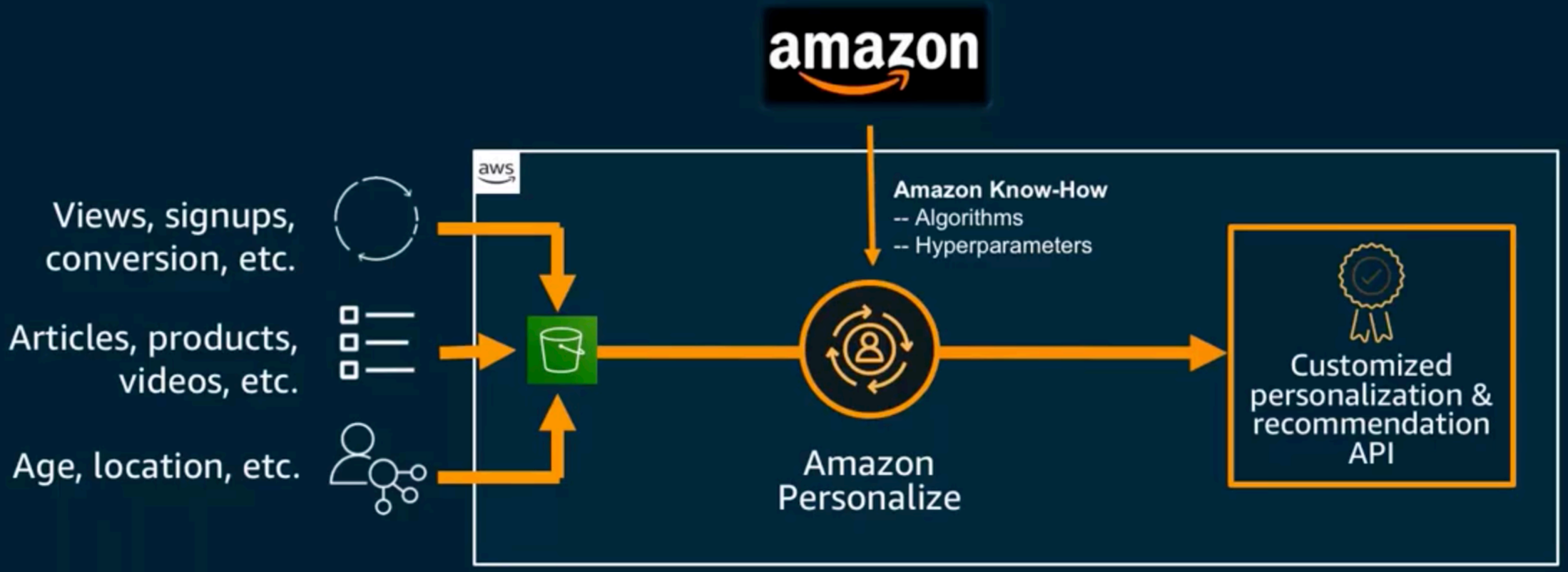
AWS Personalization

Amazon Personalize: Machine learning personalization and recommendations



Built on Amazon's experience, with 20 years of operating Personalization at scale across different segments, geos, and industries.

What are the data file formats?

INTERACTIONS
Views, signups, conversion, etc.

ITEMS
Articles, products, videos, etc.

