

CS 553 Cloud Computing
Programming Assignment 3
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Screenshots

Remote Sleep 0 10K task:-

AWS

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with options like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Load Balancing, and Auto Scaling. The 'Instances' section is currently selected. The main pane displays a table of instances. One instance, 'Worker1', is highlighted. Below the table, a detailed view for 'Worker1' is shown, including its Public DNS (ec2-52-39-22-211.us-west-2.compute.amazonaws.com), Instance ID (i-59cc229f), Instance state (running), Instance type (t2.micro), Private DNS (ip-172-31-17-215.us-west-2.compute.internal), and Public IP (52.39.22.211). The 'Description' tab is selected in the sub-pane.

Incoming Queue:-

The screenshot shows the AWS Lambda function configuration for the 'Incoming_Queue'. In the left panel, the function code is visible, showing Java files for Local_Client, Local_Code, and PA3_Code. The 'Incoming_Queue' configuration tab is selected. It shows the following details:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461853000
- Visibility Timeout: 30
- Queue ARN: arnaws:sqs:us-west-2:711023178553:Incoming_Queue
- Approx. Message Count: 0
- Message Delay (seconds): 0

Below this, the 'Message Sampling' table is empty, showing columns for ID, Body, Sent, and Sender.

Response queue:-

The screenshot shows the AWS Lambda function configuration interface. The left sidebar lists the function's code structure under 'Local_Code' and 'PA3_Code'. The main area displays the 'Response_Queue' configuration tab. Key settings include:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461853001
- Visibility Timeout: 30
- Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
- Approx. Message Count: 10000
- Message Delay (seconds): 0

The 'Message Sampling' table shows a list of messages with columns: ID, Body, Sent, and Sender. The data is as follows:

ID	Body	Sent	Sender
f8069e89-c4ec-4129-b2dc-	709 0	28 Apr, 2016 7:51:53 PM	711023178553
f350fe08-109b-40fc-8120-	894 0	28 Apr, 2016 7:51:55 PM	711023178553
110e901f-7a7f-4e5d-8ca0-	644 0	28 Apr, 2016 7:51:50 PM	711023178553
286839b9-8fd6-4bb3-93e3-	735 0	28 Apr, 2016 7:51:55 PM	711023178553
30661599-36bc-43b2-9543-	820 0	28 Apr, 2016 7:51:55 PM	711023178553
00a19495-4c40-41f9-a0a2-	886 0	28 Apr, 2016 7:51:57 PM	711023178553
7b78e09c-7e89-448d-99ec-	905 0	28 Apr, 2016 7:51:56 PM	711023178553
81beebe6-0eee-428a-bd5f-	785 0	28 Apr, 2016 7:51:55 PM	711023178553
8ebf5f00-819c-4cfd-9d6d-	767 0	28 Apr, 2016 7:51:49 PM	711023178553
8d3815fc-0c72-4e9f-a3de-	688 0	28 Apr, 2016 7:51:59 PM	711023178553
1688e58f-98fe-40f7-9517-	663 0	28 Apr, 2016 7:51:56 PM	711023178553
c11c78ed-6d38-4004-bae8-	817 0	28 Apr, 2016 7:51:57 PM	711023178553
269e993b-532e-4d09-827d-	120 0	28 Apr, 2016 7:51:21 PM	711023178553
9291c3ec-903f-4f0e-9844-	788 0	28 Apr, 2016 7:51:56 PM	711023178553
0302e149-1da7-48ae-a55c-	633 0	28 Apr, 2016 7:51:50 PM	711023178553

DynamoDB:-

The screenshot shows the AWS Lambda function configuration interface. The left sidebar lists the function's code structure under 'Local_Code' and 'PA3_Code'. The main area displays the 'Job_Id_Check' configuration tab. A button labeled 'Add scan condition' is visible. The 'Scan' table shows a list of items with columns: Id and Command. The data is as follows:

Id	Command
5226	Thread.sleep(0);
6892	Thread.sleep(0);
5593	Thread.sleep(0);
2440	Thread.sleep(0);
1497	Thread.sleep(0);
5776	Thread.sleep(0);
4752	Thread.sleep(0);
54	Thread.sleep(0);
5913	Thread.sleep(0);
1469	Thread.sleep(0);
1936	Thread.sleep(0);
4909	Thread.sleep(0);
2053	Thread.sleep(0);
788	Thread.sleep(0);
3528	Thread.sleep(0);
1016	Thread.sleep(0);
316	Thread.sleep(0);
3968	Thread.sleep(0);
618	Thread.sleep(0);

Execution Screenshot:-

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
Thread.sleep();
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461853271970
Total Time taken for execution (In Milliseconds)796137
ubuntu@ip-172-31-28-245:~/PA3_Code$
```

```
ubuntu@ip-172-31-17-215:~/PA3_Code
PA3_Code
ubuntu@ip-172-31-17-215:~/cd PA3_Code
ubuntu@ip-172-31-17-215:~/PA3_Code$ ls
credentials Local_Client.java PA3_Code.jar
hadoop.pem Local_Worker.class Workload.txt
Local_Client.class Local_Worker.java Workload.txt-
ubuntu@ip-172-31-17-215:~/PA3_Code$ ls
credentials Local_Client.java PA3_Code.jar
hadoop.pem Local_Worker.class Workload.txt
Local_Client.class Local_Worker.java Workload.txt-
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$
```

Remote Thread 2 10k sleep 0

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461855479277
Total Time taken for execution (In Milliseconds)407898
ubuntu@ip-172-31-28-245:~/PA3_Code$
```

```
ubuntu@ip-172-31-17-215:~/PA3_Code
hadoop.pem Local_Worker.class Workload.txt
Local_Client.class Local_Worker.java Workload.txt-
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$
```

```
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 2
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 2
Thread1 Connecting to Incoming_Queue Queue
Thread2 Connecting to Incoming_Queue Queue
Thread2 Connecting to Response_Queue !!
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread2 Connecting to DynamoDB !!
Thread2 Started Processing Records !!!
```

Thread 4 Sleep 0 10k jobs

The image shows two terminal windows side-by-side. Both terminals are running the command `java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt`. The left terminal shows the initial setup and processing of messages, while the right terminal shows the continuation of the process after a break.

```
ubuntu@ip-172-31-28-245:~/PA3_Code$ Table Created !!!
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----

Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!!
```

Ubuntu@ip-172-31-17-215:~/PA3_Code\$

```
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 4
Thread1 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread2 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread4 Connecting to Response_Queue !!
Thread2 Connecting to Response_Queue !!
Thread3 Connecting to Response_Queue !!
Thread1 Connecting to Response_Queue !!
Thread2 Connecting to DynamoDB !!
Thread4 Connecting to DynamoDB !!
Thread1 Connecting to DynamoDB !!
Thread3 Connecting to DynamoDB !!
Thread4 Started Processing Records !!!
Thread1 Started Processing Records !!!
Thread3 Started Processing Records !!!
Thread2 Started Processing Records !!!
```

Ubuntu@ip-172-31-17-215:~/PA3_Code\$

thread 1 10 ms 1000 jobs :-

The image shows two terminal windows side-by-side. Both terminals are running the command `java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt`. The left terminal shows the initial setup and processing of messages, while the right terminal shows the continuation of the process after a break.

```
ubuntu@ip-172-31-28-245:~/PA3_Code$ Table Created !!!
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----

Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

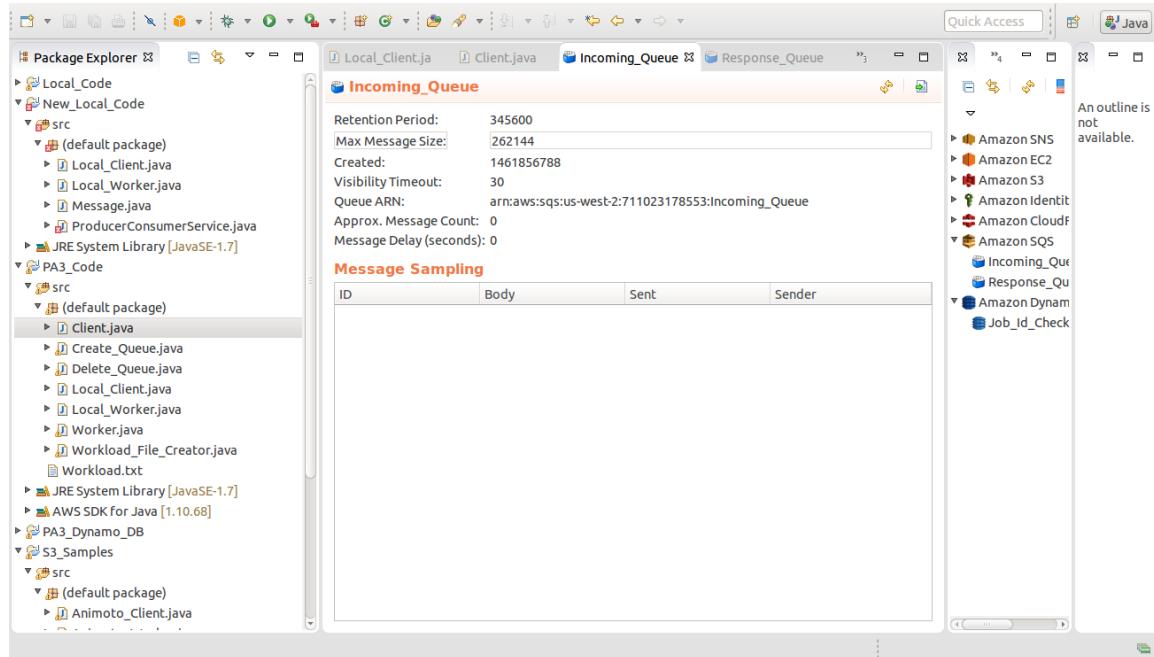
Checking if execution is completed !!!!
```

Ubuntu@ip-172-31-28-245:~/PA3_Code\$

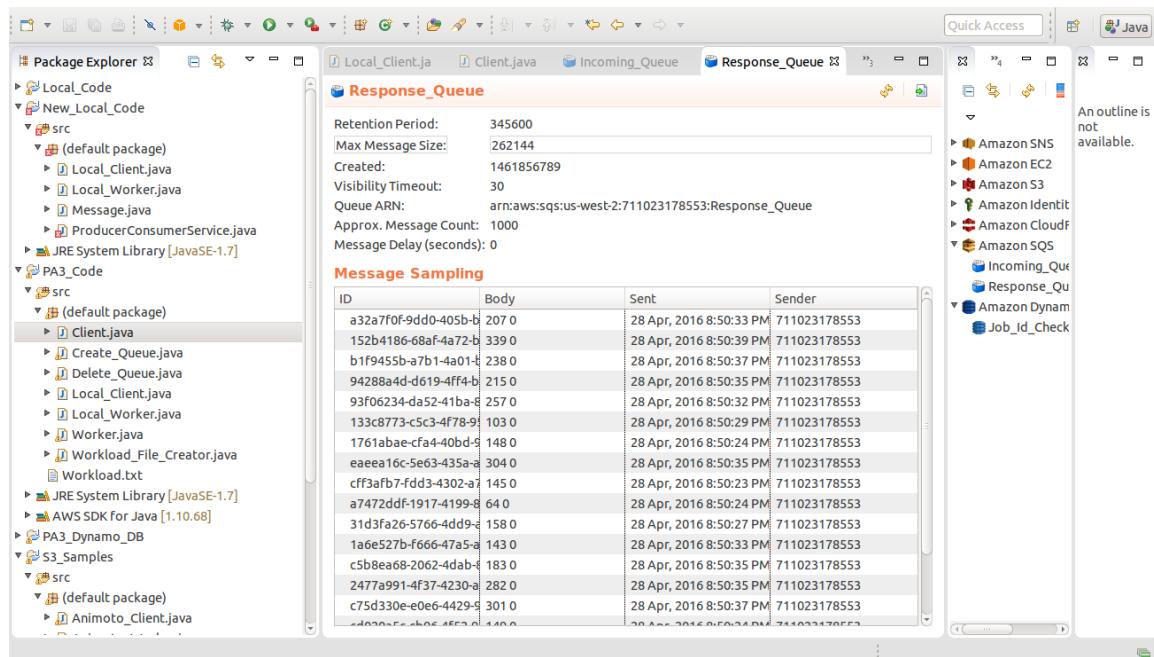
```
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 4
Thread1 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread2 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread4 Connecting to Response_Queue !!
Thread2 Connecting to Response_Queue !!
Thread3 Connecting to Response_Queue !!
Thread1 Connecting to Response_Queue !!
Thread2 Connecting to DynamoDB !!
Thread4 Connecting to DynamoDB !!
Thread1 Connecting to DynamoDB !!
Thread3 Connecting to DynamoDB !!
Thread4 Started Processing Records !!!
Thread1 Started Processing Records !!!
Thread3 Started Processing Records !!!
Thread2 Started Processing Records !!!
```

Ubuntu@ip-172-31-17-215:~/PA3_Code\$

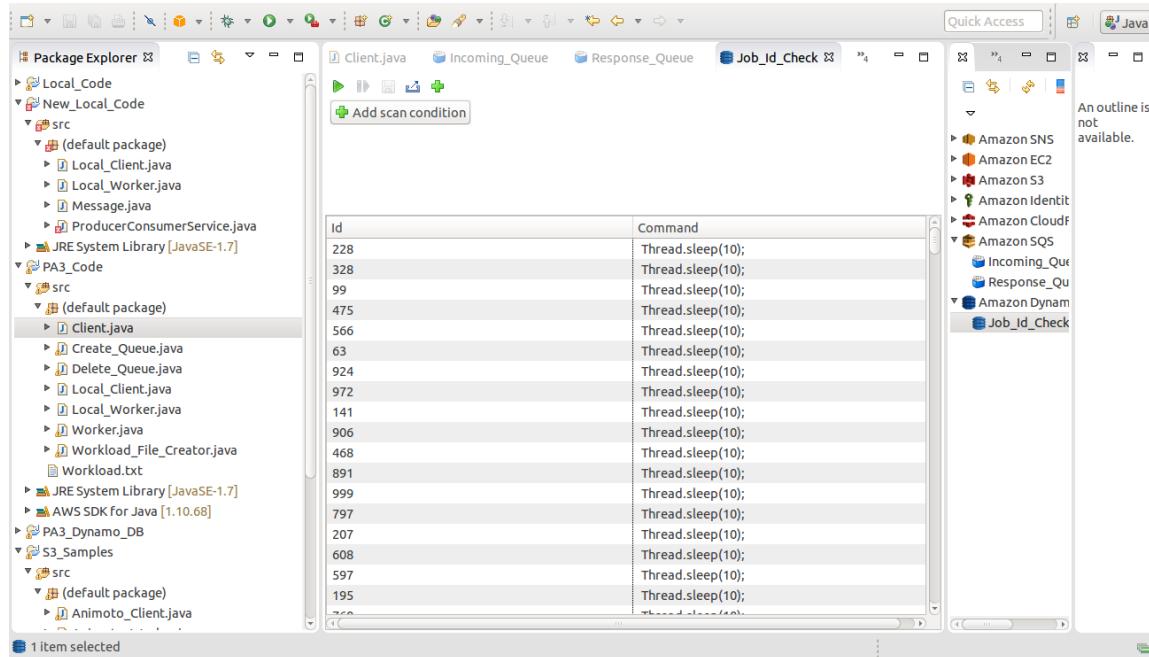
Incoming queue:-



Response queue:-



DynamoDB:-



4 threads 10ms 1000 jobs

```

ubuntu@ip-172-31-28-245:~/PA3_Code
Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Create_Qu
ue Incoming_Queue
Connecting
Creating Table !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s
Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Incoming_Queue
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
Sending messages to Incoming_Queue
Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461857264139
Total Time taken for execution (In Milliseconds)25186
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

ubuntu@ip-172-31-17-215:~/PA3_Code
Thread1 Started Processing Records !!!
Thread3 Started Processing Records !!!
Thread2 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Wor
ker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Wor
ker -s Incoming_Queue -t 4
Thread2 Connecting to Incoming_Queue Queue
Thread1 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread3 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread4 Connecting to Response_Queue !!
Thread3 Connecting to DynamoDB !!
Thread2 Connecting to Response_Queue !!
Thread4 Connecting to DynamoDB !!
Thread2 Started Processing Records !!!
Thread4 Started Processing Records !!!
Thread1 Started Processing Records !!!
Thread3 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ 

```

1 thread 1 second 100 jobs :-

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
Table Created !!!
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

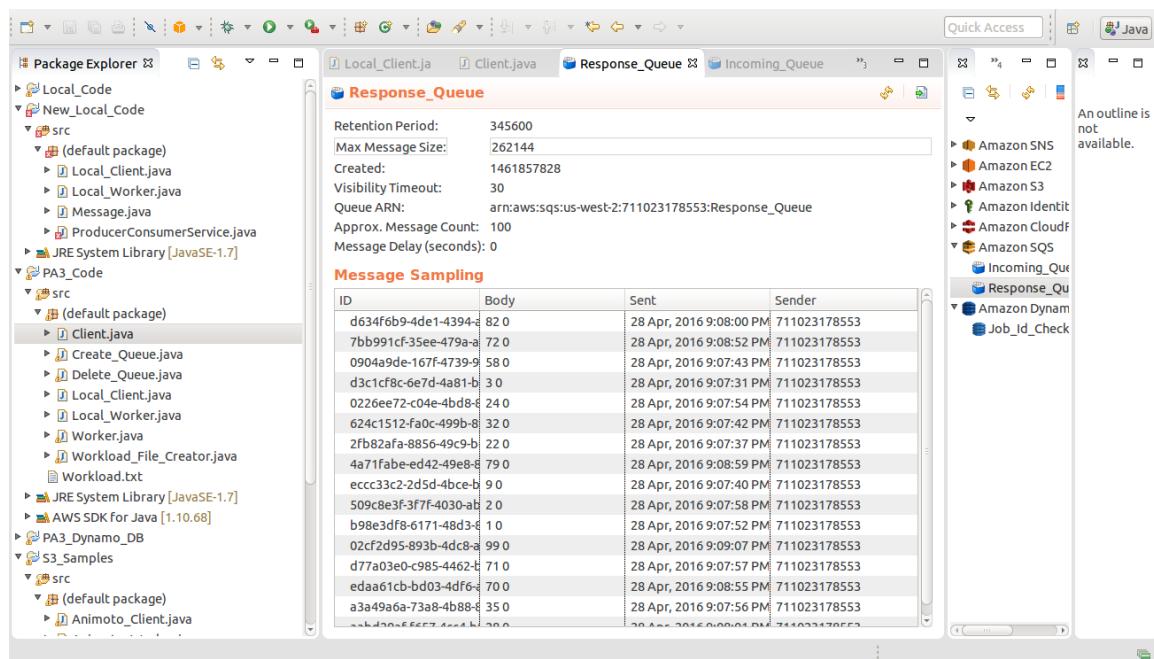
Creating Response Queue.
Response Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

Connecting Response Queue.
Response Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

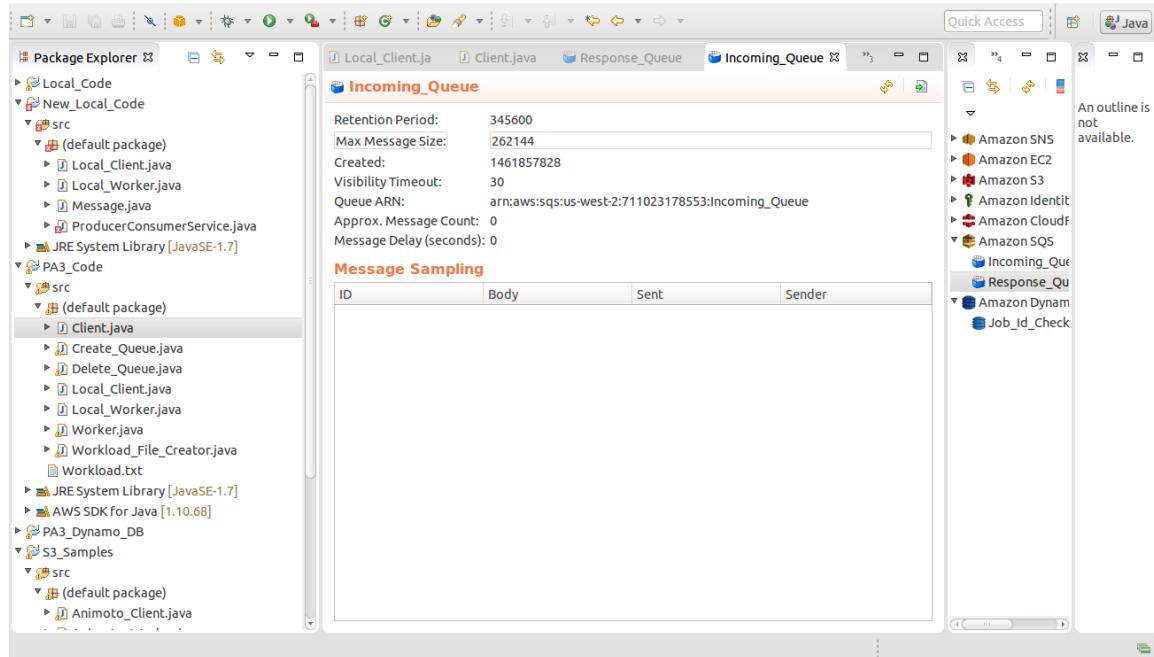
Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461857846099
Total Time taken for execution (In Milliseconds)112775
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

