

## INTERNSHIP: INTERIM PROJECT REPORT

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Dear Intern

Interim project report is an inherent component of your internship. We are enclosing a reference table of content for the interim project report.

The key objective of this report is for you to capture how far you have got in completing the internship work against milestones expected to be achieved within a specific duration and seek the mentor's feedback. Depending on the internship project and your progress (IT/Non-IT, Technical/Business Domain), you may choose to include or exclude or rename sections or leave some sections blank from the table of content mentioned below. You can also add additional sections. You can refer the project presentation to view the milestones related to your internship project. Please populate milestone# (1 / 2 / 3) and the milestone description in the interim project report based on the milestone for which you are submitting the interim project report.

You can refer the project presentation to view the milestones related to your internship project.

Internship Project Title	TNSDC RIO-125: Project -1 Developing Web Application on AWS
Name of the Company	TCS ion
Name of the Industry Mentor	Krishna Sharma
Name of the Institute	Government College of Engineering, Salem

Start Date	End Date	Total Effort (hrs.)	Project Environment	Tools used
26-04-2023	13-05-2023	67.5	Web browser (Brave), Operating System (Windows)	Amazon S3, AWS Console, EC2, VPC
Milestone #	3	Milestone:	Create instance	

### TABLE OF CONTENT

- Acknowledgements
- Objective
- Introduction / Description of Internship
- Internship Activities
- Approach / Methodology
- Assumptions
- Exceptions / Exclusions
- Charts, Table, Diagrams
- Algorithms
- Challenges & Opportunities
- Risk Vs Reward
- Reflections on the Internship
- Recommendations
- Outcome / Conclusion
- Enhancement Scope
- Link to code and executable file
- Research questions and responses

# Acknowledgements

I would like to express my sincere gratitude to the industry mentor and the entire team of TCS ION for providing me with this opportunity to learn and work on the project. I thank for their guidance and support as well as for providing necessary information regarding the project.

# Objective

The objective of this internship is to develop a web application using AWS services, such as S3, EC2, and VPC, and gain practical experience in cloud computing and web development.

# Introduction/Description of Internship

This internship involves developing a web application on AWS, which provides a reliable, scalable, secure, and highly performing infrastructure for web applications. The web application consists of a static website hosted on S3 and a dynamic website hosted on EC2. The internship aims to develop practical skills in cloud computing, web development, and project management.

# Internship Activities

The internship activities can be categorized into the following milestones:

Milestone 1: Creating the S3 Bucket

- Created an S3 bucket to store objects
- Uploaded sample objects to the bucket

Milestone 2: Configuring the S3 Bucket for Static Web Hosting

- Configured the S3 bucket to enable static web hosting
- Tested and verified the functionality of the static web hosting

Milestone 3: Creating and Configuring EC2 Instance

- Created an EC2 instance for hosting the dynamic web content
- Configured networking using VPC to ensure secure communication

# Approach / Methodology

The approach for this project is to develop a web application on AWS using a combination of different services, including AWS S3, AWS EC2 IaaS, and VPC. The project will involve creating a static website and a dynamic website, and then hosting them on AWS using the appropriate services.

The methodology involves the following steps:

- Plan the project and define the scope of work.
- Set up AWS account and create the necessary resources.
- Create an S3 bucket and store object.
- Make the bucket available to public.
- Adding public policy to S3 storage bucket.
- Starting to create IAM user for security access.
- Creating a EC2 instance using IAM security key pair.
- Creating VPC, Subnets, Internet Gateways, Route tables.

# Assumptions

To facilitate the completion of this project, we made the following assumptions:

- Basic knowledge of web development and AWS services.
- Access to an AWS account with necessary permissions.
- Availability of sample objects for uploading to the S3 bucket.
- Familiarity with networking concepts and configurations.

