Proof-of-Concept Report

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Abstract

Background: Don & Associates is a financial consultant for small and medium businesses whose HQ is in Maryland. The company has proved to be the rising star of the financial consultant segment with three consecutive years of remarkable capital return on investment. The company balance sheet is also in good standing in terms of capital gain to debt ratio.

Objective: In the next chapter of the company, the leadership decided to expand our services to the Northeast clients. The expansion carries many opportunities for increasing revenue and attracting new clients. However, the risk of budget over run while undertaking this project is also reasonably high.

Method: The IT Division is tasked to conduct research to find an innovative solution to complete the expansion. On the technical front, the IT department agrees that a hybrid Cloud model is the best way to minimize service interruption and keep the cost within budget. We conducted a comparative analysis of the top 3 Cloud providers. We pay particular attention to Cloud providers who have one or more of the following characteristics:

- Already established infrastructure in the Northeast
- Experience with financial clients and financial data
- Well-versed in financial requirements and regulations
- Currently offering Cloud services to other financial entities
- Best fit Don & Associate company profile and future need
- Flexible or reasonable pricing model

Result: Among the top 3 cloud providers, AWS Cloud services satisfied all the requirements.

Conclusion: AWS's flexibility in both pricing models, ease of usage, highly scalability make AWS stand out as the top choice for hybrid cloud adoption. This will not only solve our current problem with budget and space but also provide us leverage when solving our future business problems.

Introduction

Don & Associates is a financial consultant providing services to small- and medium-sized companies. The company is currently expanding to the Northeast and looking for an innovative way to tackle the challenges that this opportunity is bringing along. Since the company still houses an on-premise server, a second office will question our current IT support infrastructure's capabilities and capacity. This problem can be overcome by expanding our current server or stand up another server on the second site. However, this approach will call for significant spending. Additionally, in our best guess estimate, we cannot forecast certainly how many clients we will be serving in the first quarter after the second office opening. Therefore, both the workload and complexity of tasks are still somewhat in the abstract region.

The likelihood of the newly upgraded, state-of-the-art server being over or underutilized remains the greatest concern from a technical standpoint.

Statement of Need

The cost of acquiring additional equipment and maintenance is among the most popular concerns during the planning phase. Even when we choose not to stand up another on-premises server at the second site, the cost to expand and run the current server can still be significant. Furthermore, the company may need to expand its IT division to manage the new IT infrastructure.

In terms of physical location, Don & Associates will need to look for new office space to establish a branch office in US Northeast. If we use the current layout of Don & Associates HQ as a point of reference, even a lite version still needs upfront cost and ongoing expenditure. If Don & Associate does not proceed with caution, the operational cost can drive up quickly and diminish any revenue significance.

On the other hand, Cloud adoption offers multiple benefits

1. Minimal IT hardware is needed, and less space requirement
2. Don & Associates IT can maintain two sites with assistance from Cloud IT support.
3. Remote access can be performed with ease
4. Keep the bottom line in check while maintaining scalability on demand
5. Leadership and management can now fully focus on business and operation.

Assumptions

This report is written under the following assumptions:

1. Don & Associates only has one office, which is its headquarters in Maryland.
2. Don & Associates already conducted the preliminary survey to determine the potential market in US Northeast.
3. Don & Associates has an on-premises server with essential technology infrastructure to run the server.
4. Don & Associates has been a profitable company for many years in a row and looking into expansion to a new region. This means commercial loan may be needed but not to the impact level
5. Don & Associates will open at least one more branch office in the US Northeast and will need additional office space and staff (IT and Operation).
6. Don & Associates has a small internal IT team, which consists of 3-5 members. Two of those will be sent to the new branch office, at least during the initial phase.
7. Most of the devices in Don & Associates are Windows-based.

8. C-suite and higher management need to be able to remotely access the company data for teleworking and business strip.

Description of Current Infrastructure

Don & Associates is currently operating internal networks and on-premises servers. The company also has some other technology and infrastructure support staff workstation and servers. All of the company workstations use Window based OS and software. The company will migrate around 50-70% of its data and workload into the Cloud environment. The current on-premises server will be converted to process and store data that must be performed on-site by regulation.

Cloud Service Providers

1. IBM Cloud solution
2. Microsoft Azure
3. Amazon AWS

IBM Cloud solution

Service models (i.e., SaaS, PaaS, IaaS): Offer IaaS, PaaS

Services:

AI / Machine learning, Analytics, Automation

Blockchain, Compute, Containers

Databases, Developer Tools, Integration

Internet of Things (IoT)

Logging and monitoring

Networking

Quantum, Security, Storage

Pricing: Fixed/Metered/Reserved/Tiers. Has Lite and Free tier pricing option [2].

Accessibility: IBM Cloud Console [3]

Technical support: Basic/Advanced/Premium [4]

Global infrastructure: present in the Americas, Europe, and Asia. In the US Northeast, IBM Cloud infrastructure is available in Washington DC as Multizone Region (MZR) and four single data centers [5].

Advantage: offer neat services and features to kickstart a cloud architecture

Disadvantage: somewhat rigid pricing model that requires the client to be pinpoint on their workload and forecasting. More suited for established clients.

Microsoft Azure

Service models (i.e., SaaS, PaaS, IaaS): IaaS, PaaS, SaaS

Services:

AI / Machine learning, Analytics

Compute, Containers

Databases, Developer Tools, DevOps

Hybrid + multi-cloud

Identity, Integration, Internet of Things (IoT)

Management and Governance, Media, Migration, Mixed Reality, Mobile

Networking

Security, Storage, Virtual Desktop Infrastructure, Web

Pricing: Pay per usage calculates by-product in use x loads x duration.

Price by product/service use which added up to the Total cost of Ownership or (TOS) [7]

Accessibility: has pre-built cloud architectures, Microsoft Azure Portal [8]

Technical support: Basic, Developer, Standard, Professional Direct [9]

Global infrastructure: Available globally in the form of geolocations. There are nine US regions, of which three are located on the East Coast [10]

Advantage: from Microsoft, highly compatible with the company hardware and software, broad infrastructure both domestic and international.

Disadvantage: Licensure of independent services could increase costs; some services are priced higher than other providers

Amazon AWS

Service models: IaaS, PaaS, support SaaS transformation

Services:

Analytics, Application Integration, AR and VR

Blockchain, Business Applications, Compute, Cost Management, Customer Engagement

Database, Developer Tools

End User Computing, Game Technologies, Internet of Things (IoT)

Machine learning, Management & Governance, Media Services

Migration and Transfer

Mobile, Networking & Content Delivery

Robotics, Satellite, Security, Identity & Compliance, and Storage [11].

Cloud solution for Finance is available.

Pricing: On-Demand Instances, Saving Plans, Spot Instances, Reservation with Free tier.

Price by product/service use which added up to the Total cost of Ownership or (TOS) [12, 13]

Accessibility: AWS Management Console

Technical support for companies: Developer, Business, Enterprise On-Ramp, Enterprise [14]

Global infrastructure: 29 launched Regions with multiple Availability Zones [15].

33 Availability Zones + 39 Edge locations + 2 Regional Edge in Europe / Middle East / Africa.

25 Availability Zones + 44 Edge locations + 2 Regional Edge in North America. Nine on the East Coast US

29 Availability Zones + 34 Edge locations + 2 Regional Edge in Asia Pacific and China

3 Availability Zones + 4 Edge locations + 1 Regional Edge in South America

Advantage: Exceptional flexibility in service, dominant presence globally with dense infrastructure in US Northeast. Excellent pricing models allow highly adaptive scaling.

Disadvantage: NONE

Project Details

Building a VPC on AWS

1. In the search box to the right of **Services**, search for and choose **VPC** to open the VPC console.
2. Begin creating a VPC.
    a. In the top left of the screen, verify the **New VPC Experience** is toggled *on*. If it is not, toogle it on now.
    b. Choose the **VPC dashboard** link, which is also towards the top left of the console.
    c. Next, choose **Create VPC**.

Note: If you do not see a button with that name, choose the Launch VPC Wizard button instead.

3. Configure the VPC details in the *VPC settings* panel on the left:
    a. Choose **VPC and more**.
    b. Under **Name tag auto-generation**, keep *Auto-generate* selected, however change the value from project to lab.
    c. Set the **IPv4 CIDR block**
    d. Choose **Number of Availability Zones**
    e. Choose **Number of *public* subnets**
    f. Choose **Number of *private* subnets**
    g. Expand the **Customize subnets CIDR blocks** section
        i. Set **Public subnet CIDR block in selected Region**
        ii. Set **Private subnet CIDR block in selected Region**
    h. Set **NAT gateways**
    i. Set **VPC endpoints**
    j. Keep both **DNS hostnames** and **DNS resolution** *enabled*.
4. In the *Preview* panel on the right, confirm your configured settings.
    a. **VPC:** *Name of VPC*
    b. **Subnets**:
        i. Region
            1. ***Public* subnet name:**
            2. ***Private* subnet name:**

c. **Route tables**

d. **Network connections**

5. At the bottom of the screen, choose **Create VPC**

The VPC resources are created. The NAT Gateway will take a few minutes to activate.