ubuntu@ip-172-31-17-215: ~/PA3_Code
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 4
Thread2 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread3 Connecting to Response_Queue !!
Thread4 Connecting to DynamoDB !!
Thread4 Connecting to Response_Queue !!
Thread3 Connecting to DynamoDB !!
Thread2 Connecting to DynamoDB !!
Thread2 Started Processing Records !!!
Thread4 Started Processing Records !!!
Thread3 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$
```

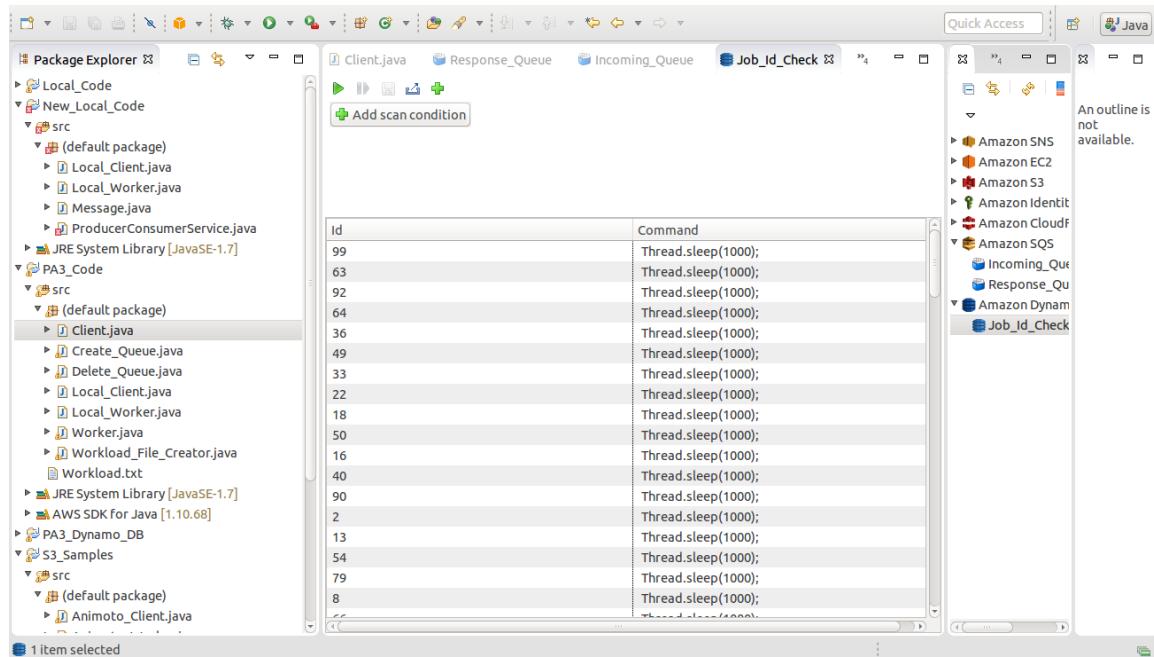
Response queue:-



Incoming_Queue:-



DynamoDB:-



4 thread 1 second 100 jobs:-

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
Table Created !!!
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

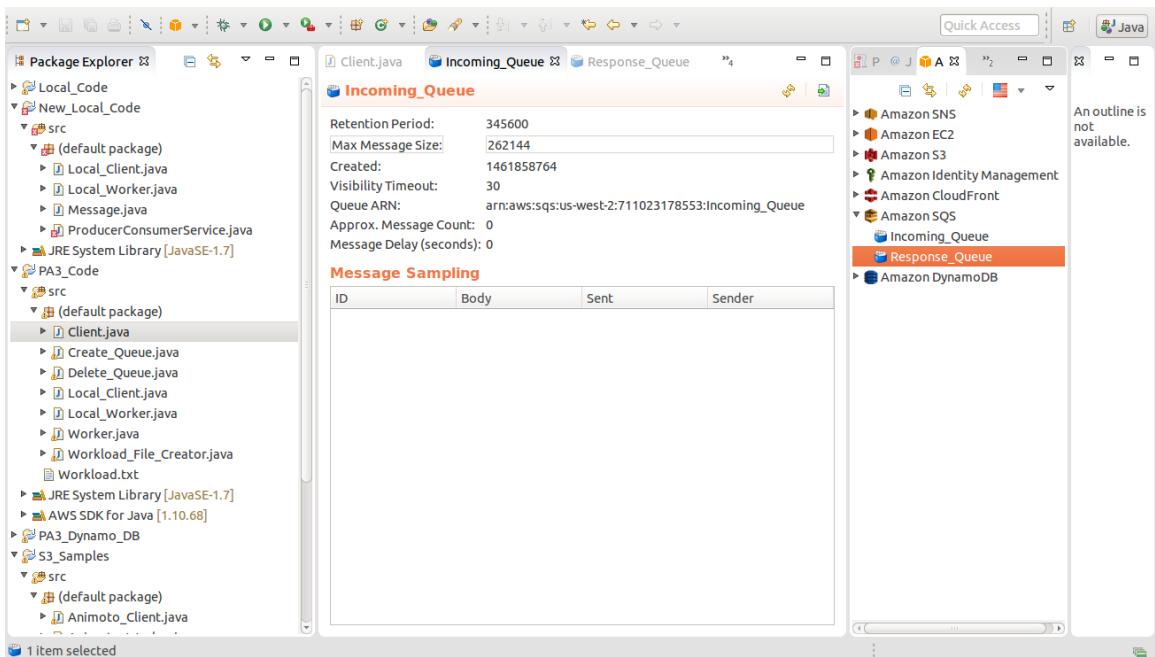
Creating Response Queue.
Response Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461858554762
Total Time taken for execution (In Milliseconds)31769
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

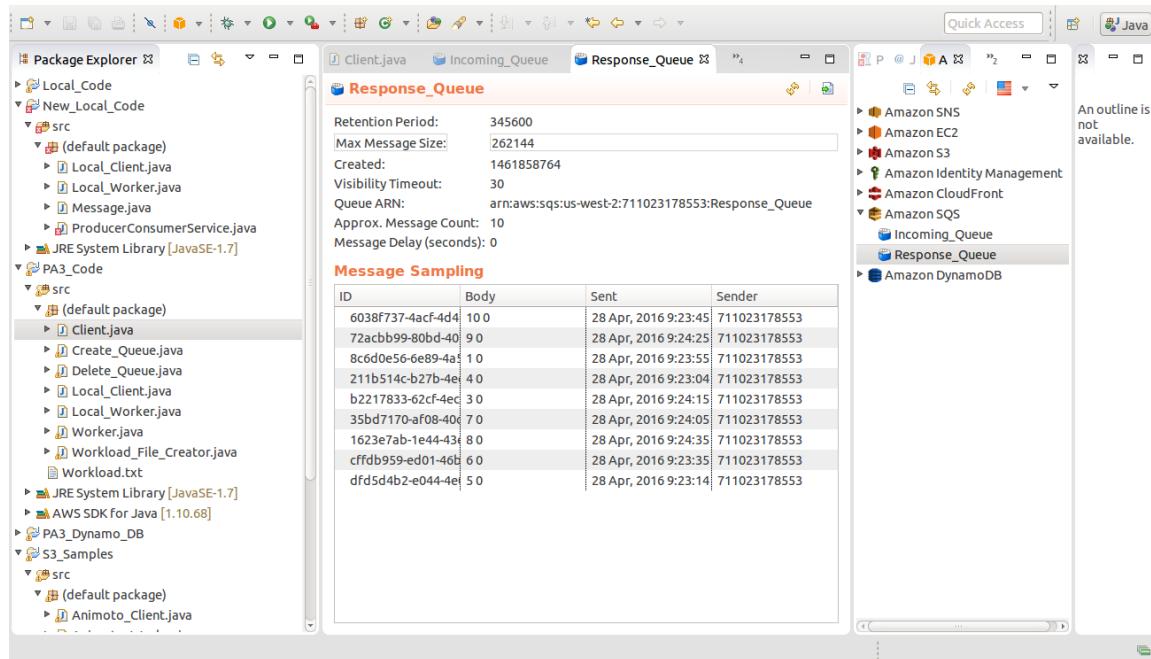
ubuntu@ip-172-31-17-215: ~/PA3_Code
er(AmazonHttpClient.java:338)
at com.amazonaws.http.AmazonHttpClient.execute(Amazon
HttpClient.java:287)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBCl
ient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBCl
ient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
-----Getting Started with Amazon SQS-----
Worker -s Incoming_Queue -t 4
Thread2 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread1 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread2 Connecting to Response_Queue !!
Thread3 Connecting to Response_Queue !!
Thread4 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread2 Connecting to DynamoDB !!
Thread3 Connecting to DynamoDB !!
Thread4 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
Thread2 Started Processing Records !!!
Thread3 Started Processing Records !!!
Thread4 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ Worker
```

1 thread 10 seconds 10 jobs:-

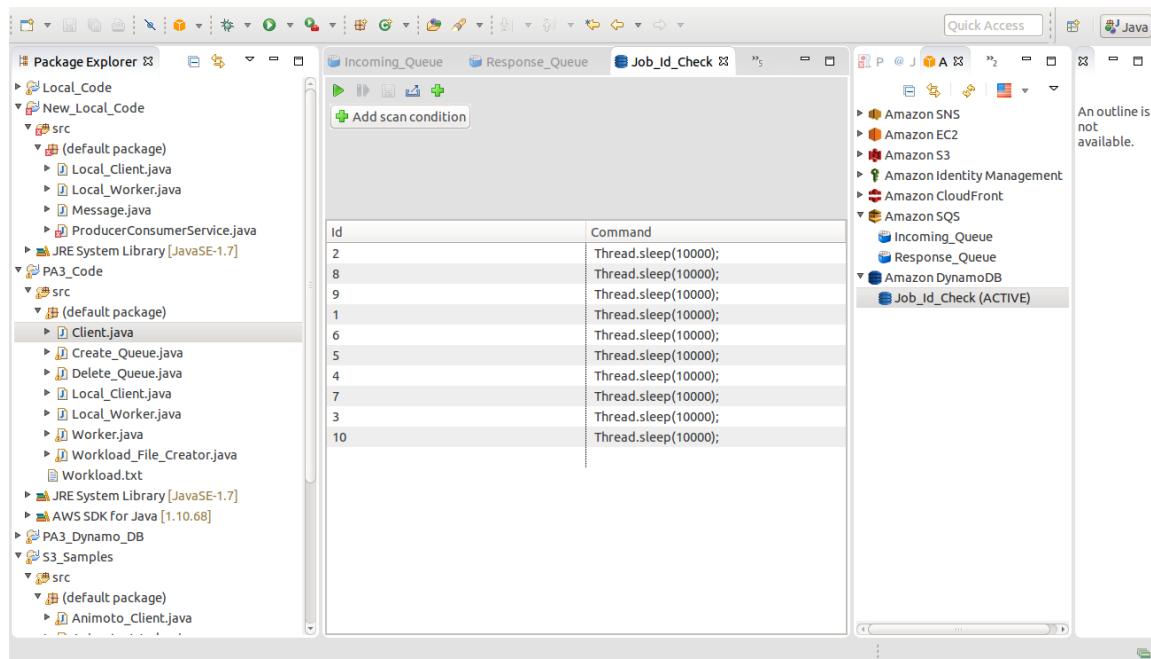
incoming queue:-



Response queue:-



DynamoDb:-



Output:-

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
Table Created !!!
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Incoming_Queue

Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s
Incoming_Queue -w Workload.txt
----Getting Started with Amazon SQS-----

Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461859570973
Total Time taken for execution (In Milliseconds)106916
ubuntu@ip-172-31-28-245:~/PA3_Code$
```

```
ubuntu@ip-172-31-17-215: ~/PA3_Code
Thread1 Connecting to DynamoDB !!!
Thread2 Connecting to DynamoDB !!!
Thread4 Connecting to DynamoDB !!!
Thread3 Connecting to Response_Queue !!!
Thread3 Connecting to DynamoDB !!!
Thread1 Started Processing Records !!!
Thread4 Started Processing Records !!!
Thread3 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!!
Thread1 Connecting to DynamoDB !!!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!!
Thread1 Connecting to DynamoDB !!!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!!
Thread1 Connecting to DynamoDB !!!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!!
Thread1 Connecting to DynamoDB !!!
Thread1 Started Processing Records !!!
```

4 threads 10 seconds 10 jobs

```
ubuntu@ip-172-31-28-245: ~/PA3_Code
to AWS, but was rejected with an error response for some reason.
Creating Incoming_Queue
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Incoming_Queue

Creating Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s
Incoming_Queue -w Workload.txt
----Getting Started with Amazon SQS-----

Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231
78553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461860235835
Total Time taken for execution (In Milliseconds)25829
ubuntu@ip-172-31-28-245:~/PA3_Code$
```

```
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-215:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 4
Thread1 Connecting to Incoming_Queue Queue
Thread3 Connecting to Incoming_Queue Queue
Thread2 Connecting to Incoming_Queue Queue
Thread4 Connecting to Incoming_Queue Queue
Thread4 Connecting to Response_Queue !!!
Thread2 Connecting to Response_Queue !!!
Thread1 Connecting to Response_Queue !!!
Thread3 Connecting to Response_Queue !!!
Thread4 Connecting to DynamoDB !!!
Thread2 Connecting to DynamoDB !!!
Thread1 Connecting to DynamoDB !!!
Thread3 Connecting to DynamoDB !!!
Thread3 Started Processing Records !!!
Thread1 Started Processing Records !!!
Thread4 Started Processing Records !!!
Thread2 Started Processing Records !!!
```

2 worker execution.

Sleep 0 10K tasks 1 thread

The image shows four terminal windows from a Linux desktop environment. The top-left window (SSH: 52.39.196.209) displays system usage and a Java application's command-line interface. The top-right window (SSH: 52.39.22.211) shows a web browser at <https://landscape.canonical.com/>. The bottom-left window (ubuntu@ip-172-31-28-245: ~/PA3_Code) runs a Java client to create an SQS queue. The bottom-right window (CSSH [2]) shows a Java application's graphical user interface with a title bar "CSSH [2]" and menu items "File", "Hosts", "Send", and "Help".

```
Usage of /: 17.9% of 7.74GB Swap usage: 0% Users logged in: 0
Graph this data and manage this system at:
https://landscape.canonical.com/
Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

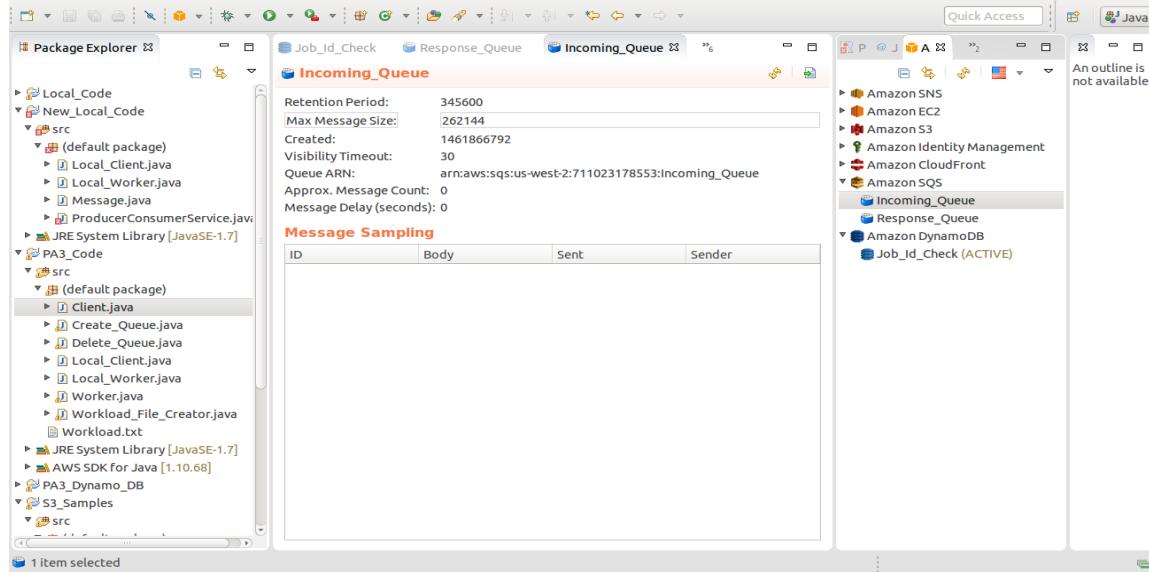
Last login: Thu Apr 28 14:12:47 2016 from 117.248.228.199
ubuntu@ip-172-31-34-13:~$ ls
PA3_Code
ubuntu@ip-172-31-34-13:~$ cd PA3_Code
ubuntu@ip-172-31-34-13:~/PA3_Code$ ls
credentials          Local_Client.java      PA3_Code.jar
hadoop.pem           Local_Worker.class    Workload.txt
Local_Client.class   Local_Worker.java   Workload.txt"
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
[]

ubuntu@ip-172-31-28-245: ~/PA3_Code
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

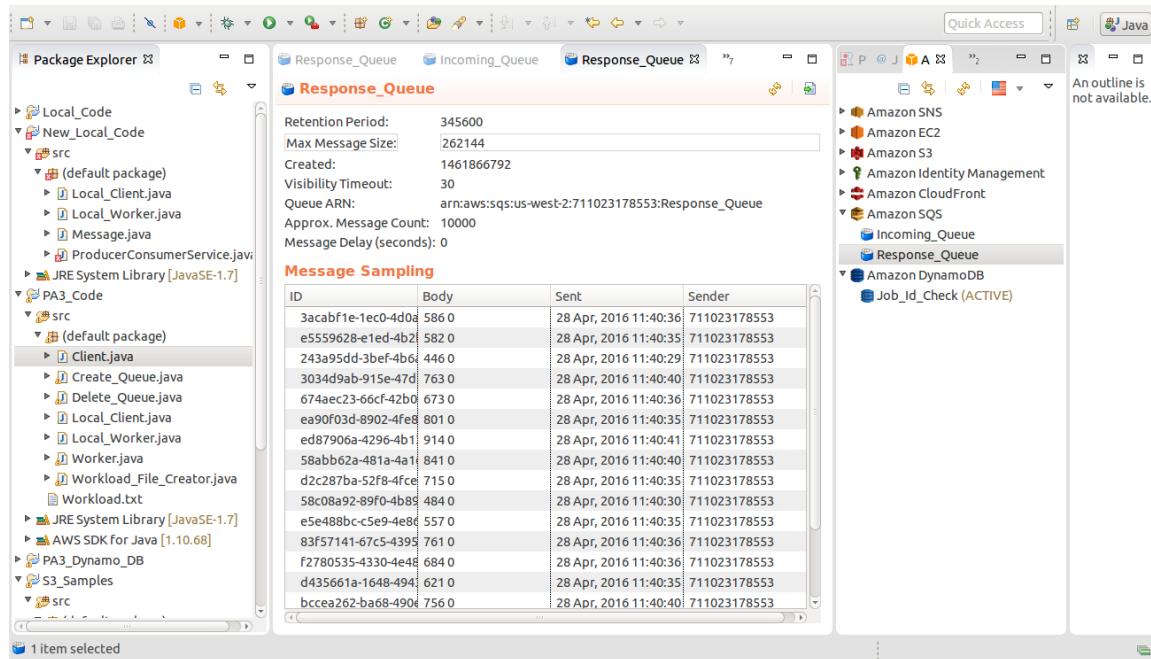
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461867014590
Total Time taken for execution (In Milliseconds)410434
ubuntu@ip-172-31-28-245:~/PA3_Code$
```

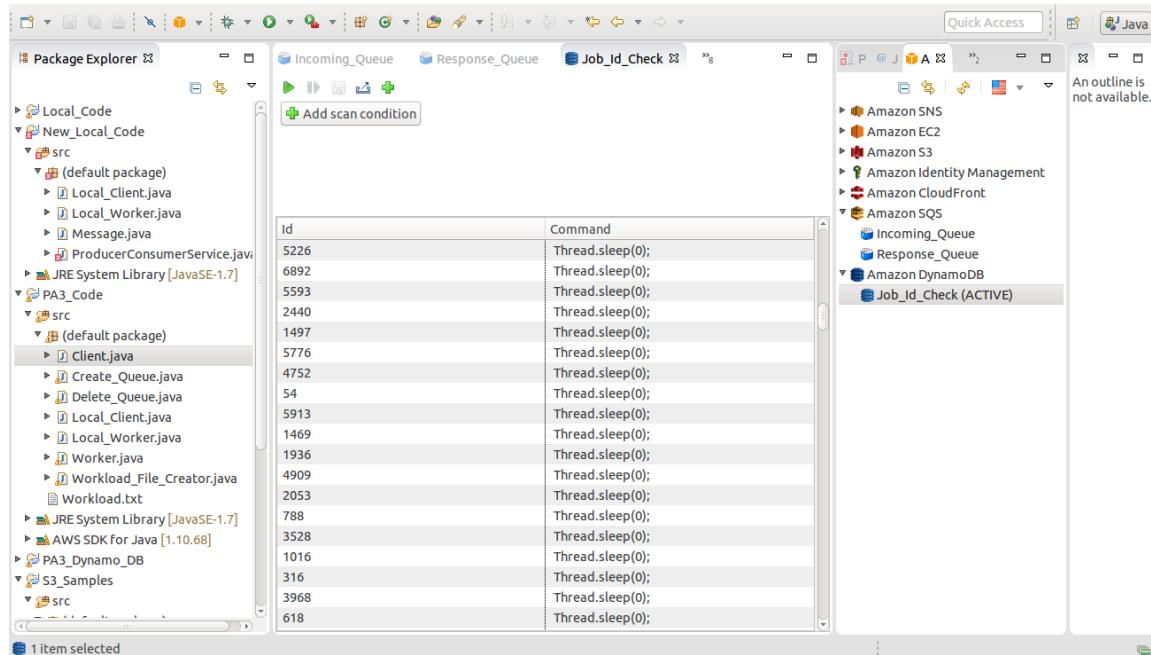
incoming queue:-



Response queue:-

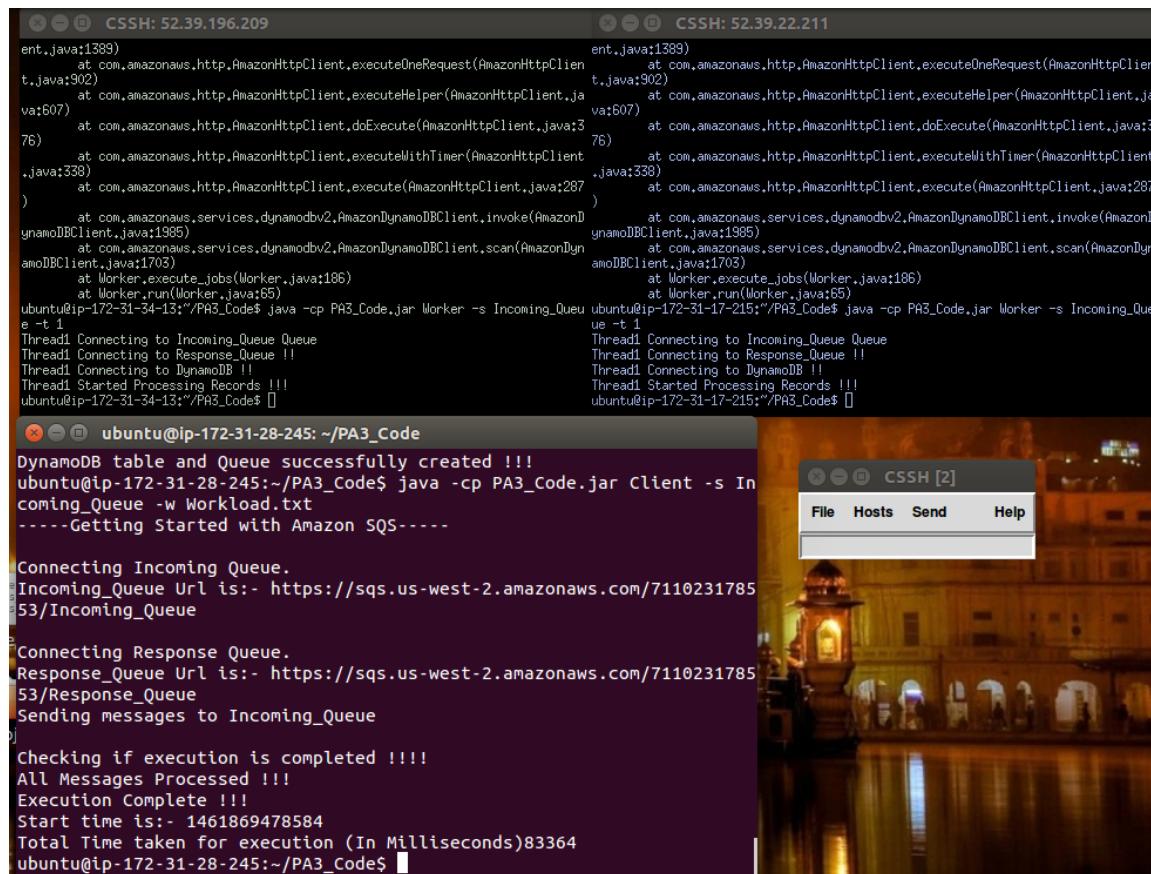


DynamoDB:-



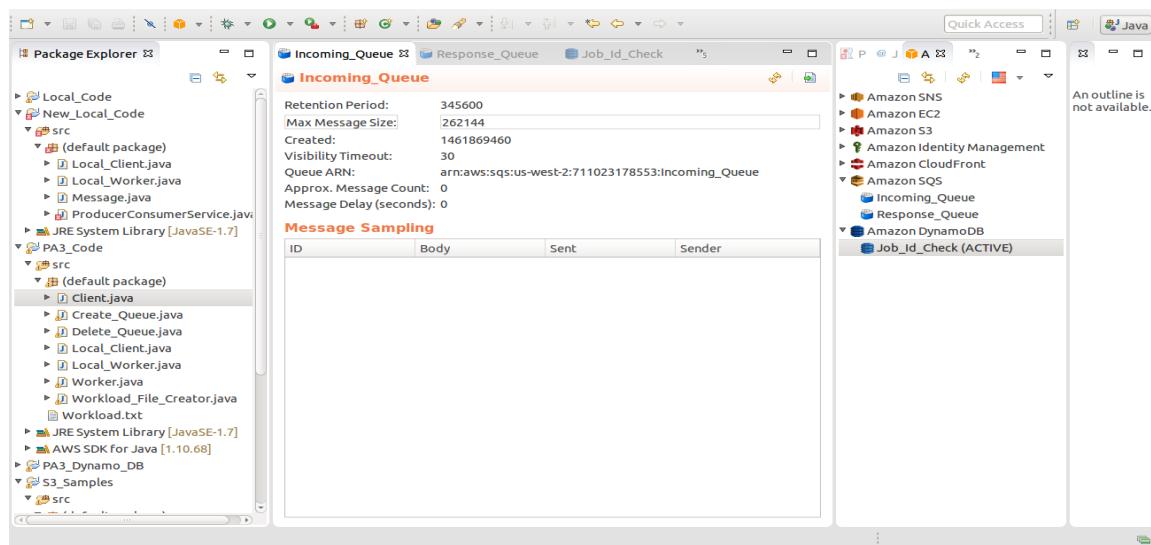
2 worker 10 ms 1 thread :-

output:-



