

# AWS Batch

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# Tagging w/ Nextflow

## Tagging ??

Tag (Tag) AWS resources. Resources are tagged with tags. Tags are key-value pairs that describe an object. You can use tags to organize your resources and manage them more effectively.

AWS Batch jobs can be tagged with tags. The `aws batch` command can be used to tag jobs. For example, to tag a job with the tag `Project: MyProject`, you can use the following command:

## AWS Batch

### Tagging your AWS Batch resources

Batch jobs (job definition) can be tagged with tags. The `Propagate Tags` option in the AWS Batch console can be used to propagate tags to the tasks. For example, to propagate tags to the tasks, you can use the following command:

AWS Batch jobs can be tagged with tags. The `tag propagation` option in the AWS Batch console can be used to propagate tags to the tasks. (Link : [https://docs.aws.amazon.com/batch/latest/userguide/using-tags.html?icmpid=docs\\_console\\_unmapped#tag-resources](https://docs.aws.amazon.com/batch/latest/userguide/using-tags.html?icmpid=docs_console_unmapped#tag-resources))

## Nextflow

Nextflow jobs can be tagged with tags. The `resourceLabels` option in the Nextflow + AWS Batch plugin can be used to propagate tags to the tasks. For example, to propagate tags to the tasks, you can use the following command:

Nextflow jobs can be tagged with tags. The `AWS Batch` plugin can be used to propagate tags to the tasks. (Link : <https://github.com/nextflow-io/nextflow/blob/5a37e6177f7a0e02b2af922768a0df5984b07b7b/plugins/nf-amazon/src/main/nextflow/cloud/aws/batch/AwsBatchTaskHandler.groovy#L713C36-L713C53>)

```

params.str = 'Hello world!'

process splitLetters {
  resourceLabels region: 'ap-northeast-2', user: 'brandon', project: 'nf-test'

  output:
  path 'chunk_*'

  """
  printf '${params.str}' | split -b 6 - chunk_
  """
}

process convertToUpper {
  resourceLabels region: 'ap-northeast-2', user: 'brandon', project: 'nf-test'

  input:
  path x

  output:
  stdout

  """
  cat $x | tr '[a-z]' '[A-Z]'
  """
}

workflow {
  splitLetters | flatten | convertToUpper | view { it.trim() }
}

```



 AWS Batch
 
 Job
 
 Tags
 


 .

Stopped at  
-

Key	Value
region	ap-northeast-2
project	nf-test
user	brandon

Key	Value
aws:batch:compute-environment	nextflow-ce
aws:batch:job-definition	nf-quay-io-nextflow-rnaseq-nf-v1-1:4
aws:batch:job-queue	nextflow-jq
myproject	innov_2024
nextflow.io/createdAt	2024-07-19T02:49:51.551Z
nextflow.io/version	24.04.3
project	nf-test
region	ap-northeast-2
user	brandon

# Troubleshooting for AWS Batch & Nextflow

## CannotPullImageManifestError: Error response from daemon: manifest unknown: manifest unknown

```
[ec2-user@ip-172-31-32-20 helloWorld]$ nextflow run tutorial.nf -bucket-dir s3:// /nextflow_tutorial_work/
```

```
NEXTFLOW ~ version 24.10.3
```

```
Launching 'tutorial.nf' [mad_volhard] DSL2 - revision: e82728278a
```

```
executor > awsbatch (1)
[72/66dc9a] process > splitLetters [100%] 1 of 1, failed: 1 ✖
[-] process > convertToUpper -
ERROR ~ Error executing process > 'splitLetters'
```

```
Caused by:
Task failed to start - CannotPullImageManifestError: Error response from daemon: manifest unknown: manifest unknown
```

Command executed:

```
printf 'Hello world!' | split -b 6 - chunk_
```

Command exit status:

```
-
```

Command output:  
(empty)

Work dir:  
s3:// /nextflow\_tutorial\_work/72/66dc9afd5eced8b691b64fbf0e295d

Container:  
quay.io/biocontainers/salmon

Tip: when you have fixed the problem you can continue the execution adding the option `--resume` to the run command line