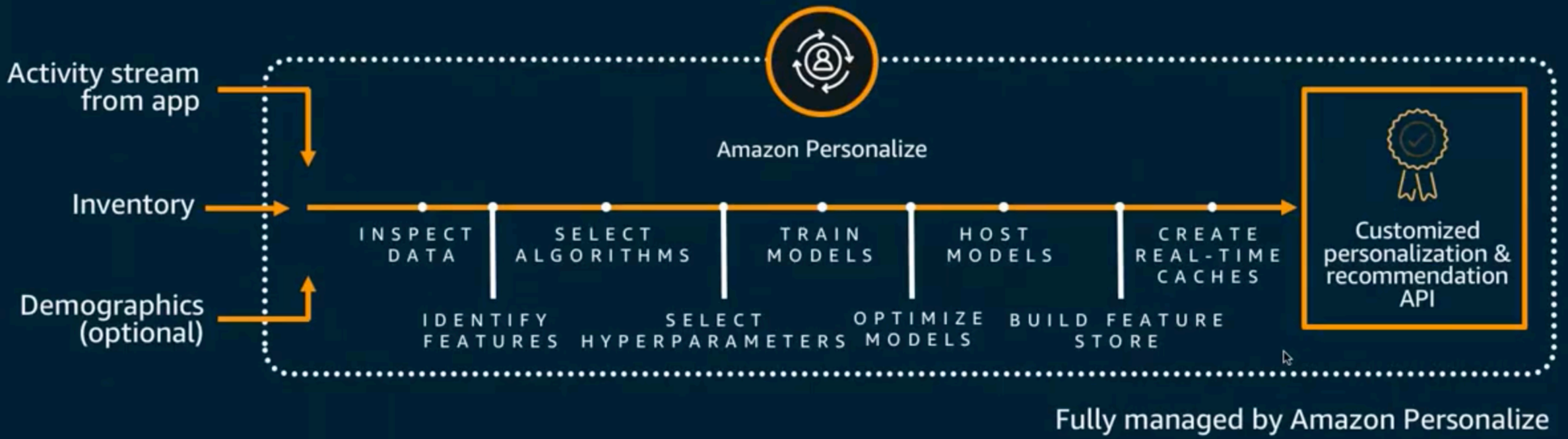
USERS
Age, location, etc.

Dataset Type	Required	Reserved
Interactions	USER_ID ITEM_ID TIMESTAMP	EVENT_TYPE EVENT_VALUE
Items	ITEM_ID	
Users	USER_ID	

EXAMPLE USERS METADATA SCHEMA

```
{
 "type": "record",
 "name": "Users",
 "namespace":
"com.amazonaws.personalize.schema",
 "fields": [
   {
     "name": "USER_ID",
     "type": "string"
   },
   {
     "name": "AGE",
     "type": "int"
   },
   {
     "name": "GENDER",
     "type": "string",
     "categorical": true
   }
 ],
 "version": "1.0"
}
```

Amazon Personalize: Machine learning personalization and recommendations



Fully managed by Amazon Personalize

Predefined recipes

Search Personalization

Name	Description
Personalized-Ranking	Personalizing search results or pre-existing curated lists for your user

