Top Architecture Diagram

Web Browsers

API Gateway

Lambda

JAM
FsoiLambdaRole

users

FSOI2

fsoi_request_handler

2. process request

1. check request cache

DynamoDB

FSOI Requests

write status updates

S3

fsoi-image-cache

cache final images

send asynchronous update to clients

DynamoDB Table

DynamoDB Table					
req_hash	status_id	message	progress	connections	req_obj
S	S	S	N	SS	S

status_id may be:
[PENDING|RUNNING|SUCCESS|FAIL]

The DynamoDB table will store information about each request and is the central coordination point for processes. The request hash is computed from the request object and is the hash key of the table. Status, message, and progress contain current status information for the request. ConnUrls contains a list of API Gateway websocket URLs, basically a list of clients to notify of changes to the request status. The request is the full request object to be preserved for posterity.

Sequence Diagrams

Client — **API Gateway** — **LambdaSubmit**

submit request (websocket)

request parameters

generate request hash

check dynamodb status

finished

create response from cache

POST response to client with API Gateway connection URL

Response

Handle a request that has been previously processed and has a cached response. The request hash will be checked in dynamo, and since it is complete, a response message can be generated and sent to the client immediately over the API Gateway websocket.

connect (websocket)

submit request (websocket)

request parameters

generate request hash

check dynamodb status

in-progress

POST status to client with API Gateway connection URL

add connectionId to dynamo

Response

Handle a request that has is currently being processed, but is not completed yet. The new client connection ID will be added to the list of clients to notify in dynamo, and the current status will be sent immediately to the client over the API Gateway websocket.