```
SSH: 52.39.196.209          SSH: 52.39.22.211
ent.java:1389)           ent.java:1389)
    at com.amazonaws.http.AmazonHttpClient.executeOneRequest(AmazonHttpClient.java:902)   at com.amazonaws.http.AmazonHttpClient.executeOneRequest(AmazonHttpClient.java:902)
    at com.amazonaws.http.AmazonHttpClient.executeHelper(AmazonHttpClient.java:807)         at com.amazonaws.http.AmazonHttpClient.executeHelper(AmazonHttpClient.java:807)
    at com.amazonaws.http.AmazonHttpClient.doExecute(AmazonHttpClient.java:76)             at com.amazonaws.http.AmazonHttpClient.doExecute(AmazonHttpClient.java:76)
    at com.amazonaws.http.AmazonHttpClient.executeWithTimer(AmazonHttpClient.java:338)       at com.amazonaws.http.AmazonHttpClient.executeWithTimer(AmazonHttpClient.java:338)
    at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)             at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
)
    at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1988)   at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1988)
    at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)     at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
    at Worker.execute_jobs(Worker.java:186)           at Worker.execute_jobs(Worker.java:186)
    at Worker.run(Worker.java:65)                     at Worker.run(Worker.java:65)
ubuntu@ip-172-31-34-13:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue ubuntu@ip-172-31-17-215:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:/PA3_Code$ [REDACTED]
[REDACTED] ubuntu@ip-172-31-28-245:~/PA3_Code
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue
Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461869478584
Total Time taken for execution (In Milliseconds)83364
ubuntu@ip-172-31-28-245:~/PA3_Code$ [REDACTED]
```

Incoming queue:-



Response queue:-

The screenshot shows the Eclipse IDE interface with the following details:

- Package Explorer:** Shows project structure with packages like Local_Code, New_Local_Code, PA3_Code, and S3_Samples.
- Response Queue (Active):**
 - Retention Period: 345600
 - Max Message Size: 262144
 - Created: 1461869460
 - Visibility Timeout: 30
 - Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
 - Approx. Message Count: 2000
 - Message Delay (seconds): 0
- Message Sampling:** A table showing 20 messages from the queue.

ID	Body	Sent	Sender
6ed82b7d-9d30-44f6	6 0	29 Apr, 2016 12:21:22	711023178553
d2046d91-96f6-42b2	59 0	29 Apr, 2016 12:21:22	711023178553
7a99cadf-5264-4551	1 0	29 Apr, 2016 12:21:23	711023178553
1c7e9625-ebc7-486	68 0	29 Apr, 2016 12:21:24	711023178553
7946ae52-8f39-4d11	84 0	29 Apr, 2016 12:21:27	711023178553
a68c06fb-761f-4959	87 0	29 Apr, 2016 12:21:27	711023178553
8beaa2a-2c19-4bf4	44 0	29 Apr, 2016 12:21:26	711023178553
ad7df4df-73ac-4476	16 0	29 Apr, 2016 12:21:23	711023178553
0b2b9c4f-db1d-419	80 0	29 Apr, 2016 12:21:27	711023178553
bf62c55d-e0ee-43c	85 0	29 Apr, 2016 12:21:27	711023178553
f045ad15-6314-4a7	5 0	29 Apr, 2016 12:21:23	711023178553
40360bb9-4643-4bd2	2 0	29 Apr, 2016 12:21:23	711023178553
7df6fcbe-2ed9-408	69 0	29 Apr, 2016 12:21:27	711023178553
8e923e96-18a6-4d1	66 0	29 Apr, 2016 12:21:26	711023178553
b5467661-1b1c-421	125 0	29 Apr, 2016 12:21:27	711023178553
- Amazon Services:** Shows a sidebar with various AWS services: Amazon SNS, Amazon EC2, Amazon S3, Amazon Identity Management, Amazon CloudFront, Amazon SQS, Amazon DynamoDB, and Job_Id_Check (ACTIVE).

DynamoDB:-

The screenshot shows the Eclipse IDE interface with the following details:

- Package Explorer:** Shows project structure with packages like Local_Code, New_Local_Code, PA3_Code, and S3_Samples.
- Job_Id_Check (Active):**
 - Add scan condition:** A button to add a scan condition.
 - Table Data:** A table showing data from the Job_Id_Check table.

ID	Command
228	Thread.sleep(10);
328	Thread.sleep(10);
99	Thread.sleep(10);
475	Thread.sleep(10);
566	Thread.sleep(10);
63	Thread.sleep(10);
1088	Thread.sleep(10);
924	Thread.sleep(10);
141	Thread.sleep(10);
906	Thread.sleep(10);
468	Thread.sleep(10);
1202	Thread.sleep(10);
891	Thread.sleep(10);
999	Thread.sleep(10);
797	Thread.sleep(10);
207	Thread.sleep(10);
608	Thread.sleep(10);
597	Thread.sleep(10);
195	Thread.sleep(10);
 - Amazon Services:** Shows a sidebar with various AWS services: Amazon SNS, Amazon EC2, Amazon S3, Amazon Identity Management, Amazon CloudFront, Amazon SQS, Amazon DynamoDB, and Job_Id_Check (ACTIVE).

2 worker 1 thread 1 sec :-

output:-

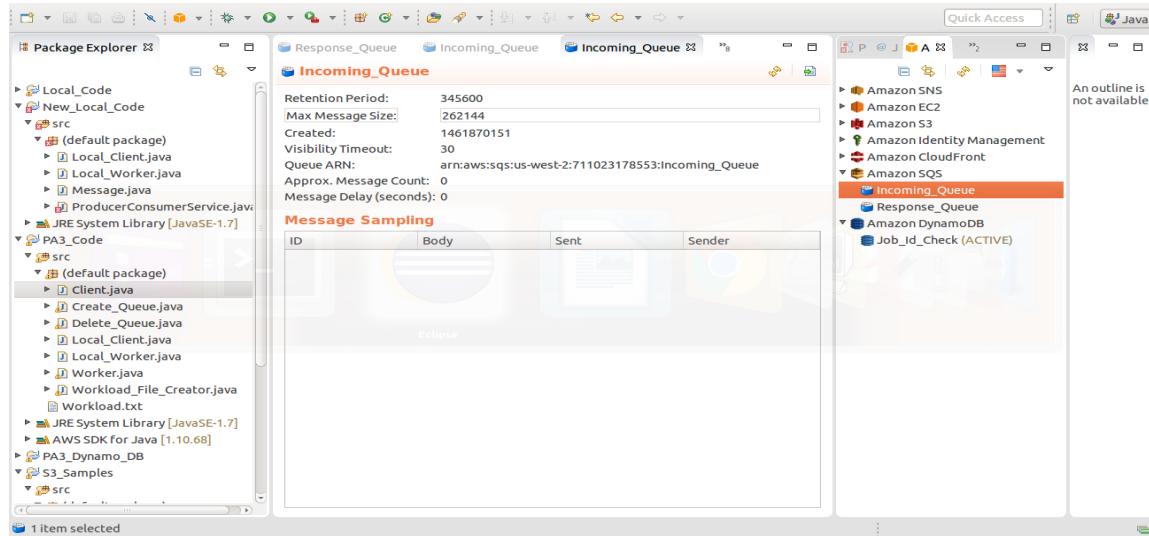
```
SSH: 52.39.196.209 SSH: 52.39.22.211
at com.amazonaws.http.AmazonHttpClient.executeOneRequest(AmazonHttpClient.java:1389)
at com.amazonaws.http.AmazonHttpClient.executeHelper(AmazonHttpClient.java:902)
at com.amazonaws.http.AmazonHttpClient.executeWithTimer(AmazonHttpClient.java:338)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:~/PA3_Code$ [1]
SSH: 52.39.22.211
at com.amazonaws.http.AmazonHttpClient.executeOneRequest(AmazonHttpClient.java:1389)
at com.amazonaws.http.AmazonHttpClient.executeHelper(AmazonHttpClient.java:902)
at com.amazonaws.http.AmazonHttpClient.executeWithTimer(AmazonHttpClient.java:338)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ [1]

ubuntu@ip-172-31-28-245:~/PA3_Code
DynamoDB table and Queue successfully created !!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue

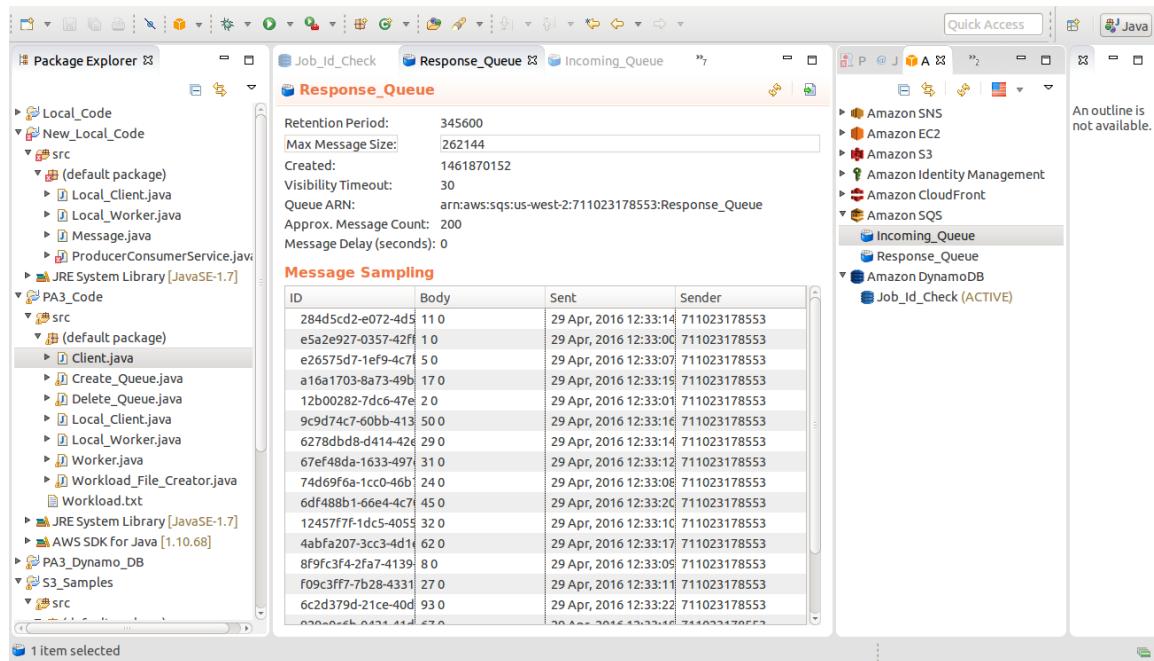
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!
All Messages Processed !!
Execution Complete !!
Start time is:- 1461870177482
Total Time taken for execution (In Milliseconds)109203
ubuntu@ip-172-31-28-245:~/PA3_Code$ [1]
```

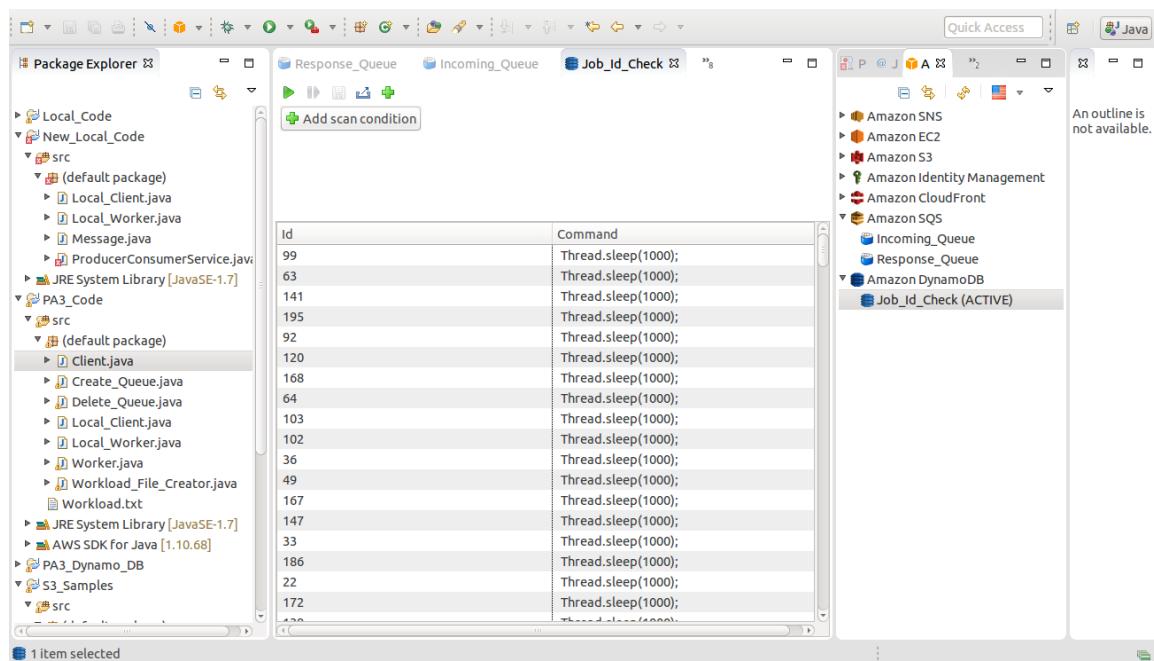
incoming queue:-



response queue:-

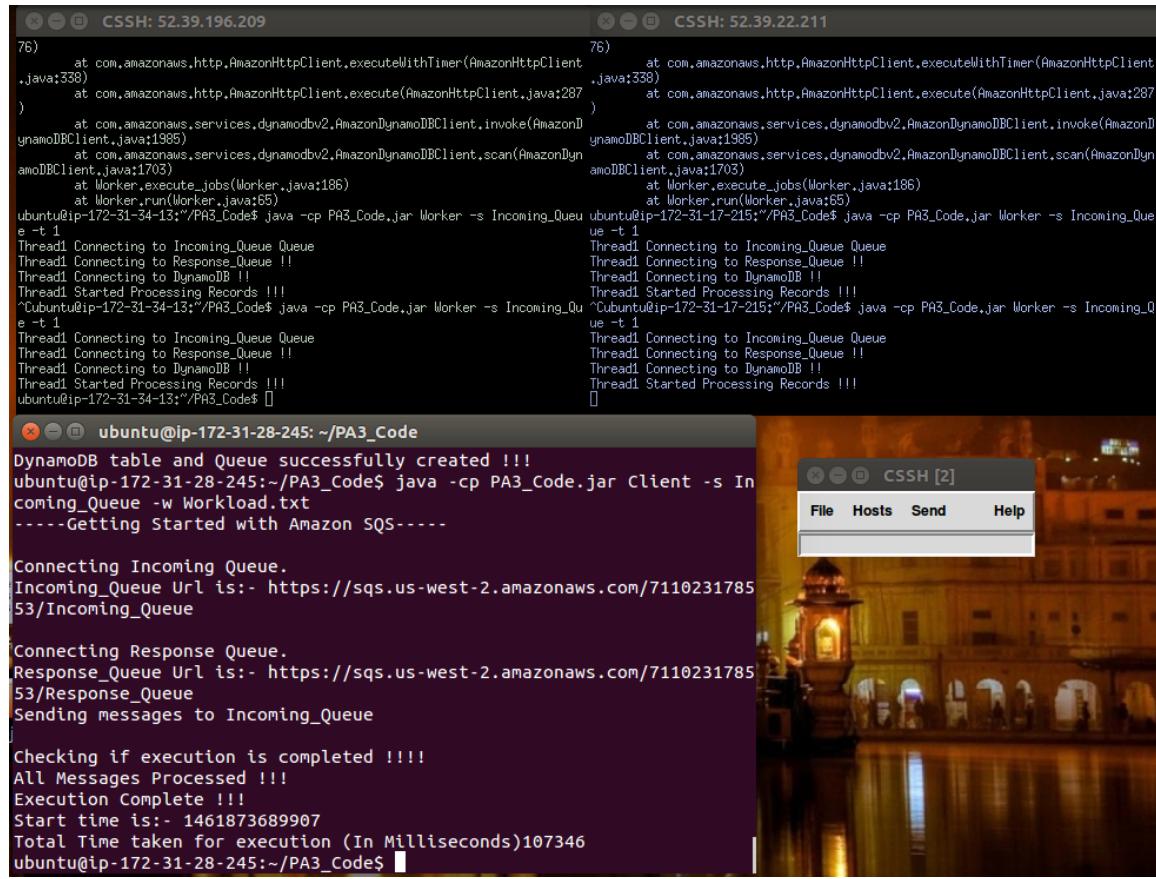


DynamoDB:-



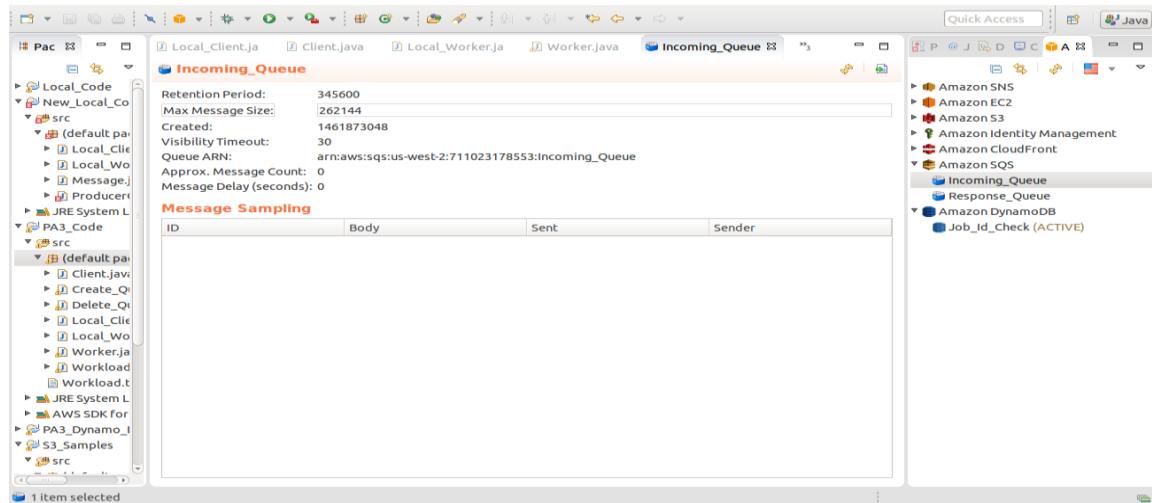
2 worker 1 thread 10 seconds:-

output:-

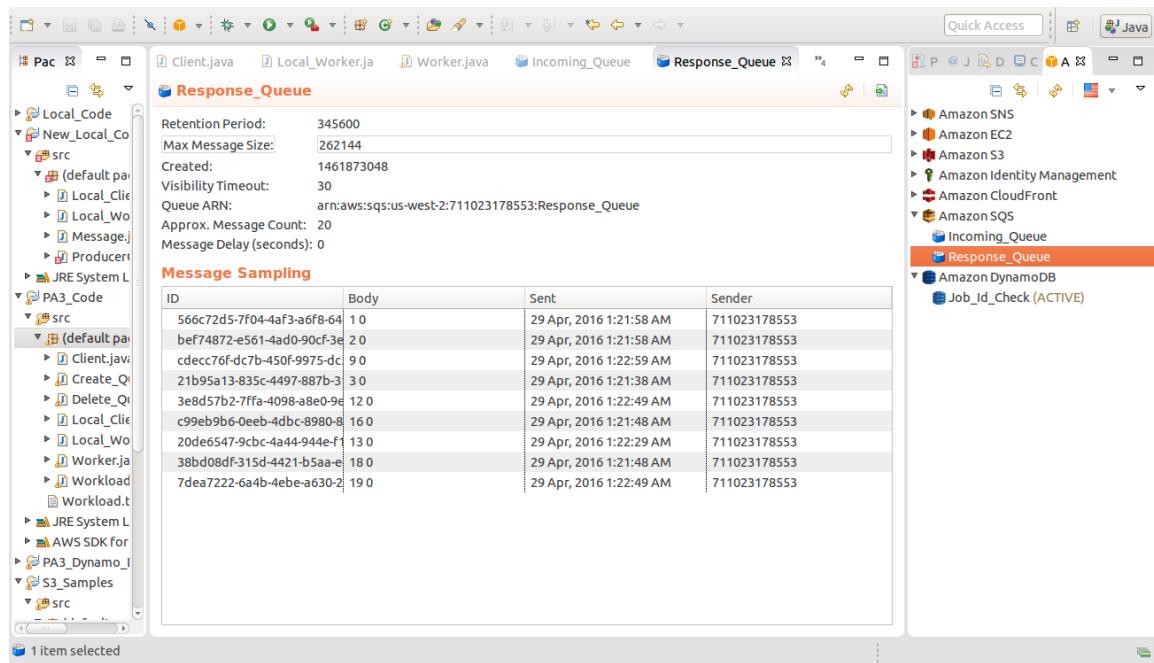


