# **AWS Cloud Data Engineer**

Major project report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

in

# **Computer Science and Engineering**

By Ketan Mittal (181361)



Department of Computer Science & Engineering and Information Technology

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# Acknowledgement

Firstly, I express my heartiest thanks and gratefulness to Almighty God for His divine blessing makes it possible to complete the project work successfully.

I am really grateful and wish my profound indebtedness to Supervisor Dr. Ekta Gandotra, Assistant Professor (SG), Department of CSE Jaypee University of Information Technology, Wakhnaghat.

Deep Knowledge and keen interest of my supervisor in the field of "Data Science" to carry out this project. Her endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, and reading many inferior drafts and correcting them at all stages have made it possible to complete this project.

I would like to express my heartiest gratitude to my supervisor, for her kind help to finish my project.

I would also generously welcome each one of those individuals who have helped me straightforwardly or in a roundabout way in making this project a win. In this unique situation, I might want to thank the various staff individuals, both educating and non-instructing, which have developed their convenient help and facilitated my undertaking.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

Ketan Mittal (181361)

# **TABLE OF CONTENT**

Con	tent	Page No.
Ackı	nowledgement	2
Cano	didate's Declaration	5
Proje	ect Report Undertaking	6
Abst	ract	7
Cha	pter 1 [ Introduction ]	8
1.1 Cognizant Internship program		9
1.2 Objectives		10
1.3 Criteria for Behavioral evaluation		10
1.4 R	Results	11
Cha	pter 2 [ Internship Program Sequence ]	
2.1	Stage 1 - Functional Testing Week 1,2,3	12
2.2	Stage 2 - Python and SQL Week 4,5,6	13
2.3	AWS Cloud Computing Week - 6,7,8(continuity) Ultimate AWS Certified Solutions Architect Associate2021	14
2.4	Behavioral Evaluation	15
2.5	Integrated Capability Test	15

Cha	pter 3 [ Python ]	
3.1	Files and Exceptions	16
3.2	Data Visualization Generating data Downloading data	19
3.3	SQL	23
Cha	pter 4 [ AWS Cloud computing ]	
4.1	Who is using cloud computing Signup for AWS	24
4.2	Amazon EC2 Step up and running Basics Networking and security Storage Working with Windows Instance	25
4.3	What is amazon S3? How Amazon S3 works	28
4.4 30	Getting started with Amazon S3	
	Prerequisites	
Cha	apter 5 [ Conclusions ]	
5.1 C	32	
Refe	erences	33

## Candidate's Declaration

I hereby declare that the work presented in this report entitled internship training report in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering/Information Technology** submitted in the Department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from August 2015 to December 2015 under the supervision of (Supervisor name) (Designation and Department name). The matter embodied in the report has not been submitted for the award of any other degree or diploma.

(Student Signature) **Student Name-** Ketan Mittal **Roll no.**- 181361

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

**Supervisor Name**: Dr. Ekta Gandotra **Designation**: Assistant Professor (SG)

**Department name:** CSE

**Dated:** 26-05-2022

**Supervisor Name:** Grace Esther **Designation:** Programmer

**Department Name:** Human Resource-Gen C

Dated:26-05-2022

# PROJECT REPORT UNDERTAKING

I, Ketan Mittal, Roll No. 181361, Branch - Computer Science and Engineering are doing my internship with Cognizant from 03-03-22 to 10-06-22.

As per procedure, I have to submit my project report to the university related to the work that I have done during this internship.

I have compiled my project report. But due to the COVID-19 situation, my project mentor in the company is not able to sign my project report.

So, I hereby declare that the project report is fully designed/developed by me and no part of the work is borrowed or purchased from any agency. And I'll produce a certificate/document of my internship completion with the company to TnP Cell whenever the COVID-19 situation gets normal.

Signature

Name: Ketan Mittal

Roll No.: 181361

Date: 26-05-2022

# **ABSTRACT**

Cognizant Internship provides all Campus selects with the opportunity to gain business readiness prior to onboarding with Cognizant. Each intern is required to commit a certain number of training hours across core skills, hands-on experience, and behavioural learning. Additionally, during the project phase, you will also work on business-aligned use cases as part of the project component, with training to become more technologically competent.

Training will be done from Monday through Friday from 9 am to 7 pm (IST) including 1 hour lunch break. Interns can use Saturdays to catch up on the pending learning and assignments provided.