Please wait until *all* the resources are created before proceeding to the next step.

6. Once it is complete, choose **View VPC**

The VPC is basically created at step 5. To make the VPC fully functional and secured please refer to the following steps as needed.

- ✓ Step 6 through 15 cover how to set up additional subnets after creation.
- ✓ Step 16 through 20 cover how to configure the security group for the newly created VPC.

7. In the left navigation panel, choose **Subnets**
8. Choose **Create subnet**, then configure

   VPC ID: (select from the menu).
   Subnet name: choose a subnet name
   Availability Zone: select which availability zone the subnet will be in
   IPv4 CIDR block: designate a block for this subnet

9. Choose **Create subnet**
10. In the left navigation panel, choose **Route tables**
11. Select a routable created earlier; ensure to select a private routable when configuring private subnets and a public routable when configuring public subnets
12. In the lower pane, choose **Routes** tab
13. Choose the **Subnet associations** tab
14. Choose **Edit subnet associations**
15. Select all subnets that you want to associate with this routable
16. Choose **Save associations**
17. In the left navigation pane, choose **Security groups**.
18. Choose **Create security group** and then configure:

    Security group name: Web Security Group
    Description: Enable HTTP access
    VPC: choose the VPC

19. In the Inbound rules pane, choose Add rule
20. Configure the following settings:

Type: HTTP
Source: Anywhere-IPv4
Description: Permit web requests

21. Scroll to the bottom of the page and choose **Create security group**

Launching a Web Server on AWS

22. In the search box to the right of **Services**, search for and choose **EC2** to open the EC2 console.
23. From the **Launch instance** menu choose **Launch instance**.
24. Name the instance.
25. Choose an AMI from which to create the instance:
    - ✓ The type of *Amazon Machine Image (AMI)* you choose determines the Operating System that will run on the EC2 instance that you launch.
26. Choose an Instance type:
    - ✓ The *Instance Type* defines the hardware resources assigned to the instance.
27. Select the key pair to associate with the instance:
    a. From the **Key pair name** menu, select **vockey**.

The vockey key pair you selected will allow you to connect to this instance via SSH after it has launched. Although you will not need to do that in this lab, it is still required to identify an existing key pair, or create a new one, when you launch an instance.

28. Configure the Network settings:
    a. Next to Network settings, choose **Edit**, then configure:
        i. **Network:** *network name*
        ii. **Subnet:** *choose a public subnet*
        iii. **Auto-assign public IP:** *Enable*
    b. Next, you will configure the instance to use the *Web Security Group* that you created earlier.
        i. Under Firewall (security groups), choose **Select an existing security group**.
        ii. For **Common security groups**, select **Web Security Group**.

- ✓ This security group will permit HTTP access to the instance.

29. In the *Configure storage* section

30. Configure a script to run on the instance when it launches:
    a. Expand the **Advanced details** panel.
    b. Scroll to the bottom of the page and then input the code into the **User data** box.
31. At the bottom of the **Summary** panel, on the right side of the screen, choose **Launch Instance**.
    ✓ You will see a Success message
32. Choose **View all instances**
33. Wait until the EC2 instance show 2/2 checks passed in the Status check column
34. Select the launched instance that you have been working on
35. Copy the **Public IPv4 DND** value shown in the Details tab at the bottom of the page
36. Open a new browser tab, paste the **Public DNS** value, and press Enter
    ✓ You should see a web page display.

Challenges Encountered

No challenges were encountered while building VPC.

Conclusion

An AWS Cloud Migration will solve the current challenges in both the short and medium term. We remain in control of what service we are using and how much data or workload will be processed outside the company parameter. With AWS Technical Support onboard, we can ensure that our process and operation will be running at maximal availability and constantly monitored 24/7. The hybrid migration will also complete the second objective, which is keeping costs low and strengthening the bottom line. Since AWS allows us to expand and contract our Cloud architecture on demand, we can save a lot of energy and resource by not having to do guesswork.

Last and most importantly, we, who operate as financial consultants, must be a living example of our business model. We have been proving to our clients many times in the past and up until now that Don Associate is one of the most trusted names in small/medium business finances. Our clients have been benefiting greatly from our sounded advises when making strategic decisions. Don & Associates has always been right there with our clients and partners. We understand the sector and business as if we have helped build the businesses since Day 0. This is the moment where Don & Associate demonstrate to our clients, current, and future, that we can also walk the walk. An AWS Cloud offers an elegant solution to our challenges and opens many new pathways that we can take to complete our journey.

References

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[11] AWS, “AWS Cloud Products,” aws.amazon.com. [Online]. Available: https://aws.amazon.com/products/?hp=tile&so-exp=below&refid=102f2459-9f37-4bff-b49f-f41de8d04f46&aws-products-all.sort-by=item.additionalFields.productNameLowercase&aws-products-all.sort-order=asc&awsf.re%3AInvent=*all&awsf.Free%20Tier%20Type=*all&awsf.tech-category=*all [Accessed Nov. 22, 2022]

[12] AWS, “Key principles – How AWS Pricing Works,” docs.aws.amazon.com. [Online]. Available: https://docs.aws.amazon.com/whitepapers/latest/how-aws-pricing-works/key-principles.html [Accessed Nov. 20, 2022].

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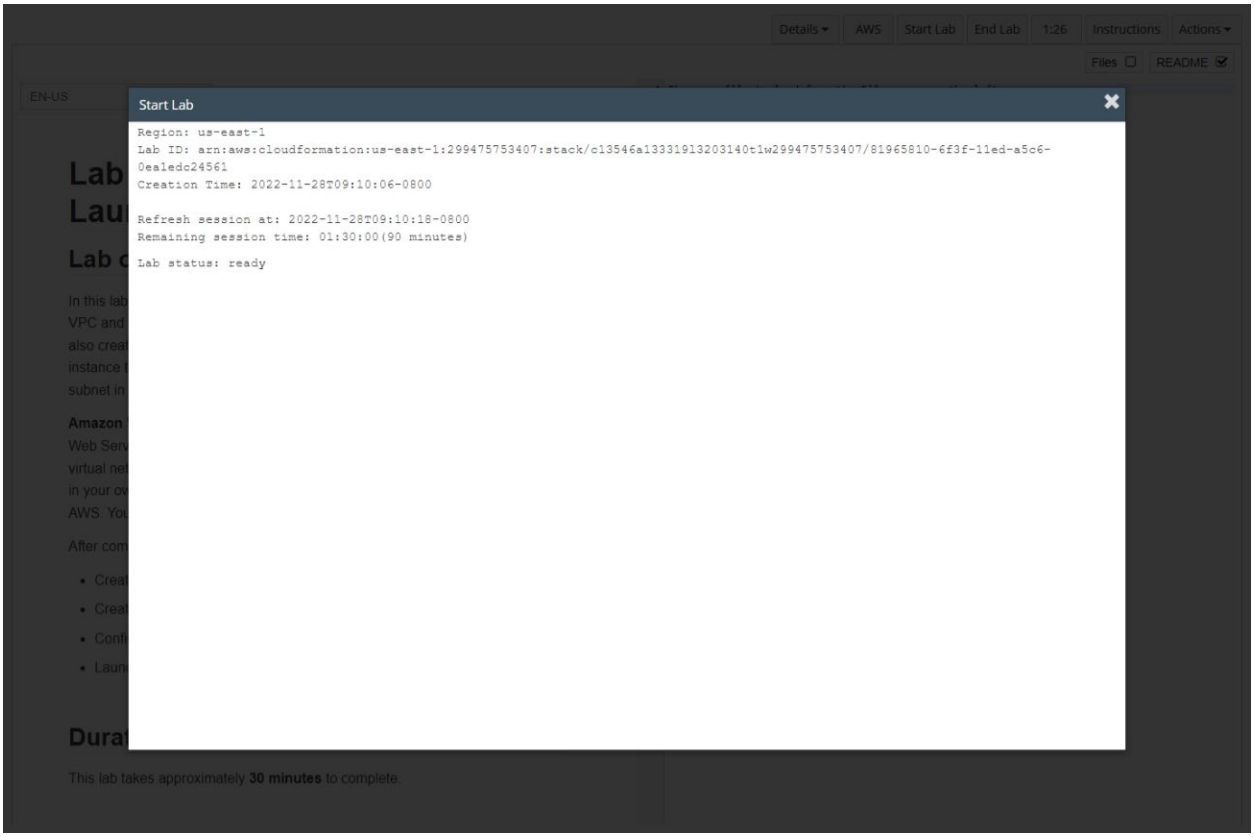
Appendix - Screenshots