```
SSH: 52.39.196.209          SSH: 52.39.22.211
76)      at com.amazonaws.http.AmazonHttpClient.executeWithTimer(AmazonHttpClient.java:338)    76)      at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
)      at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)    )      at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1703)
)      at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)    )      at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:186)
)      at Worker.execute_jobs(Worker.java:186)    )      at Worker.run(Worker.java:65)
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1      ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue      Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!      Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!      Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!      Thread1 Started Processing Records !!!
?Ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1      ?Ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue      Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!      Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!      Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!      Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:~/PA3_Code$ [REDACTED]
[REDACTED]      [REDACTED]
ubuntu@ip-172-31-28-245:~/PA3_Code
DynamoDB table and Queue successfully created !!!
ubuntu@ip-172-31-28-245:~/PA3_Code$ java -cp PA3_Code.jar Client -s Incoming_Queue -w Workload.txt
-----Getting Started with Amazon SQS-----
Connecting Incoming Queue.
Incoming_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Incoming_Queue
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/711023178553/Response_Queue
Sending messages to Incoming_Queue
Checking if execution is completed !!
All Messages Processed !!
Execution Complete !!
Start time is:- 1461873689907
Total Time taken for execution (In Milliseconds)107346
ubuntu@ip-172-31-28-245:~/PA3_Code$ [REDACTED]
```

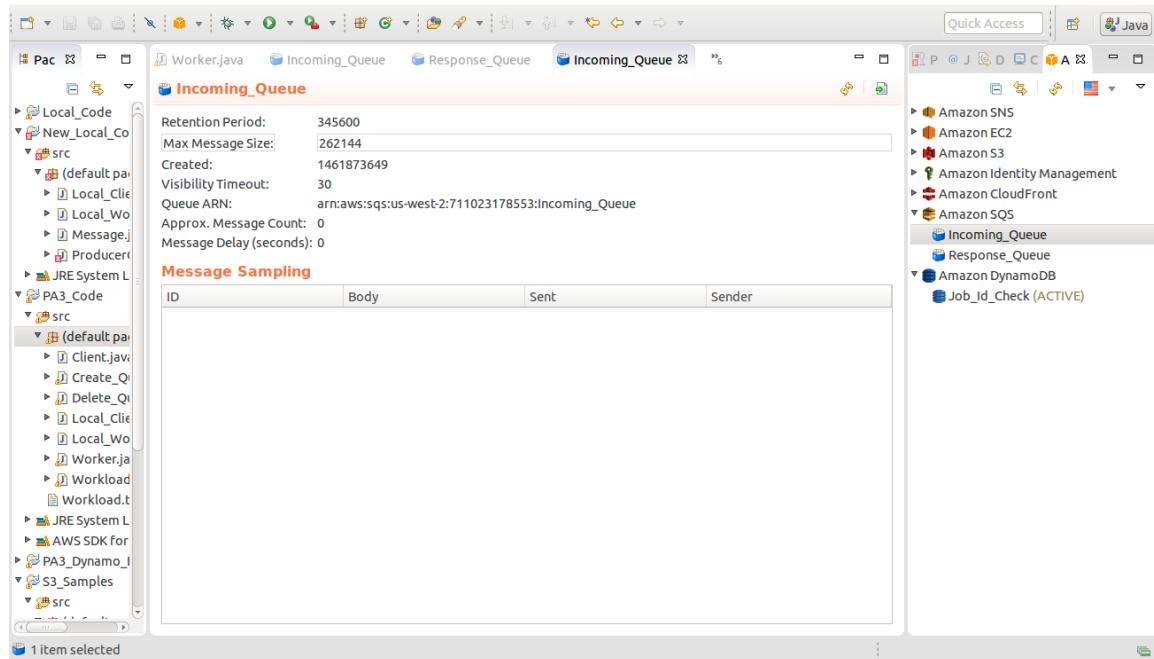
incomingqueue:-



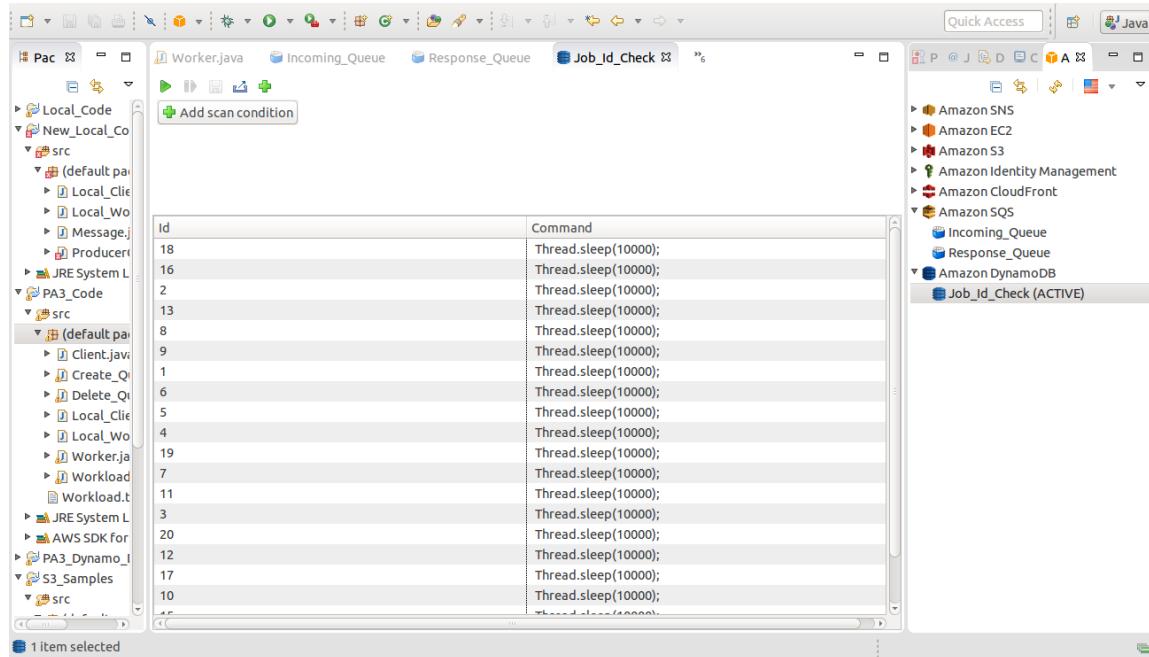
response queue:-



incoming Queue:-



DynamoDb:-



4 workers 1 thread 10 ms :-

output:-

```

Last login: Thu Apr 28 18:34:10 2016 from 117.248.228.199
ubuntu@ip-172-31-17-212:~$ cd PA3_Code
ubuntu@ip-172-31-17-212:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-212:~/PA3_Code$ 
ubuntu@ip-172-31-17-212:~/PA3_Code$ 

Last login: Thu Apr 28 18:34:10 2016 from 117.248.228.199
ubuntu@ip-172-31-17-211:~$ cd PA3_Code
ubuntu@ip-172-31-17-211:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:~/PA3_Code$ 
ubuntu@ip-172-31-17-211:~/PA3_Code$ 

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud
76 packages can be updated,
47 updates are security updates.

Last login: Thu Apr 28 18:34:10 2016 from 117.248.228.199
ubuntu@ip-172-31-34-13:~$ cd PA3_Code
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:~/PA3_Code$ 
ubuntu@ip-172-31-34-13:~/PA3_Code$ 

Last login: Thu Apr 28 18:34:10 2016 from 117.248.228.199
ubuntu@ip-172-31-17-215:~$ cd PA3_Code
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ 
ubuntu@ip-172-31-17-215:~/PA3_Code$ 

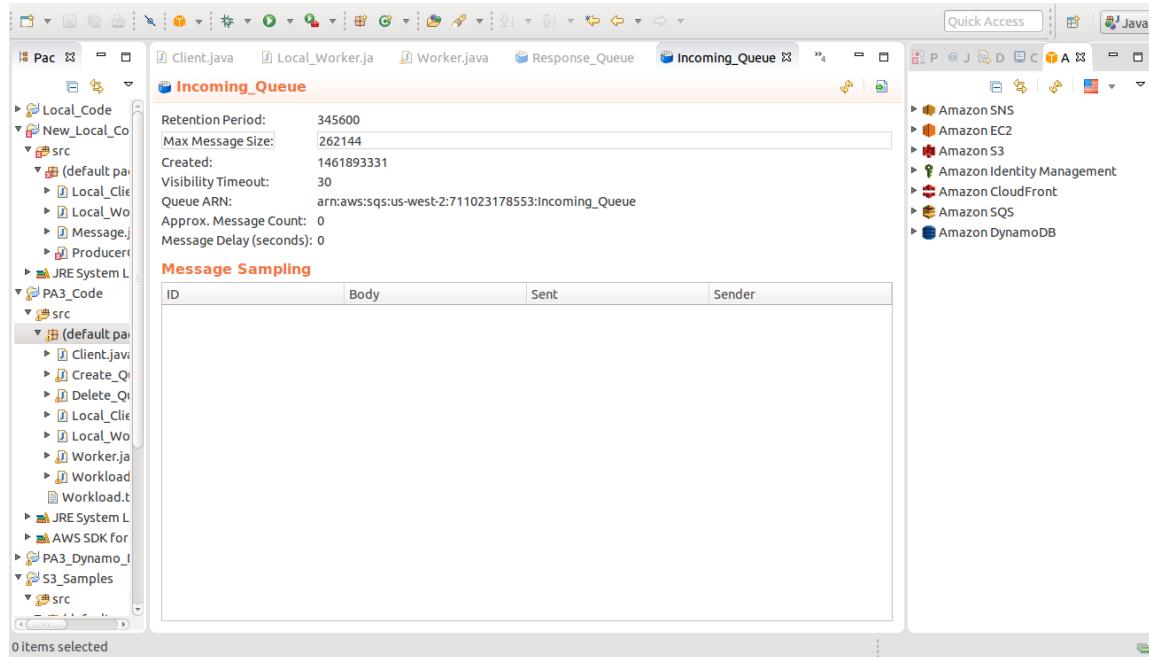
ubuntu@ip-172-31-28-245: ~/PA3_Code
53/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231785
53/Response_Queue
Sending messages to Incoming_Queue

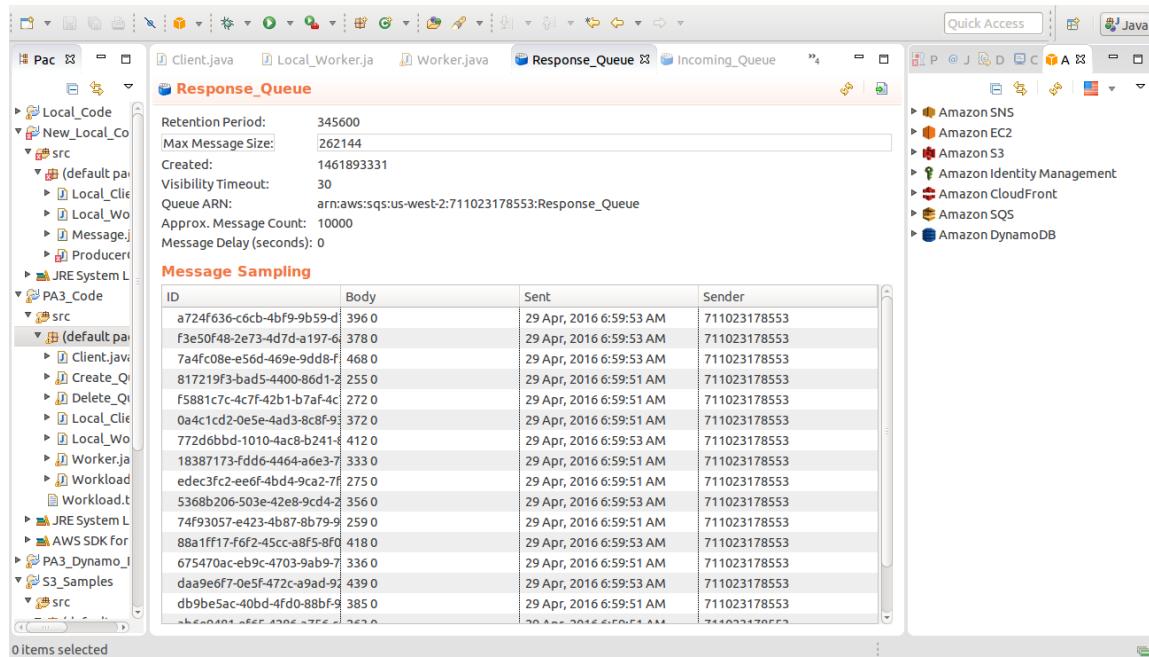
Checking if execution is completed !!!!
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461893383159
Total Time taken for execution (In Milliseconds)215800
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

```

Incoming queue:-



Response queue:-



DynamoDB:-

The screenshot shows the AWS Lambda console. The left sidebar lists several projects: Local_Code, New_Local_Code, PA3_Code, and S3_Samples. The main tab is titled 'Job_Id_Check' (ACTIVE). The configuration section contains a table with two columns: 'Id' and 'Command'. The table lists 20 entries, each with an ID and a command of 'Thread.sleep(0);'. The right sidebar shows a list of AWS services, with 'Amazon DynamoDB' selected.

Id	Command
5226	Thread.sleep(0);
6892	Thread.sleep(0);
5593	Thread.sleep(0);
2440	Thread.sleep(0);
1497	Thread.sleep(0);
5776	Thread.sleep(0);
4752	Thread.sleep(0);
54	Thread.sleep(0);
5913	Thread.sleep(0);
1469	Thread.sleep(0);
1936	Thread.sleep(0);
4909	Thread.sleep(0);
2053	Thread.sleep(0);
788	Thread.sleep(0);
3528	Thread.sleep(0);
1016	Thread.sleep(0);
316	Thread.sleep(0);
3968	Thread.sleep(0);
618	Thread.sleep(0);

Incoming queue:-

The screenshot shows the AWS Lambda console. The left sidebar lists the same projects as the previous screenshot. The main tab is titled 'Incoming_Queue'. The configuration section displays details for the queue: Retention Period (345600), Max Message Size (262144), Created (146189331), Visibility Timeout (30), Queue ARN (arn:aws:sqs:us-west-2:711023178553:incoming_Queue), Approx. Message Count (0), and Message Delay (seconds) (0). Below this, there is a 'Message Sampling' table with columns: ID, Body, Sent, and Sender. The table is currently empty. The right sidebar shows a list of AWS services, with 'Amazon SQS' selected.

4 worker 1 thread 10 ms job:-

response

The screenshot shows the AWS Lambda function configuration for the 'Response_Queue' function. The configuration pane displays the following details:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461894502
- Visibility Timeout: 30
- Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
- Approx. Message Count: 4000
- Message Delay (seconds): 0

The 'Message Sampling' table lists approximately 20 messages from the queue, showing their ID, Body, Sent time, and Sender. The first few rows of the table are as follows:

ID	Body	Sent	Sender
ac9c180e-1b31-46e9-8b11-b3280	328 0	29 Apr, 2016 7:18:52 AM	711023178553
a812a079-b351-44a6-aba0-e2370	237 0	29 Apr, 2016 7:18:50 AM	711023178553
cad33180-af0d-4686-8cc7-8e390	390 0	29 Apr, 2016 7:18:50 AM	711023178553
031fb085-0569-4c4a-b8a7-3	259 0	29 Apr, 2016 7:18:50 AM	711023178553
6c8abe57-9248-4fc8-a5e6-b	83 0	29 Apr, 2016 7:18:47 AM	711023178553
9716a20d-e974-4fc1-8e80-5	244 0	29 Apr, 2016 7:18:50 AM	711023178553
776d0d95-2c01-4735-9b74-e	300 0	29 Apr, 2016 7:18:52 AM	711023178553
cad57f5d-1ec6-4580-812d-e	206 0	29 Apr, 2016 7:18:49 AM	711023178553
b25589d0-429f-46ad-a692-b	245 0	29 Apr, 2016 7:18:51 AM	711023178553
372fb6db-2579-43cf-8090-6	223 0	29 Apr, 2016 7:18:50 AM	711023178553
68f554d8-5bc3-4d9b-b37e-e	181 0	29 Apr, 2016 7:18:49 AM	711023178553
8ce690be-732f-40dc-a796-1	202 0	29 Apr, 2016 7:18:49 AM	711023178553
a2b6b81c-eafb-4e58-9725-e	305 0	29 Apr, 2016 7:18:52 AM	711023178553
52667813-26b2-4a52-8e78-c	240 0	29 Apr, 2016 7:18:50 AM	711023178553
4969a927-08ee-4ece-9759-e	314 0	29 Apr, 2016 7:18:52 AM	711023178553

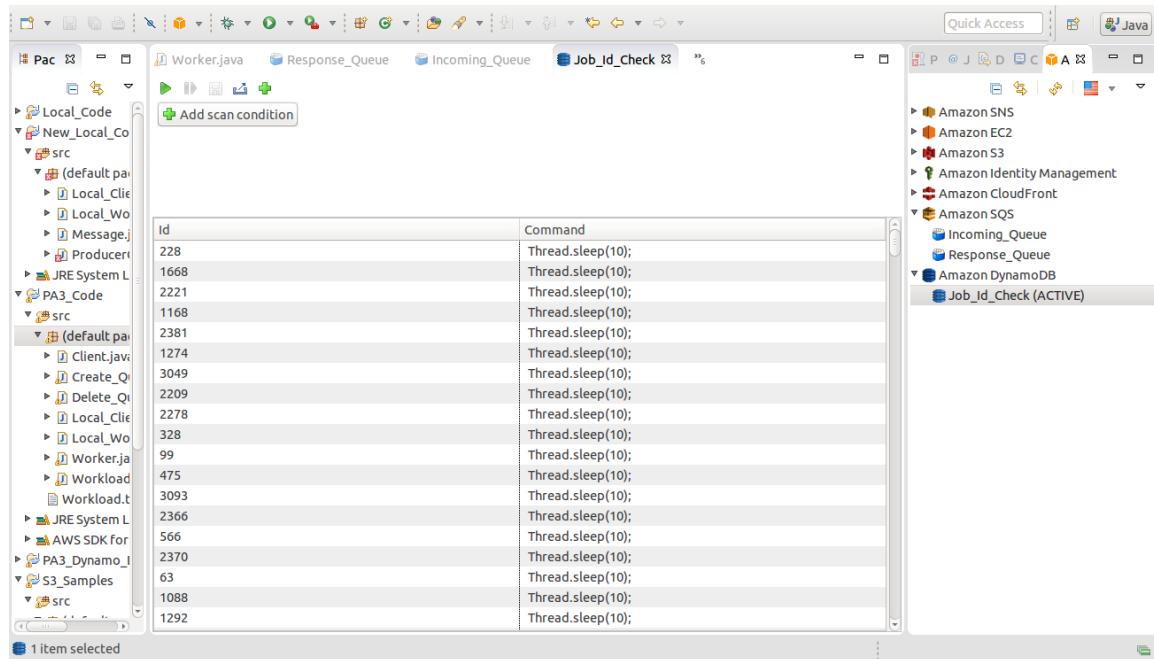
incoming:-

The screenshot shows the AWS Lambda function configuration for the 'Incoming_Queue' function. The configuration pane displays the following details:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461894502
- Visibility Timeout: 30
- Queue ARN: arn:aws:sqs:us-west-2:711023178553:Incoming_Queue
- Approx. Message Count: 0
- Message Delay (seconds): 0

The 'Message Sampling' table is currently empty, indicating no messages have been sent to the queue.

DynamoDB:-



output:-

```

SSH: 52.39.41.214
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^C
ubuntu@ip-172-31-17-212:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-212:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-212:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-212:~/PA3_Code$ ^C

SSH: 52.39.179.10
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^C
ubuntu@ip-172-31-17-211:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-211:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-211:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:~/PA3_Code$ ^C