Our internship program is aligned to the curriculum track and the duration ranges from 3 to 6 months. The internship duration ranges from 3 to 6 months based on your core skill training.

# **CHAPTER 1**

# Introduction

•Cognizant provides **IT consulting business process outsourcing services** for industries including banking, health care, manufacturing, media, and entertainment.

•Cognizant is an American multinational information technology services and consulting company. Cognizant is organized into several verticals and horizontal units. The vertical units focus on specific industries such as Banking & Financial Services, Insurance, Healthcare, Manufacturing and Retail. The horizontals focus on specific technologies or process areas such as Analytics, mobile computing, BPO and Testing.

An intern will undergo a learning curriculum based on the learning track assigned. The learning path will include in-depth sessions, hands-on exercises and projectwork. There also will be a series of webinars, quizzes, SME interactions, mentor connects, code challenges etc. to accelerate your learning.

## 1.1 Cognizant Internship program

Cognizant Internship provides all Campus selects with the opportunity to gain business readiness prior to onboarding with Cognizant. Each intern is required to commit a certain number of training hours across core skills, hands-on experience, and behavioural learning. Additionally, during the project phase, you will also work on business-aligned use cases as part of the project component, with training to become more technologically competent.

Milestone will be based on a learning track assigned to you with components like

- 1. Continuous learning with hands-on exercises
- 2. Assess type 1 wit code challenges
- 3. Assess type 2 with knowledge and skill-based assessments
- 4. Business Aligned Project
- 5. Business/ SME feedback Candidates are required to spend Monday to Friday 9 am to 7 pm (IST) for a period of 3 to 6 months which has a dependency on the track assigned.

An intern will undergo a learning curriculum as per the learning path assigned. The learning path will include in-depth sessions, hands-on exercises and project work. There will also be a series of webinars, quizzes, SME interactions, mentor connects, code challenges, assessments etc. to accelerate learning. The performance during the Internship would be monitored through learning progress and continuous evaluations.

# 1.2 Objectives

The objectives of Cognizant Solution Technologies are:

The overall objective is to focus the activities on its specialized services and to become a leader in this niche in the country.

Growth - To expand the business at a challenging and manageable rate, serving the market with innovation and adaptability.

We expect you to

- 1. Complete your learning/assessment's/Hands-on as per the given schedule.
- 2. Get sufficiently equipped to deliver quality work.
- 3. Adhere to the organisation's policies and complete the given assignment(s) on time.

## 1.3 Criteria for Behavioral evaluation

Behavioral evaluation is based on the following parameters:

- 1. Email etiquette
- 2. Problem-solving and critical thinking
- 3. Open to learn and open to change
- 4. Public speaking
- 5. Interview skills.

#### 1.4 Results

Cognizant Internship Program is a great platform to get a head start in your career. This program offers you the one-of-a-kind opportunity to learn business-ready skills. Other advantages include working on a business case and receiving a stipend. However, we believe that business-focused learning is the most important component that should motivate you to join our internship program. Below are a few benefits for your understanding.

- a. Acts as a Launchpad to the Corporate world
- b. Work on business-aligned use cases
- c. Learn and Work with Subject Matter Experts
- d. Opportunity to interact with Leaders
- e. Milestone based stipend

f.Participate in technical (hackathons, code challenges) and fun events

# CHAPTER - 2 INTERNSHIP PROGRAM SEQUENCE

# 2.1 Stage 1 – Functional Testing

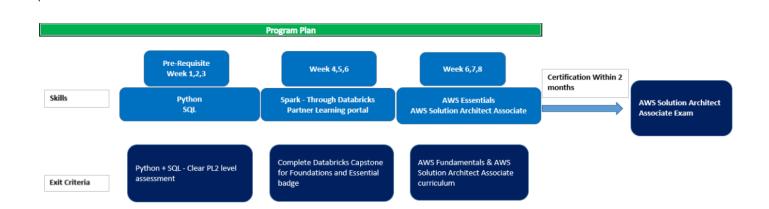
I was inducted as a team member in my cohort then, this functional testing program started, this testing fundamentals consist of a single week of training in which we have to learn various techniques and do various hands-on and assessment during this functional testing sequence.

#### Week 1, 2, 3:

In this week we all have to complete Udemy courses provided by the cognizant during the internship, complete the hands-on, assessment(important), and also complete the integrated capability test also.