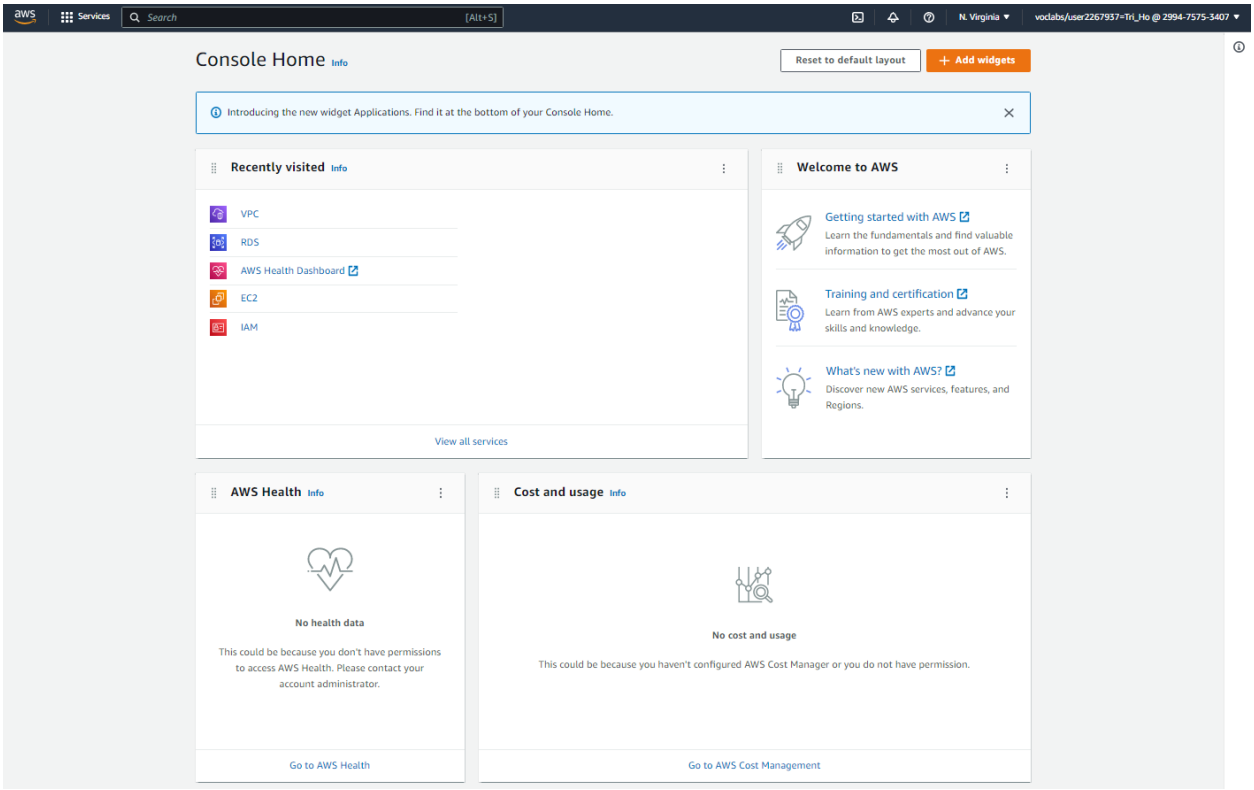
Start Lab



Source: AWS

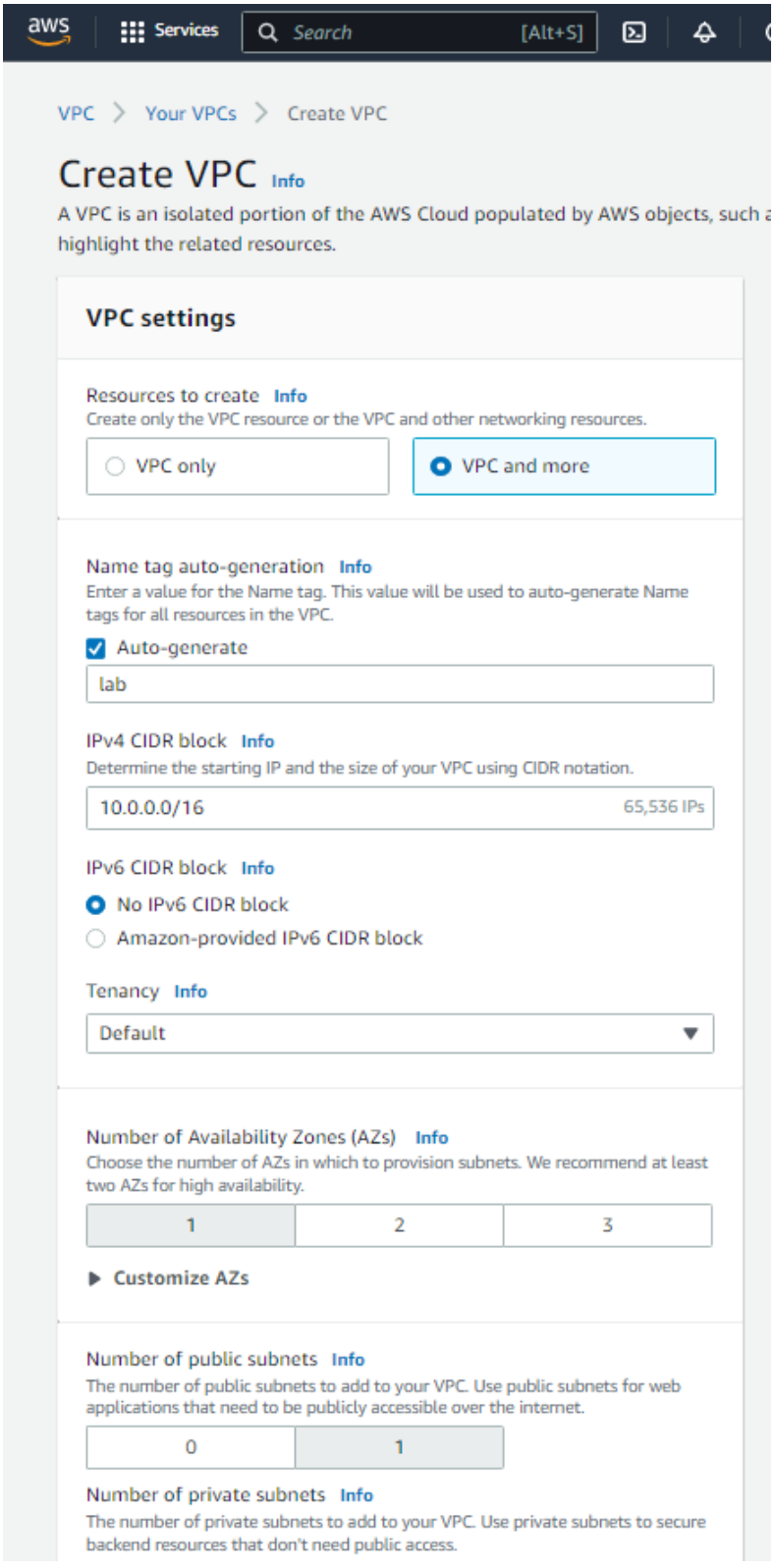
AWS Management Console Name

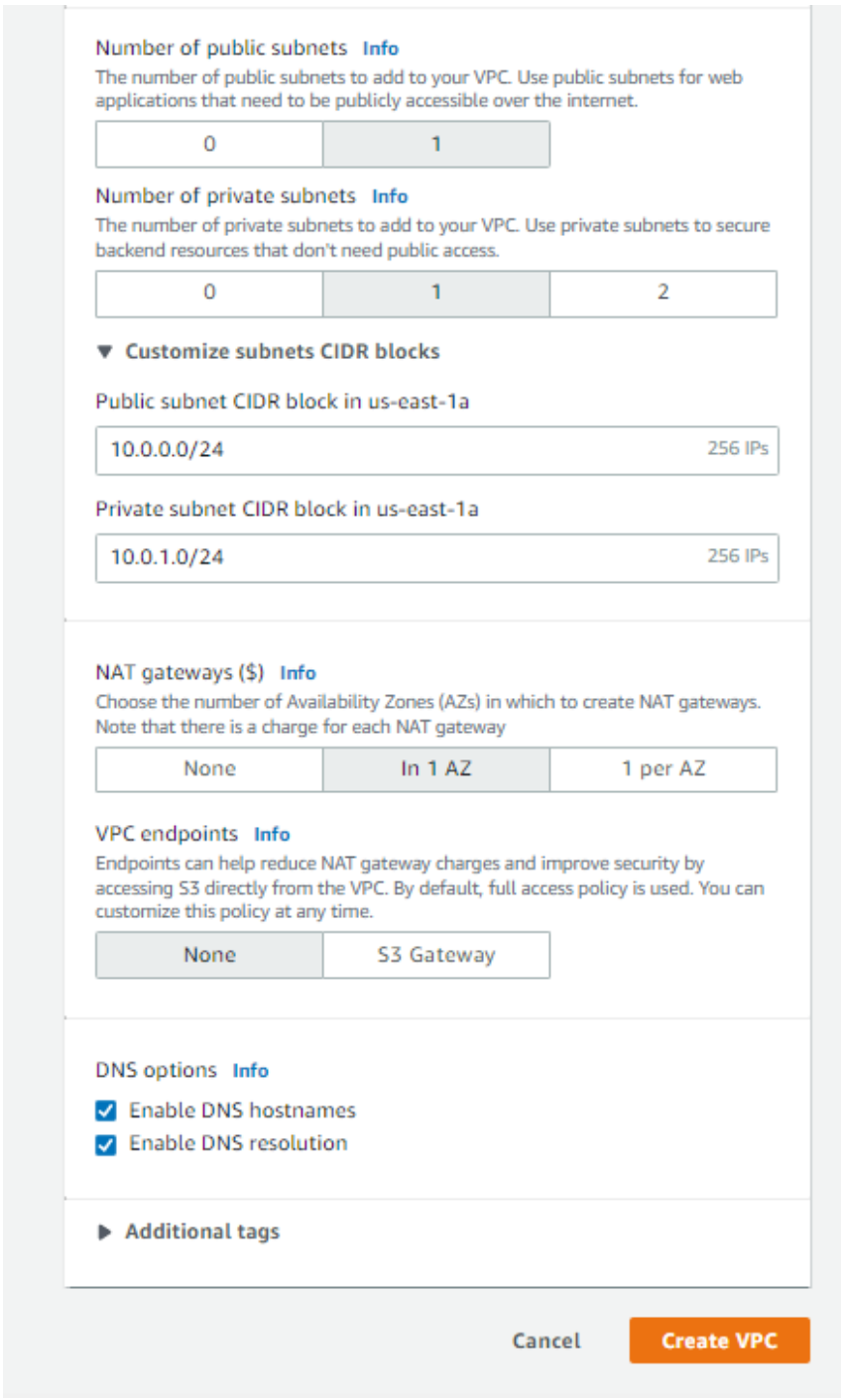
Include a screenshot of the following page to show your name.