SSH: 52.39.196.209
at Worker.executeJobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^C
ubuntu@ip-172-31-34-13:~/PA3_Code$ ^C
ubuntu@ip-172-31-34-13:~/PA3_Code$ ^C
ubuntu@ip-172-31-34-13:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:~/PA3_Code$ ^C

SSH: 52.39.22.211
at Worker.executeJobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^C
ubuntu@ip-172-31-17-215:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-215:~/PA3_Code$ ^C
ubuntu@ip-172-31-17-215:~/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:~/PA3_Code$ ^C

ubuntu@ip-172-31-28-245: ~/PA3_Code
53/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231785
53/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461894520808
Total Time taken for execution (In Milliseconds)94094
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

```

4 worker 1 thread 1 sec job:-

output:-

```
SSH: 52.27.41.214
ue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-212:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-212:/PA3_Code$ [0]

SSH: 52.39.179.10
ue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:/PA3_Code$ [0]

SSH: 52.39.196.209
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-34-13:/PA3_Code$ ^C
ubuntu@ip-172-31-34-13:/PA3_Code$ ^C
ubuntu@ip-172-31-34-13:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-34-13:/PA3_Code$ [0]

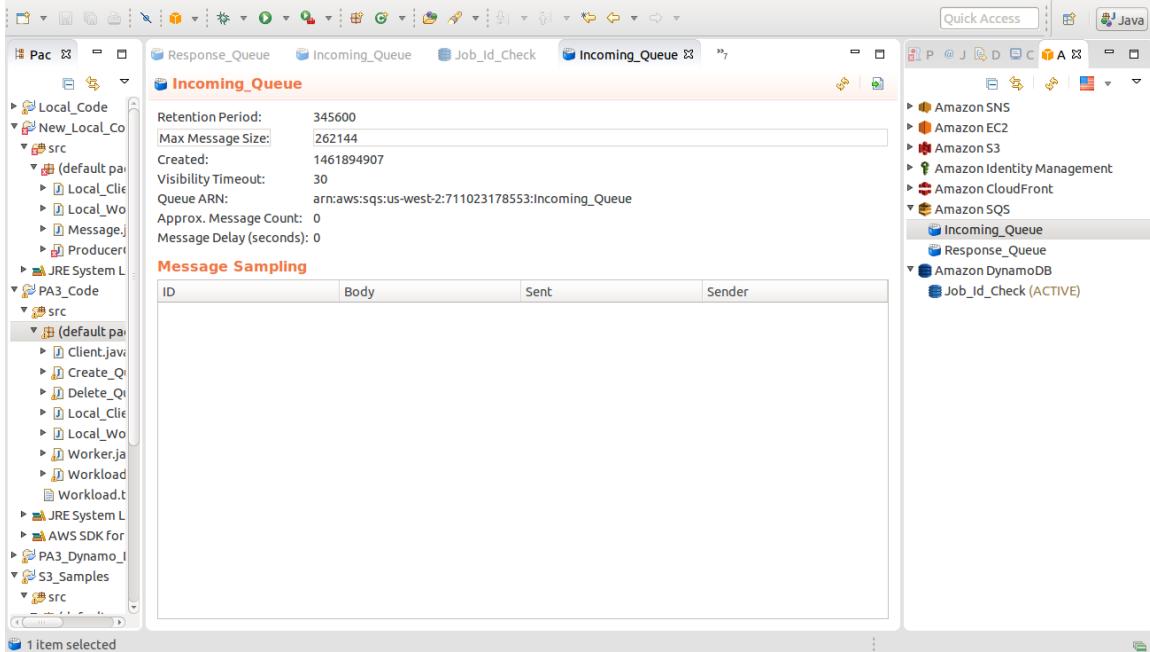
SSH: 52.39.22.211
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
^Cubuntu@ip-172-31-17-215:/PA3_Code$ ^C
ubuntu@ip-172-31-17-215:/PA3_Code$ ^C
ubuntu@ip-172-31-17-215:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:/PA3_Code$ [0]

ubuntu@ip-172-31-28-245:~/PA3_Code
53/Incoming_Queue

Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231785
53/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!
All Messages Processed !!!
Execution Complete !!
Start time is:- 1461894935733
Total Time taken for execution (In Milliseconds)111260
ubuntu@ip-172-31-28-245:~/PA3_Code$ [0]
```

incoming:-



Response:-

The screenshot shows the AWS Lambda console interface for the function "Response_Queue". The left sidebar lists various AWS services, and the main pane displays the configuration and message sampling for the function.

Configuration:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461894907
- Visibility Timeout: 30
- Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
- Approx. Message Count: 400
- Message Delay (seconds): 0

Message Sampling:

ID	Body	Sent	Sender
a99540d9-2662-4fa3-a2ad-7	60 0	29 Apr, 2016 7:25:57 AM	711023178553
8a96b157-2f00-4007-bcff-6	8 0	29 Apr, 2016 7:25:43 AM	711023178553
083f1c16-00e0-402b-9500-9	105 0	29 Apr, 2016 7:25:56 AM	711023178553
d7437ce9-8e91-4c87-9bcf-0	37 0	29 Apr, 2016 7:25:39 AM	711023178553
b4ce3a3c-2b8c-4521-b7e7-b	15 0	29 Apr, 2016 7:25:44 AM	711023178553
8a079c42-55ab-4c69-928b-1	22 0	29 Apr, 2016 7:25:40 AM	711023178553
e4d48717-14b1-4cc4-bcce-6	6 0	29 Apr, 2016 7:25:40 AM	711023178553
3fb9619-2174-41df-a321-d	45 0	29 Apr, 2016 7:25:41 AM	711023178553
05fef746-5a32-4765-bed1-4	29 0	29 Apr, 2016 7:25:43 AM	711023178553
ba6fe4d7-89c3-4b7d-bfa6-b	64 0	29 Apr, 2016 7:25:49 AM	711023178553
22644008-353d-4426-ae2f-2	13 0	29 Apr, 2016 7:25:40 AM	711023178553
2e68960e-04d9-4951-9953-5	19 0	29 Apr, 2016 7:25:40 AM	711023178553
65382964-56ab-4f12-b0d6-1	33 0	29 Apr, 2016 7:25:54 AM	711023178553
9d7ac9b2-6551-4dca-a3d8-c	4 0	29 Apr, 2016 7:25:39 AM	711023178553
0089c155-bff4-4f35-8c95-c0	16 0	29 Apr, 2016 7:25:42 AM	711023178553

DynamoDB:-

The screenshot shows the AWS Lambda console interface for the function "Job_Id_Check". The left sidebar lists various AWS services, and the main pane displays the configuration and a scan of the "Job_Id_Check" table.

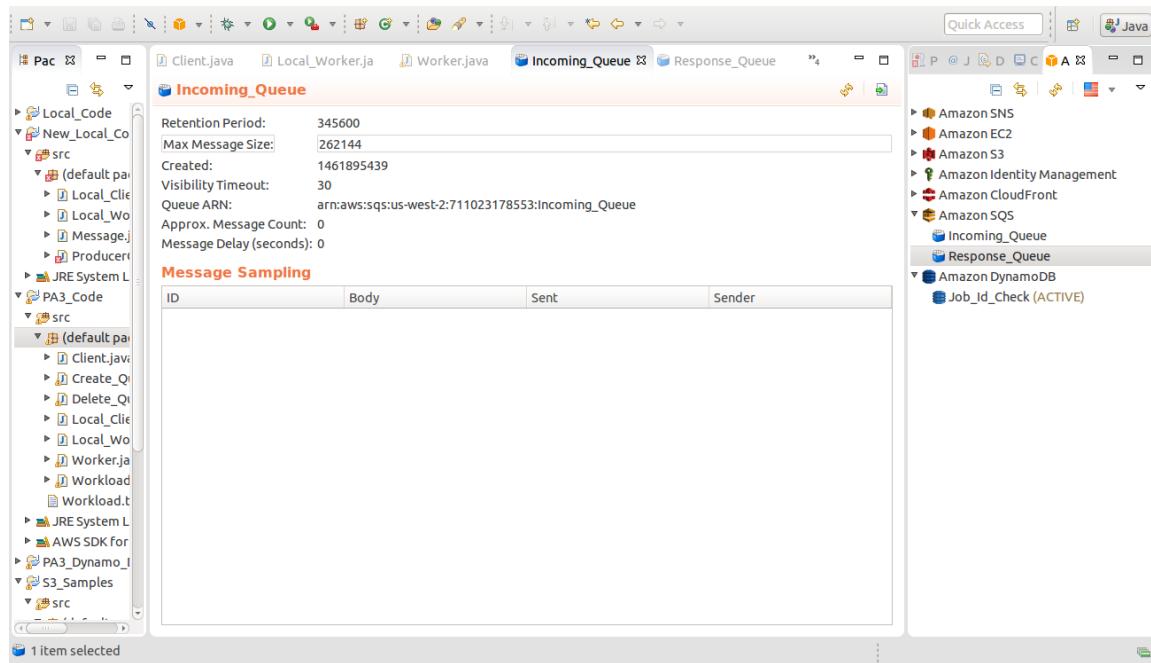
Configuration:

Scan Results:

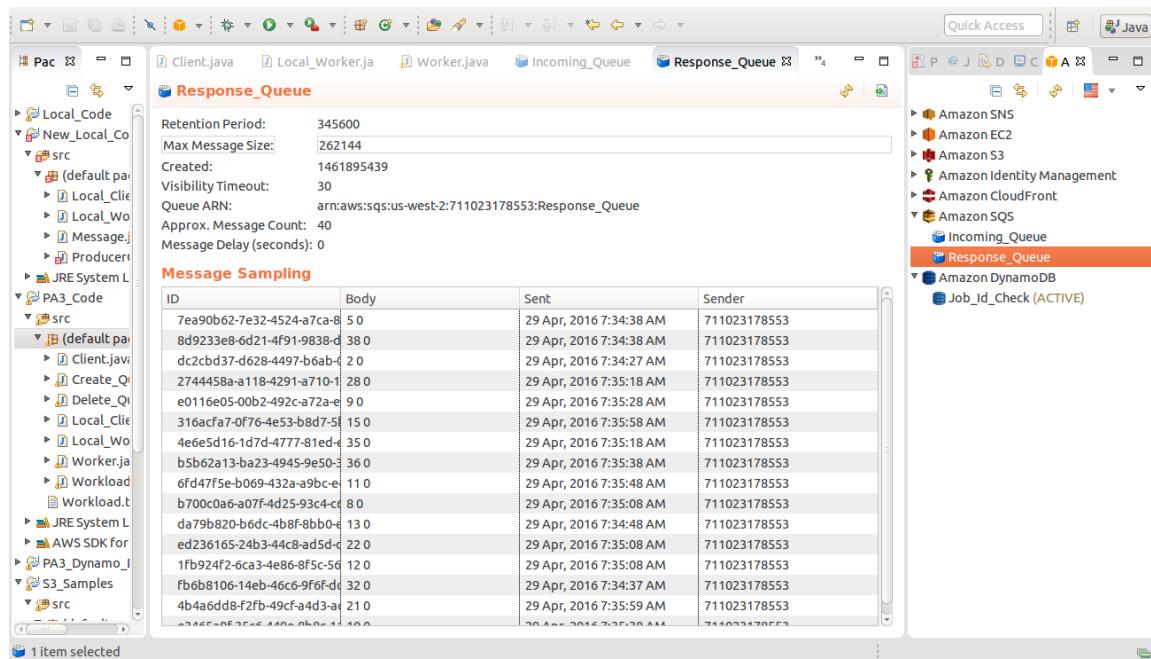
ID	Command
228	Thread.sleep(1000);
328	Thread.sleep(1000);
99	Thread.sleep(1000);
63	Thread.sleep(1000);
141	Thread.sleep(1000);
207	Thread.sleep(1000);
195	Thread.sleep(1000);
92	Thread.sleep(1000);
357	Thread.sleep(1000);
120	Thread.sleep(1000);
231	Thread.sleep(1000);
168	Thread.sleep(1000);
365	Thread.sleep(1000);
64	Thread.sleep(1000);
103	Thread.sleep(1000);
242	Thread.sleep(1000);
102	Thread.sleep(1000);
204	Thread.sleep(1000);
200	Thread.sleep(1000);

4 worker 1 thread 10 seconds :-

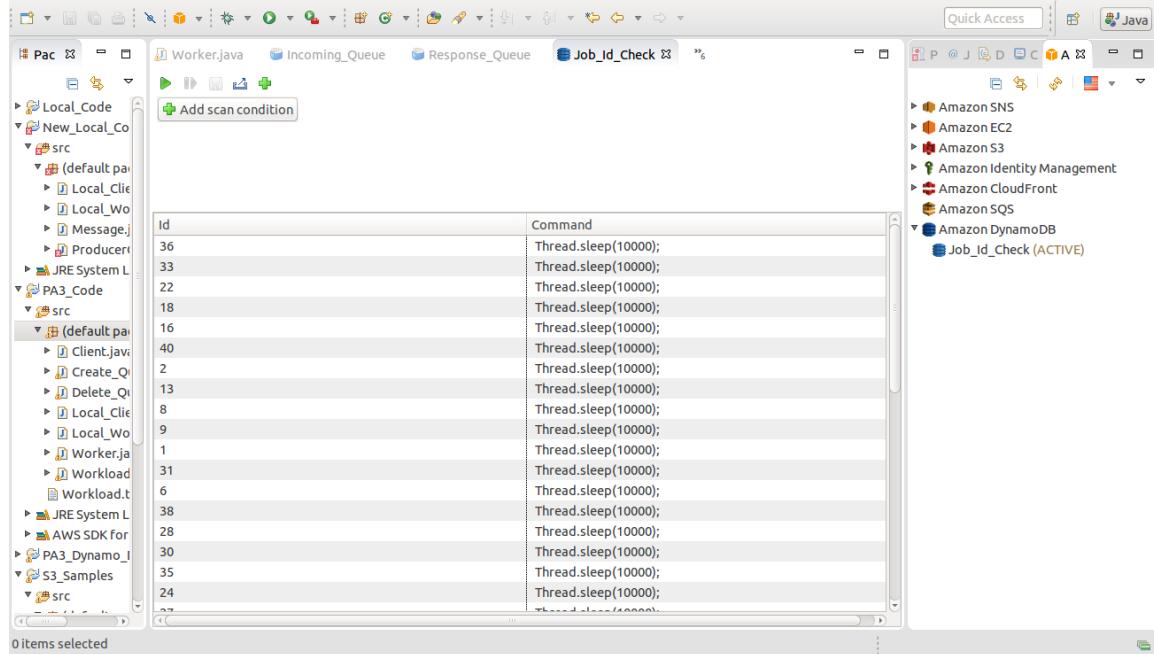
incoming:-



Response:-



DynamoDB:-



output:-

```

SSH: 52.27.41.214
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-212:/PA3_Code$ 
ubuntu@ip-172-31-17-212:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
[]

SSH: 52.39.179.10
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-211:/PA3_Code$ 
ubuntu@ip-172-31-17-211:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:/PA3_Code$ 

SSH: 52.39.196.209
.java:338)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-34-13:/PA3_Code$ 
ubuntu@ip-172-31-34-13:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
[]

SSH: 52.39.22.211
.java:338)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:287)
)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.invoke(AmazonDynamoDBClient.java:1985)
at com.amazonaws.services.dynamodbv2.AmazonDynamoDBClient.scan(AmazonDynamoDBClient.java:1703)
at Worker.execute_jobs(Worker.java:186)
at Worker.run(Worker.java:65)
ubuntu@ip-172-31-17-215:/PA3_Code$ 
ubuntu@ip-172-31-17-215:/PA3_Code$ java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-215:/PA3_Code$ 

ubuntu@ip-172-31-28-245:~/PA3_Code$ 53/Incoming_Queue
Connecting Response Queue.
Response_Queue Url is:- https://sns.us-west-2.amazonaws.com/7110231785
53/Response_Queue
Sending messages to Incoming_Queue

