A Practical Activity Report For
Cloud Computing

Submitted By:

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Submitted To:
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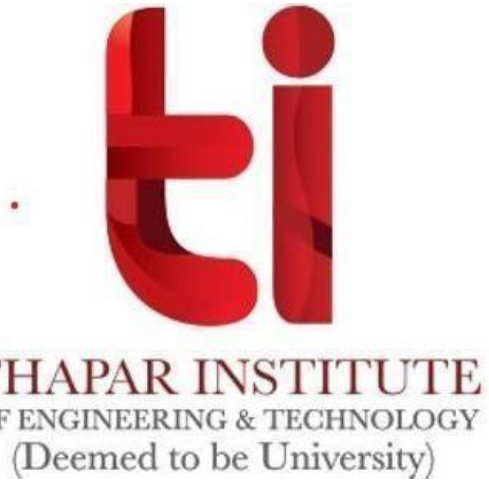


Depatment of Electronics and Communication Engineering

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY, (DEEMED TO BE UNIVERSITY), PATIALA, PUNJAB

Experiment 8

Aim: To Build Amazon Virtual Private Cloud (Amazon VPC) Using the VPC Wizard.

Introduction:

Amazon VPC and Its Types:

AWS provides a lot of services; these services are sufficient to run your architecture. The backbone for the security of this architecture is VPC (Virtual Private Cloud). VPC is basically a private cloud in the AWS environment that helps you to use all the services by AWS in your defined private space. You have control over the virtual network and you can also restrict the incoming traffic using security groups.

Overall, VPC helps you to secure your environment and give you a complete authority of incoming traffic. There are two types of VPCs, Default VPC that is by default created by Amazon and Non-Default VPC that is created by you to suffice your security needs.

Route Tables:

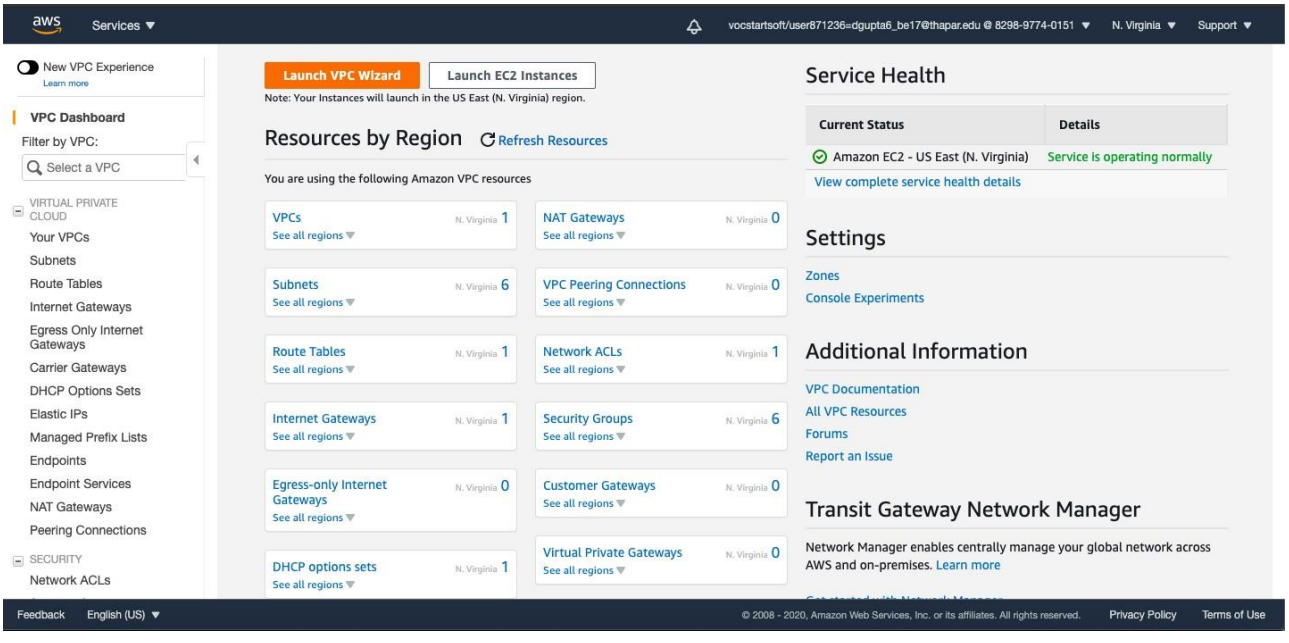
Route table can be understood as a table that contains rules for routing traffic within and outside a subnet. The route table is also used to add Internet Gateway to the subnet. There can be multiple route tables in a VPC.