-- Check '.nextflow.log' file for details

Details

Status

🔴 Failed

Created at

Dec 26, 2024, 12:33:35 UTC+00:00

Status reason

Task failed to start

Started at

-

ARN

[arn:aws:batch:ap-northeast-2:985fb91-89ad-45e9-9aa1-75f73aea21e0](#):job/c985fb91-89ad-45e9-9aa1-75f73aea21e0

Stopped at

Dec 26, 2024, 12:37:56 UTC+00:00

Job ID

[c985fb91-89ad-45e9-9aa1-75f73aea21e0](#)

Log stream name

[nf-quay-io-biocontainers-salmon/default/7f01e52680b6482bb5efb855ff3d1a87](#)

Job attempts

Job configuration

Containers

Logging

Tags

JSON

Job attempts

Created at

Dec 26, 2024, 21:33:35

Started at

-

Stopped at

Dec 26, 2024, 21:37:56

Attempt #1

Status reason

Task failed to start

Started at

-

Stopped at

Dec 26, 2024, 21:37:56

Container Instance ARN

[arn:aws:ecs:ap-northeast-2:igib-a4723f19-7b71-35ba-8fb5-5ac4994eec97/1bb2d81cb03f4382b8e0b5be4d0d5199](#)

ECS task ARN

[arn:aws:ecs:ap-northeast-2:a4723f19-7b71-35ba-8fb5-5ac4994eec97/7f01e52680b6482bb5efb855ff3d1a87](#)

Exit code

-

Reason

CannotPullImageManifestError: Error response from daemon: manifest unknown: manifest unknown

Log stream name

[nf-quay-io-biocontainers-salmon/default/7f01e52680b6482bb5efb855ff3d1a87](#)

Network interfaces

Attachment ID	IPv6 address	Private IPv4 address
No resources		

## Solution

Check your docker image.

```
[ec2-user@ip-172-31-32-20 ~]$ docker pull quay.io/biocontainers/salmon
Using default tag: latest
Error response from daemon: manifest for quay.io/biocontainers/salmon:latest not found: manifest unknown: manifest unknown
```

bash: aws: command not found

```
[ec2-user@ip-172-31-32-20 helloWorld]$ nextflow run tutorial.nf -bucket-dir s3://.../nextflow_tutorial_work/

NEXTFLOW ~ version 24.10.3

Launching `tutorial.nf` [voluminous_pasteur] DSL2 - revision: e82728278a

executor > awsbatch (1)
[e6/c0cc8c] process > splitLetters [100%] 1 of 1, failed: 1 ✖
[-] process > convertToUpper -
ERROR ~ Error executing process > 'splitLetters'

Caused by:
  Essential container in task exited

Command executed:

  printf 'Hello world!' | split -b 6 - chunk_

Command exit status:
  127

Command output:
  (empty)

Command error:
  bash: aws: command not found
  bash: line 1: aws: command not found

Work dir:
  s3://.../nextflow_tutorial_work/e6/c0cc8c8f8eda05f0e821e094353adb

Container:
  quay.io/nextflow/rnaseq-nf:v1.1

Tip: when you have fixed the problem you can continue the execution adding the option `--resume` to the run command line
-- Check '.nextflow.log' file for details
```

## Solution

Check your container image has the aws cli program.

