

# Experiment 5

## Automation and Optimization with Amazon S3

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**Aim :** Automate Files backup to aws S3 bucket on Linux machine.

### Procedure :

Steps:

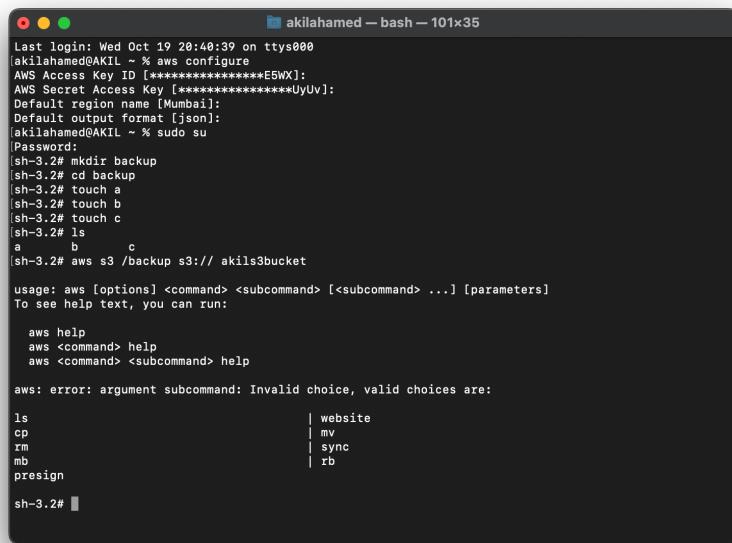
1. Create a S3 bucket.
2. Create a EC2 instance.
3. Give EC2 instance Role to access S3.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and Elastic Block Store. The main content area displays a table titled 'Instances (1) Info'. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IP. One row is shown for an instance named 'akilec2instance' with the ID 'i-06514be42e65ac5a9', which is 'Running', an 't2.micro' type, has a green status check, no alarms, and is located in 'ap-south-1b'. At the bottom of the main area, there's a modal window titled 'Select an instance'.

(or you may also grant access to your local linux machine using aws configure cmd and entering your IAM user credentials over there)

4. Connect to your EC2 instance CLI.
5. Type “sudo su” to give access root directory.
6. Create a directory “backup”. Type: mkdir backup
7. Go inside the “backup” directory.
8. Make some test files.

Type : touch a



```
akilahamed@AKIL ~ % aws configure
[*****] Access Key ID [*****E5NX];
AWS Secret Access Key [*****JyUv];
Default region name [Mumbai];
Default output format [json];
akilahamed@AKIL ~ % sudo su
Password:
sh-3.2# mkdir backup
sh-3.2# cd backup
sh-3.2# touch a
sh-3.2# touch b
sh-3.2# touch c
sh-3.2# ls
a      b      c
sh-3.2# aws s3 /backup s3:// akils3bucket
usage: aws [options] <command> <subcommand> [<subcommand> ...] [parameters]
To see help text, you can run:
aws help
aws <command> help
aws <command> <subcommand> help
aws: error: argument subcommand: Invalid choice, valid choices are:
ls          | website
cp          | mv
rm          | sync
mb          | rb
presign
sh-3.2#
```

9. List Them By Cmd–ls

The screenshot shows the AWS S3 Management Console with the URL [s3.console.aws.amazon.com](https://s3.console.aws.amazon.com). The navigation bar includes links for 'Inbox (5,772)', 'ENG vs INDIA Live Streaming &...', 'S3 Management Console' (highlighted), 'EC2 Instance Connect', 'Grant an EC2 instance access t...', and 'Easy to use Online PDF editor'. The top right shows the user 'akil1010 @ 4503-6037-2724'. The main area is titled 'Upload' with a sub-section 'Info'. A note says: 'Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)'.