Checking if execution is completed !!!! 
All Messages Processed !!!
Execution Complete !!!
Start time is:- 1461895890394
Total Time taken for execution (In Milliseconds)106990
ubuntu@ip-172-31-28-245:~/PA3_Code$ 
```

8 instances running on AWS:-

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, AMIs, and Elastic Block Store. The main area displays a table of 8 instances. The columns include Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. Each instance has a green circular icon next to its name, indicating it is running. The Public DNS column lists various IP addresses starting with ec2-52-32-212-125.us-west-2.compute.amazonaws.com up to ec2-52-38-165-15.us-west-2.compute.amazonaws.com.

8 workers 1 thread 10K sleep 0 job:-

The screenshot displays multiple SSH sessions (labeled 1 through 8) showing the execution of a Java application named PA3_Code. Each session shows the following sequence of events:

- Initial Command:** cd PA3_Code
- Java Execution:** java -cp PA3_Code.jar Worker -s Incoming_Queue -t 1
- Output Log:** Shows threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting to process records.
- Final Output:** All sessions converge to a final message indicating completion: "All Messages Processed !!! Execution Complete !!! Start time is:- 1461896656135 Total Time taken for execution (In Milliseconds)106459"

response queue:-

Response_Queue

Retention Period: 345600
Max Message Size: 262144
Created: 1461896593
Visibility Timeout: 30
Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
Approx. Message Count: 10000
Message Delay (seconds): 0

Message Sampling

ID	Body	Sent	Sender
2cb4a6cf-8850-400d-80f1-a0	5270	29 Apr, 2016 7:54:21 AM	711023178553
018d41f9-3976-4f67-96d1-0	3770	29 Apr, 2016 7:54:20 AM	711023178553
0ed051c6-d8a2-42c5-b7e-3	2740	29 Apr, 2016 7:54:19 AM	711023178553
d3cd3676-0597-4b6c-a12b-a	3160	29 Apr, 2016 7:54:19 AM	711023178553
ba4b8e45-6f42-4aa1-bbb-5	3620	29 Apr, 2016 7:54:19 AM	711023178553
1aa06db0-5e22-4ea4-93b-3	3250	29 Apr, 2016 7:54:19 AM	711023178553
c1614f05-9a91-4bd2-b1d-0	2710	29 Apr, 2016 7:54:19 AM	711023178553
fee877cc-0a60-4403-9654-6	3900	29 Apr, 2016 7:54:20 AM	711023178553
e4ecc412-3046-4e36-917d-d	5320	29 Apr, 2016 7:54:21 AM	711023178553
0c9d2a61-e443-40d-995d-0	4090	29 Apr, 2016 7:54:20 AM	711023178553
86ba4223-5865-470a-aadc-e	3540	29 Apr, 2016 7:54:19 AM	711023178553
7685c378-65fa-4e35-8c24-8	3520	29 Apr, 2016 7:54:19 AM	711023178553
12eabce2-2dc4-4c4b-9bad-3	3280	29 Apr, 2016 7:54:19 AM	711023178553
d1d8c7ac-e163-414e-a65b-6	3500	29 Apr, 2016 7:54:19 AM	711023178553
a91ce2df-aa90-49b1-9fb4-b	4210	29 Apr, 2016 7:54:20 AM	711023178553

incoming queue:-

Incoming_Queue

Retention Period: 345600
Max Message Size: 262144
Created: 1461896593
Visibility Timeout: 30
Queue ARN: arn:aws:sqs:us-west-2:711023178553:Incoming_Queue
Approx. Message Count: 0
Message Delay (seconds): 0

Message Sampling

ID	Body	Sent	Sender
0a10ecf8-61bc-4b8f-9695-f	8420 Thread.sleep(0);	29 Apr, 2016 7:55:15 AM	711023178553
f9c08dba-8407-4ed9-9acd-5	8532 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
3f966ac9-8226-444b-bc8d-e	8553 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
f6e073fe-53d6-45ec-9848-6	8254 Thread.sleep(0);	29 Apr, 2016 7:55:14 AM	711023178553
c89d665d-ec7d-4f28-b5ed-7	8279 Thread.sleep(0);	29 Apr, 2016 7:55:14 AM	711023178553
1084fee2-6e01-413e-94ee-b	8477 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
92519ea2-2ad7-43e1-ab44-6	8373 Thread.sleep(0);	29 Apr, 2016 7:55:15 AM	711023178553
d8d4e7b2-ef19-4439-a433-7	8567 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
f090a8da-9b0d-4782-9ad4-5	8370 Thread.sleep(0);	29 Apr, 2016 7:55:15 AM	711023178553
aeab34cb-86db-467c-bad-3	8568 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
9bbc6c08-357f-4f20-b658-5	8739 Thread.sleep(0);	29 Apr, 2016 7:55:18 AM	711023178553
ae58c883-5e5d-4300-bf58-9	8693 Thread.sleep(0);	29 Apr, 2016 7:55:17 AM	711023178553
3d2202a1-c804-4ab6-ad0c-a	8489 Thread.sleep(0);	29 Apr, 2016 7:55:16 AM	711023178553
9aa4d3fe-31ad-4b24-ba9d-5	8677 Thread.sleep(0);	29 Apr, 2016 7:55:17 AM	711023178553
06f5284b-681e-446b-b2c5-7	8415 Thread.sleep(0);	29 Apr, 2016 7:55:15 AM	711023178553

dynamoDB:-

The screenshot shows the AWS CloudWatch Metrics interface. On the left, there's a navigation pane with various AWS services like SNS, EC2, S3, etc. In the center, there's a table titled "Job_Id_Check" with two columns: "Id" and "Command". The table contains approximately 20 rows of data. On the right, there's a sidebar with more AWS services.

Id	Command
5226	Thread.sleep(0);
6892	Thread.sleep(0);
5593	Thread.sleep(0);
2440	Thread.sleep(0);
1497	Thread.sleep(0);
5776	Thread.sleep(0);
4752	Thread.sleep(0);
54	Thread.sleep(0);
5913	Thread.sleep(0);
1469	Thread.sleep(0);
1936	Thread.sleep(0);
4909	Thread.sleep(0);
2053	Thread.sleep(0);
788	Thread.sleep(0);
3528	Thread.sleep(0);
1016	Thread.sleep(0);
316	Thread.sleep(0);
3968	Thread.sleep(0);
618	Thread.sleep(0);

8 worker 10ms 1 thread:-

incoming:-

The screenshot shows the AWS CloudWatch Metrics interface. On the left, there's a navigation pane with various AWS services like SNS, EC2, S3, etc. In the center, there's a configuration panel for the "Incoming_Queue" and a "Message Sampling" table. The configuration panel shows details like Retention Period, Max Message Size, and Queue ARN. The "Message Sampling" table has columns for ID, Body, Sent, and Sender. It currently shows 0 items selected.

ID	Body	Sent	Sender
0 Items selected			

Response:-

Response_Queue Configuration:

- Retention Period: 345600
- Max Message Size: 262144
- Created: 1461897028
- Visibility Timeout: 30
- Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue
- Approx. Message Count: 8000
- Message Delay (seconds): 0

Message Sampling

ID	Body	Sent	Sender
115e6316-8544-40cd-8fc3-e1520	bff18924-7e98-449b-8c9a-2e1170	29 Apr, 2016 8:00:50 AM	711023178553
11c948d0-9ce0-412b-bbb2-c2150	18f1227e-e335-43cf-a1b3-b860	29 Apr, 2016 8:00:51 AM	711023178553
345eb3dd-564d-4e01-99b7-2420	aa104404-83f2-4bb9-ad3e-1250	29 Apr, 2016 8:00:51 AM	711023178553
65201479-a3f8-4040-a290-fc2460	6523c237-3580-435a-87e1-4c1300	29 Apr, 2016 8:00:51 AM	711023178553
ee5aef75-979c-421e-b796-e490	d9d0ad37-4578-4bb9-aa28-1110	29 Apr, 2016 8:00:50 AM	711023178553
dc1ef539-559e-4e25-aed8-e1100	176feedd-256f-4d22-9d19-2370	29 Apr, 2016 8:00:50 AM	711023178553
51bb0a16-ef7d-4139-a928-d1890	c1a971f7-6d59-4c55-bd96-81840	29 Apr, 2016 8:00:51 AM	711023178553
d85fc29d-c010-400e-8425-b1530		29 Apr, 2016 8:00:50 AM	711023178553

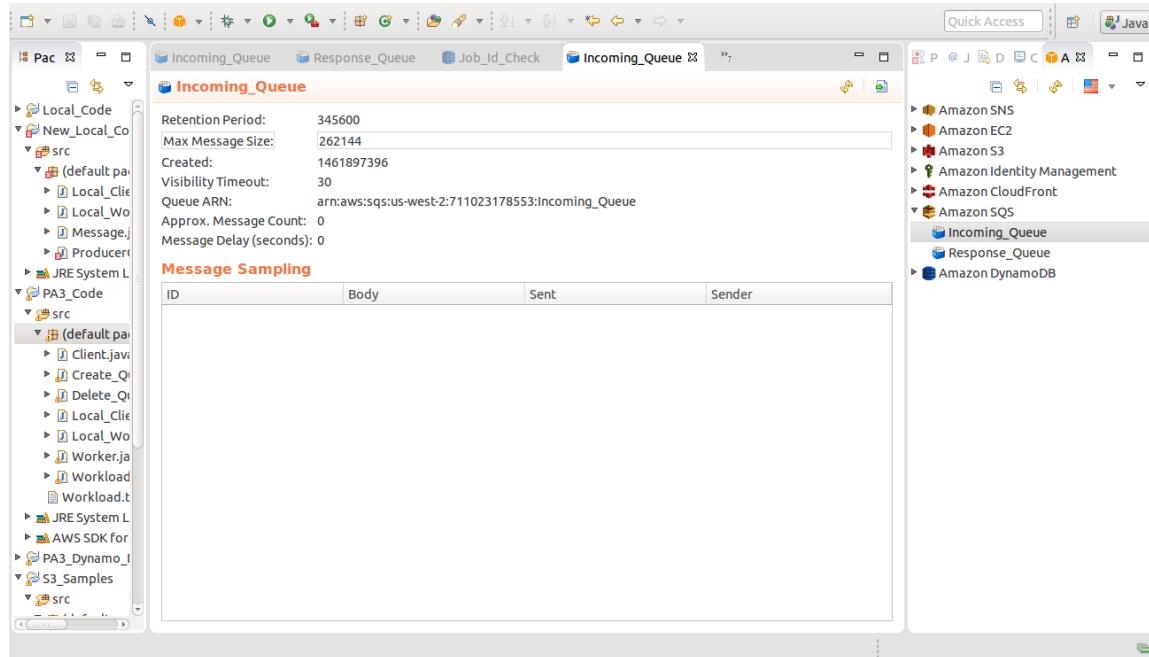
DynamoDB:-

Job_Id_Check Configuration:

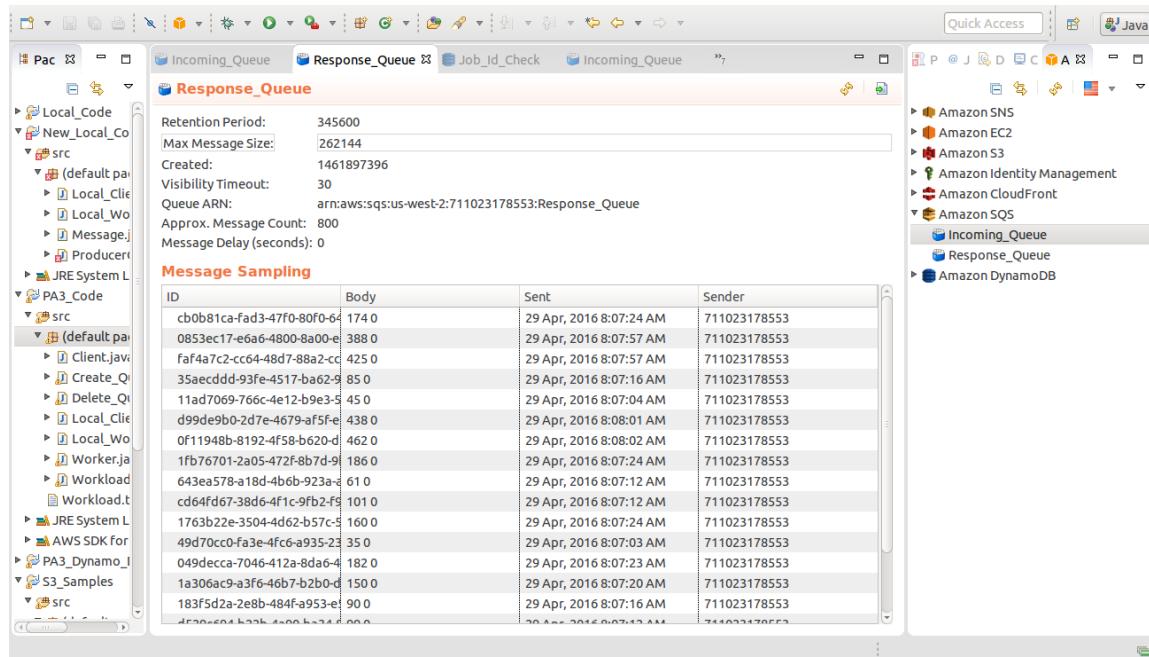
Add scan condition

Id	Command
3635	Thread.sleep(10);
228	Thread.sleep(10);
1668	Thread.sleep(10);
6308	Thread.sleep(10);
4274	Thread.sleep(10);
6239	Thread.sleep(10);
3435	Thread.sleep(10);
4831	Thread.sleep(10);
5704	Thread.sleep(10);
7150	Thread.sleep(10);
2221	Thread.sleep(10);
5529	Thread.sleep(10);
1168	Thread.sleep(10);
7065	Thread.sleep(10);
5021	Thread.sleep(10);
2381	Thread.sleep(10);
3238	Thread.sleep(10);
1274	Thread.sleep(10);

incoming:-



response:-



DynamoDB:-

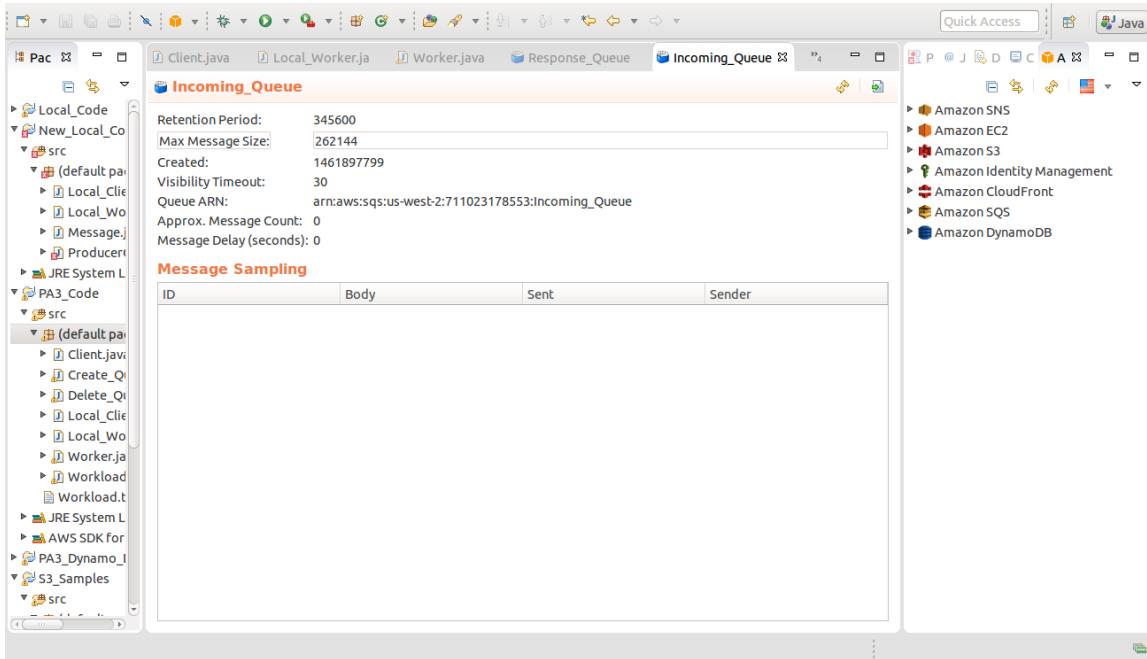
The screenshot shows the AWS Lambda console. The left sidebar lists the project structure with packages like Local_Code, New_Local_Code, PA3_Code, and S3_Samples. The main area displays the function configuration for "Job_Id_Check". It's triggered by "Incoming_Queue" and sends responses to "Response_Queue". The code editor shows Java code with a sleep operation. The configuration pane shows the function ARN and runtime settings.

8 worker 1 thread 10 seconds job:-

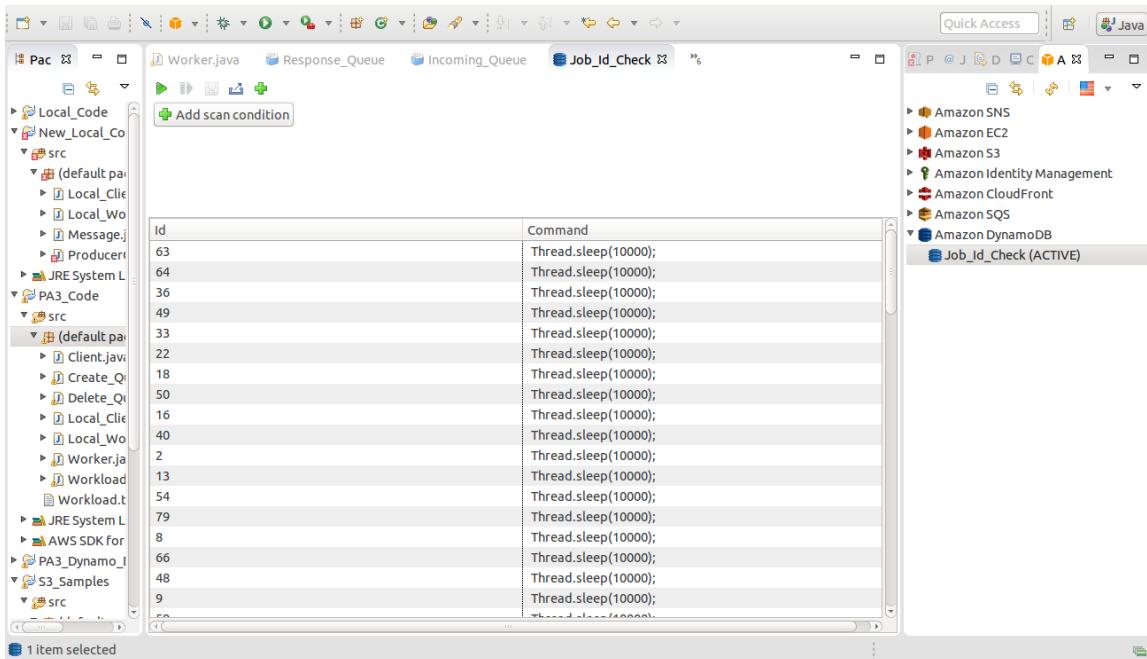
response:-

The screenshot shows the AWS Lambda console. The left sidebar lists the project structure with packages like Local_Code, New_Local_Code, PA3_Code, and S3_Samples. The main area displays the function configuration for "Response_Queue". It's triggered by "Incoming_Queue" and sends responses to "Response_Queue". The code editor shows Java code with a sleep operation. The configuration pane shows the function ARN and runtime settings.

incoming:-



DynamoDB:-



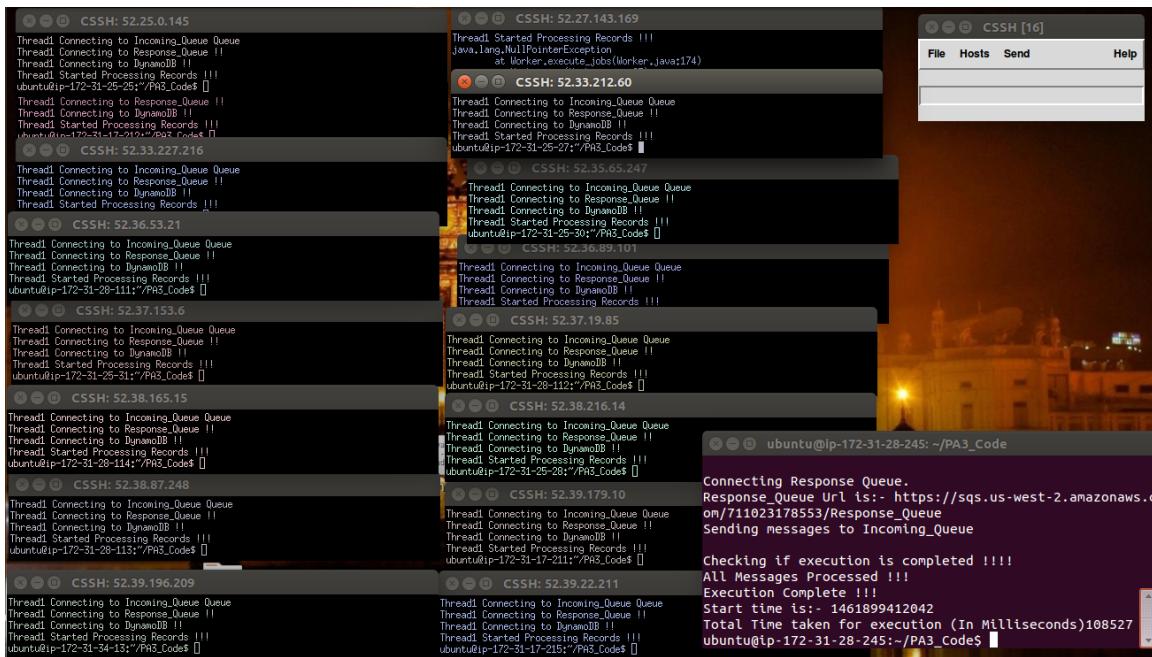
output:-

The screenshot displays six terminal windows (SSH sessions) showing the execution of the PA3_Code application across different hosts. The hosts and their log outputs are as follows:

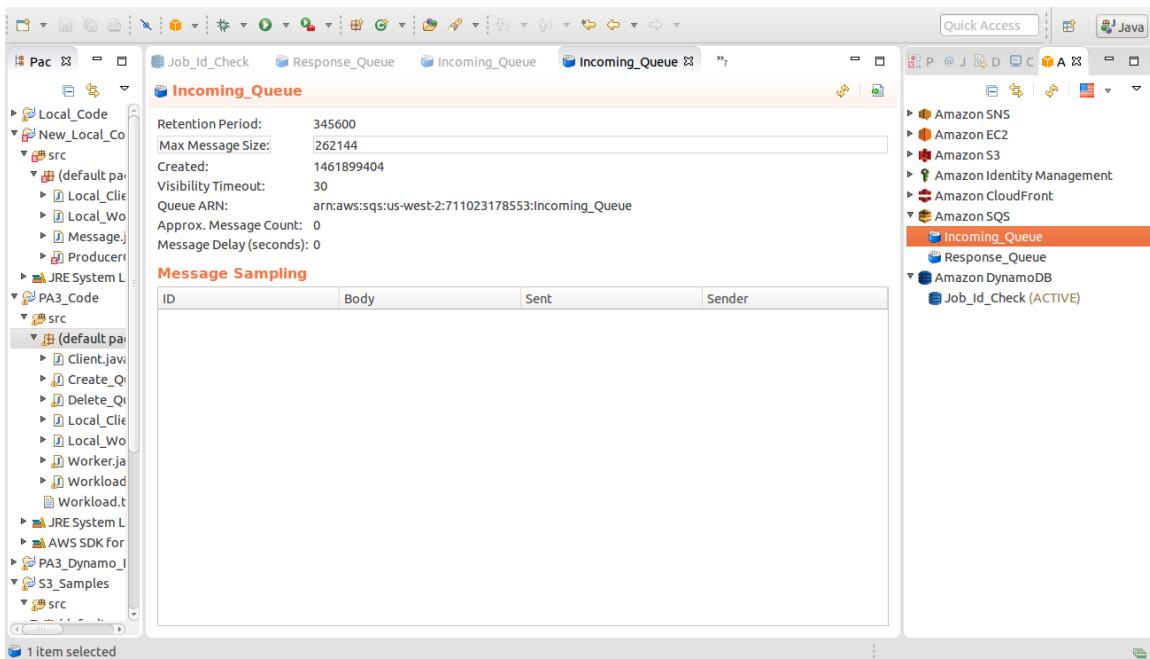
- SSH: 52.27.41.214**:
Logs show threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting processing records.
- SSH: 52.36.53.21**:
Logs show threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting processing records.
- SSH: 52.38.165.15**:
Logs show threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting processing records.
- SSH: 52.39.179.10**:
Logs show threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting processing records.
- SSH: 52.39.22.211**:
Logs show threads connecting to Incoming_Queue, Response_Queue, and DynamoDB, and starting processing records.
- ubuntu@ip-172-31-28-245: ~/PA3_Code**:
Logs show the application connecting to the response queue, sending messages to the incoming queue, and checking for completion. It also prints the start time (1461898091835), total execution time (117934 ms), and a message indicating all messages were processed.

16 worker 1 thread 0 sleep 0 task:-

output:-



incoming:-



Response:-

The screenshot shows the AWS CloudWatch Metrics interface. The left sidebar lists metrics from the 'Job_Id_Check' namespace, including 'Response_Queue' and 'Incoming_Queue'. The 'Response_Queue' metric details are displayed: Retention Period: 345600, Max Message Size: 262144, Created: 1461899405, Visibility Timeout: 30, Queue ARN: arn:aws:sqs:us-west-2:711023178553:Response_Queue, Approx. Message Count: 10000, and Message Delay (seconds): 0. Below this, a 'Message Sampling' table lists 20 messages with columns: ID, Body, Sent, and Sender. The table shows various message IDs and their corresponding details.

ID	Body	Sent	Sender
819d35df-5aff-4b31-9ac7-bf	25 0	29 Apr, 2016 8:40:24 AM	711023178553
e119d7a6-638d-4e3f-8ebc-2	51 0	29 Apr, 2016 8:40:25 AM	711023178553
f8471bd8-186e-44b2-b1ae-1	137 0	29 Apr, 2016 8:40:25 AM	711023178553
ee870434-59fa-4cd1-ab59-4	19 0	29 Apr, 2016 8:40:24 AM	711023178553
b1d9dd2b-c5f4-46d3-a47a-5	24 0	29 Apr, 2016 8:40:24 AM	711023178553
3a890270-b185-43ad-ac16-6	42 0	29 Apr, 2016 8:40:24 AM	711023178553
d6669b48-c60c-47d0-abd5-1	230 0	29 Apr, 2016 8:40:25 AM	711023178553
31abe050-8d03-4a85-8bc1-4	142 0	29 Apr, 2016 8:40:25 AM	711023178553
ab214942-84ea-4cdb-8dc4-6	48 0	29 Apr, 2016 8:40:25 AM	711023178553
86cb4bee-2b82-49fd-b5cb-8	85 0	29 Apr, 2016 8:40:25 AM	711023178553
bbb70b64-3b2d-4c51-b5ae	69 0	29 Apr, 2016 8:40:24 AM	711023178553
6bf55c57-363c-490b-9796-b	109 0	29 Apr, 2016 8:40:25 AM	711023178553
8ef80d64-352b-4fdb-badd-c	22 0	29 Apr, 2016 8:40:24 AM	711023178553
3de29811-eec4-4f95-866d-9	6 0	29 Apr, 2016 8:40:24 AM	711023178553
1734e2fc-6f04-45c6-9f49-32	15 0	29 Apr, 2016 8:40:25 AM	711023178553

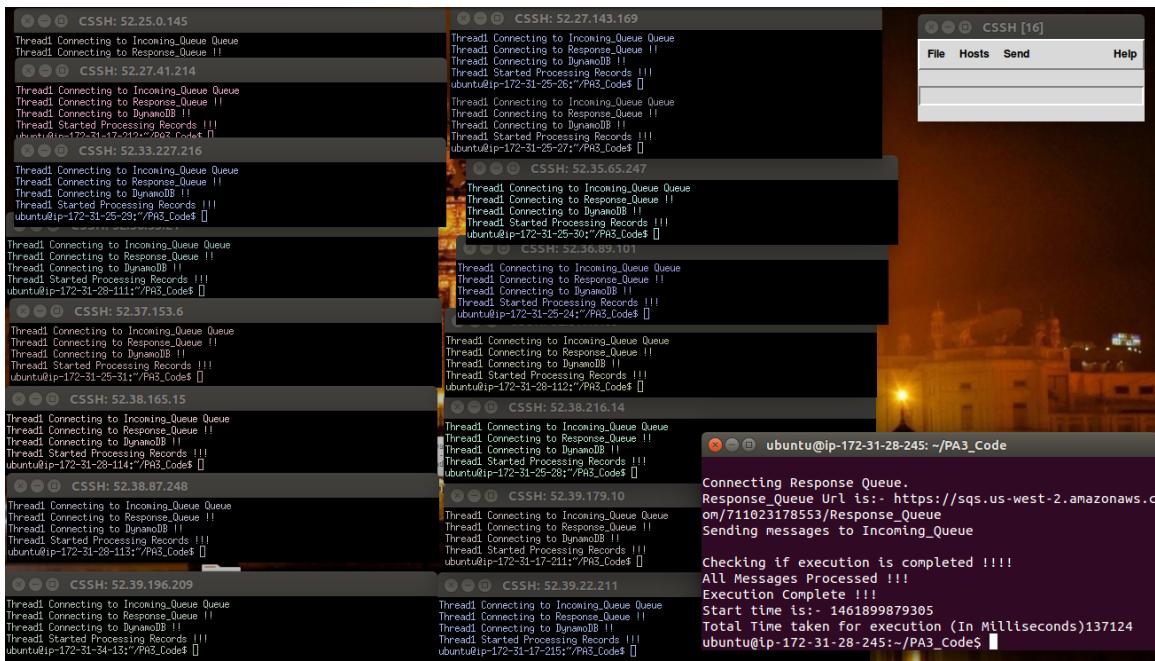
dynamoDB:-

The screenshot shows the AWS CloudWatch Metrics interface. The left sidebar lists metrics from the 'Job_Id_Check' namespace, including 'Response_Queue' and 'Incoming_Queue'. The 'Incoming_Queue' metric details are displayed: Add scan condition. Below this, a table lists items from the 'Incoming_Queue' table with columns: Id and Command. The table shows various item IDs and their corresponding commands.

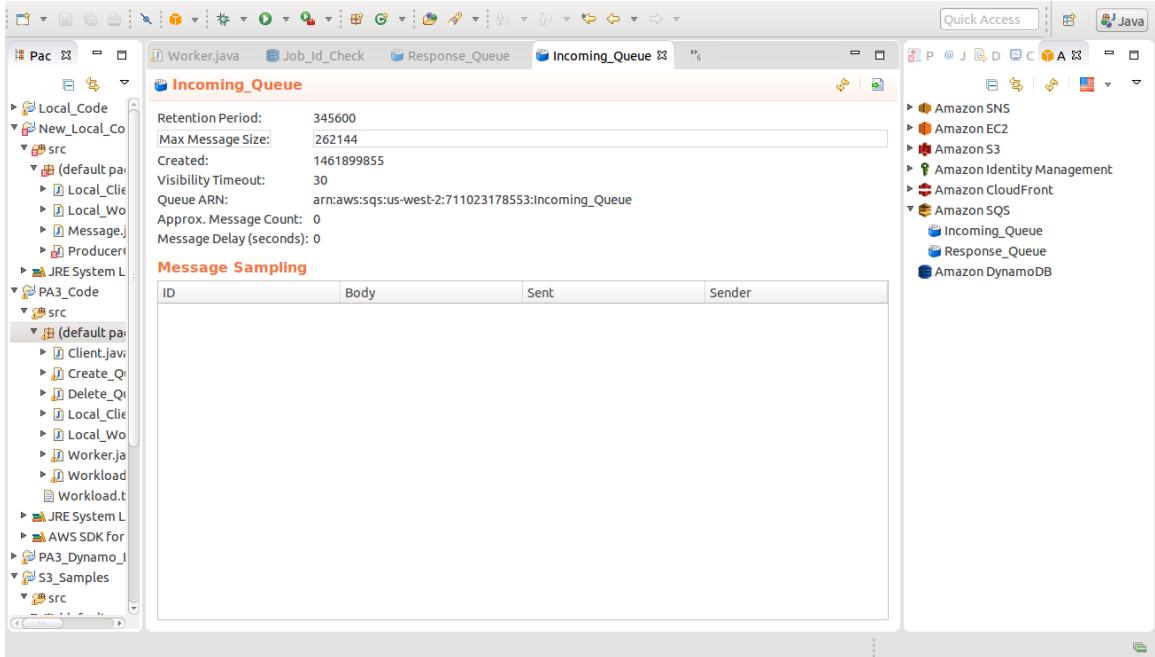
Id	Command
5226	Thread.sleep(0);
6892	Thread.sleep(0);
5593	Thread.sleep(0);
2440	Thread.sleep(0);
1497	Thread.sleep(0);
5776	Thread.sleep(0);
4752	Thread.sleep(0);
54	Thread.sleep(0);
5913	Thread.sleep(0);
1469	Thread.sleep(0);
1936	Thread.sleep(0);
4909	Thread.sleep(0);
2053	Thread.sleep(0);
788	Thread.sleep(0);
3528	Thread.sleep(0);
1016	Thread.sleep(0);
316	Thread.sleep(0);
3968	Thread.sleep(0);
618	Thread.sleep(0);

16 worker 1 thread 10ms job:-

output:-



incoming :-



resposne:-

The screenshot shows the AWS Lambda console interface for a function named "Response_Queue". On the left, the "Local_Code" and "PA3_Code" sections are visible. The main pane displays the "Message Sampling" table:

ID	Body	Sent	Sender
8f0b392f-b581-4a8f-90fa-ce	49 0	29 Apr, 2016 8:48:00 AM	711023178553
a1a0614a-7087-47a5-b929-c	45 0	29 Apr, 2016 8:48:00 AM	711023178553
b229d3c3-bdff-4241-a223-2	63 0	29 Apr, 2016 8:48:00 AM	711023178553
4f836e4c-8f5c-4d27-a74d-ff	60 0	29 Apr, 2016 8:48:00 AM	711023178553
44d4e729-bd25-44aa-89bf-3	20 0	29 Apr, 2016 8:48:00 AM	711023178553
af54b2cd-587e-4cba-b753-b	32 0	29 Apr, 2016 8:48:00 AM	711023178553
f0f40f01-9617-4d38-88c0-2b	46 0	29 Apr, 2016 8:48:00 AM	711023178553
6daeb23b-87a7-418d-8b35-	27 0	29 Apr, 2016 8:48:00 AM	711023178553
5049b089-e7a3-4817-9c7e-3	23 0	29 Apr, 2016 8:48:00 AM	711023178553
209657cb-a9dc-4caa-9834-e	56 0	29 Apr, 2016 8:48:00 AM	711023178553
f71872a6-a0b6-417c-bd5a-6	47 0	29 Apr, 2016 8:48:00 AM	711023178553
cd2efab7-303e-4c4e-a602-c	58 0	29 Apr, 2016 8:48:00 AM	711023178553
7a58f879-3ee5-425f-9ec7-7	67 0	29 Apr, 2016 8:48:00 AM	711023178553
608f3754-b431-4396-9f8c-7	38 0	29 Apr, 2016 8:48:00 AM	711023178553
07ec6de7-f390-45c6-8630-c	68 0	29 Apr, 2016 8:48:00 AM	711023178553

The right sidebar lists various AWS services, with "Amazon SQS" and its queues "Incoming_Queue" and "Response_Queue" highlighted.

DynamoDB:-

The screenshot shows the AWS Lambda console interface for a function named "Job_Id_Check". On the left, the "Local_Code" and "PA3_Code" sections are visible. The main pane shows a table titled "Add scan condition" with the following data:

ID	Command
8205	Thread.sleep(10);
3201	Thread.sleep(10);
12694	Thread.sleep(10);
12274	Thread.sleep(10);
5423	Thread.sleep(10);
10732	Thread.sleep(10);
10646	Thread.sleep(10);
194	Thread.sleep(10);
1658	Thread.sleep(10);
3308	Thread.sleep(10);
2002	Thread.sleep(10);
12522	Thread.sleep(10);
8076	Thread.sleep(10);
10101	Thread.sleep(10);
10408	Thread.sleep(10);
1020	Thread.sleep(10);
1251	Thread.sleep(10);
1165	Thread.sleep(10);
628	Thread.sleep(10);

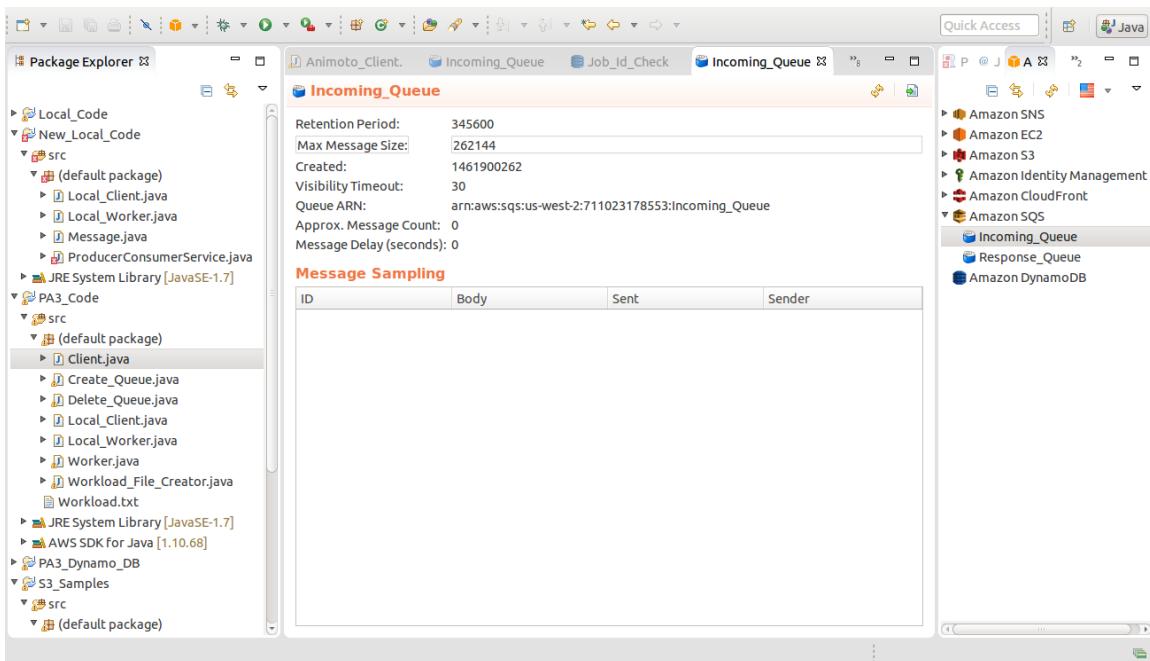
The right sidebar lists various AWS services, with "Amazon DynamoDB" and the table "Job_Id_Check (ACTIVE)" highlighted.

16 worker 1 second 1 thread:-

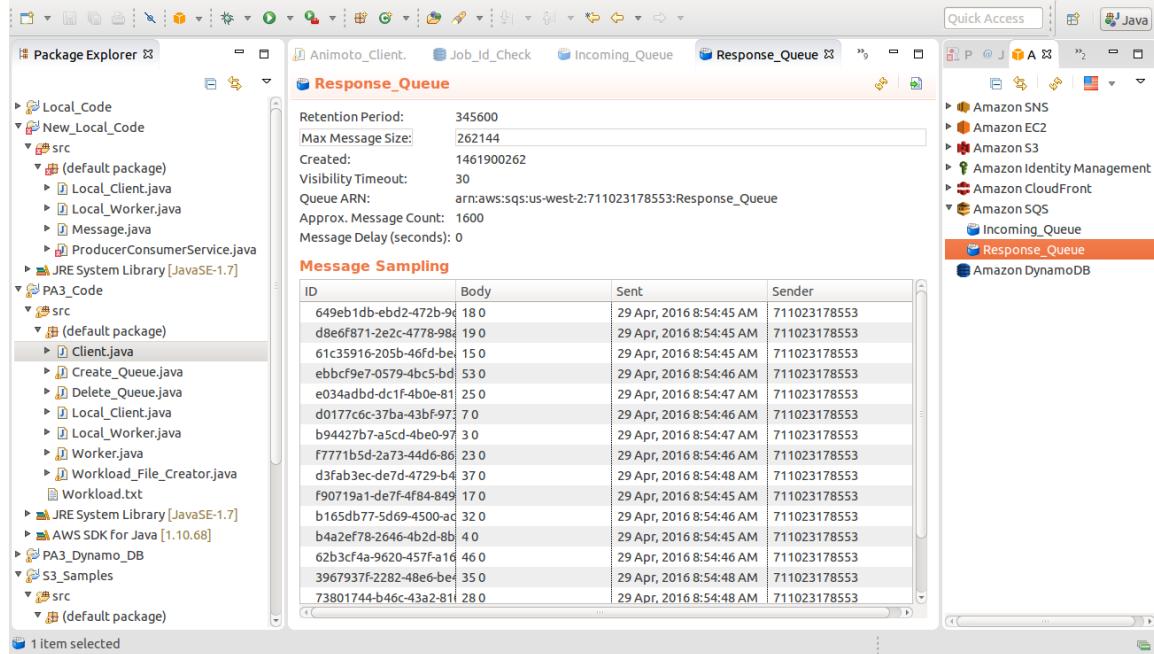
output:-



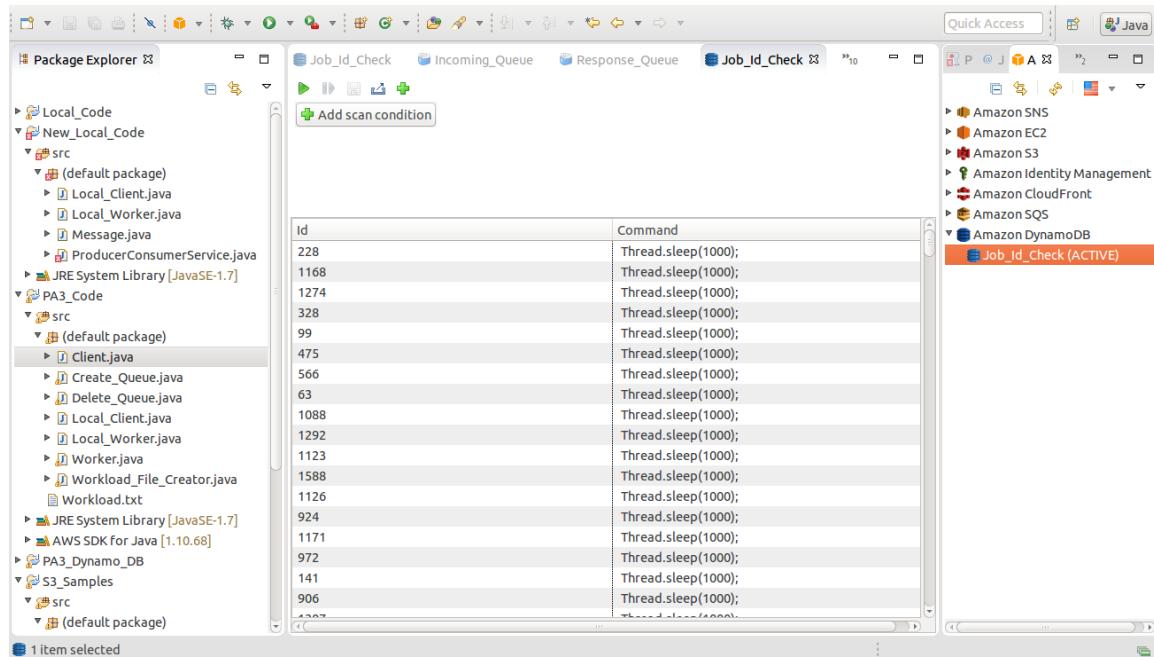
incoming:-



response:-

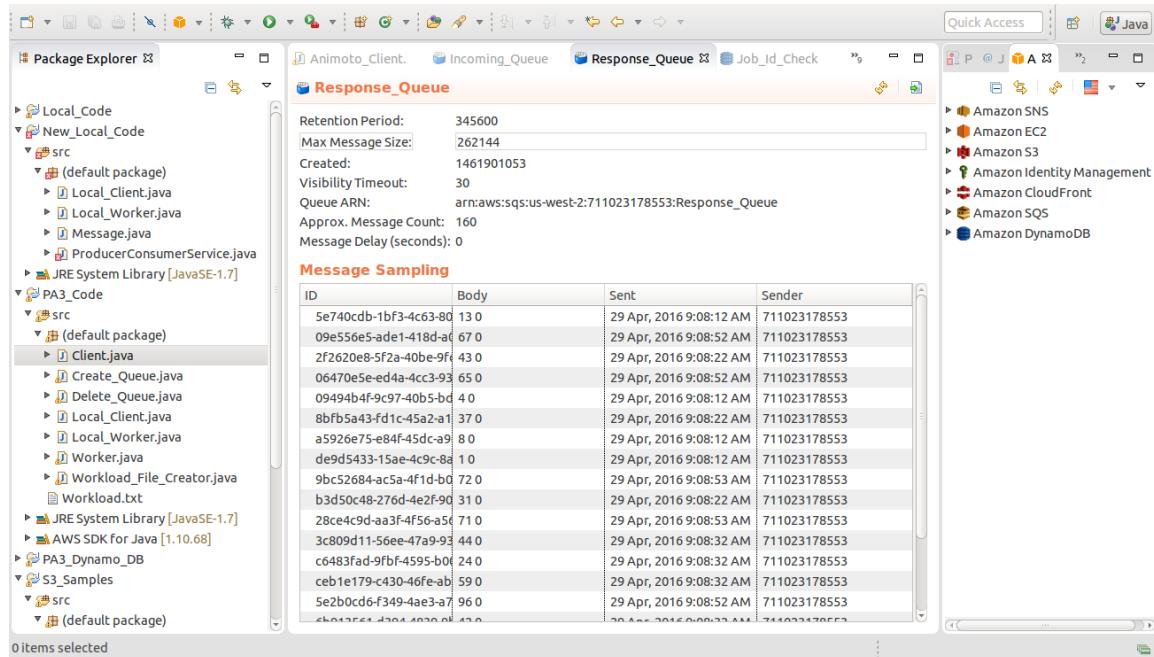


dynamodb:-

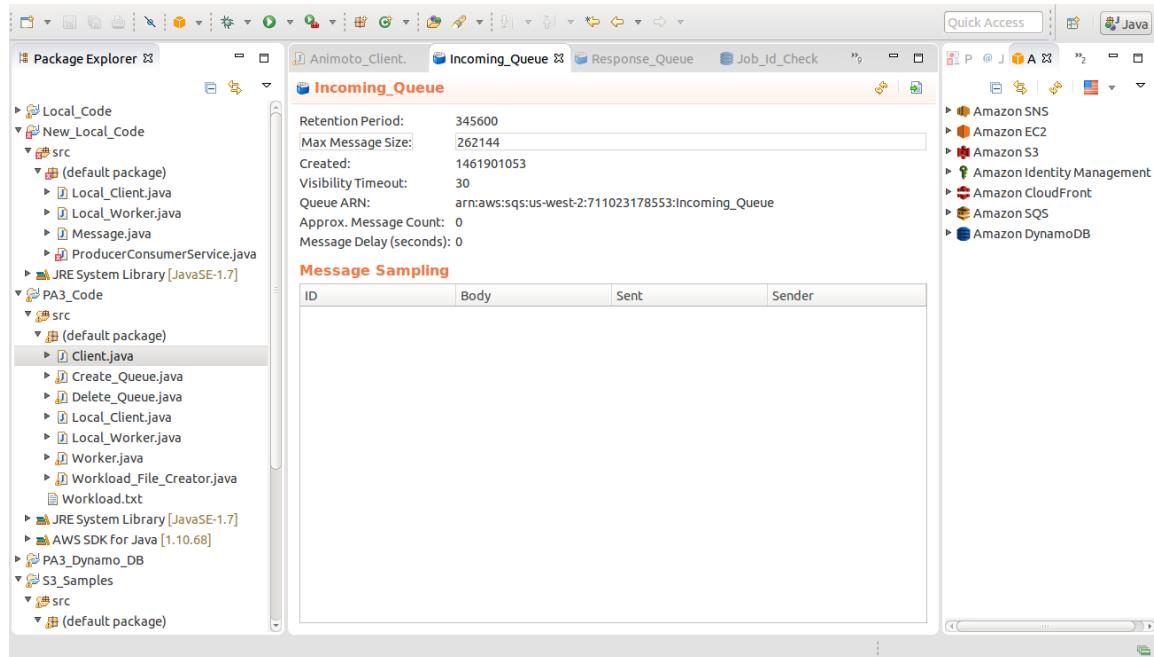


16 worker 1 thread 10 seconds job:-

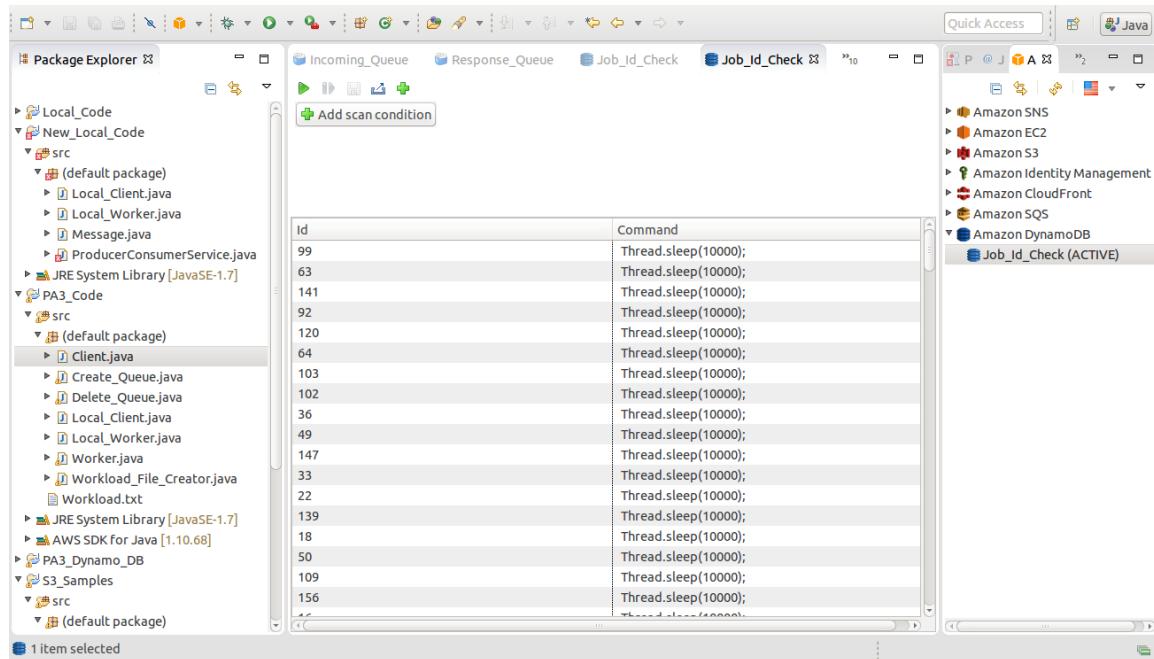
response:-



incoming:-



dynamoDB:-



output:-

