

UDACITY

Project 5

Serverless Application

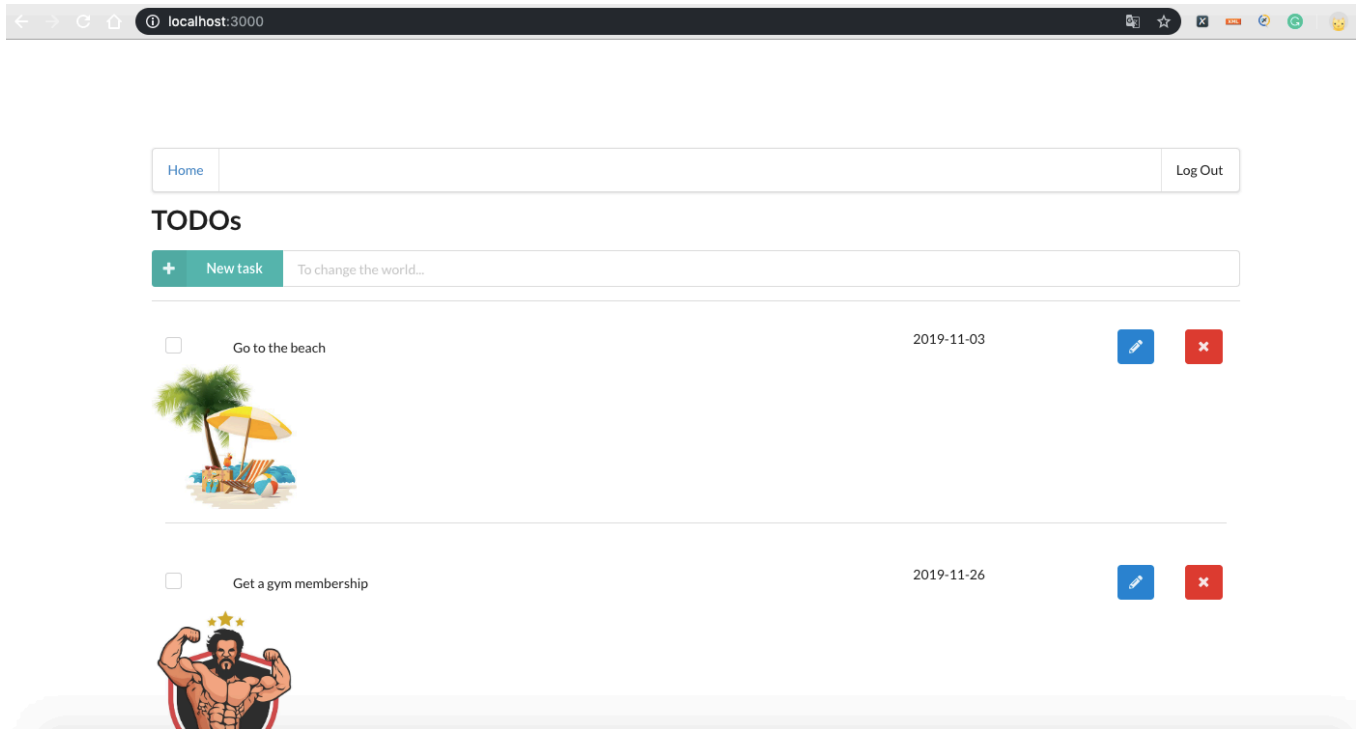
Prepared by:

Asrar Meshal Albeshri

Cloud Developer Nanodegree program

Project Screenshots

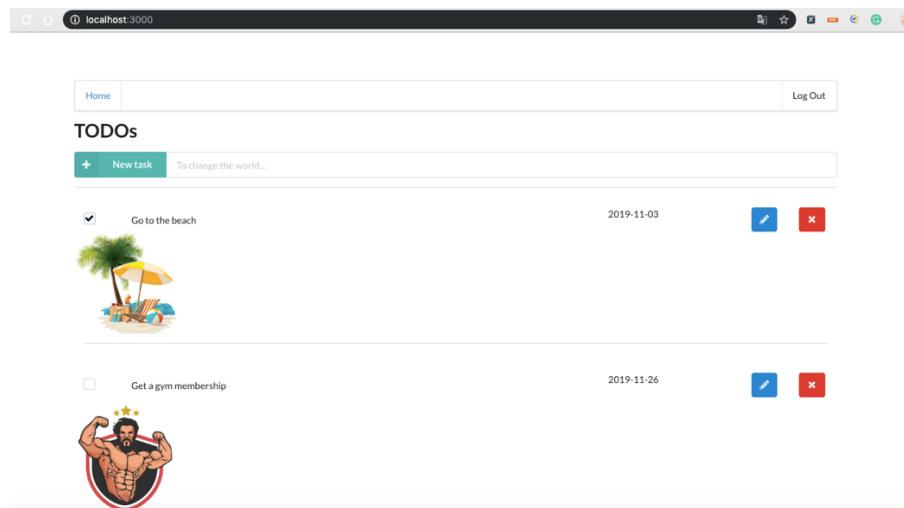
To Do web application



Some details about the project

User can do the following:

- Create a new to-do task,
- Upload Image (optionally),
- Update to do task status if done or not (as shown in the following picture),



- And, delete a to-do task.

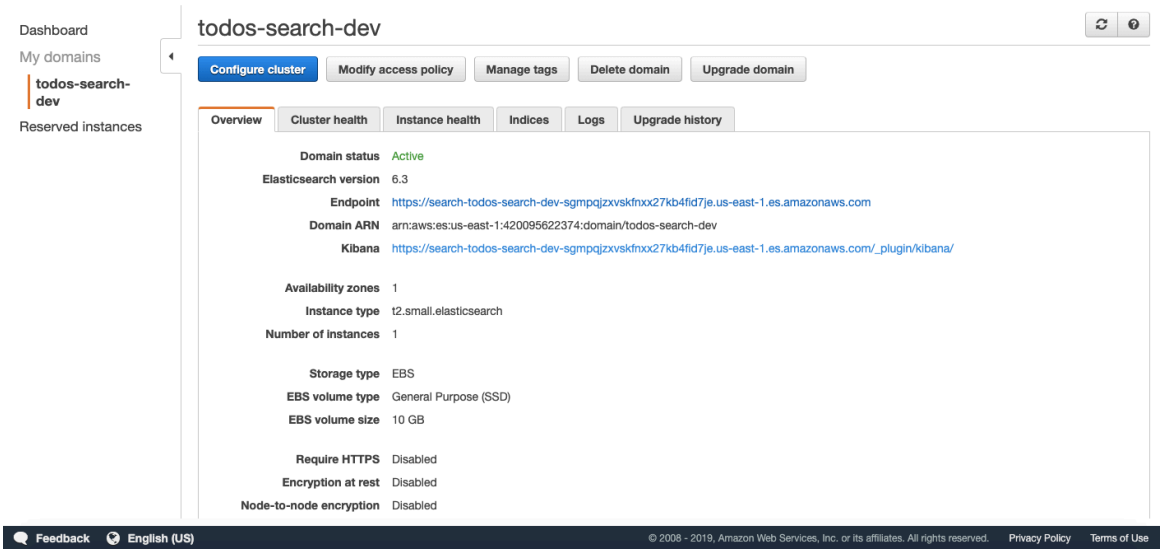
Also, the application applies the following features and services:

Sorting the items:

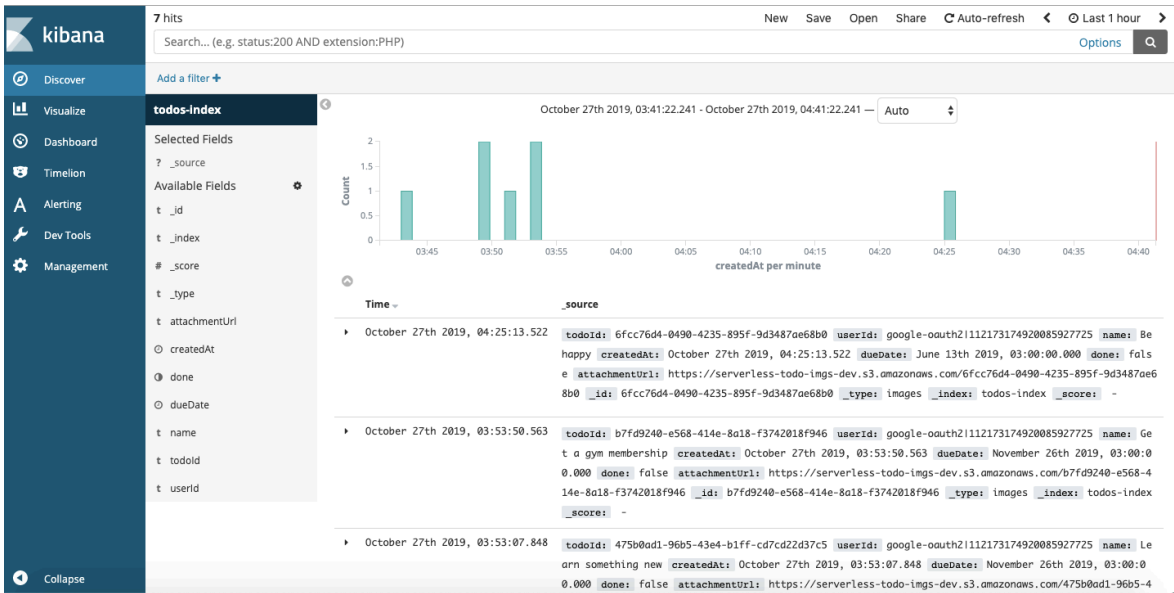
I have sorted a to-do list based on the due date in ascending order (as shown in the above picture).

Elasticsearch Service:

I have made an Elasticsearch cluster to allow full-text search (as shown in the following picture).



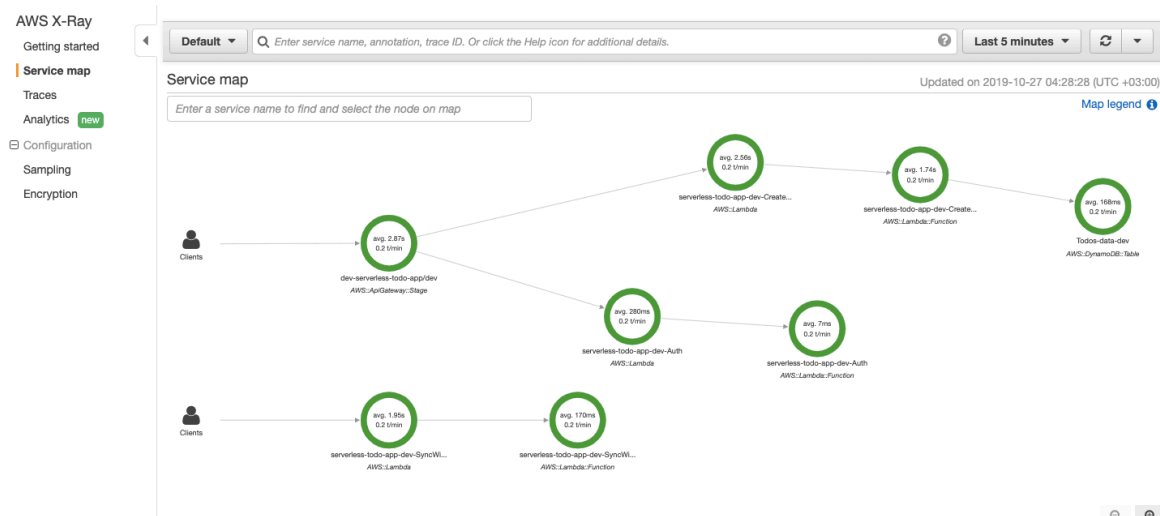
Elasticsearch cluster overview



Kibana Interface for to do Elasticsearch cluster

Distributed tracing: x-ray tracing:

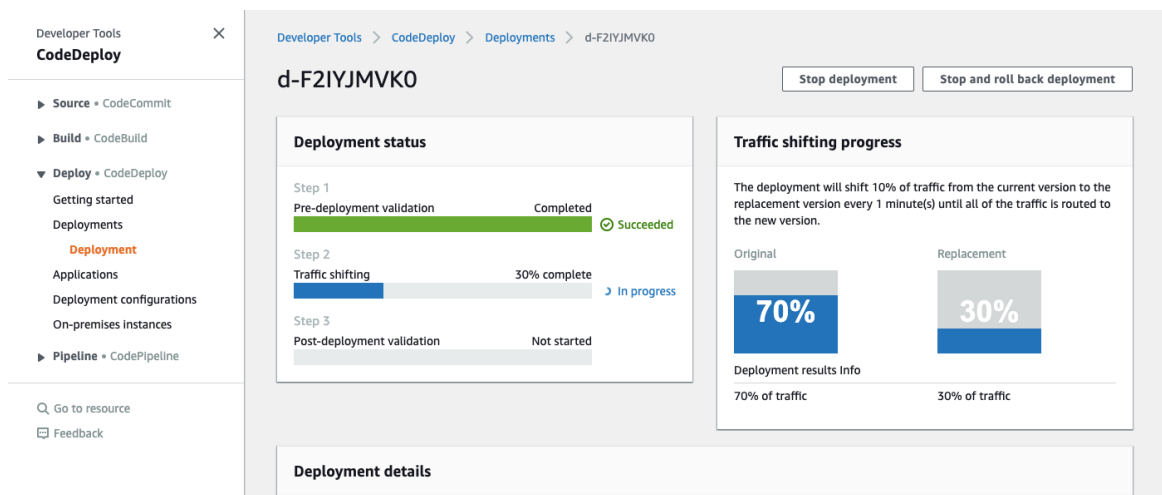
I have created an AWS X-ray to implement distributed tracing and send information about executed requests.



For example, when the user creates a to-do task, the API gateway will verify the user through the auth lambda function. If the user is validated, the data will be saved in dynamodb table.

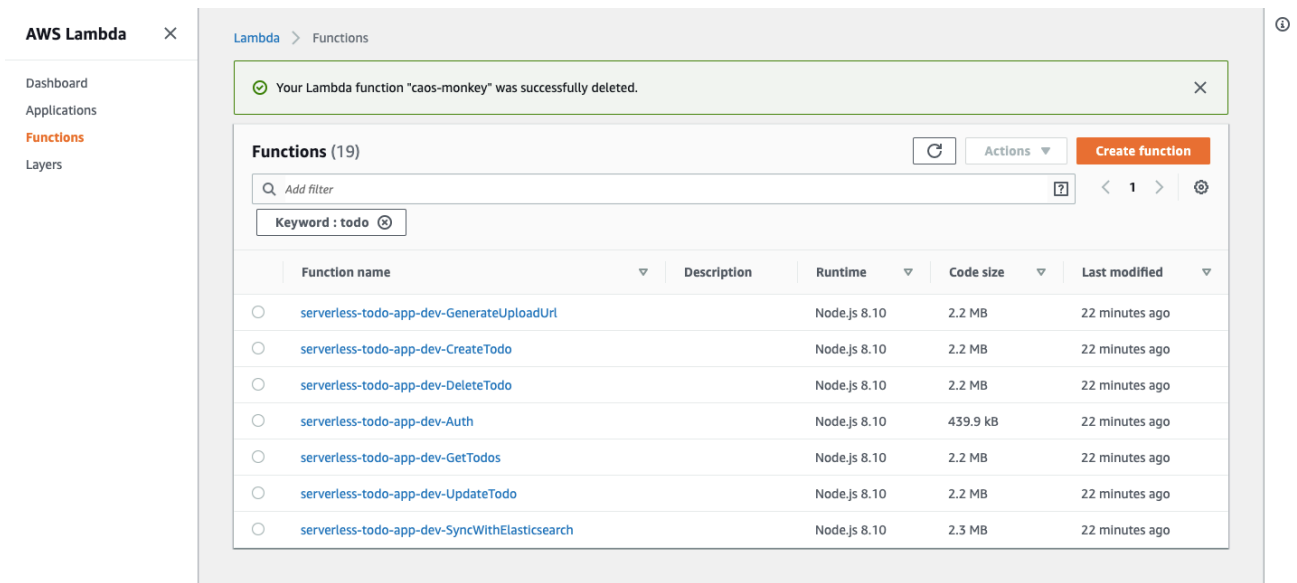
Canary deployment:

I have made canary deployment to deploy and test the new version of the application. I will explain this deployment by creating a to-do task as an example.



Optimize functions size:

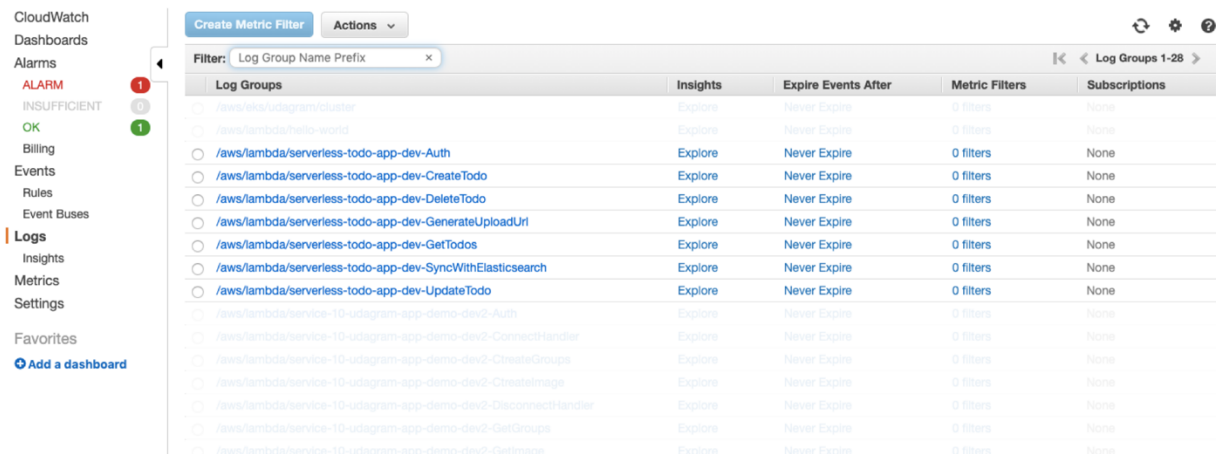
- I have packaged functions individually to optimize function size.



The screenshot shows the AWS Lambda console. A notification at the top states: "Your Lambda function 'caos-monkey' was successfully deleted." Below this, the 'Functions (19)' section is visible. A search filter 'Keyword: todo' is applied. The table lists several functions, all using Node.js 8.10 runtime. The functions are:

Function name	Description	Runtime	Code size	Last modified
serverless-todo-app-dev-GenerateUploadUrl		Node.js 8.10	2.2 MB	22 minutes ago
serverless-todo-app-dev-CreateTodo		Node.js 8.10	2.2 MB	22 minutes ago
serverless-todo-app-dev-DeleteTodo		Node.js 8.10	2.2 MB	22 minutes ago
serverless-todo-app-dev-Auth		Node.js 8.10	439.9 kB	22 minutes ago
serverless-todo-app-dev-GetTodos		Node.js 8.10	2.2 MB	22 minutes ago
serverless-todo-app-dev-UpdateTodo		Node.js 8.10	2.2 MB	22 minutes ago
serverless-todo-app-dev-SyncWithElasticsearch		Node.js 8.10	2.3 MB	22 minutes ago