<https://www.nextflow.io/docs/latest/aws.html#custom-ami>

**ERROR ~ Pipeline failed. Please refer to troubleshooting docs: <https://nf-co.re/docs/usage/troubleshooting>**

```

Uploading local `bin` scripts folder to s3:// /nf-core_scrnaseq_workdir_2/tmp/b3/944d6c2946dc964109c3b6f42b5246/bin
-[nf-core/scrnaseq] Pipeline completed with errors-
executor > awsbatch (22)
[56/f664ed] process > NFCORE_SCRNASEQ:SCRNASEQ:FASTQC_CHECK:FASTQC (Sample_Y) [100%] 2 of 2 ✓
[23/3e00b7] process > NFCORE_SCRNASEQ:SCRNASEQ:CELLRANGER_ALIGN:CELLRANGER_COUNT (Sample_Y) [100%] 2 of 2 ✓
[3f/4b550e] process > NFCORE_SCRNASEQ:SCRNASEQ:MTX_TO_H5AD (Sample_Y) [100%] 4 of 4 ✓
[75/2c2dd9] process > NFCORE_SCRNASEQ:SCRNASEQ:H5AD_CONVERSION:CONCAT_H5AD (Sample_X) [75%] 3 of 4
[b1/f909b2] process > NFCORE_SCRNASEQ:SCRNASEQ:H5AD_CONVERSION:ANNDATAR_CONVERT (combined) [71%] 5 of 7
[f9/4df11a] process > NFCORE_SCRNASEQ:SCRNASEQ:EMPTY_DROPLET_REMOVAL:CELLBENDER_REMOVEBACKGROUND (Sample_Y) [0%] 0 of 2
[-] process > NFCORE_SCRNASEQ:SCRNASEQ:EMPTY_DROPLET_REMOVAL:ADATA_BARCODES -
[-] process > NFCORE_SCRNASEQ:SCRNASEQ:EMPTYDROPS_H5AD_CONVERSION:CONCAT_H5AD -
[-] process > NFCORE_SCRNASEQ:SCRNASEQ:EMPTYDROPS_H5AD_CONVERSION:ANNDATAR_CONVERT -
[6b/6e7032] process > NFCORE_SCRNASEQ:SCRNASEQ:MULTIQC [0%] 0 of 1
ERROR ~ Pipeline failed. Please refer to troubleshooting docs: https://nf-co.re/docs/usage/troubleshooting

-- Check '.nextflow.log' file for details
WARN: Killing running tasks (6)
WARN: Failed to render execution report -- see the log file for details
WARN: Failed to render execution timeline -- see the log file for details

```

## Solution

Check the .nextflow.log file content. There may be various causes, but this appears to be because the token has expired.

```

Caused by: com.amazonaws.services.s3.model.AmazonS3Exception: The provided token has expired. (Service: Amazon S3; Status Code: 400; Error Code: ExpiredToken; Request ID: SRHCCGA0PXY26G; S3 Extended Request ID: Sn4KngREFF0WVxzcVhSCYmXoxTNl0503rk6kgN05b8Fq+fnTNK/39rz2R6vASzoDLTP31rj7I+; Proxy: n
ull)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.handleErrorResponse(AmazonHttpClient.java:1888)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.handleServiceErrorResponse(AmazonHttpClient.java:1418)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.executeInnerRequest(AmazonHttpClient.java:1387)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.executeHelper(AmazonHttpClient.java:1157)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.doExecute(AmazonHttpClient.java:814)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.executeWithTimer(AmazonHttpClient.java:781)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.execute(AmazonHttpClient.java:755)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.access$500(AmazonHttpClient.java:715)
at com.amazonaws.http.AmazonHttpClient$RequestExecutor.runBuilderImpl(AmazonHttpClient.java:697)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:561)
at com.amazonaws.http.AmazonHttpClient.execute(AmazonHttpClient.java:541)
at com.amazonaws.services.s3.AmazonS3Client.invoke(AmazonS3Client.java:5558)
at com.amazonaws.services.s3.AmazonS3Client.invoke(AmazonS3Client.java:5585)
at com.amazonaws.services.s3.AmazonS3Client.access$3$0(AmazonS3Client.java:423)
at com.amazonaws.services.s3.AmazonS3Client$PutObjectStrategy.invokeServiceCall(AmazonS3Client.java:6639)
at com.amazonaws.services.s3.AmazonS3Client.uploadObject(AmazonS3Client.java:1892)
at com.amazonaws.services.s3.AmazonS3Client.putObject(AmazonS3Client.java:1852)
at nextflow.cloud.aws.nio.S3OutputStream.putObject(S3OutputStream.java:636)
... 32 common frames omitted
Dec-28 13:52:05.072 [main] DEBUG nextflow.cache.CacheDB - Closing CacheDB done
Dec-28 13:52:05.081 [main] INFO org.pf4j.AbstractPluginManager - Stop plugin 'nf-amazon2.9.2'
Dec-28 13:52:05.081 [main] DEBUG nextflow.plugin.BasePlugin - Plugin stopped nf-amazon
Dec-28 13:52:05.081 [main] INFO org.pf4j.AbstractPluginManager - Stop plugin 'nf-schema2.1.1'
Dec-28 13:52:05.081 [main] DEBUG nextflow.plugin.BasePlugin - Plugin stopped nf-schema
Dec-28 13:52:05.083 [main] DEBUG nextflow.script.ScriptRunner - > Execution complete -- Goodbye
(END)

```