In this week 1, we learned the designing part in which we have to test the applications.

After we completed the online Udemy courses, we did the hands-on and completing the hands-on is mandatory for every intern then, after completing the hands-on we use to give the assessment, a small test whose marks were taken into account, for the calculation of the final overall performance.



# 2.2 Stage 2- Python and SQL

## Week 4, 5,6:

In this week we all have to complete Udemy courses provided by the cognizant during the internship, complete the hands-on, assessment(important), and complete the integrated capability test also.

In this week 2, we learned the core Python, SQL, and AWS Cloud Computing parts from scratch with the help of the Udemy courses and trainer guide queries.

After we completed the online Udemy courses, we did the hands-on and completing the hands-on is mandatory for every intern and then, after completing the hands-on we used to give an assessment, a small test whose marks were taken into account, for the calculation of the final overall performance.

# **Python**

Python for Beginners: Learn Python Programming (Python 3)

Python for Programmers

The Python Bible: Everything You Need to Program in Python

100 Python Exercises: Evaluate and Improve Your Skills

Data Visualization with Python for Beginners

Data Analysis with Pandas and Python
Interactive Python Dashboards with Plotly and Dash
Complete Course on Data Visualization, Matplotlib and Python

## **SQL**

Use SQL to query a database - Use SQL to perform data analysis - Be comfortable putting SQL and PostgreSQL on their resume

This course bundle includes self-paced courses designed for Databricks Partners in preparation of completing the Developer Foundations Capstones successfully and earning the Developer Foundations Badge.

This course bundle includes self-paced courses designed for Databricks Partners in preparation of completing the Developer Essentials Capstones successfully and earning the Developer Essentials Badge.

# **2.3 Week-6,7,8(continuity)**

# **AWS Cloud Computing**

#### **AWS Essentials - Hands-on Learning**

Students will get a complete idea about various services in the AWS platform and how to use them.
- Grasp the fundamentals of AWS including Amazon Simple Storage Service (S3), Amazon Elastic Cloud Compute (EC2), Amazon Virtual Private Cloud (VPC), AWS databases (RDS and others) and various application services. - This course provides a good foundation for Associate level certification and covers most of the exam topics in depth.

#### Ultimate AWS Certified Solutions Architect Associate 2021

Pass the AWS Certified Solutions Architect Associate Certification (SAA-C01) - All 500+ slides available as downloadable PDF - Perform Real-World Solution Architecture on AWS - Learn AWS Fundamentals (EC2, ELB, ASG, RDS, ElastiCache, S3) - Learn Serverless Fundamentals (Lambda, DynamoDB, Cognito, API Gateway) - Analyze 10+ Solution Architectures (traditional & serverless) - Understand the Well-Architected Framework, Disaster Recovery - Master all the differences of Databases on AWS - Secure your entire AWS Cloud using KMS, IAM Policies & SSM.

**AWS Solutions Architect Associate (SAA-C02) Certification Preparation for AWS**In this learning path, you will learn about AWS Solutions Architect Associate (SAA-C02)
Certification Preparation for AWS

# 2.4 Behavioural evaluation:

#### Behavioural evaluation is based on the following parameters

- 1. Email etiquette
- 2. Problem-solving and critical thinking
- 3. Open to learn and open to change
- 4. Public speaking
- 5. Interview skills.

# 2.5 Integrated Capability Test

After completing a few technologies, we had an Integrated capability test, in which we combine all knowledge that we learned in the past Python, and SQL to try to solve the Hackerank question.

The integrated capability test is for 2 hours, which includes all the things that we had learned till now.

It consists of a question and requires full knowledge of all the technologies and integration to solve the coding question.

It contains a huge weightage in the overall performance, the overall performance is calculated as the average of the assessment, Integrated capability test, Business unit score, and Project score.

We get two attempts to give the integrated capability test, if we get failed in the first attempt then, we get a second attempt to give the integrated capability test.