Internet Gateway:

Internet Gateway is a very important component that allows your instance to connect to the internet. It allows the user to make the subnet pubic by providing a route to the internet. With the help of Internet Gateway, an instance can access the internet and the resources outside instance can access the instance.

STEPS TO BIULD VPC:

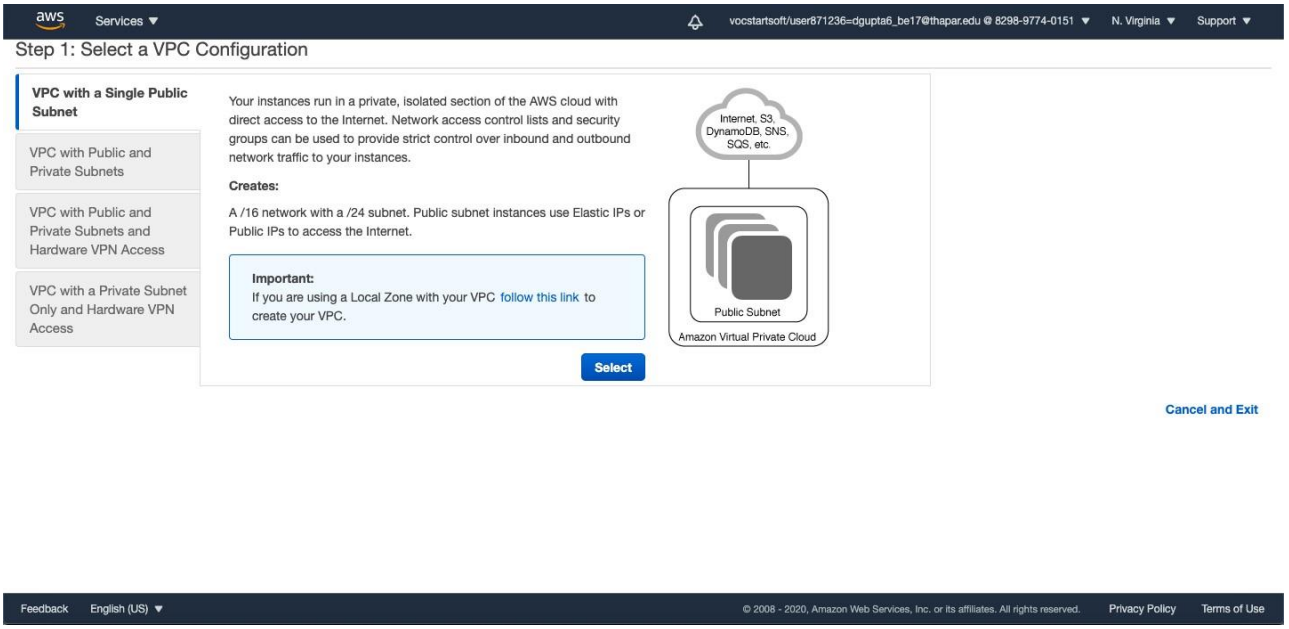
1 Navigate to the VPC Dashboard. Here you will see a "**Launch VPC Wizard**" click on it.



2 Navigate to the VPC Dashboard. Here you will see a "**Launch VPC Wizard**" click on it. This is the "*VPC creation*" wizard. Here you can find 4 different options:

1. VPC with Single Public Subnet, the one we are going to choose.
2. VPC with Public and Private Subnets.
3. VPC with Public and Private Subnets and Hardware VPN Access.
4. VPC with a Private Subnet only and Hardware VPN Access.