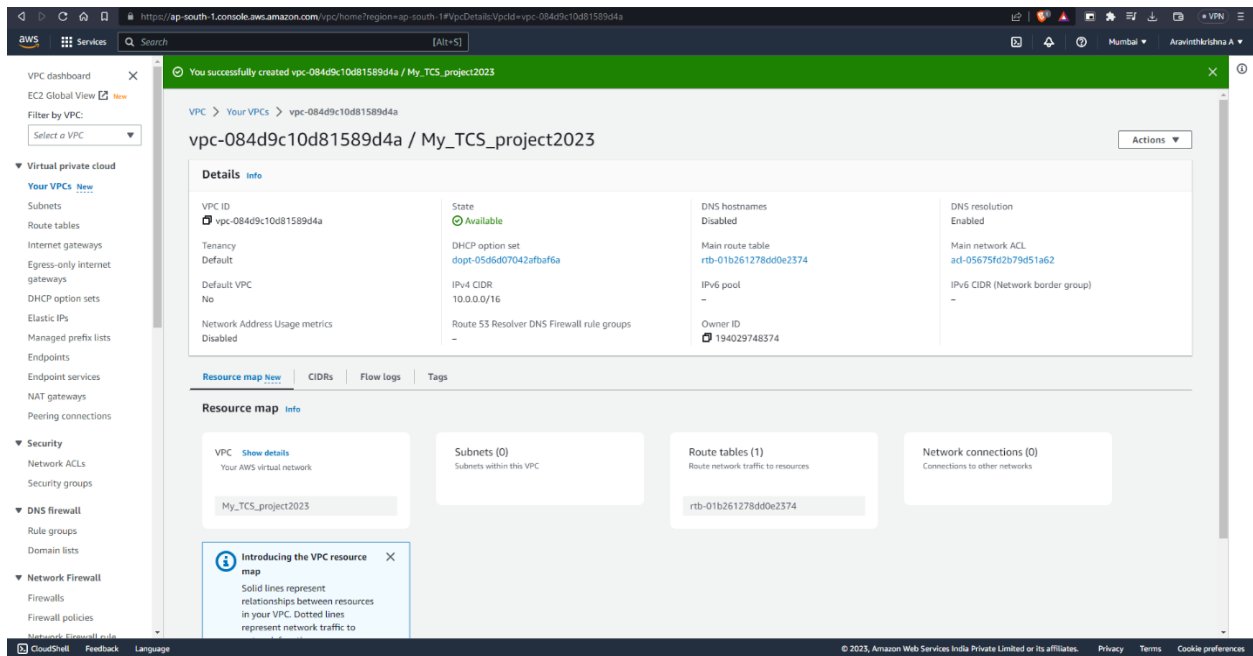
# Exceptions / Exclusions

There are a few exceptions and exclusions to note in this project:

- The project does not cover advanced configurations and optimizations of AWS services beyond the scope of the milestones.
- Security measures, such as SSL/TLS certificates and encryption, are not included in this project but should be implemented in a production environment.

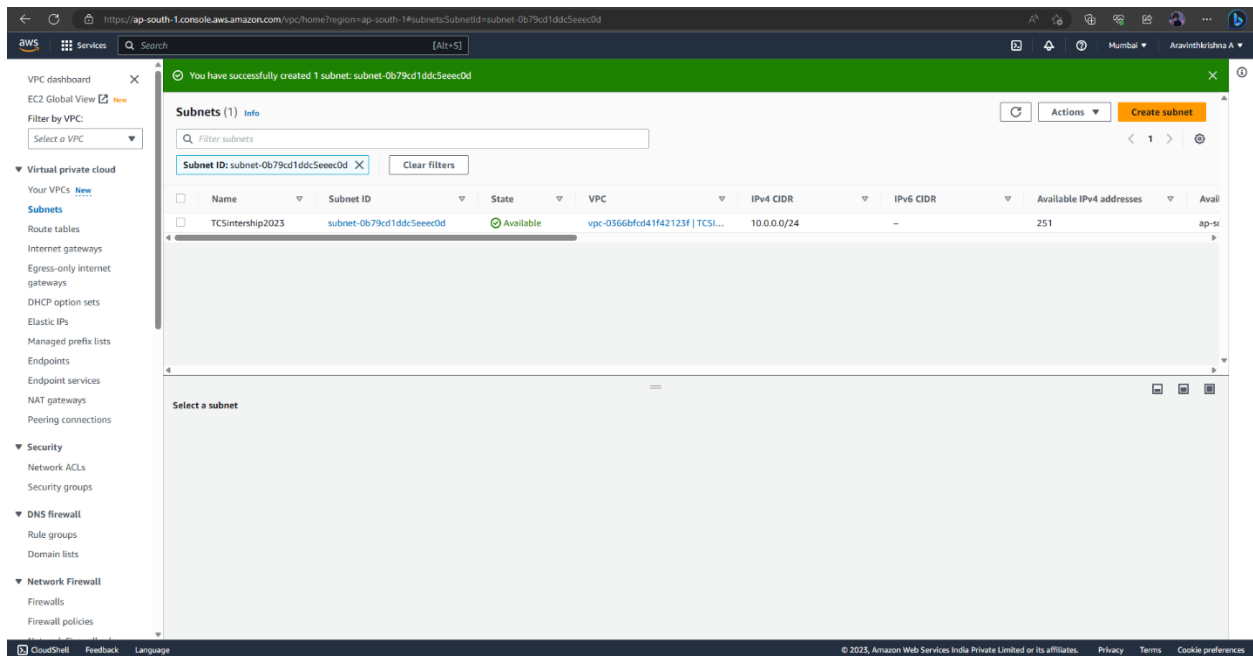
# Charts, Table, Diagrams

- Creating a Virtual Private Cloud (VPC).