```

SSH: 52.25.0.145
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
SSH: 52.27.41.214
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
SSH: 52.33.227.216
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-25-26:~/PA3_Code$ 
SSH: 52.37.153.6
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-28-111:~/PA3_Code$ 
SSH: 52.38.165.15
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-29-113:~/PA3_Code$ 
SSH: 52.38.87.248
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-29-113:~/PA3_Code$ 
SSH: 52.39.196.209
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-29-113:~/PA3_Code$ 
SSH: 52.39.179.10
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-29-28:~/PA3_Code$ 
SSH: 52.39.22.211
Thread1 Connecting to Incoming_Queue Queue
Thread1 Connecting to Response_Queue !!
Thread1 Connecting to DynamoDB !!
Thread1 Started Processing Records !!!
ubuntu@ip-172-31-17-211:~/PA3_Code$ 
ubuntu@ip-172-31-28-245:~/PA3_Code$ 
Connecting Response Queue.
Response Queue Url is:- https://sns.us-west-2.amazonaws.com/1102317853/Response_Queue
Sending messages to Incoming_Queue
Checking if execution is completed !!
All Messages Processed !!!
Execution Complete !!
Start time ls:- 1461901419225
Total Time taken for execution (In Milliseconds)113986
ubuntu@ip-172-31-28-245:~/PA3_Code$ 

```

AWS 16 worker screenshot:-

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with options like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main area displays a table of 16 EC2 instances. The columns include Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. All instances are listed as 'running' with green status indicators. The Public DNS column shows unique addresses for each instance, such as ec2-52-39-179-10.us-west-2.compute.amazonaws.com for Worker3 and ec2-52-37-19-85.us-west-2.compute.amazonaws.com for Worker6. The table header has a search bar labeled 'Filter by tags and attributes or search by keyword'. At the bottom of the table, it says 'Instance: i-4321c885 (Worker6) Public DNS: ec2-52-37-19-85.us-west-2.compute.amazonaws.com'.

Local Worker execution:-

1 thread 10K sleep 0 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp$ javac Workload_File_Creator.java
Note: Workload_File_Creator.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
10000
Enter the sleep time for job (milliseconds):-
0
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Worker.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10000
All Records Processed Successfully !!!
Start time is:- 1461913158352
Total Time taken for execution (In Milliseconds):- 168
ubuntu@ip-172-31-20-21:~/temp$
```