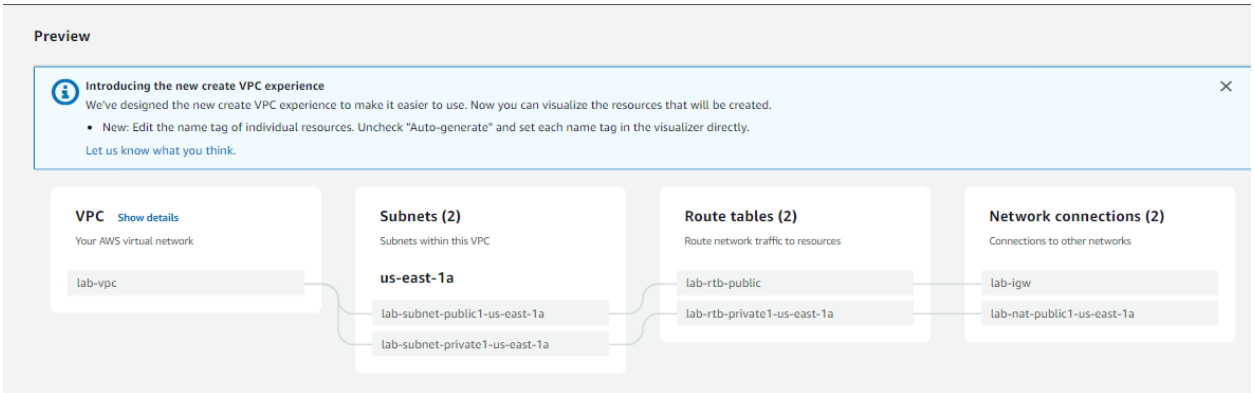


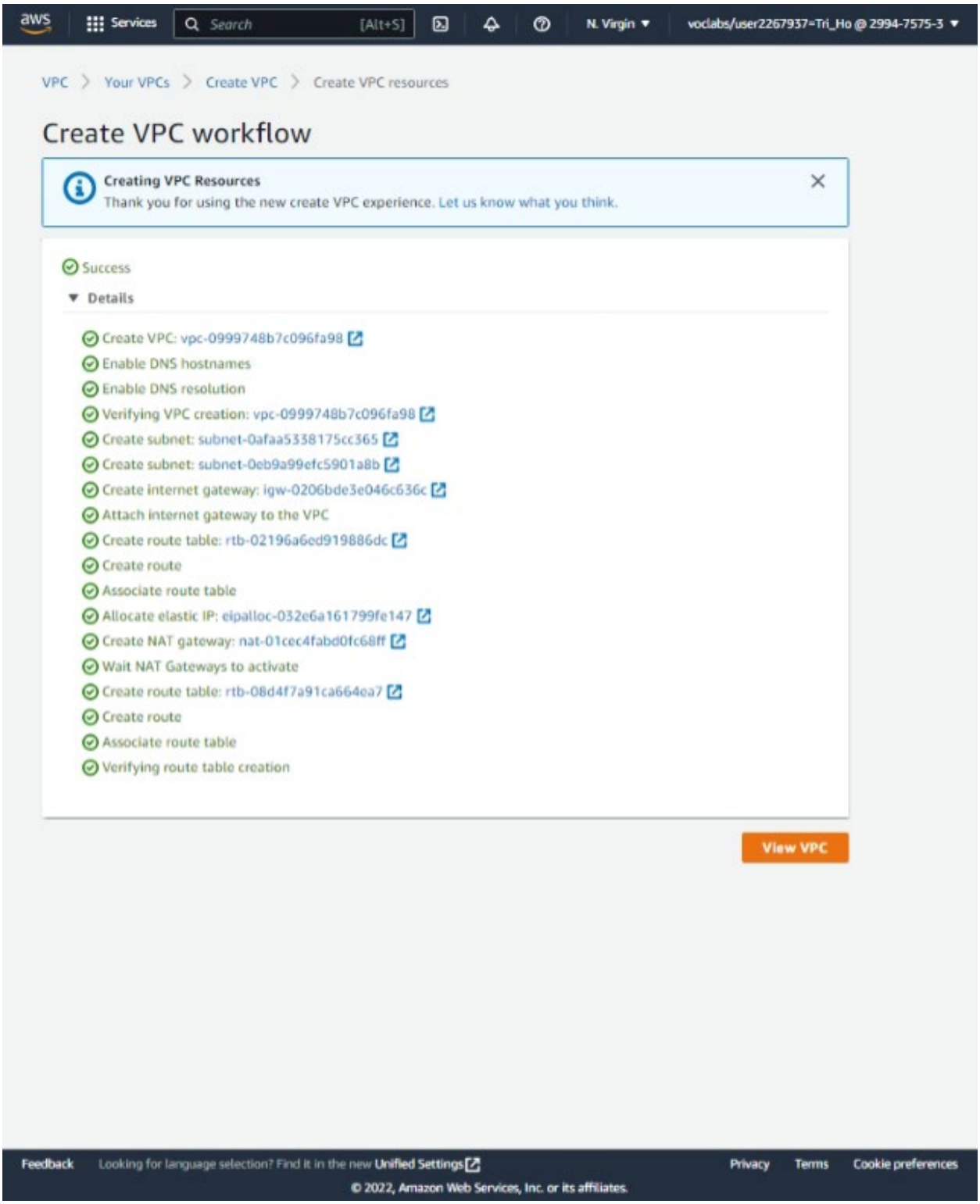
Source: AWS

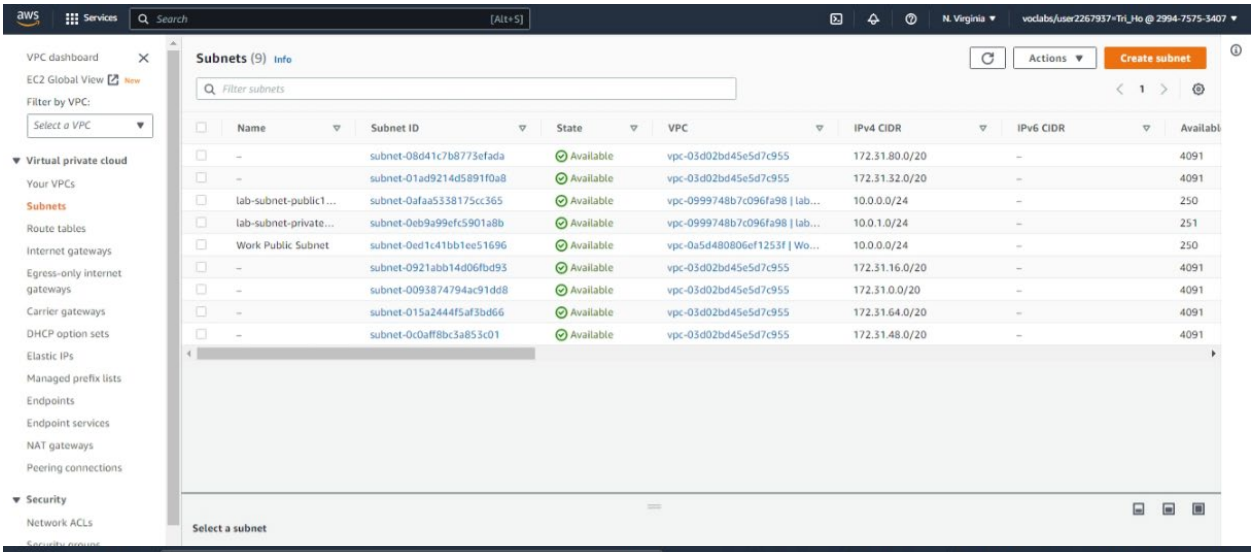
Task 1: Create Your VPC




Number of public subnets Info
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.
0
1
Number of private subnets Info
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.
0
1
2
Customize subnets CIDR blocks
Public subnet CIDR block in us-east-1a
10.0.0.0/24
256 IPs
Private subnet CIDR block in us-east-1a
10.0.1.0/24
256 IPs
NAT gateways ($) Info
Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway
None
In 1 AZ
1 per AZ
VPC endpoints Info
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.
None
S3 Gateway
DNS options Info
Enable DNS hostnames
Enable DNS resolution
Additional tags
Cancel
Create VPC