A dashed blue box highlights the 'Drag and drop files and folders you want to upload here, or choose Add files, or Add folders.' section. Below it, a table lists 'Files and folders (3 Total, 1.1 KB)'. The table has columns: Name, Folder, Type, and Size. The items listed are:

	Name	Folder	Type	Size
<input type="checkbox"/>	a.rtf	-	text/rtf	388.0 B
<input type="checkbox"/>	b.rtf	-	text/rtf	390.0 B
<input type="checkbox"/>	c.rtf	-	text/rtf	390.0 B

Below the table is a 'Destination' section with the text 's3://akils3bucket'. At the bottom, there are links for 'Feedback', 'Looking for language selection? Find it in the new Unified Settings', '© 2022, Amazon Internet Services Private Ltd. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

Now to sync these files of backup directory on the S3 bucket. Cmd : aws s3 sync localfilepath s3://bucketname

11. Now, we are going to create a cron job in order to automate this process. Cmd : crontab -e

Enter the cmd : cron code aws s3 sync /directory s3://bucketname

For e.g. : cron code for 1 min is \* \* \* \* \*

(you may use crontab.guru to create your own job expression) URL : <https://crontab.guru/>

```
usage: aws [options] <command> <subcommand> [<subcommand> ...] [parameters]
To see help text, you can run:
    aws help
    aws <command> help
    aws <command> <subcommand> help
aws: error: argument subcommand: Invalid choice, valid choices are:
ls                                | website
cp                                | mv
rm                                | sync
mb                                | rb
presign
[root@ip-172-31-0-253 backup]# pwd
/home/ec2-user/backup
[root@ip-172-31-0-253 backup]# aws s3 sync /home/ec2-user/backup s3://automate-uploadd
upload: ./a to s3://automate-uploadd/a
upload: ./c to s3://automate-uploadd/c
upload: ./b to s3://automate-uploadd/b
[root@ip-172-31-0-253 backup]# crontab -e
no crontab for root - using an empty one
[1]+  Stopped                  crontab -e
[root@ip-172-31-0-253 backup]# cron code aws s3 sync /home/ec2-user/backup s3://automate-uploadd
bash: cron: command not found
[root@ip-172-31-0-253 backup]# cron code aws s3 sync /backup s3://automate-uploadd
bash: cron: command not found
[root@ip-172-31-0-253 backup]#
```

## Restart the Crond service

Run “systemctl restart/stop/start cornd.service” to restart/stop/start your cron jobs respectively.

13.Now, we are going to create some test files to check if they are uploaded every minute or not.

14.File d and file e have been updated.

The screenshot shows the AWS S3 console interface. On the left, a sidebar navigation includes 'Buckets' (selected), 'Access Points', 'Object Lambda Access Points', 'Multi-Region Access Points', 'Batch Operations', and 'Access analyzer for S3'. Below this is a section for 'Block Public Access settings for this account'. Under 'Storage Lens', there are links for 'Dashboards' and 'AWS Organizations settings'. A 'Feature spotlight' section is present, along with a link to 'AWS Marketplace for S3'. The main content area is titled 'automate-upload' and shows 'Objects (6)'. A table lists the objects: '3' (Type: -, Last modified: Oct 12, 2022, 10:52:03 UTC+05:30, Size: 0 B, Storage class: Standard); 'a' (Type: -, Last modified: Oct 12, 2022, 10:37:37 UTC+05:30, Size: 0 B, Storage class: Standard); 'b' (Type: -, Last modified: Oct 12, 2022, 10:37:37 UTC+05:30, Size: 0 B, Storage class: Standard); 'c' (Type: -, Last modified: Oct 12, 2022, 10:52:03 UTC+05:30, Size: 0 B, Storage class: Standard); 'd' (Type: -, Last modified: Oct 12, 2022, 10:52:03 UTC+05:30, Size: 0 B, Storage class: Standard); and 'e' (Type: -, Last modified: Oct 12, 2022, 10:52:03 UTC+05:30, Size: 0 B, Storage class: Standard). Action buttons include 'Upload' (highlighted in orange), 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', and 'Create folder'. A search bar at the top right says 'Find objects by prefix'.

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	3	-	October 12, 2022, 10:52:03 (UTC+05:30)	0 B	Standard
<input type="checkbox"/>	a	-	October 12, 2022, 10:37:37 (UTC+05:30)	0 B	Standard
<input type="checkbox"/>	b	-	October 12, 2022, 10:37:37 (UTC+05:30)	0 B	Standard
<input type="checkbox"/>	c	-	October 12, 2022, 10:52:03 (UTC+05:30)	0 B	Standard
<input type="checkbox"/>	d	-	October 12, 2022, 10:52:03 (UTC+05:30)	0 B	Standard
<input type="checkbox"/>	e	-	October 12, 2022, 10:52:03 (UTC+05:30)	0 B	Standard

**Result:** We have successfully automated our local files/directory backup on Amazon S3 buckets using crontab.