`

#### **CHAPTER - 3**

#### **PYTHON**

# 3.1 Files and exceptions

You learned to read an entire file at once and read through a file's contents one line at a time. You learned to write to a file and append text to the end of a file. You read about exceptions and how to handle the exceptions you're likely to see in your programs. Finally, you learned how to store Python data structures so you can save information your users provide, preventing them from having to start over each time they run a program.

```
import pandas as pd
diamonds = pd.read_csv('https://raw.githubusercontent.com/mwaskom/seaborn-data/master/diamonds.csv
print(diamonds)
                   cut color clarity depth
                                           table price
      carat
                                                         3.95
       0.23
                 Ideal
                                SI2
                                      61.5
                                            55.0
                                                    326
                                                               3.98
              Premium
1
       0.21
                          Ε
                                SI1
                                      59.8
                                            61.0
                                                    326 3.89
                                                              3.84
2
       0.23
                 Good
                         Е
                                VS1
                                      56.9
                                            65.0
                                                    327
                                                        4.05
                                                              4.07
                                                                    2.31
3
       0.29
              Premium
                         I
                                VS2
                                      62.4
                                            58.0
                                                    334
                                                        4.20
                                                              4.23
                                                                    2.63
                                            58.0
                                                    335
                                                        4.34
                                                              4.35
4
       0.31
                  Good
                          J
                                SI2
                                      63.3
       0.72
                                SI1
                                      60.8
                                            57.0
                                                   2757
                                                         5.75
                                                              5.76
53935
                 Ideal
                        D
53936
       0.72
                          D
                                      63.1
                                            55.0
                                                   2757
                                                        5.69
                 Good
                                SI1
                                                              5.75
                          D
                                SI1
                                                              5.68
53937
       0.70 Very Good
                                      62.8
                                            60.0
                                                   2757 5.66
                                                                    3.56
53938
       0.86
             Premium
                          Н
                                SI2
                                      61.0
                                            58.0
                                                   2757
                                                        6.15
                                                              6.12
                                                                    3.74
53939
       0.75
                 Ideal
                          D
                                SI2
                                      62.2
                                            55.0
                                                   2757
                                                        5.83
                                                              5.87
[53940 rows x 10 columns]
#2(1.)
print("First five rows:")
print(diamonds.head())
First five rows:
             cut color clarity depth table price
  carat
                                       55.0
   0.23
           Ideal E
                       SI2
                                61.5
                                              326
                                                   3.95
                                                         3.98
                                                               2.43
   0.21 Premium
                    Ε
                          SI1
                                59.8
                                       61.0
                                              326
                                                   3.89
                                                         3.84
                                                               2.31
                   Е
                          VS1
2
   0.23
                                56.9
                                       65.0
                                              327
                                                  4.05
                                                        4.07
                                                               2.31
          Good
   0.29 Premium
                          VS2
                                62.4
                                       58.0
                                              334
                                                  4.20
                                                        4.23
                                                               2.63
   0.31
            Good
                          SI2
                                63.3 58.0
                                              335 4.34
                                                        4.35
```

```
print(diamonds['cut'])
      0
                  Ideal
      1
                Premium
      2
                   Good
                Premium
                   Good
      53935
                 Ideal
      53936
                   Good
              Very Good
      53937
      53938
                Premium
      53939
                  Ideal
      Name: cut, Length: 53940, dtype: object
[11]: #2(4.)
      diamonds['Quality color'] = diamonds.cut + ', ' + diamonds.color
      print(diamonds.head())
                   cut color clarity depth table price
         carat
                                                            X
                                                                       Z
      0
        0.23
                                            55.0
                                                   326 3.95 3.98 2.43
                 Ideal E
                               SI2
                                      61.5
                                       59.8
      1
         0.21 Premium
                           Ε
                                 SI1
                                              61.0
                                                     326 3.89 3.84 2.31
                                                     327 4.05 4.07 2.31
334 4.20 4.23 2.63
         0.23
                 Good
                           Ε
                                 VS1
                                       56.9
                                              65.0
         0.29 Premium
                           Ι
                                 VS2
                                       62.4
                                             58.0
                                            58.0
                                                     335 4.34 4.35 2.75
         0.31
                  Good
                           J
                                 SI2
                                       63.3
        Quality color
      0
            Ideal, E
          Premium, E
      1
      2
            Good, E
      3
         Premium, I
            Good, J
      4
```