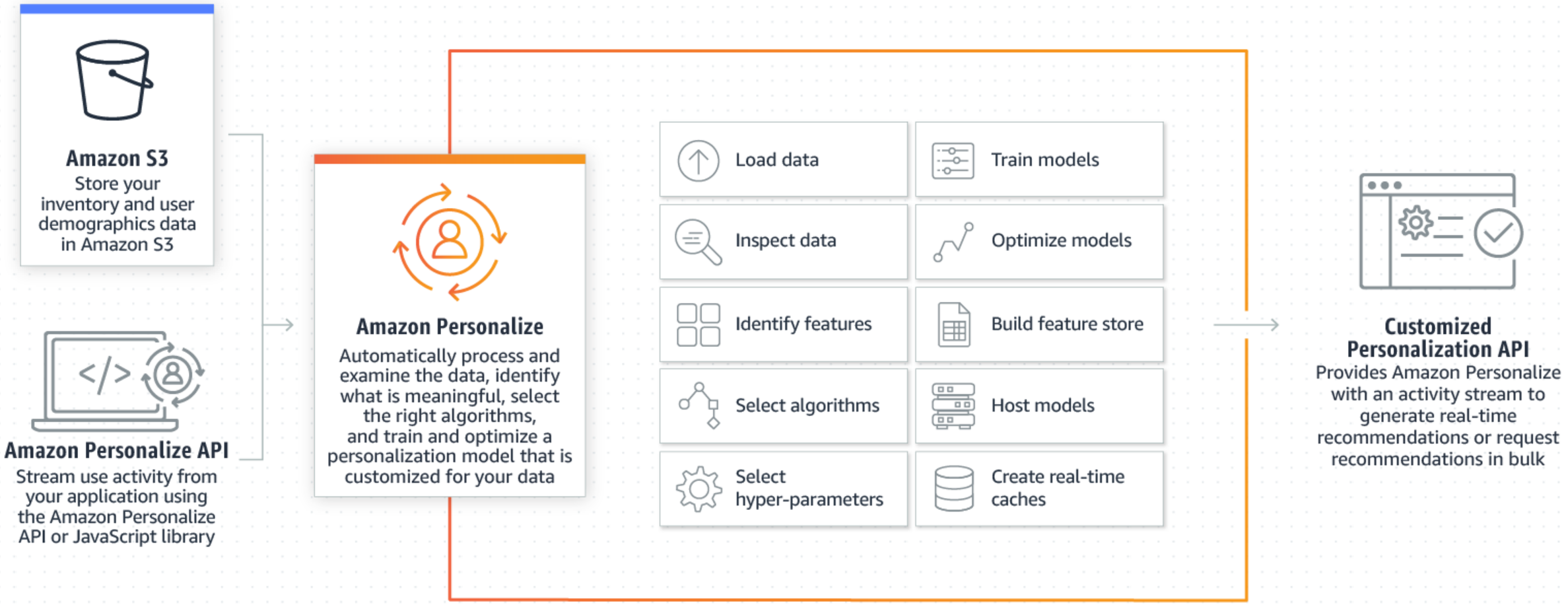
Related Items

Name	Description
SIMS	Similar items based on co-occurrence of the item in the user history in the INTERACTIONS dataset. Use for improving item discoverability. High performance

User Personalization

Name	Description
HRNN	Hierarchical recurrent Neural Network, which can model the temporal order of the user/item data. Very powerful when user behaviour is changing with time
HRNN-metadata	As HRNN, but with additional features from the metadata for USERS and ITEMS
HRNN-coldstart	As HRNN-metadata, but with the ability to recommend new items as soon as they are added into your model

Overview


Amazon S3
Store your inventory and user demographics data in Amazon S3
Amazon Personalize API
Stream use activity from your application using the Amazon Personalize API or JavaScript library
Amazon Personalize
Automatically process and examine the data, identify what is meaningful, select the right algorithms, and train and optimize a personalization model that is customized for your data
Load data
Train models
Inspect data
Optimize models
Identify features
Build feature store
Select algorithms
Host models
Select hyper-parameters
Create real-time caches
Customized Personalization API
Provides Amazon Personalize with an activity stream to generate real-time recommendations or request recommendations in bulk

Overview

1. Create related datasets and a dataset group.

2. Get training data.
   - Import historical data to the dataset group.
   - Record user events to the dataset group.

3. Create a solution version (trained model) using a recipe.

4. Evaluate the solution version using metrics.

5. Create a campaign (deploy the solution version).

6. Provide recommendations for users.

Dataset Group

Dashboard

Overview

Upload datasets

Datasets are required to create solutions, which are then used to generate recommendations.

View datasets

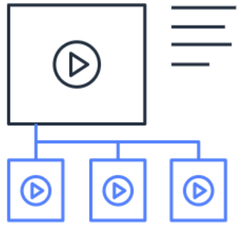
Install event ingestion SDK

The event ingestion SDK allows you to track user events in your application and feed them to your solutions.

View APIs

Create solutions

Solutions help you generate recommendations. They consist of custom models trained on your datasets along with the underlying infrastructure required to generate recommendations.



Launch campaigns

Campaigns allow your application to get recommendations from your solution version. They also provide you with analytics on the solution's usage.

View campaigns