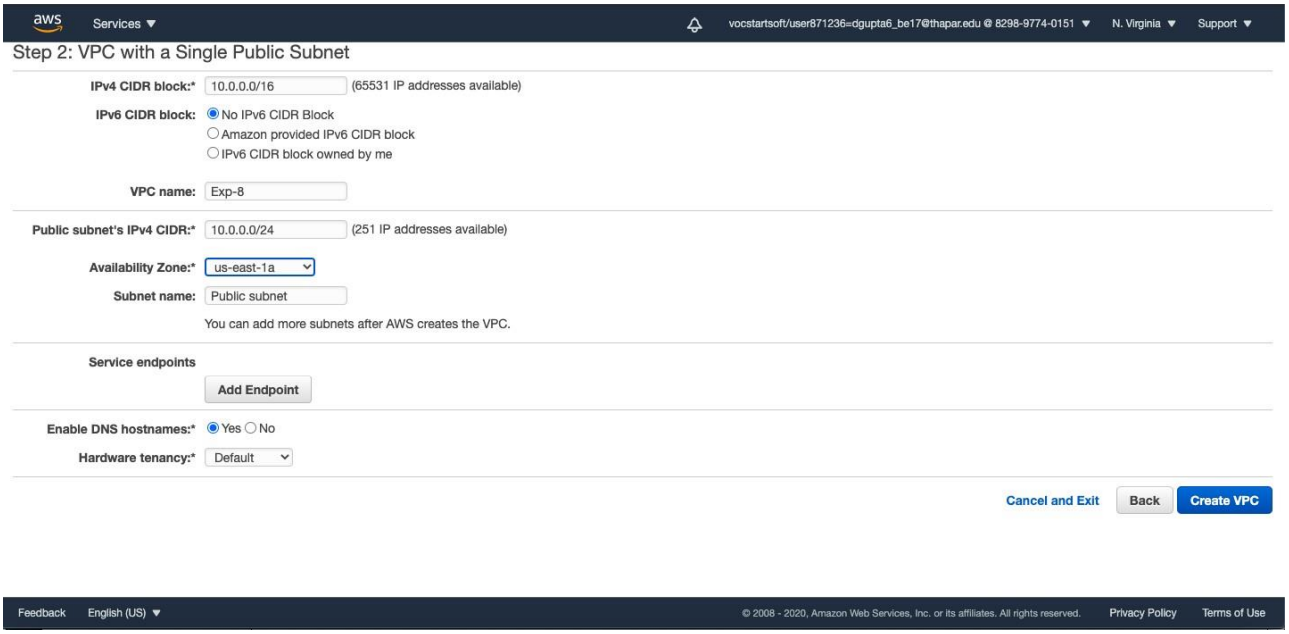
So, let's start by creating a VPC with a single public subnet. Click on "*Select* ".



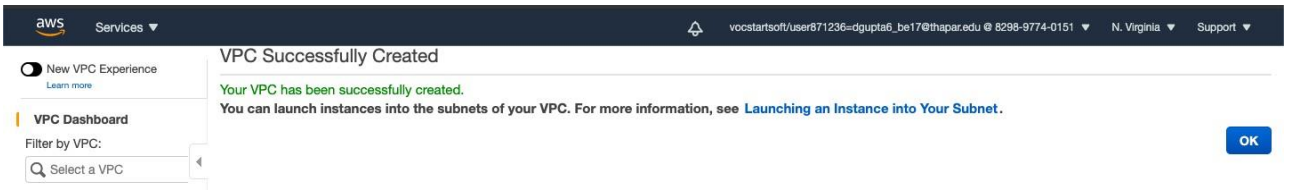
3 Here you will have to mention a few details for creating your VPC.

- The IPv4 CIDR block VPC Name
- Public Subnet's IPv4 CIDR
- Availability Zone where you want your VPC to be created
- Subnet name
- Hardware tenancy

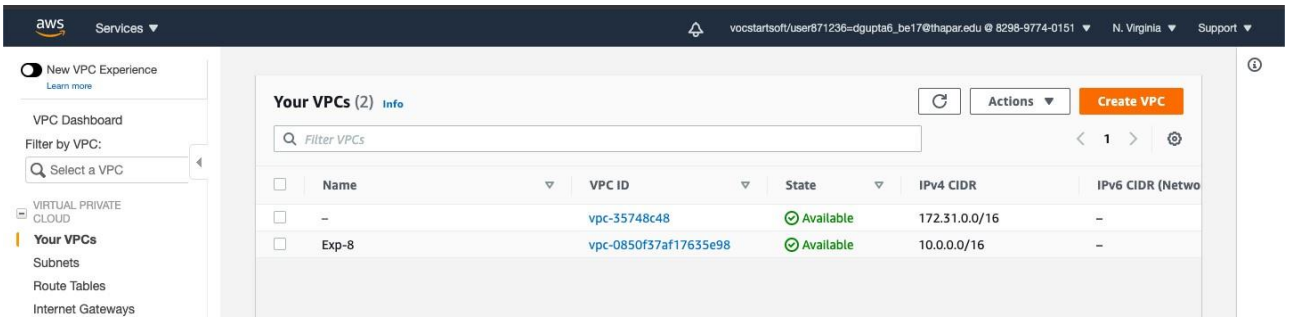
After mentioning all the details, click on "*Create VPC*".