# 3.2 Data visualization

# Generating data

#17

You learned to create simple plots with matplotlib, and you saw how to use a scatter plot to explore random walks. You learned to create a histogram with Pygal and how to use a histogram to explore the results of rolling dice of different sizes. Generating your own data sets with code is an interesting and powerful way to model and explore a wide variety of real-world situations. As you continue to work through the data visualization projects that follow, keep an eye out for situations you might be able to model with code. Look at the visualizations you see in news media, and see if you can identify those that were generated using methods similar to the ones you're learning in these projects.

```
print("Diamonds where length>5, width>5 and depth>5:")
 result = diamonds[(diamonds.x>5) & (diamonds.y>5) & (diamonds.z>5)]
 print(result.head())
Diamonds where length>5, width>5 and depth>5:
        carat cut color clarity depth table price
                                                                5083 7.34 7.28 5.12
11778 1.83 Fair J I1 70.0 58.0
11778 1.83 Fair J 11 70.0 58.0 5083 7.34 7.28 5.12 13002 2.14 Fair J 11 69.4 57.0 5405 7.74 7.70 5.36 13118 2.15 Fair J 11 65.5 57.0 5430 8.01 7.95 5.23 13562 1.96 Fair F 11 66.6 60.0 5554 7.59 7.56 5.04 13757 2.22 Fair J 11 66.7 56.0 5607 8.04 8.02 5.36
 #18
 print("Diamonds that are either Premium or Ideal:")
 result = diamonds[(diamonds.cut == 'Premium') | (diamonds.cut == 'Ideal')]
 print(result.head())
Diamonds that are either Premium or Ideal:
    carat cut color clarity depth table price
      0.23 Ideal E
                                     SI2 61.5 55.0 326 3.95 3.98 2.43
1 0.21 Premium E SI1 59.8 61.0 326 3.89 3.84 2.31 3 0.29 Premium I VS2 62.4 58.0 334 4.20 4.23 2.63 11 0.23 Ideal J VS1 62.8 56.0 340 3.93 3.90 2.46 12 0.22 Premium F SI1 60.4 61.0 342 3.88 3.84 2.33
```

```
In [34]: #21
          print("Subset of 3 rows from diamonds DataFrame:")
          result = pd.read_csv('http://bit.ly/uforeports', nrows=3)
          print(result.head())
         Subset of 3 rows from diamonds DataFrame:
                   City Colors Reported Shape Reported State
                                                                            Time
                                           TRIANGLE NY 6/1/1930 22:00
OTHER NJ 6/30/1930 20:00
                 Ithaca
                                     NaN
         1 Willingboro
                                     NaN
                                                   OVAL CO 2/15/1931 14:00
               Holvoke
                                     NaN
In [35]:
          print("Iterate through diamonds DataFrame:")
          for index, row in diamonds.iterrows():
              print(index, row.carat, row.cut, row.color, row.price)
         Iterate through diamonds DataFrame:
         0 0.23 Ideal E 326
         1 0.21 Premium E 326
         2 0.23 Good E 327
         3 0.29 Premium I 334
         4 0.31 Good J 335
         5 0.24 Very Good J 336
         6 0.24 Very Good I 336
         7 0.26 Very Good H 337
         8 0.22 Fair E 337
         9 0.23 Very Good H 338
         10 0.3 Good J 339
         11 0.23 Ideal J 340
         12 0.22 Premium F 342
         13 0.31 Ideal J 344
```

# **Downloading data**

You learned how to process CSV and JSON files, and extract the data you want to focus on. Using historical weather data, you learned more about working with matplotlib, including how to use the DateTime module and how to plot multiple data series on one chart. You learned to plot country data on a world map in Pygal and to style Pygal maps and charts. As you gain experience with CSV and JSON files, you'll be able to process almost any data you want to analyze. Most online data sets can be downloaded in either or both of these formats. From working with these formats, you'll be able to learn other data formats as well.

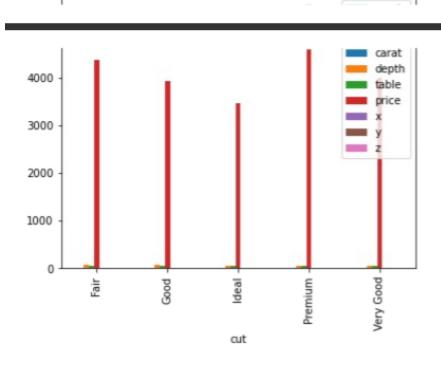
```
Count, minimum, maximum price for each cut of diamonds DataFrame:
          count min
                        max
cut
Fair
                337 18574
           1610
Good
           4906
                      18788
                327
Ideal
          21551
                326
                     18806
Premium
          13791
                326
                      18823
Very Good 12082 336
                     18818
```

```
#30

print("Side-by-side bar plot of the diamonds DataFrame:")
diamonds.groupby('cut').mean().plot(kind='bar')
```