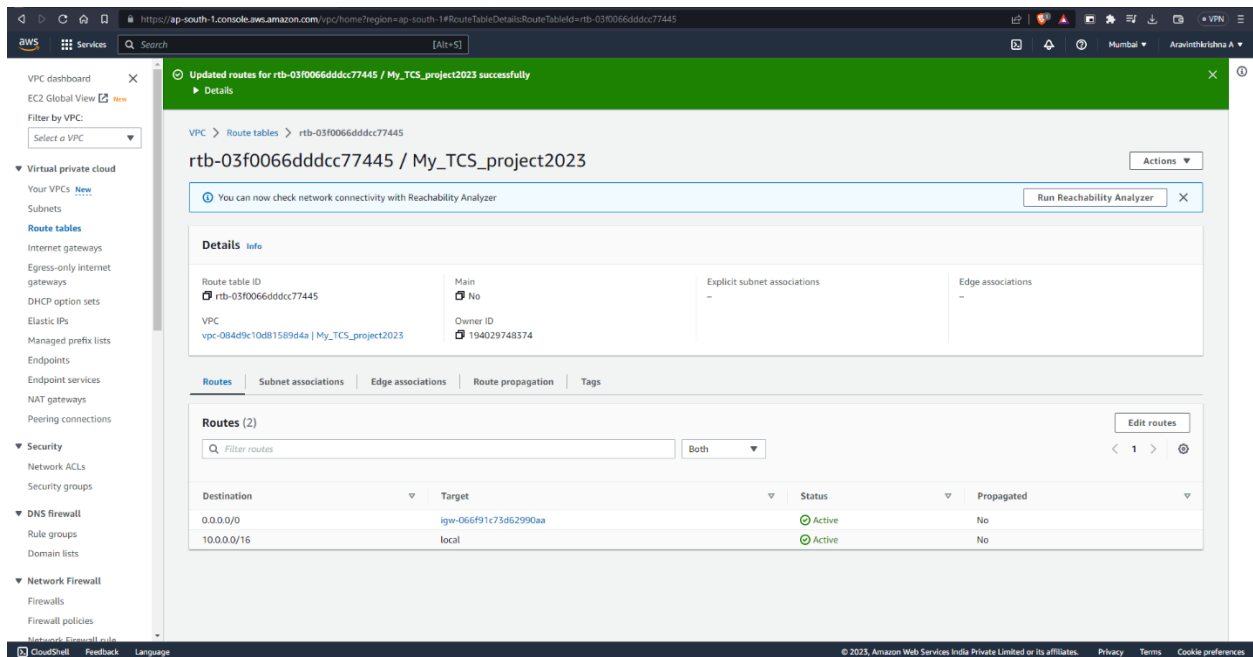


## INTERNSHIP: INTERIM PROJECT REPORT

- Creating a subnet.