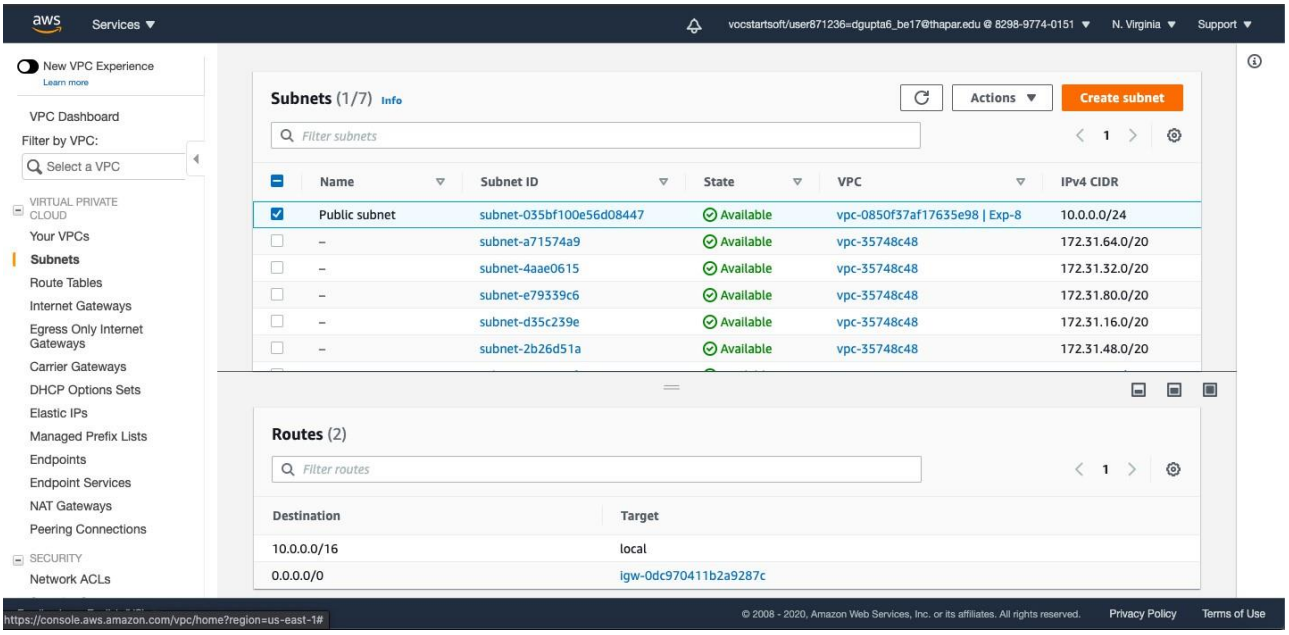
4 You will get a message saying "*Your VPC has been successfully created* ". Click on "*OK* ".



5 In the "Your VPC" section, you can see that there is a new VPC named "*Exp-8*" created.



6 Now let’s verify the public subnet. You can see that a subnet named “Public Subnet” is created. This subnet has a route table attached which consists of local and public access with an Internet Gateway.



Experiment 9

Aim: To Create a DynamoDB table and perform both query and scan searches of the table

Introduction:

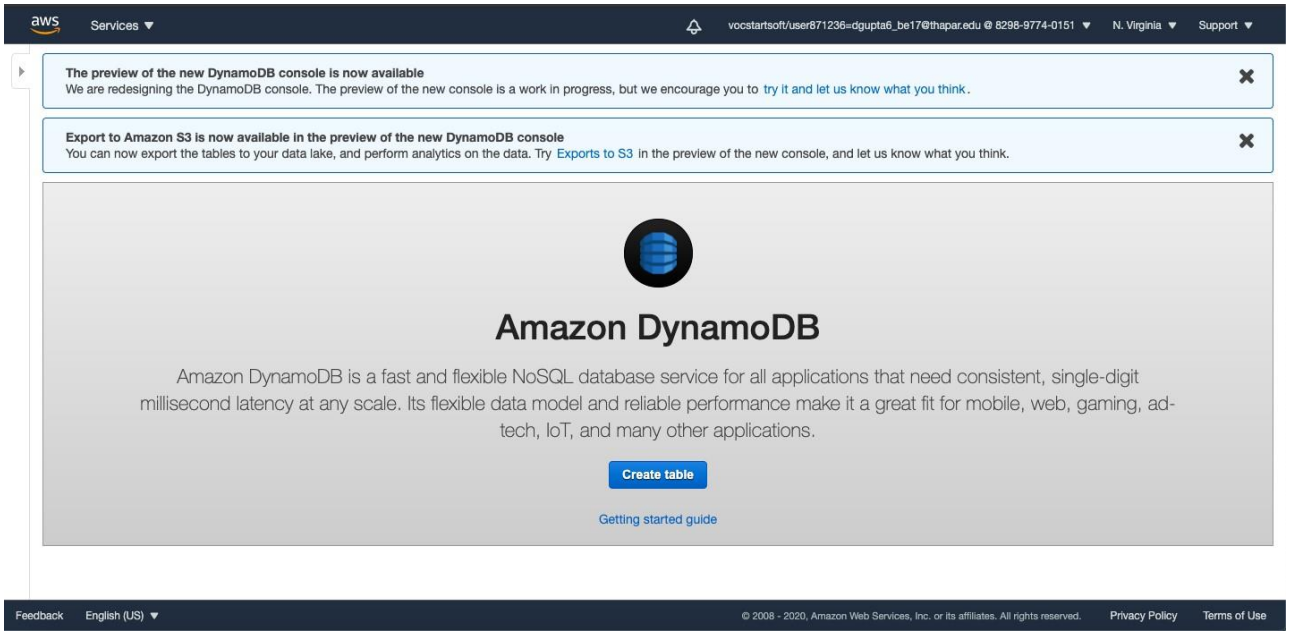
Amazon DynamoDB is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. DynamoDB lets you offload the administrative burdens of operating and scaling a distributed database so that you don't have to worry about hardware provisioning, setup and configuration, replication, software patching, or cluster scaling.
DynamoDB also offers encryption at rest, which eliminates the operational burden and complexity involved in protecting sensitive data. For more information, see DynamoDB Encryption at Rest.

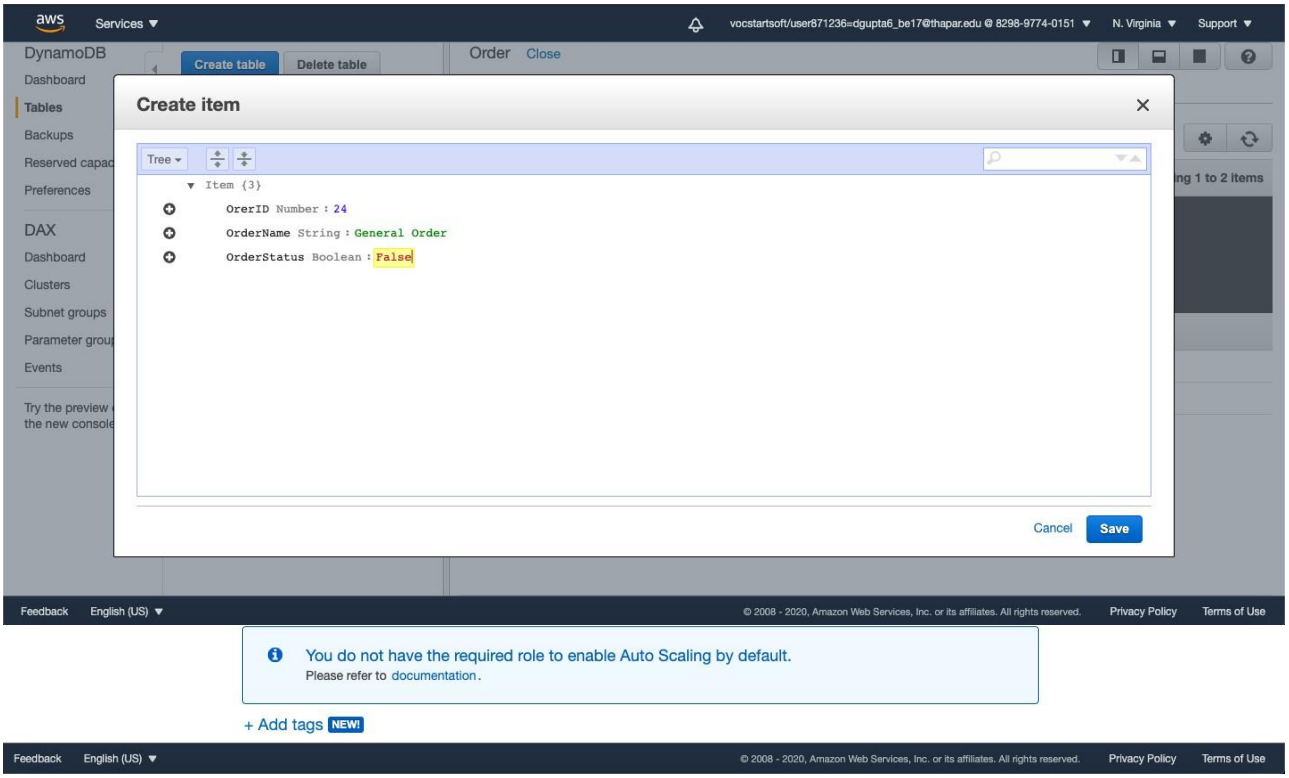
With DynamoDB, you can create database tables that can store and retrieve any amount of data and serve any level of request traffic. You can scale up or scale down your tables' throughput capacity without downtime or performance degradation. You can use the AWS Management Console to monitor resource utilization and performance metrics.