Side-by-side bar plot of the diamonds DataFrame:

<AxesSubplot:xlabel='cut'>



```
#2(14.)

diamonds = pd.read_csv('https://raw.githubusercontent.com/mwaskom/seaborn-data/master/diamonds.csv')
print("\nSort the entire diamonds DataFrame by the 'carat' Series in ascending order")
result = diamonds.sort_values('carat')
print(result)
print("\nSort the entire diamonds DataFrame by the 'carat' Series in descending order")
result = diamonds.sort_values('carat', ascending=False)
print(result)
```

```
Sort the entire diamonds DataFrame by the 'carat' Series in ascending order
               cut color clarity depth table price
      carat
      0.20 Premium E VS2 61.1
                                            59.0
                                                    367
                                                          3.81
                                                                3.77 2.33
3.71 2.33
3.84 2.30
                        D
F
       0.20
              Ideal
                               VS2
                                             57.0
31597
                                      61.5
                                                     367
                                                         3.01
3.73
                                                          3.81
31596
       0.20 Premium
                               VS2
                                     62.6
                                             59.0
                                                     367
31595 0.20
              Ideal
                        E
                               VS2
                                    59.7
                                             55.0
                                                     367
                                                         3.86
31594 0.20 Premium E
                               VS2 59.7
                                                         3.84
                                                                3.80 2.28
                                            62.0
                                                    367
       4.01 Premium J
4.01 Premium I
4.13 Fair H
4.50 Fair J
                              I1 62.5
I1 61.0
I1 64.8
I1 65.8
25999
                                             62.0 15223 10.02
                                                                9.94 6.24
25998
                                            61.0 15223 10.14 10.10 6.17
61.0 17329 10.00 9.85 6.43
27130
                                             58.0 18531 10.23 10.16 6.72
27630
                               I1 65.5 59.0 18018 10.74 10.54 6.98
                Fair
27415 5.01
                        J
```

[53940 rows x 10 columns]

# **3.3 SQL**

## Maximum discount product

```
SELECT category, product_id, discount

from (
SELECT * ,
dense_rank() over(partition by category order by discount desc,
product_id) as rnk

from product
) as pd
where pd.rnk=1
```

# Weather department statics

```
SELECT S.name , C.name , avg(W.humidity) ,

CASE

WHEN 0<=avg(W.temperature) and avg(W.temperature)

15 THEN "COLD"

WHEN 15<=avg(W.temperature) and avg(W.temperature)

30 THEN "WARM"

WHEN 30<=avg(W.temperature) THEN "HOT"

END

from state_weather_stats W

JOIN state S ON S.id = W.state_id

JOIN country C ON C.id = S.country_id

where record_date like "2018-11-%"

GROUP BY W.state_id

ORDER BY avg(W.humidity) DESC , S.name ASC;
```

#### **CHAPTER - 4**

# **AWS Cloud computing**

#### 4.1 Who is using cloud computing?

Data backup, disaster recovery, email, virtual desktops, software development and testing, big data analytics, and customer-facing web apps are just a few of the use cases that organisations of all sizes and industries are embracing the cloud for. Healthcare organisations, for example, are utilising the cloud to produce more individualised treatments for patients. The cloud is being used by financial services businesses to power real-time fraud detection and prevention. The cloud is also being used by video game developers to deliver online games to millions of players all over the world.

#### Sign up for AWS

When you join Amazon Web Services, you're instantly signed up for all of the company's services, including Amazon EC2. You are only charged for the services you utilise.

You just pay for what you use with Amazon EC2. You can get started with Amazon EC2 for free if you are a new AWS user. See AWS Free Tier for further details.

If you already have an AWS account, go to the next step. If you don't already have an AWS account, follow the stepsybelow to establish one.