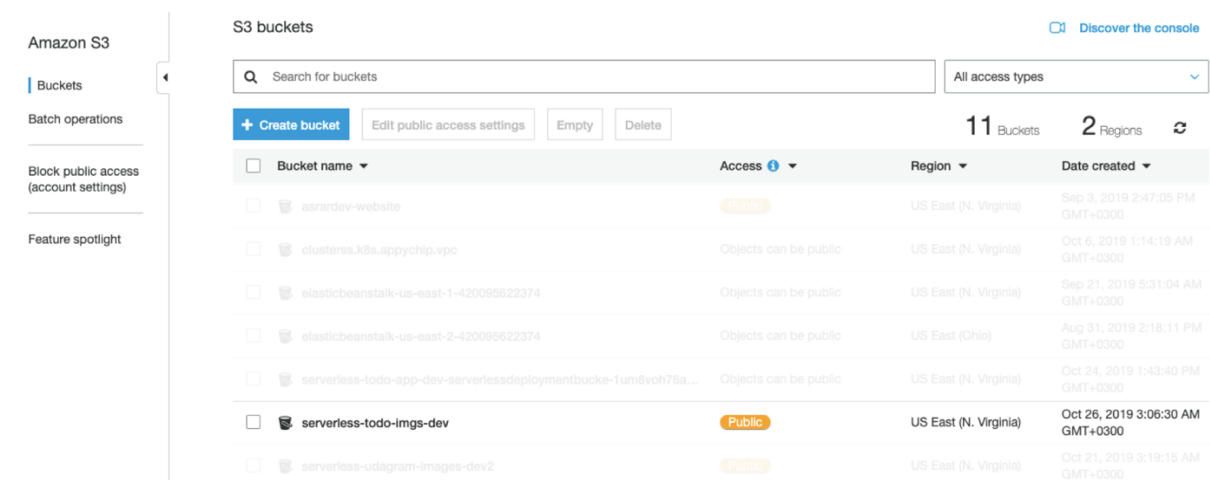
CloudWatch logs for lambda functions:



The screenshot shows the AWS CloudWatch console. The 'Log Groups' section is selected, displaying a list of log groups for various Lambda functions. The table includes columns for Log Groups, Insights, Expire Events After, Metric Filters, and Subscriptions. The log groups are:

Log Groups	Insights	Expire Events After	Metric Filters	Subscriptions
/aws/eks/udagram/cluster	Explore	Never Expire	0 filters	None
/aws/lambda/hello-world	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-Auth	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-CreateTodo	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-DeleteTodo	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-GenerateUploadUrl	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-GetTodos	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-SyncWithElasticsearch	Explore	Never Expire	0 filters	None
/aws/lambda/serverless-todo-app-dev-UpdateTodo	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-Auth	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-ConnectHandler	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-CreateGroups	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-CreateImage	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-DisconnectHandler	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-GetGroups	Explore	Never Expire	0 filters	None
/aws/lambda/service-10-udagram-app-demo-dev2-GetImage	Explore	Never Expire	0 filters	None

S3 bucket to store application attachments:



The screenshot shows the Amazon S3 console. The 'Buckets' section is selected, displaying a list of buckets. The table includes columns for Bucket name, Access, Region, and Date created. The buckets are:

Bucket name	Access	Region	Date created
asrarddev-website	Public	US East (N. Virginia)	Sep 3, 2019 2:47:05 PM GMT+0300
clusters.k8s.appypchip.vpc	Objects can be public	US East (N. Virginia)	Oct 6, 2019 1:14:19 AM GMT+0300
elasticbeanstalk-us-east-1-420095622374	Objects can be public	US East (N. Virginia)	Sep 21, 2019 5:31:04 AM GMT+0300
elasticbeanstalk-us-east-2-420095622374	Objects can be public	US East (Ohio)	Aug 31, 2019 2:18:11 PM GMT+0300
serverless-todo-app-dev-serverlessdeploymentbucket-1um8voh76a...	Objects can be public	US East (N. Virginia)	Oct 24, 2019 1:43:40 PM GMT+0300
serverless-todo-imgs-dev	Public	US East (N. Virginia)	Oct 26, 2019 3:06:30 AM GMT+0300
serverless-udagram-images-dev2	Public	US East (N. Virginia)	Oct 21, 2019 3:19:15 AM GMT+0300