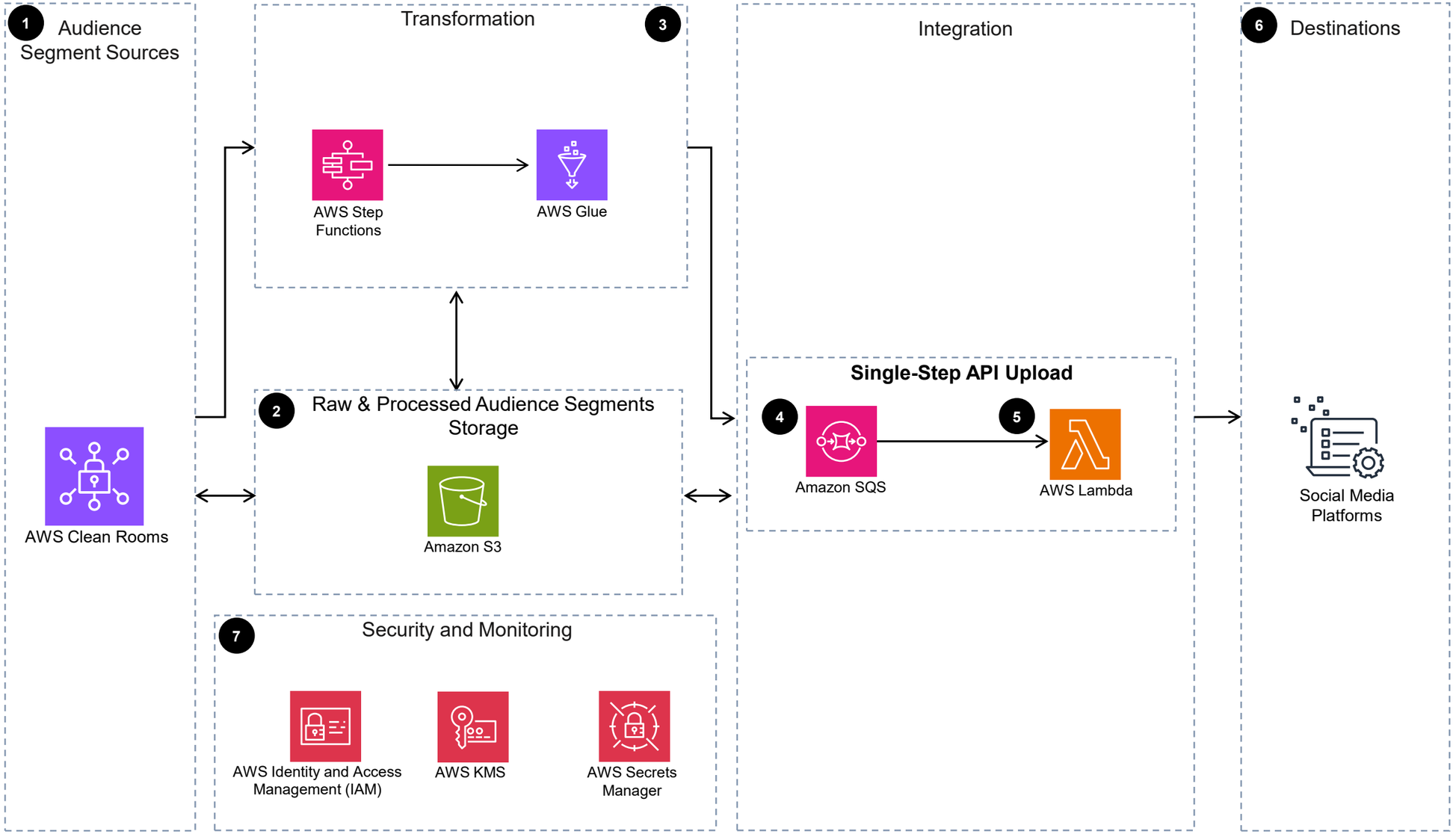
The Single-Step API Upload pattern is shown here in more detail.




1. An **AWS Clean Rooms** query is used to generate a data export of audiences for activation.
2. The audience or segmentation output from the segmentation source is stored in an **Amazon S3** bucket.
3. A **Step Functions** workflow coordinates the **AWS Glue** job for advertising platform-specific data transformation, normalization, and anonymization of personally identifiable information (PII) using hashing techniques, like SHA256. The **AWS Glue** job writes processed audience segmentation to an **Amazon S3** bucket.
4. The Single-Step API Upload pattern uses a **Lambda** function to read the events from **Amazon Simple Queue Service (Amazon SQS)** and data from storage to publish segment data to the advertising platform marketing API. Using this pattern is best suited for non-batch, transactional, and streaming activations.
5. A **Lambda** function reads the file upload events from **Amazon SQS** and reads the audience data from **Amazon S3** storage to publish segment data to the advertising platform API.
6. This pattern is applicable to ad platforms for online media targeting.
7. Use **IAM** to securely manage identities and access to AWS services and resources.

   Use **Secrets Manager** to store advertiser ID and access tokens. Configuring the uploader integration module accesses this service at run time.

   Use **AWS KMS** to store customer managed encryption keys. Use these keys to encrypt data at rest and in transit.

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