To create an AWS account

- 1. Open https://portal.aws.amazon.com/billing/signup.
- 2 Follow the online instructions

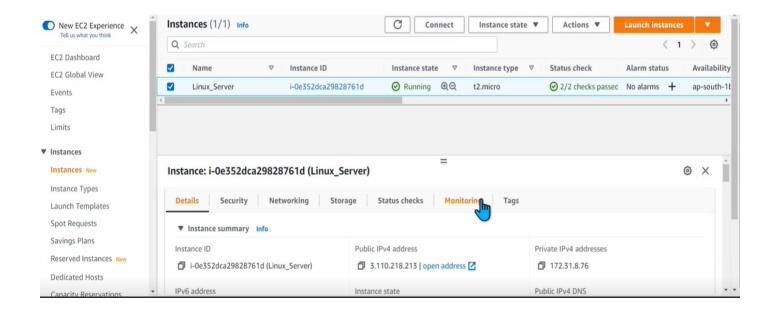
Part of the sign-up procedure involves receiving a phone call and entering a verification code on the phone keypad.

- 3. Create a key pair
- 4. Create a security group
- 5. Get started with Amazon EC2 Windows instances

```
| Security | Security
```

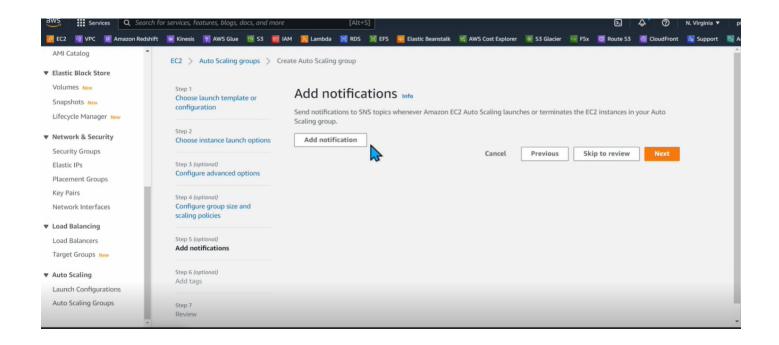
#### 4.2 Amazon EC2

In the Amazon Web Services (AWS) Cloud, Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing power. Using Amazon EC2 reduces the requirement for upfront hardware investment, allowing you to create and deploy apps more quickly. Amazon EC2 allows you to create as many or as few virtual servers as you need, as well as establish security and networking and manage storage. You may scale up or down on Amazon EC2 to manage variations in demand or popularity spikes, decreasing the need to anticipate traffic.



## How to get started with Amazon EC2

To begin, you must first set up Amazon EC2. After you've completed the setup, you're ready to go on to the Amazon EC2 Get Started instruction. You may read the technical documentation if you need additional information about an Amazon EC2 function.



# Set up and running

- Set up to use Amazon EC2
- Get started with Amazon EC2 Windows instances

# **Basics**

- Amazon EC2 Windows instances
- Instance types
- Tags

# **Networking and security**

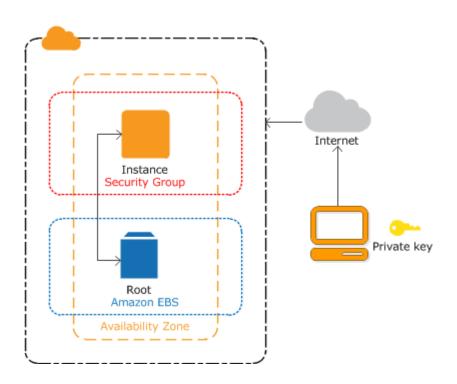
- Key pairs
- Security groups
- Elastic IP addresses
- Virtual private clouds

# Storage

- Amazon EBS
- Instance store

## Working with Windows instances

• AWS Systems Manager Run Command in the AWS Systems Manager User Guide



## 4.3 What is Amazon S3?

Amazon S3 is an object storage service with industry-leading scalability, data availability, security, and performance. Amazon S3 allows customers of all sizes and sectors to store and safeguard any amount of data for a variety of use cases, including data lakes, websites, mobile apps, backup and restore, archiving, business applications, IoT devices, and big data analytics. You may use Amazon S3's administration tools to optimise, organise, and customise data access to meet your unique business, organisational, and compliance needs.

#### How Amazon S3 works

Amazon S3 is an object storage service that stores data as objects within buckets. An object is a file and any metadata that describes the file. A bucket is a container for objects.