Steps to Create a Dynamo DB Table:

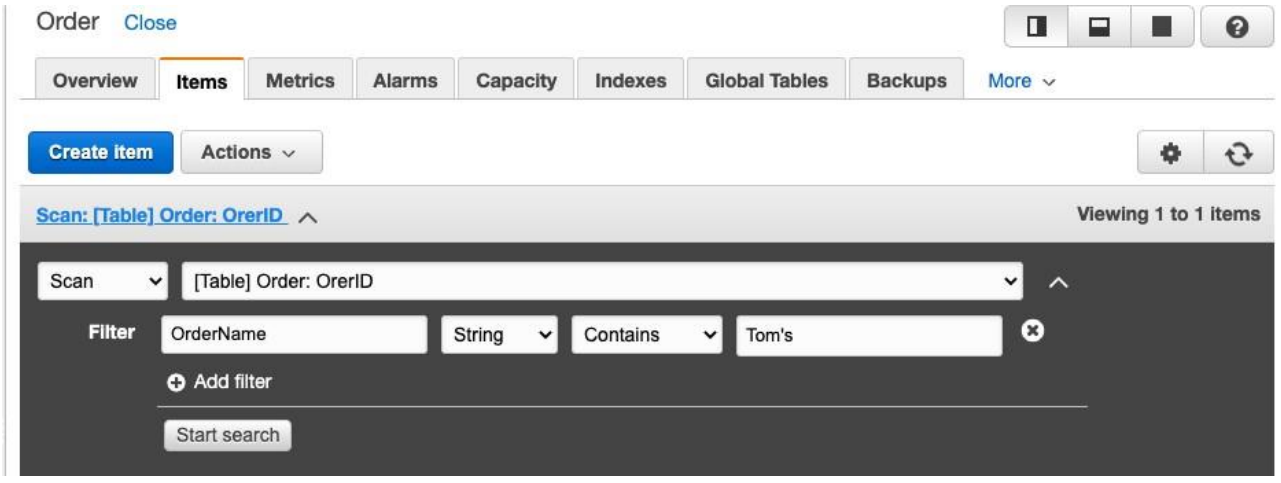
1 Go to Amazon Dynamo DB

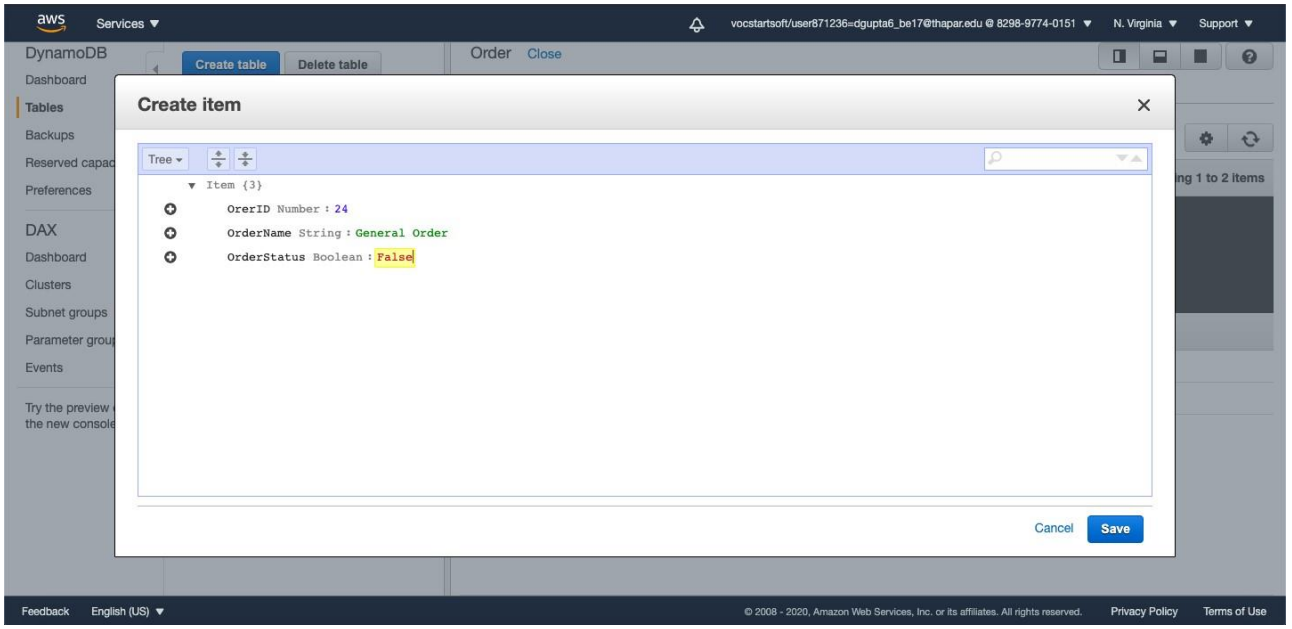
2 Click on CREATE TABLE



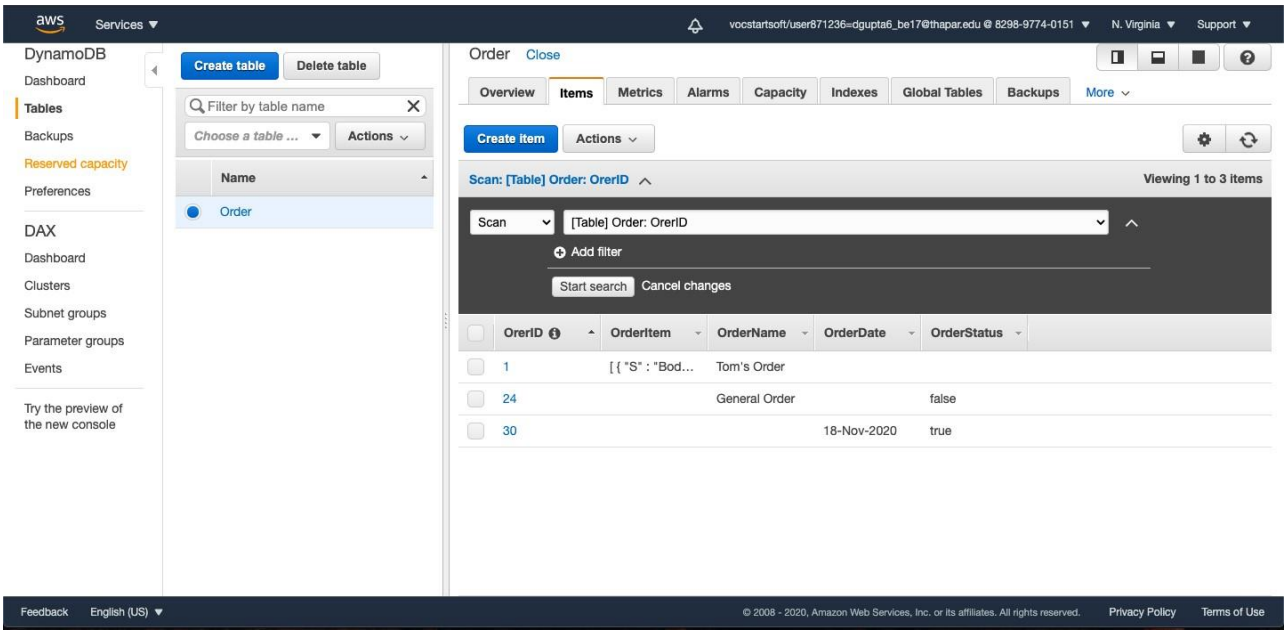


3 Click on CREATE ITEM to add items in the table that we have created.





4 The Table is created and ITEMS are added into the Table.

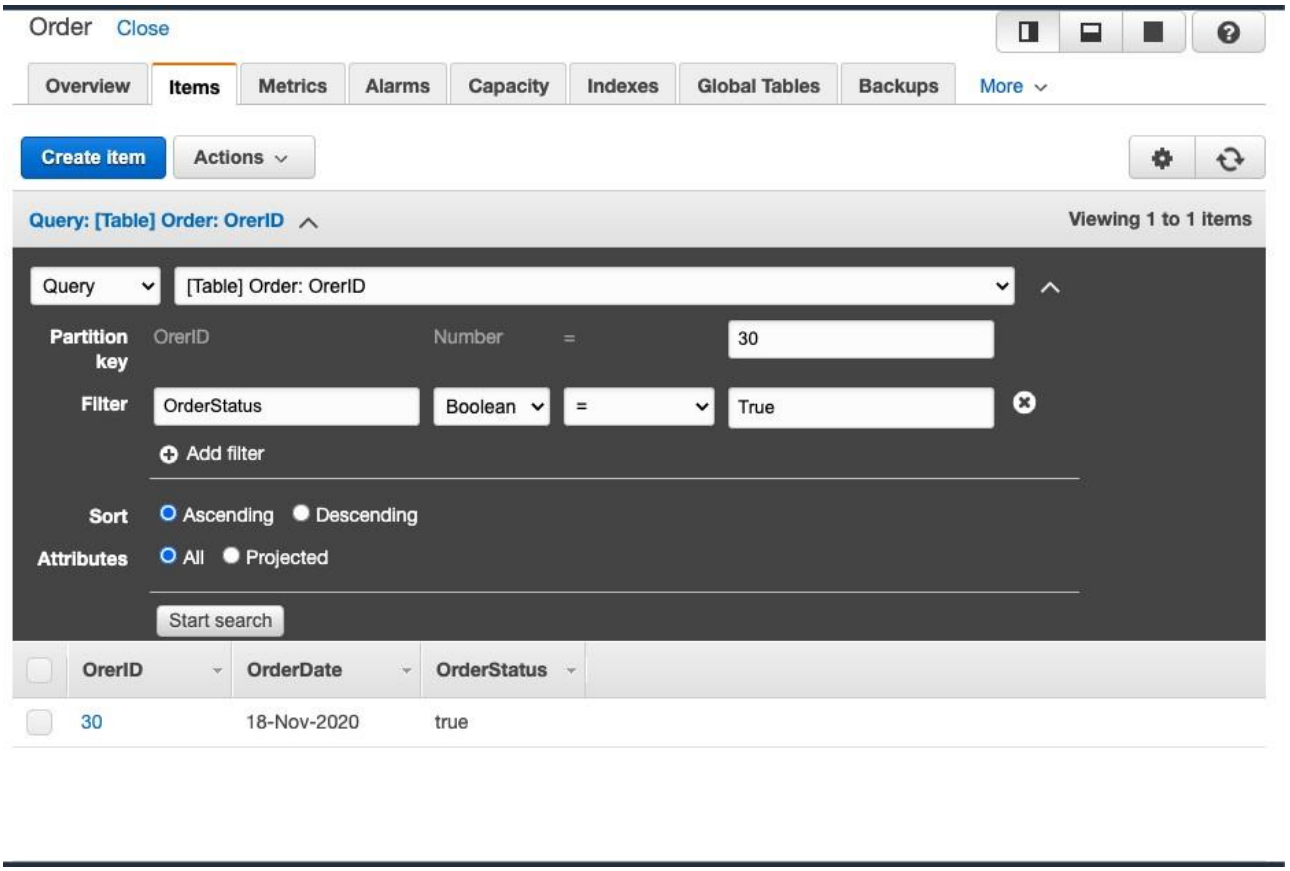


5 Perform SCAN and QUERY operation on the Table we created.

a. SCAN


Order
Close
Overview
Items
Metrics
Alarms
Capacity
Indexes
Global Tables
Backups
More
Create item
Actions
Scan: [Table] Order: OrerID
Viewing 1 to 1 items
Scan
[Table] Order: OrerID
Filter
OrderName
String
Contains
Tom's
Add filter
Start search
OrerID
OrderItem
OrderName
1
[{ "S" : "Bodywash" }, { "S" : "Toilet\npaper\n" }]
Tom's Order

b. QUERY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More
Create item
Actions
Query: [Table] Order: OrerID
Viewing 1 to 1 items
Query
[Table] Order: OrerID
Partition key
OrerID
Number
=
30
Filter
OrderStatus
Boolean
=
True
Add filter
Sort
Ascending
Descending
Attributes
All
Projected
Start search
OrerID
OrderDate
OrderStatus
30
18-Nov-2020
true