Preview
Introducing the new create VPC experience
We've designed the new create VPC experience to make it easier to use. Now you can visualize the resources that will be created.
New: Edit the name tag of individual resources. Uncheck "Auto-generate" and set each name tag in the visualizer directly.
Let us know what you think.
VPC
Show details
Your AWS virtual network
lab-vpc
Subnets (2)
Subnets within this VPC
us-east-1a
lab-subnet-public1-us-east-1a
lab-subnet-private1-us-east-1a
Route tables (2)
Route network traffic to resources
lab-rtb-public
lab-rtb-private1-us-east-1a
Network connections (2)
Connections to other networks
lab-igw
lab-nat-public1-us-east-1a


aws
Services
Search
[Alt+S]
N. Virgin
voclabs/user2267937=Tri_Ho @ 2994-7575-3
VPC
Your VPCs
Create VPC
Create VPC resources
Create VPC workflow
Creating VPC Resources
Thank you for using the new create VPC experience. Let us know what you think.
Success
Details
Create VPC: vpc-0999748b7c096fa98
Enable DNS hostnames
Enable DNS resolution
Verifying VPC creation: vpc-0999748b7c096fa98
Create subnet: subnet-0afaa5338175cc365
Create subnet: subnet-0eb9a99efc5901a8b
Create internet gateway: igw-0206bde3e046c636c
Attach internet gateway to the VPC
Create route table: rtb-02196a6ed919886dc
Create route
Associate route table
Allocate elastic IP: eipalloc-032e6a161799fe147
Create NAT gateway: nat-01cec4fabd0fc68ff
Wait NAT Gateways to activate
Create route table: rtb-08d4f7a91ca664ea7
Create route
Associate route table
Verifying route table creation
View VPC
Feedback
Looking for language selection? Find it in the new Unified Settings
Privacy
Terms
Cookie preferences
© 2022, Amazon Web Services, Inc. or its affiliates.


Subnets (9) Info
Actions
Create subnet
Filter subnets
Name
Subnet ID
State
VPC
IPv4 CIDR
IPv6 CIDR
subnet-08d41c7b8773efada
subnet-01ad9214d5891f0a8
subnet-0afaa5338175cc365
subnet-0eb9a99efc5901a8b
subnet-0ed1c41bb1ee51696
subnet-0921abb14d06fbd93
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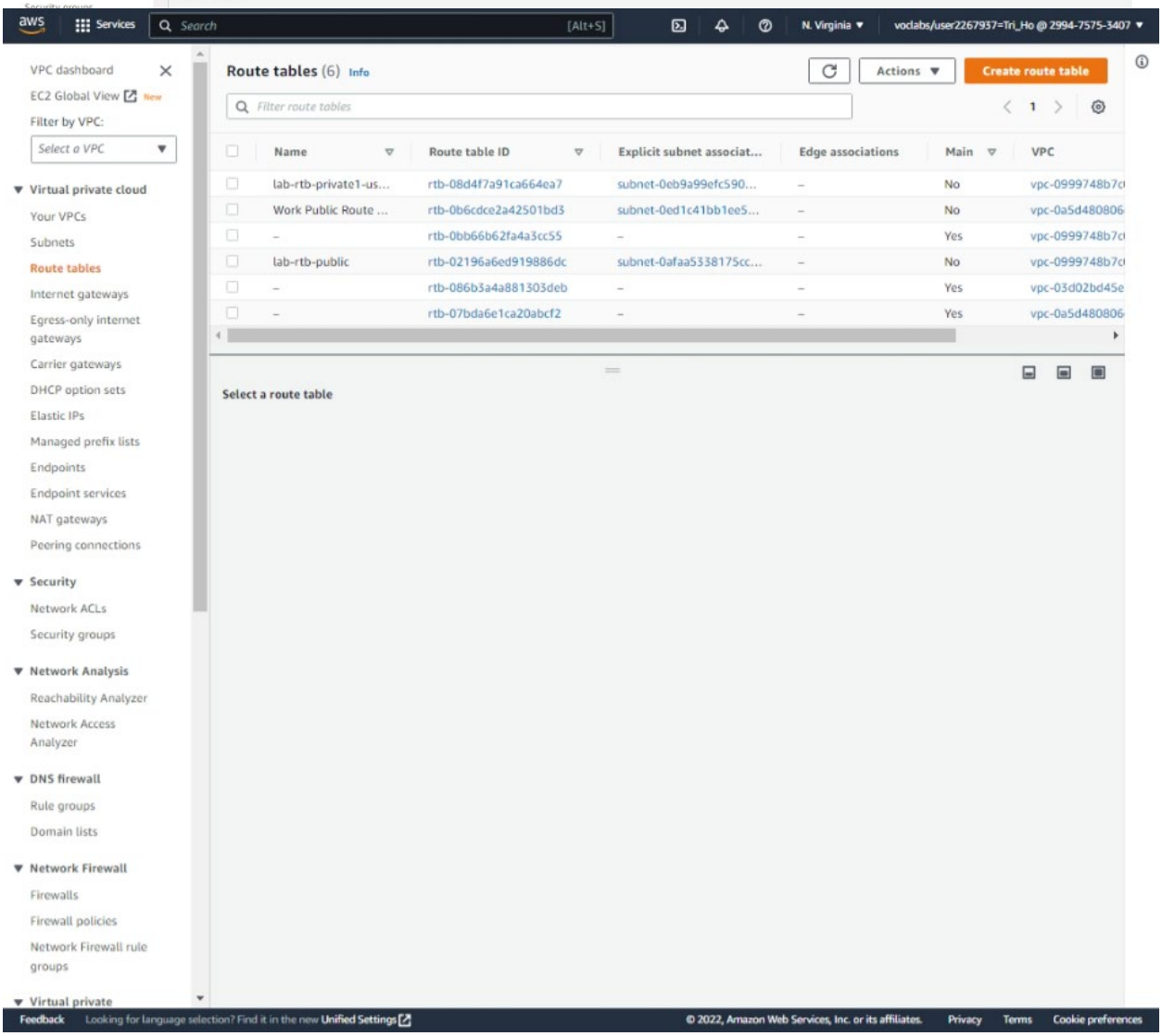
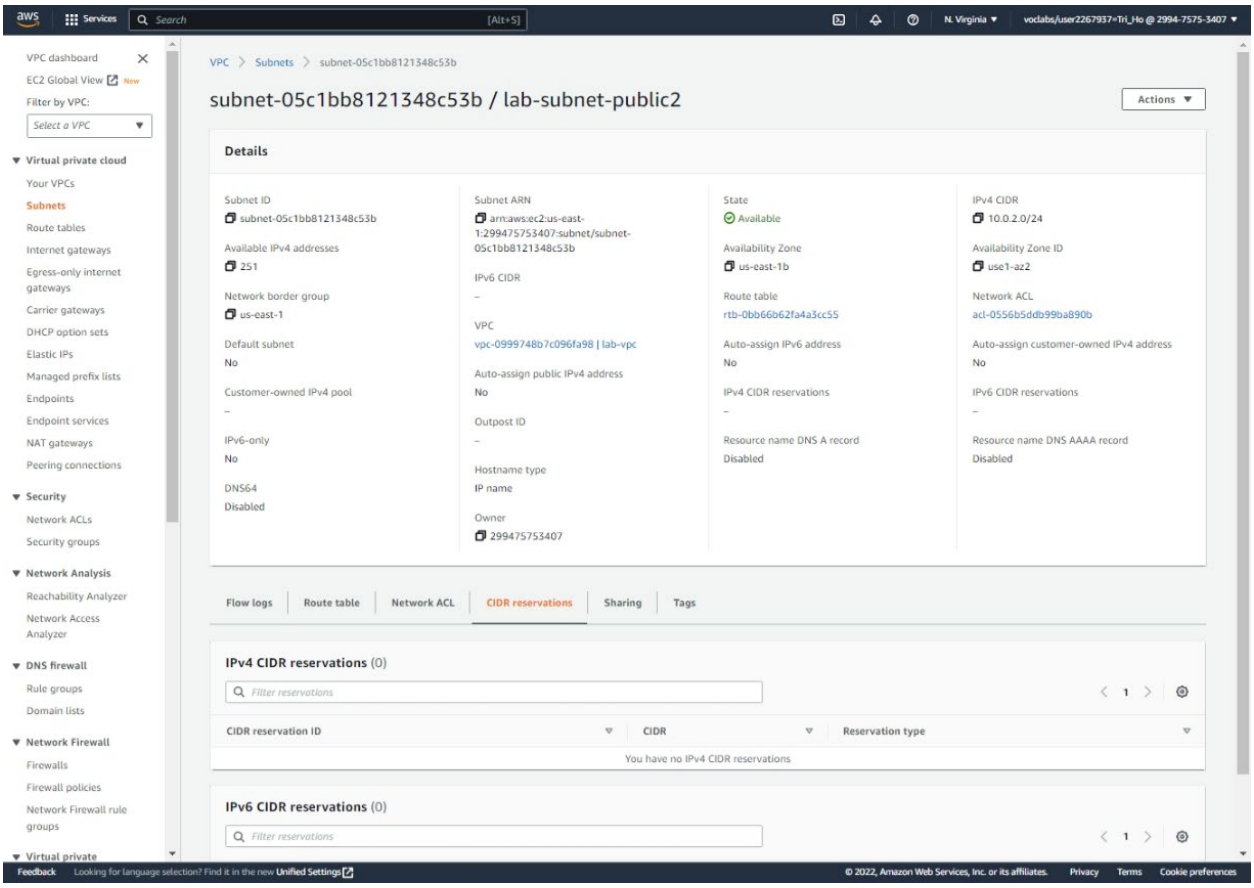
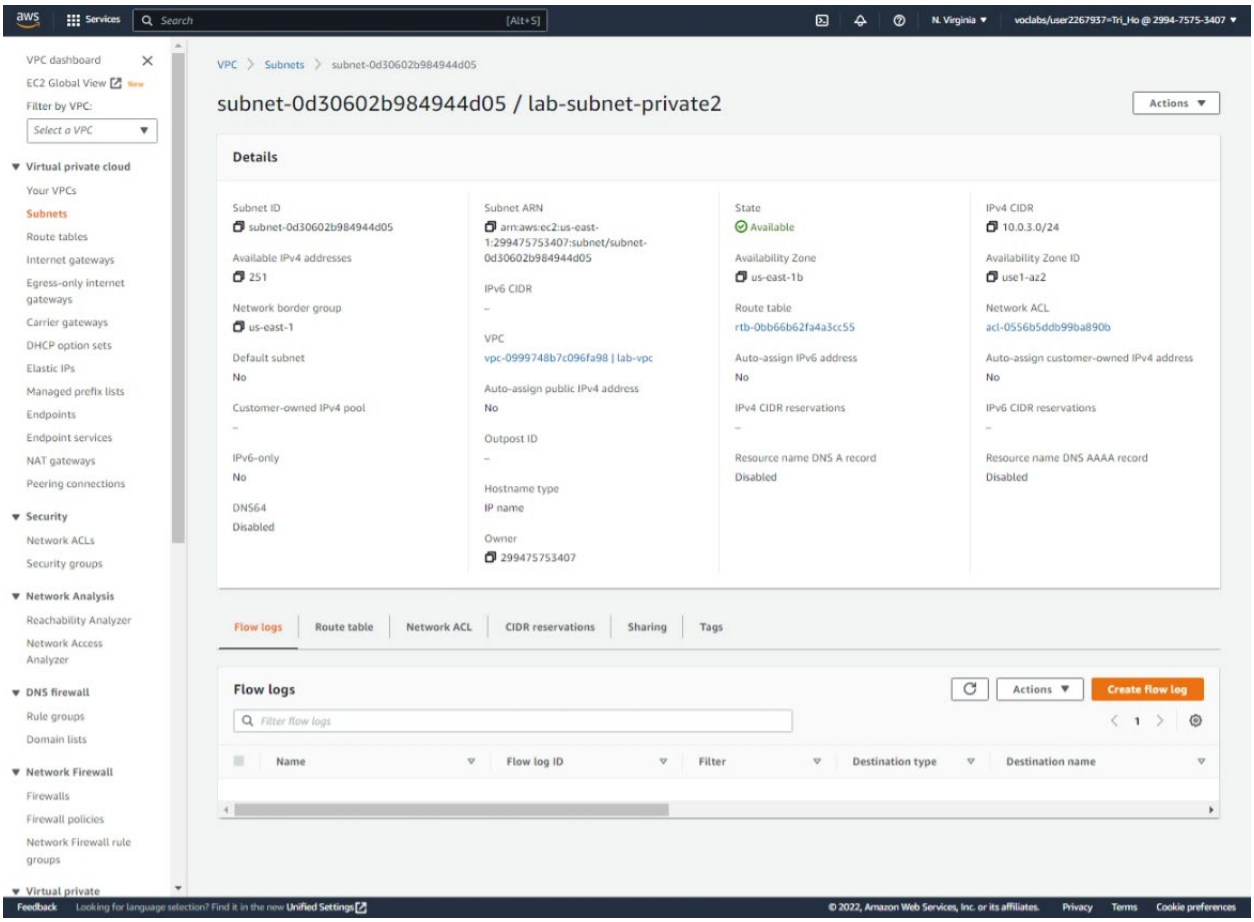
subnet-0c0aff8bc3a853c01
Select a subnet