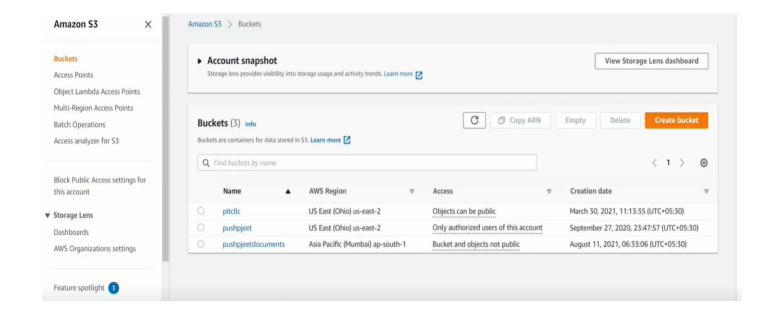
To store your data in Amazon S3, you first create a bucket and specify a bucket name and AWS Region. Then, you upload your data to that bucket as objects in Amazon S3. Each object has a key (or key name), which is the unique identifier for the object within the bucket.

S3 provides features that you can configure to support your specific use case. For example, you can use S3 Versioning to keep multiple versions of an object in the same bucket, which allows you to restore objects that are accidentally deleted or overwritten.

Buckets and the objects in them are private and can be accessed only if you explicitly grant access permissions. You can use bucket policies, AWS Identity and Access Management (IAM) policies, access control lists (ACLs), and S3 Access Points to manage access.

#### Topics

- Buckets
- Objects
- Keys
- S3 Versioning
- Version ID
- Bucket policy
- S3 Access Points
- Access control lists (ACLs)
- Regions



# 4.4 Getting started with Amazon S3

You can get started with Amazon S3 by working with buckets and objects. A bucket is a container for objects. An object is a file and any metadata that describes that file.

To store an object in Amazon S3, you create a bucket and then upload the object to the bucket. When the object is in the bucket, you can open it, download it, and move it. When you no longer need an object or a bucket, you can clean up your resources.

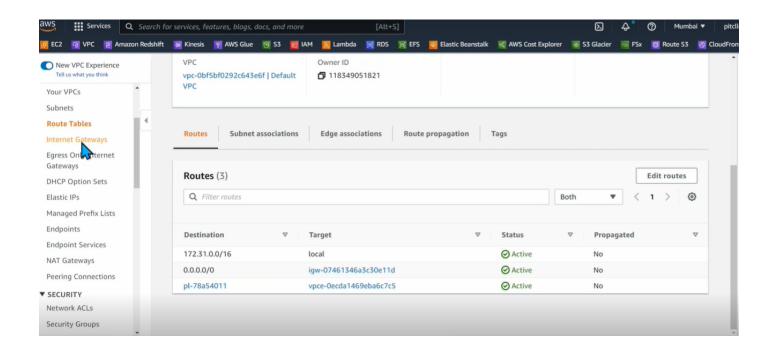
With Amazon S3, you pay only for what you use. For more information about Amazon S3 features and pricing, see Amazon S3. If you are a new Amazon S3 customer, you can get started with Amazon S3 for free. For more information, see AWS Free Tier.

## **Prerequisites**

Before you begin, confirm that you've completed the steps in Prerequisite: Setting up Amazon S3.

#### **Topics**

- Prerequisite: Setting up Amazon S3
- Step 1: Create you first S3 bucket
- Step 2: Upload an object to your bucket
- Step 3: Download an object
- Step 4: Copy your object to a folder
- Step 5: Delete your objects and bucket



#### **CHAPTER-5**

## **CONCLUSION**

I am still on the way to doing my internship with the cognizant and I have learned so much from this internship offered by Cognizant, really helped me in shaping my personality and equipping me with the knowledge of these technologies.

I like to thank in advance the coaches, mentors and trainers of cognizant who guided me through the whole journey of my internship in cognizant and solved all my doubts during the internship. The Coaches, Mentor and trainer were all of good nature and at every moment helped me when I was doing wrong and shaped me during my whole internship.

Especially my mentor gave more effort during the internship and passed our all queries to the higher authority in the company whether it was related to the reattempt of the assessment, technical issues faced in the assessment or providing extra time to complete the work.

I would highly recommend my juniors once to prepare well for the offer the cognizant and get the internship opportunity from the cognizant because cognizant is a top fortune company in the information technology field.

# **REFERENCES**

- Cognizant Hand book
- Internship experience
- Assessment
- Cognizant internship curriculum
- <a href="https://docs.aws.amazon.com/index.html">https://docs.aws.amazon.com/index.html</a>

# JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT PLAGIARISM VERIFICATION REPORT

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