

EC2 Department Tag Updater – Task3



Task Description

An organisation has multiple EC2 instances running in a VPC on AWS. Each instance has multiple tags like “**Department**” and “**Hostname**” associated with it. The value of the Department tag is one of: **Frontend**, **Backend**, **DevOps**, **QA**, **ITOps**, etc.

The organisation has requested you to change the Department tags of a few servers and has shared a CSV file with the old and new values for the "Hostname".

Sample CSV:

Hostname	CurrentDepartment	NewDepartment
webserver01	Backend	Frontend
webserver02	Frontend	Frontend
database04	QA	Backend
ansible	DevOps	Backend
scanner		DevOps
activedirectory02	ITOps	ITOps
database03	Frontend	Backend
jenkins		DevOps



Objective

Create a script that updates the **Department** tag of EC2 instances by reading the Hostname and tag values from a CSV file. The script should:

- Search for EC2 instances by their **Hostname** tag.
- Check if the **Department** tag matches the expected current value (if provided).
- Update the tag with the new department if conditions are met.
- Skip mismatches and handle missing instances gracefully.

How to Run

Prerequisites

- Python 3.x
 - `boto3` installed (`pip install boto3`)
 - AWS credentials configured using:
 - AWS CLI (`aws configure`) or
 - Environment variables
 - A CSV file named `update_tags.csv` present in the working directory.
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Expected Outcome

- Script reads the CSV and updates the `Department` tag for all matched EC2 instances.
 - Logs:
 - Successfully updated instances
 - Skipped instances (due to tag mismatch)
 - Instances not found
 - Summary Report at the end
-

Demonstration

Step 1: Before Running the Script

Example EC2 Tags:

Hostname: webserver01

Department: Backend

EC2 > Instances

Dashboard
EC2 Global View
Events

▼ Instances

Instances

Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

▼ Images

AMIs
AMI Catalog

▼ Elastic Block Store

Volumes
Snapshots
Lifecycle Manager

▼ Network & Security

Security Groups

Successfully initiated termination (deletion) of i-0bd58e1eab06ea101,i-0578a6799f4721655,i-023f156c8d83755f4,i-0d56e2209991b627b,i-007ff352ca25f514a,i-0a5311bf60b008dd7,i-0c3bb314a91befcd4,i-00e6bac5f2f1881ff

Instances (1/16) info

Last updated 1 minute ago

Connect Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive) All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	database04	i-018a2089bc30c1eca	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input type="checkbox"/>	database03	i-0181cea985a6d4712	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input checked="" type="checkbox"/>	webserver01	i-04e6e5f25c4676606	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input type="checkbox"/>	scanner	i-0d1e5860a8318941c	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input type="checkbox"/>	ansible	i-00d5ebcea816cd340	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input type="checkbox"/>	ansible	i-0bd58e1eab06ea101	Terminated	t2.micro	-	View alarms +	us-east-1b
<input type="checkbox"/>	scanner	i-0578a6799f4721655	Terminated	t2.micro	-	View alarms +	us-east-1b
<input type="checkbox"/>	database04	i-023f156c8d83755f4	Terminated	t2.micro	-	View alarms +	us-east-1b

i-04e6e5f25c4676606 (webserver01)

Key	Value
Name	webserver01
Hostname	webserver01
Department	Backend

Step 2: Running the Script

python3 updateScript.py

Step 3: Sample Output

```
rashimittal@Rashis-MacBook-Air task3 % python3 updateScript.py
Starting Department tag update process...

Processing Hostname: webserver01
Updated i-0e896c232a6fc9e2b - Department -> Frontend
Processing Hostname: webserver02
Updated i-0fae4077d6e7753a4 - Department -> Frontend
Processing Hostname: database04
Updated i-0bef440667559682b - Department -> Backend
Processing Hostname: ansible
Updated i-097dcfe631d6431b4 - Department -> Backend
Processing Hostname: scanner
Updated i-0c6b3dd699877b007 - Department -> Devops
Processing Hostname: activedirectory02
Updated i-029668b2ec6e55d75 - Department -> ITops
Processing Hostname: database03
Updated i-048caf6332462f392 - Department -> Backend
Processing Hostname: jenkins
Updated i-0e2f37cb9abc757c2 - Department -> Devops

Summary Report
✓ Updated: 8
✗ Failed: 0
? Not Found: 0
✓ Tag update process completed.
```

After running the Scripts the Tags have been changed.

Instances (1/8) Info

Last updated 2 minutes ago

Connect

Instance state

Actions

Launch instances

Running

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	jenkins	i-0e2f37cb9abc757c2	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	ansible	i-097dcfe631d6431b4	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	scanner	i-0c6b3dd699877b007	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input checked="" type="checkbox"/>	webserver01	i-0e896c232a6fc9e2b	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	activedirector...	i-029668b2ec6e55d75	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	database04	i-0bef440667559682b	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	webserver02	i-0fae4077d6e7753a4	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	database03	i-048caf6332462f392	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b

i-0e896c232a6fc9e2b (webserver01)

Key	Value
Department	Frontend
Name	webserver01
Hostname	webserver01