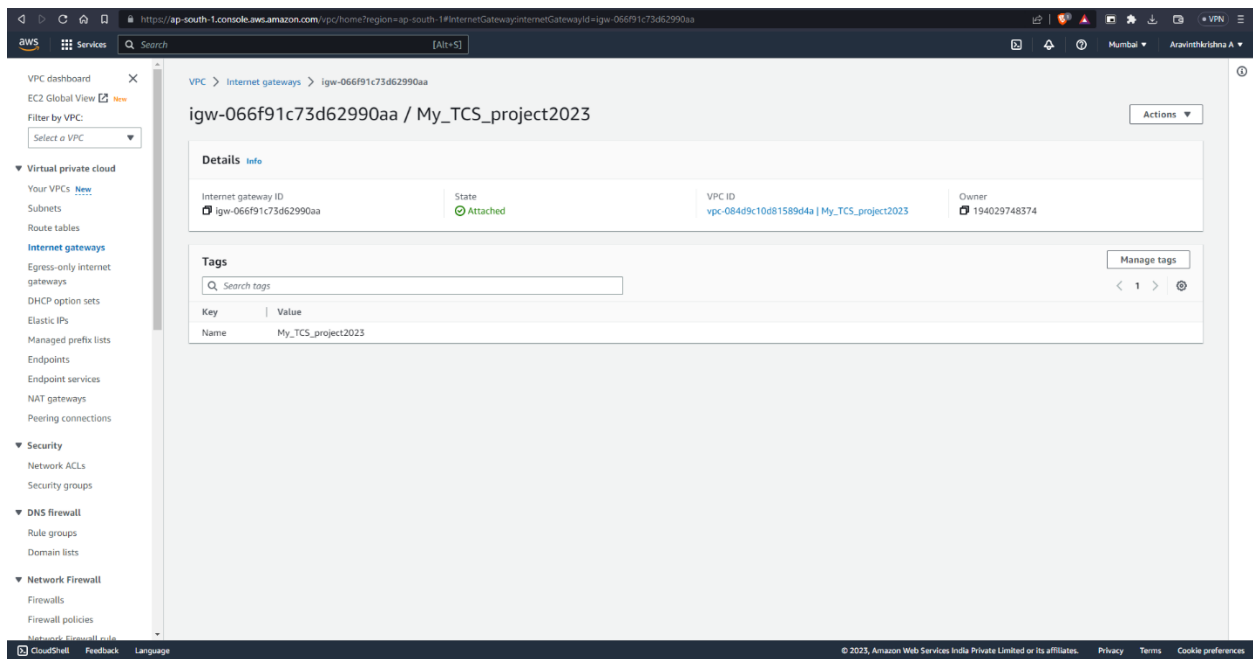


- Creating a Route Tables

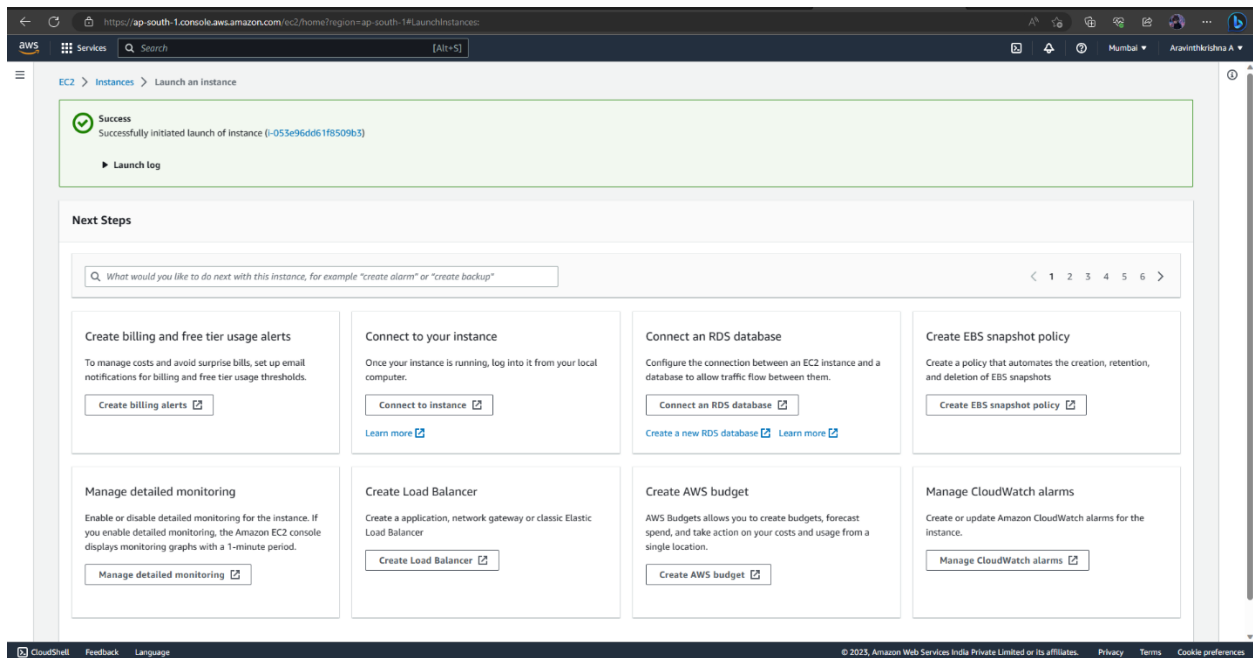


- Creating a Internet Gateway

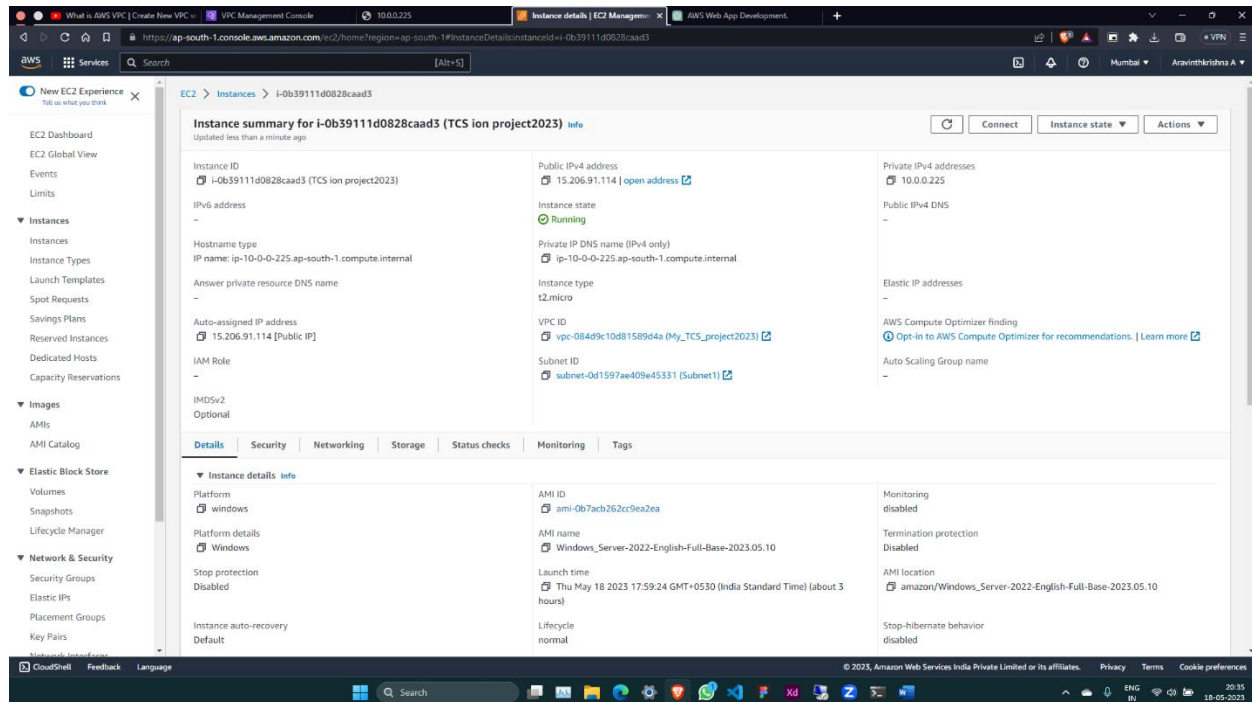
# INTERNSHIP: INTERIM PROJECT REPORT



- Now Creating a EC2 instance



- Details of Instance



## Challenges & Opportunities

### Challenges:

- Understanding and configuring the networking components within AWS VPC.
- Troubleshooting and resolving issues related to connectivity and access permissions.
- Ensuring compatibility and proper configuration of the packages installed on the EC2 instance.

### Opportunities:

- Learning and gaining hands-on experience with AWS services.
- Exploring the scalability and cost-effectiveness of AWS infrastructure.
- Developing problem-solving skills through the resolution of technical challenges.

### Risk Vs Reward

#### Risks:

- Potential security vulnerabilities if proper security measures are not implemented.
- Downtime or performance issues if the infrastructure is not adequately scaled or optimized.

#### Rewards:

- Cost savings through the use of scalable and pay-as-you-go AWS services.
- Enhanced reliability and availability of the web application.
- Increased flexibility and scalability to handle varying traffic patterns.

### Reflections on the Internship

This internship provided valuable insights into the world of AWS and web application hosting. We gained hands-on experience with various AWS services and learned how to architect and configure a scalable infrastructure for web applications. The challenges faced during the internship helped us develop problem-solving skills and enhanced our understanding of cloud computing.

### Enhancement scope

The Enhancement Scope for this project can include further optimization and scaling of the application by incorporating additional AWS services, such as Elastic Load Balancing and Auto Scaling. Additionally, implementing features such as user authentication and data encryption can enhance the security and reliability of the web application. Another potential enhancement could be the integration of a Content Delivery Network (CDN) to improve the delivery of content to users. Finally, implementing monitoring and logging tools can provide valuable insights into the performance and usage of the application, enabling proactive troubleshooting and optimization.

### Outcome / Conclusion

I successfully developed a Static web application on AWS using a combination of S3. Now am working on dynamic web app using EC2 in VPC.