2 thread sleep 0 10 K jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 2 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10000
All Records Processed Successfully !!!
Start time is:- 1461913200627
Total Time taken for execution (In Milliseconds):- 151
```

4 thread sleep 0 10 K jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
^Cubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 4 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10000
All Records Processed Successfully !!!
Start time is:- 1461913246188
Total Time taken for execution (In Milliseconds):- 114
```

8 thread sleep 0 10 K jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
^Cubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 8 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10000
All Records Processed Successfully !!!
Start time is:- 1461913291246
Total Time taken for execution (In Milliseconds):- 144
```

16 thread sleep 0 10 K jobs:-

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 16 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10000
All Records Processed Successfully !!!
Start time is:- 1461913349156
Total Time taken for execution (In Milliseconds):- 132
```

1 thread sleep 10 1000 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp$ javac Workload_File_Creator.java
Note: Workload_File_Creator.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
1000
Enter the sleep time for job (milliseconds):-
10
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Worker.java
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Worker.java
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Worker.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 1000
All Records Processed Successfully !!!
Start time is:- 1461913649678
Total Time taken for execution (In Milliseconds):- 10152
ubuntu@ip-172-31-20-21:~/temp$
```

2 thread sleep 10 2000 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp$ javaworkload_File_Creator
Enter number of sleep jobs to create:-
2000
Enter the sleep time for job (milliseconds):-
10
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
^Cubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
^Cubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 2 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 2000
All Records Processed Successfully !!!
Start time is:- 1461913889289
Total Time taken for execution (In Milliseconds):- 10168
```

4 thread sleep 10 4000 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Records Failed to process:- 0
Records Successfully processed:- 2000
All Records Processed Successfully !!!
Start time is:- 1461914063844
Total Time taken for execution (In Milliseconds):- 5105
Worker execution complete !!!
^Cubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 4 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 4000
All Records Processed Successfully !!!
Start time is:- 1461914089159
Total Time taken for execution (In Milliseconds):- 10176
```

8 thread sleep 10 8000 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
8000
Enter the sleep time for job (milliseconds):-
10
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 8 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 8000
All Records Processed Successfully !!!
Start time is:- 1461914253015
Total Time taken for execution (In Milliseconds):- 10173
```

16 thread sleep 10 16000 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
16000
Enter the sleep time for job (milliseconds):-
10
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 16 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 16000
All Records Processed Successfully !!!
Start time is:- 1461915187712
Total Time taken for execution (In Milliseconds):- 10231
```

1 thread sleep 1000 100 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100
All Records Processed Successfully !!!
Start time is:- 1461915529065
Total Time taken for execution (In Milliseconds):- 100032
ubuntu@ip-172-31-20-21:~/temp$
```

2 thread sleep 1000 200 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp
Enter number of sleep jobs to create:-
200
Enter the sleep time for job (milliseconds):-
1000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 2 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 200
All Records Processed Successfully !!!
Start time is:- 1461915867784
Total Time taken for execution (In Milliseconds):- 100034
ubuntu@ip-172-31-20-21:~/temp$
```

4 thread sleep 1000 400 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp
Records Successfully processed:- 200
All Records Processed Successfully !!!
Start time is:- 1461915867784
Total Time taken for execution (In Milliseconds):- 100034
^Cubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
400
Enter the sleep time for job (milliseconds):-
1000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java

ubuntu@ip-172-31-20-21:~/temp$
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 4 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 400
All Records Processed Successfully !!!
Start time is:- 1461916515966
Total Time taken for execution (In Milliseconds):- 100043
ubuntu@ip-172-31-20-21:~/temp$
```

8 thread sleep 1000 800 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
operation processing is explicitly requested
1 error
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
800
Enter the sleep time for job (milliseconds):-
1000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 8 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 800
All Records Processed Successfully !!!
Start time is:- 1461916707539
Total Time taken for execution (In Milliseconds):- 100052
```

16 thread sleep 1000 1600 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 16 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 1600
All Records Processed Successfully !!!
Start time is:- 1461916964678
Total Time taken for execution (In Milliseconds):- 100066
```

1 thread sleep 10000 10 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 1600
All Records Processed Successfully !!!
Start time is:- 1461916964678
Total Time taken for execution (In Milliseconds):- 100066
^Cubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
10
Enter the sleep time for job (milliseconds):-
10000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10
All Records Processed Successfully !!!
Start time is:- 1461917293768
Total Time taken for execution (In Milliseconds):- 100011
ubuntu@ip-172-31-20-21:~/temp$
```

2 thread sleep 10000 20 jobs:-

```
ubuntu@ip-172-31-20-21: ~/temp
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 10
All Records Processed Successfully !!!
Start time is:- 1461917293768
Total Time taken for execution (In Milliseconds):- 100011
ubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
20
Enter the sleep time for job (milliseconds):-
10000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 2 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 20
All Records Processed Successfully !!!
Start time is:- 1461917533094
Total Time taken for execution (In Milliseconds):- 100015
ubuntu@ip-172-31-20-21:~/temp$
```

4 thread sleep 10000 40 jobs:-

```
ubuntu@ip-172-31-20-21:~/temp
^Cubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
40
Enter the sleep time for job (milliseconds):-
10000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 4 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 40
All Records Processed Successfully !!!
Start time is:- 1461917720349
Total Time taken for execution (In Milliseconds):- 100015
```

8 thread sleep 10000 80 jobs:-

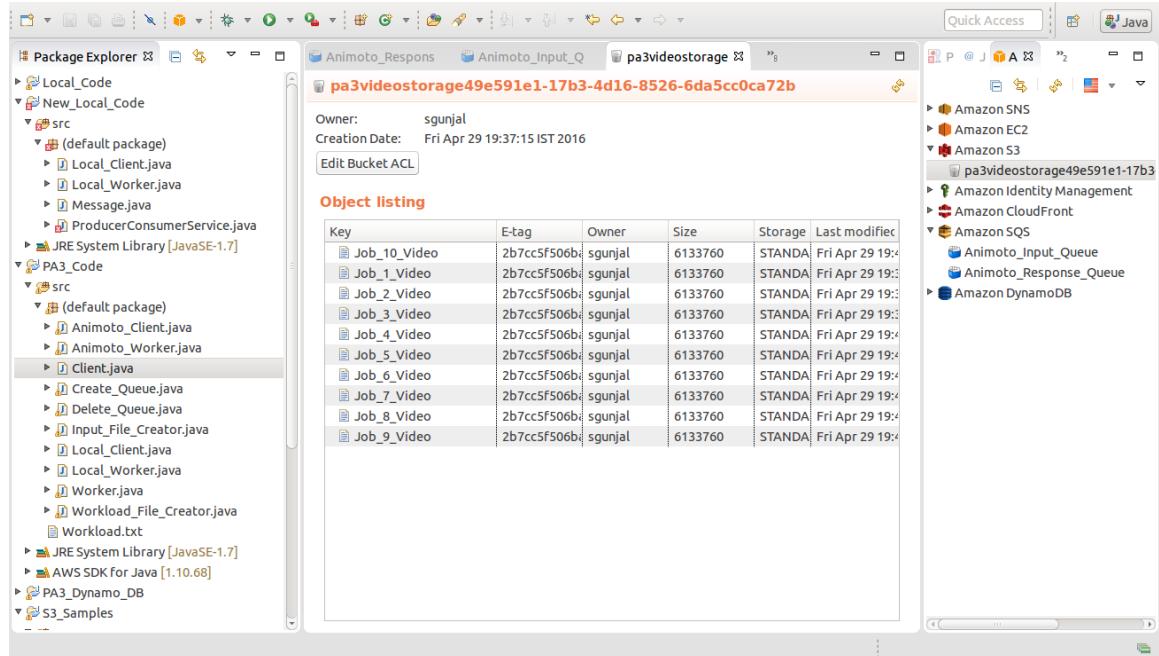
```
ubuntu@ip-172-31-20-21:~/temp
Enter number of sleep jobs to create:-
80
Enter the sleep time for job (milliseconds):-
10000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 8 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 80
All Records Processed Successfully !!!
Start time is:- 1461917963827
Total Time taken for execution (In Milliseconds):- 100017
```

16 thread sleep 10000 160 jobs:-

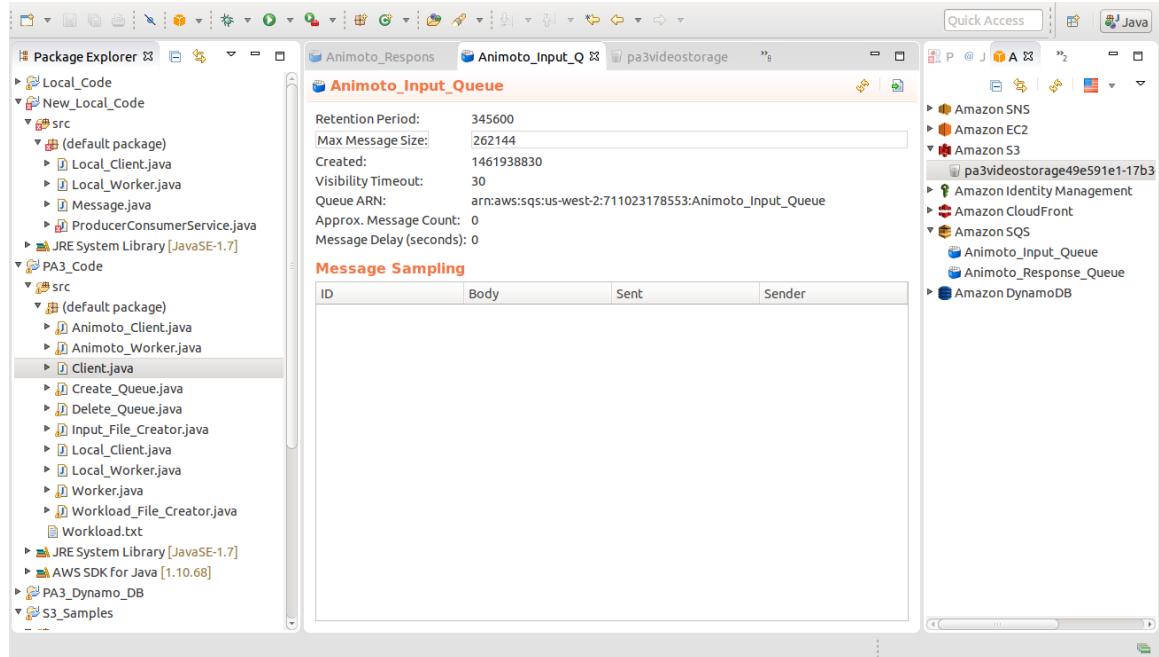
```
ubuntu@ip-172-31-20-21:~/temp
^Cubuntu@ip-172-31-20-21:~/temp$ java Workload_File_Creator
Enter number of sleep jobs to create:-
160
Enter the sleep time for job (milliseconds):-
10000
ubuntu@ip-172-31-20-21:~/temp$ vi Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ javac Local_Client.java
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 16 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 160
All Records Processed Successfully !!!
Start time is:- 1461918166382
Total Time taken for execution (In Milliseconds):- 100023
^Cubuntu@ip-172-31-20-21:~/temp$
```

Animoto Screenshots:-

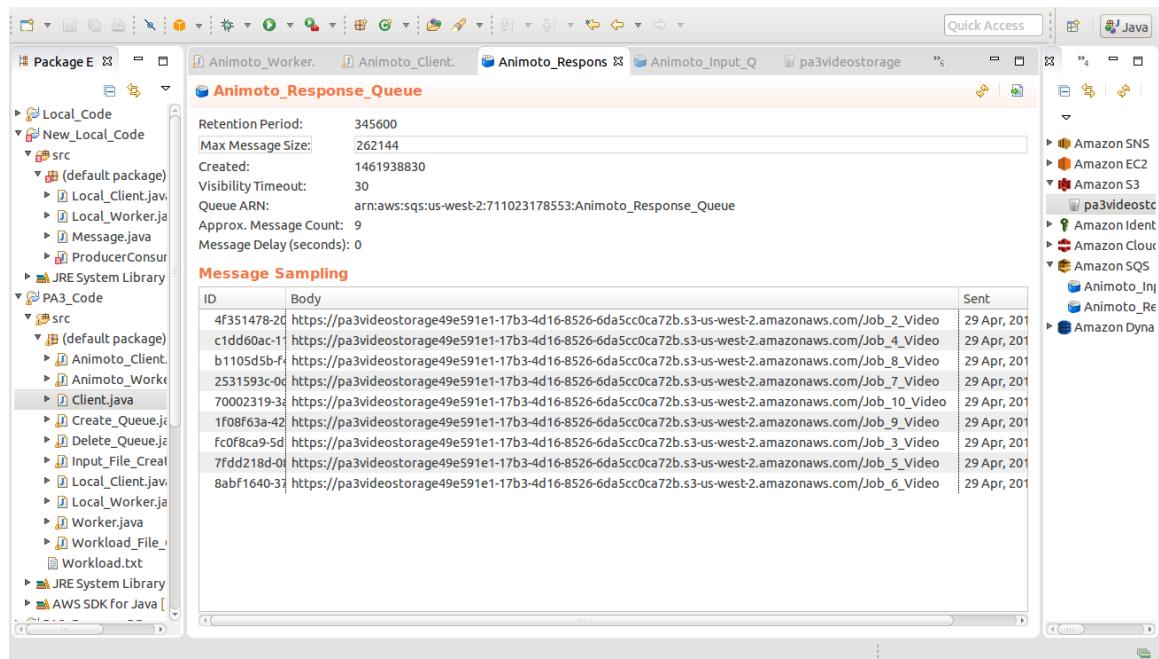
S3 :-



Incoming queue:-



Response Queue:-



DynamoDb:-

The screenshot shows the Eclipse IDE interface. On the left, the package explorer displays a Java project structure with packages like Local_Code, New_Local_Code, and PA3_Code. In the center, a table view shows a list of items from the Animoto_Job_Id table. The table has two columns: Id and Command. The Id column contains values 2, 8, 9, 1, 6, 5, 4, 7, 3, and 10. The Command column contains the path /home/ubuntu/PA3_Jar_files/Image_Link.txt repeated for each row. On the right, the AWS Toolkit sidebar lists various AWS services, with Amazon DynamoDB selected.

Id	Command
2	/home/ubuntu/PA3_Jar_files/Image_Link.txt
8	/home/ubuntu/PA3_Jar_files/Image_Link.txt
9	/home/ubuntu/PA3_Jar_files/Image_Link.txt
1	/home/ubuntu/PA3_Jar_files/Image_Link.txt
6	/home/ubuntu/PA3_Jar_files/Image_Link.txt
5	/home/ubuntu/PA3_Jar_files/Image_Link.txt
4	/home/ubuntu/PA3_Jar_files/Image_Link.txt
7	/home/ubuntu/PA3_Jar_files/Image_Link.txt
3	/home/ubuntu/PA3_Jar_files/Image_Link.txt
10	/home/ubuntu/PA3_Jar_files/Image_Link.txt

AWS screenshot:-

The screenshot shows the AWS EC2 Management Console. The left sidebar navigation bar includes links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, Elastic Block Store, and Network & Security. The Instances section is currently selected. The main content area displays a table of running instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. Three instances are listed:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
Animoto_Worker	i-7e5554a6	t2.micro	us-west-2b	running	2/2 checks ...	None	ec2-52-38-90-143.us-west-2.compute.amazonaws.com
Animoto_Client	i-ab4a4273	t2.micro	us-west-2b	running	2/2 checks ...	None	ec2-52-25-125.us-west-2.compute.amazonaws.com
Local	i-9b70995d	t2.micro	us-west-2a	running	2/2 checks ...	None	ec2-52-34-119.us-west-2.compute.amazonaws.com

Below the table, a detailed view is shown for the instance i-7e5554a6 (Animoto_Worker). The details include Instance ID (i-7e5554a6), Public DNS (ec2-52-38-90-143.us-west-2.compute.amazonaws.com), Instance state (running), Instance type (t2.micro), Private DNS (ip-172-31-35-125.us-west-2.compute.internal), Private IPs (172.31.35.125), Secondary private IPs, Public DNS (ec2-52-38-90-143.us-west-2.compute.amazonaws.com), Public IP (52.38.90.143), Elastic IP (-), Availability zone (us-west-2b), Security groups (launch-wizard-109), and Scheduled events (No scheduled events).

Video generated proof:-

```
ubuntu@ip-172-31-35-125:~/PA3_Jar_files$ ls
Animoto_Workload.txt  img14.jpg  img20.jpg  img27.jpg  img33.jpg  img3.jpg   img46.jpg  img52.jpg  img59.jpg  Job_10.mpg  Job_7.mpg
credentials           img15.jpg  img21.jpg  img28.jpg  img34.jpg  img40.jpg  img47.jpg  img53.jpg  img5.jpg   Job_1.mpg   Job_8.mpg
Image_Link.txt        img16.jpg  img22.jpg  img29.jpg  img35.jpg  img41.jpg  img48.jpg  img54.jpg  img60.jpg  Job_2.mpg   Job_9.mpg
img10.jpg             img17.jpg  img23.jpg  img29.jpg  img36.jpg  img42.jpg  img49.jpg  img55.jpg  img6.jpg   Job_3.mpg   PA3_Code.j
img11.jpg             img18.jpg  img24.jpg  img30.jpg  img37.jpg  img43.jpg  img49.jpg  img56.jpg  img7.jpg   Job_4.mpg
img12.jpg             img19.jpg  img25.jpg  img31.jpg  img38.jpg  img44.jpg  img50.jpg  img57.jpg  img8.jpg   Job_5.mpg
img13.jpg             img1.jpg   img26.jpg  img32.jpg  img39.jpg  img45.jpg  img51.jpg  img58.jpg  img9.jpg   Job_6.mpg
ubuntu@ip-172-31-35-125:~/PA3_Jar_files$ ls *.mpg
Job_10.mpg  Job_1.mpg  Job_2.mpg  Job_3.mpg  Job_4.mpg  Job_5.mpg  Job_6.mpg  Job_7.mpg  Job_8.mpg  Job_9.mpg
ubuntu@ip-172-31-35-125:~/PA3_Jar_files$
```

Local:-

100k sleep 0 job execution:-

1 Thread

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 1 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100000
All Records Processed Successfully !!!
Start time is:- 1461948641784
Total Time taken for execution (In Milliseconds):- 643
ubuntu@ip-172-31-20-21:~/temp$
```

2 Threads

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 2 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100000
All Records Processed Successfully !!!
Start time is:- 1461949171344
Total Time taken for execution (In Milliseconds):- 615
ubuntu@ip-172-31-20-21:~/temp$
```

4 threads

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 4 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100000
All Records Processed Successfully !!!
Start time is:- 1461949224079
Total Time taken for execution (In Milliseconds):- 707
ubuntu@ip-172-31-20-21:~/temp$
```

8 Threads

```
ubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 8 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100000
All Records Processed Successfully !!!
Start time is:- 1461949286424
Total Time taken for execution (In Milliseconds):- 602
```

16 Threads

```
^Cubuntu@ip-172-31-20-21:~/temp$ java Local_Client -s LOCAL -t 16 -w Workload.txt
Local Client started !!!
Local Worker started !!!
Worker execution complete !!!
Records Failed to process:- 0
Records Successfully processed:- 100000
All Records Processed Successfully !!!
Start time is:- 1461949397704
Total Time taken for execution (In Milliseconds):- 586
^Cubuntu@ip-172-31-20-21:~/temp$
```