Route tables (6) Info
Actions
Create route table
Filter route tables
Name
Route table ID
Explicit subnet associat...
Edge associations
Main
VPC
lab-rtb-private1-us...
rtb-08d4f7a91ca664ea7
Work Public Route ...
rtb-0b6cdce2a42501bd3
rtb-0bb66b62fa4a3cc55
lab-rtb-public
rtb-02196a6ed919886dc
rtb-086b3a4a881303deb
rtb-07bda6e1ca20abcf2
Select a route table

Task 2: Create Additional Subnets




aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
VPC dashboard
EC2 Global View
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections
Security
Network ACLs
Security groups
Network Analysis
Reachability Analyzer
Network Access Analyzer
DNS firewall
Rule groups
Domain lists
Network Firewall
Firewalls
Firewall policies
Network Firewall rule groups
Virtual private
VPC > Subnets > subnet-0d30602b984944d05
subnet-0d30602b984944d05 / lab-subnet-private2
Actions
Details
Subnet ID
subnet-0d30602b984944d05
Subnet ARN
arn:aws:ec2:us-east-1:299475753407:subnet/subnet-0d30602b984944d05
State
Available
IPv4 CIDR
10.0.3.0/24
Available IPv4 addresses
251
IPv6 CIDR
Availability Zone
us-east-1b
Availability Zone ID
use1-az2
Network border group
us-east-1
VPC
vpc-0999748b7c096fa98 | lab-vpc
Route table
rtb-0bb66b62fa4a3cc55
Network ACL
acl-0556b5ddb99ba890b
Default subnet
No
Auto-assign public IPv4 address
No
Auto-assign IPv6 address
No
Auto-assign customer-owned IPv4 address
No
Customer-owned IPv4 pool
Outpost ID
IPv4 CIDR reservations
IPv6 CIDR reservations
IPv6-only
No
Hostname type
IP name
Resource name DNS A record
Disabled
Resource name DNS AAAA record
Disabled
DNS64
Disabled
Owner
299475753407
Flow logs
Route table
Network ACL
CIDR reservations
Sharing
Tags
Flow logs
Actions
Create flow log
Filter flow logs
Name
Flow log ID
Filter
Destination type
Destination name
Feedback
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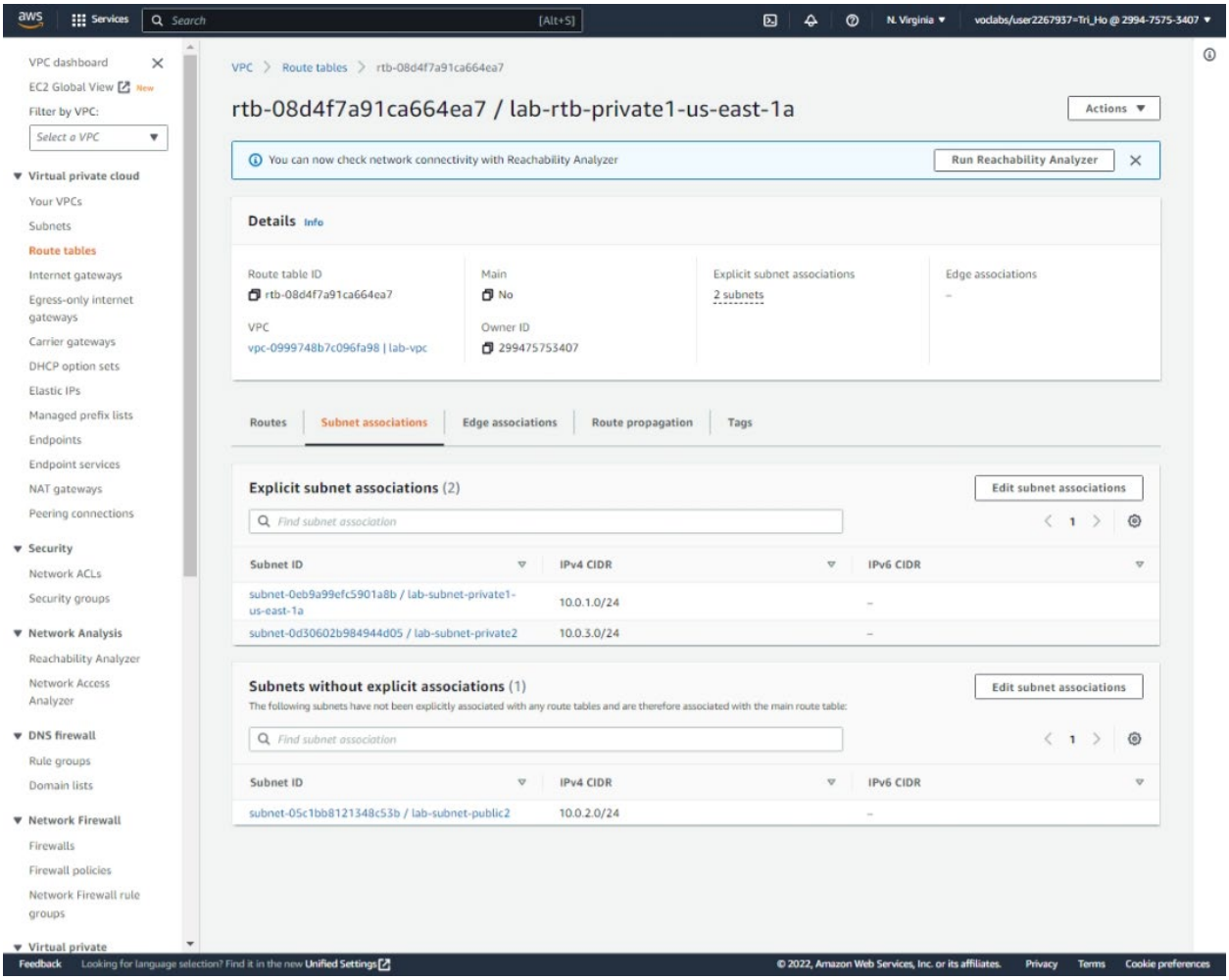
Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
VPC dashboard
EC2 Global View
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections
Security
Network ACLs
Security groups
Network Analysis
Reachability Analyzer
Network Access Analyzer
DNS firewall
Rule groups
Domain lists
Network Firewall
Firewalls
Firewall policies
Network Firewall rule groups
Virtual private
VPC > Route tables > rtb-08d4f7a91ca664ea7
rtb-08d4f7a91ca664ea7 / lab-rtb-private1-us-east-1a
Actions
You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer
Details Info
Route table ID
rtb-08d4f7a91ca664ea7
Main
No
Explicit subnet associations
2 subnets
Edge associations
VPC
vpc-0999748b7c096fa98 | lab-vpc
Owner ID
299475753407
Routes
Subnet associations
Edge associations
Route propagation
Tags
Explicit subnet associations (2)
Edit subnet associations
Find subnet association
Subnet ID
IPv4 CIDR
IPv6 CIDR
subnet-0eb9a99efc5901a8b / lab-subnet-private1-us-east-1a
10.0.1.0/24
subnet-0d30602b984944d05 / lab-subnet-private2
10.0.3.0/24
Subnets without explicit associations (1)
The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:
Edit subnet associations
Find subnet association
Subnet ID
IPv4 CIDR
IPv6 CIDR
subnet-05c1bb8121348c53b / lab-subnet-public2
10.0.2.0/24
Feedback
Looking for language selection? Find it in the new Unified Settings
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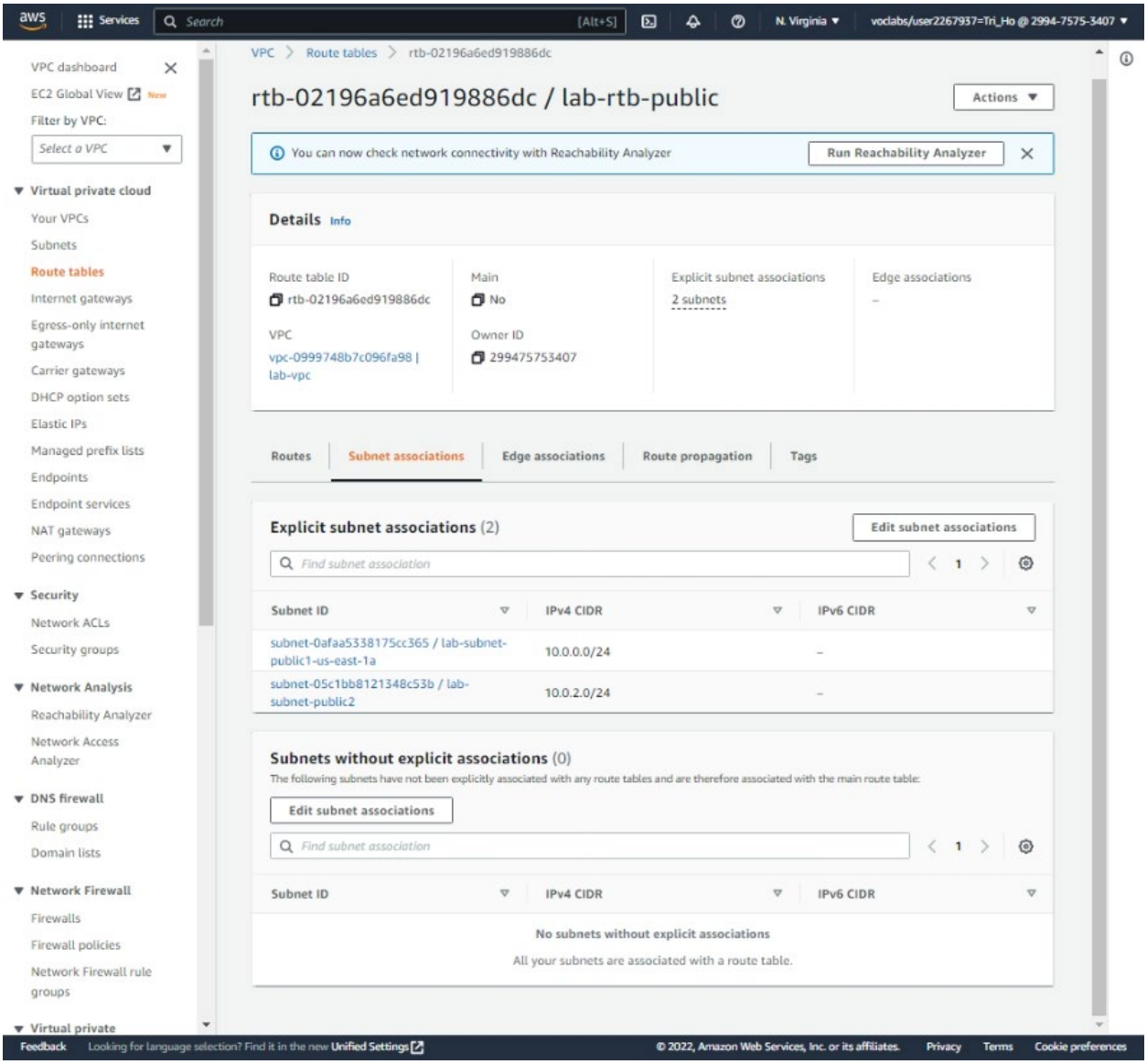
Terms
Cookie preferences


aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
VPC dashboard
EC2 Global View
New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections
Security
Network ACLs
Security groups
Network Analysis
Reachability Analyzer
Network Access Analyzer
DNS firewall
Rule groups
Domain lists
Network Firewall
Firewalls
Firewall policies
Network Firewall rule groups
Virtual private
VPC > Route tables > rtb-02196a6ed919886dc
rtb-02196a6ed919886dc / lab-rtb-public
Actions
You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer
Details Info
Route table ID
rtb-02196a6ed919886dc
Main
No
Explicit subnet associations
2 subnets
Edge associations
–
VPC
vpc-0999748b7c096fa98 | lab-vpc
Owner ID
299475753407
Routes
Subnet associations
Edge associations
Route propagation
Tags
Explicit subnet associations (2)
Edit subnet associations
Find subnet association
1
Subnet ID
IPv4 CIDR
IPv6 CIDR
subnet-0afaa5338175cc365 / lab-subnet-public1-us-east-1a
10.0.0.0/24
–
subnet-05c1bb8121348c53b / lab-subnet-public2
10.0.2.0/24
–
Subnets without explicit associations (0)
The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:
Edit subnet associations
Find subnet association
1
Subnet ID
IPv4 CIDR
IPv6 CIDR
No subnets without explicit associations
All your subnets are associated with a route table.
Feedback
Looking for language selection? Find it in the new Unified Settings
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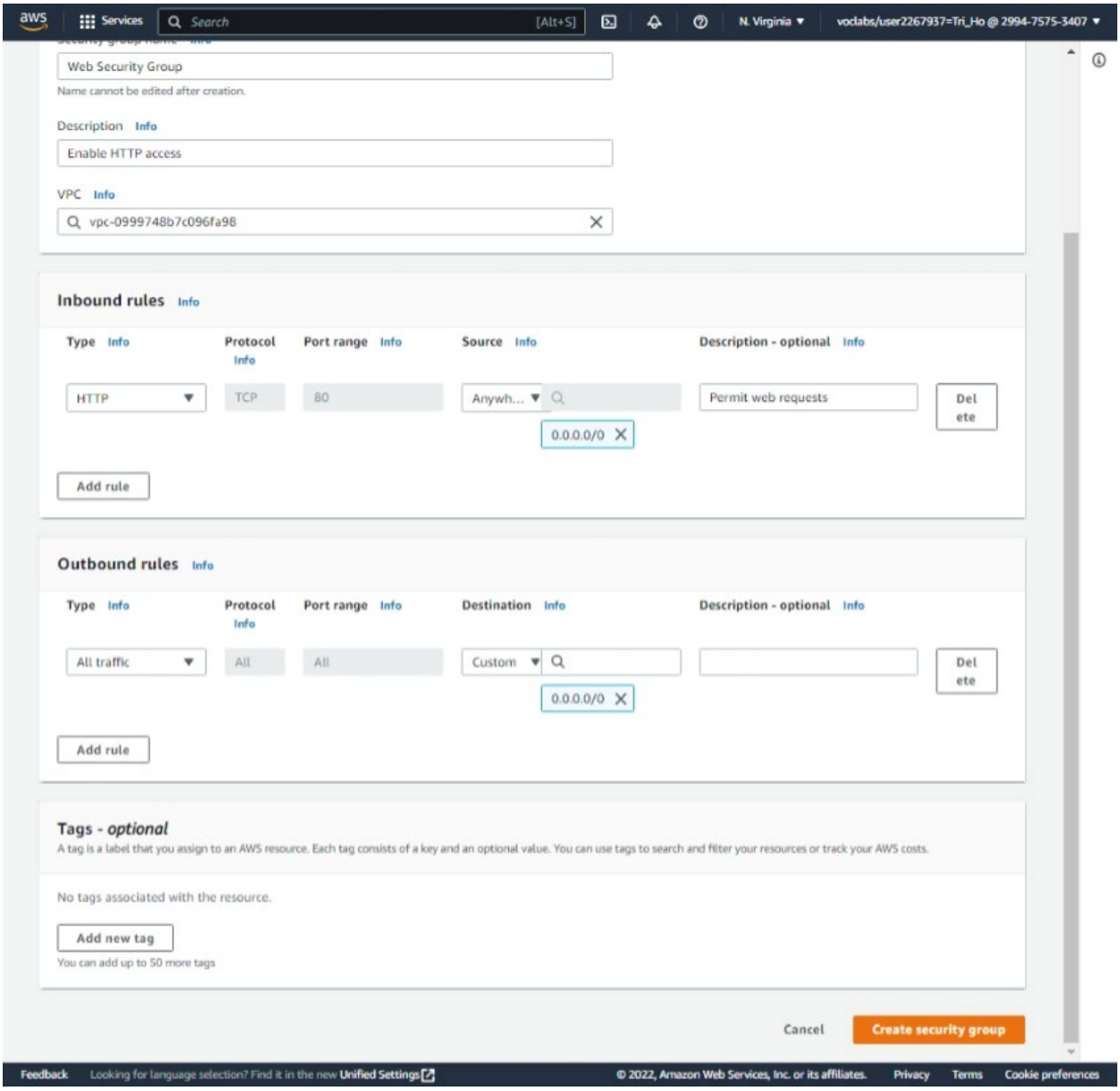
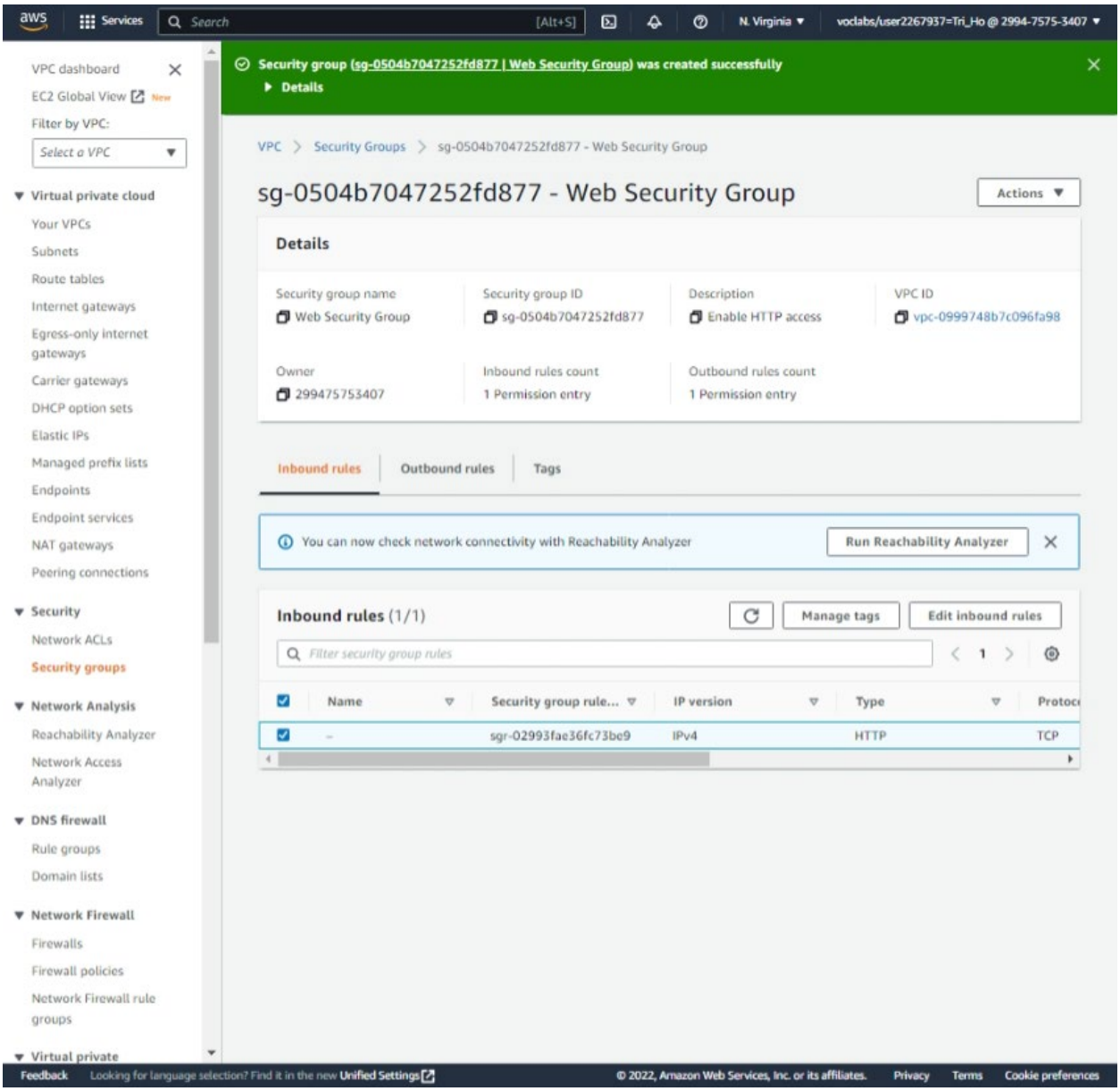
Task 3: Create a VPC Security Group




Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
VPC dashboard
EC2 Global View
New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
Peering connections
Security
Network ACLs
Security groups
Network Analysis
Reachability Analyzer
Network Access Analyzer
DNS firewall
Rule groups
Domain lists
Network Firewall
Firewalls
Firewall policies
Network Firewall rule groups
Virtual private
Security group (sg-0504b7047252fd877 | Web Security Group) was created successfully
Details
VPC > Security Groups > sg-0504b7047252fd877 - Web Security Group
sg-0504b7047252fd877 - Web Security Group
Actions
Details
Security group name
Web Security Group
Security group ID
sg-0504b7047252fd877
Description
Enable HTTP access
VPC ID
vpc-0999748b7c096fa98
Owner
299475753407
Inbound rules count
1 Permission entry
Outbound rules count
1 Permission entry
Inbound rules
Outbound rules
Tags
You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer
Inbound rules (1/1)
Manage tags
Edit inbound rules
Filter security group rules
1
Name
Security group rule...
IP version
Type
Protoc
sgr-02993fae36fc73be9
IPv4
HTTP
TCP
Feedback
Looking for language selection? Find it in the new Unified Settings
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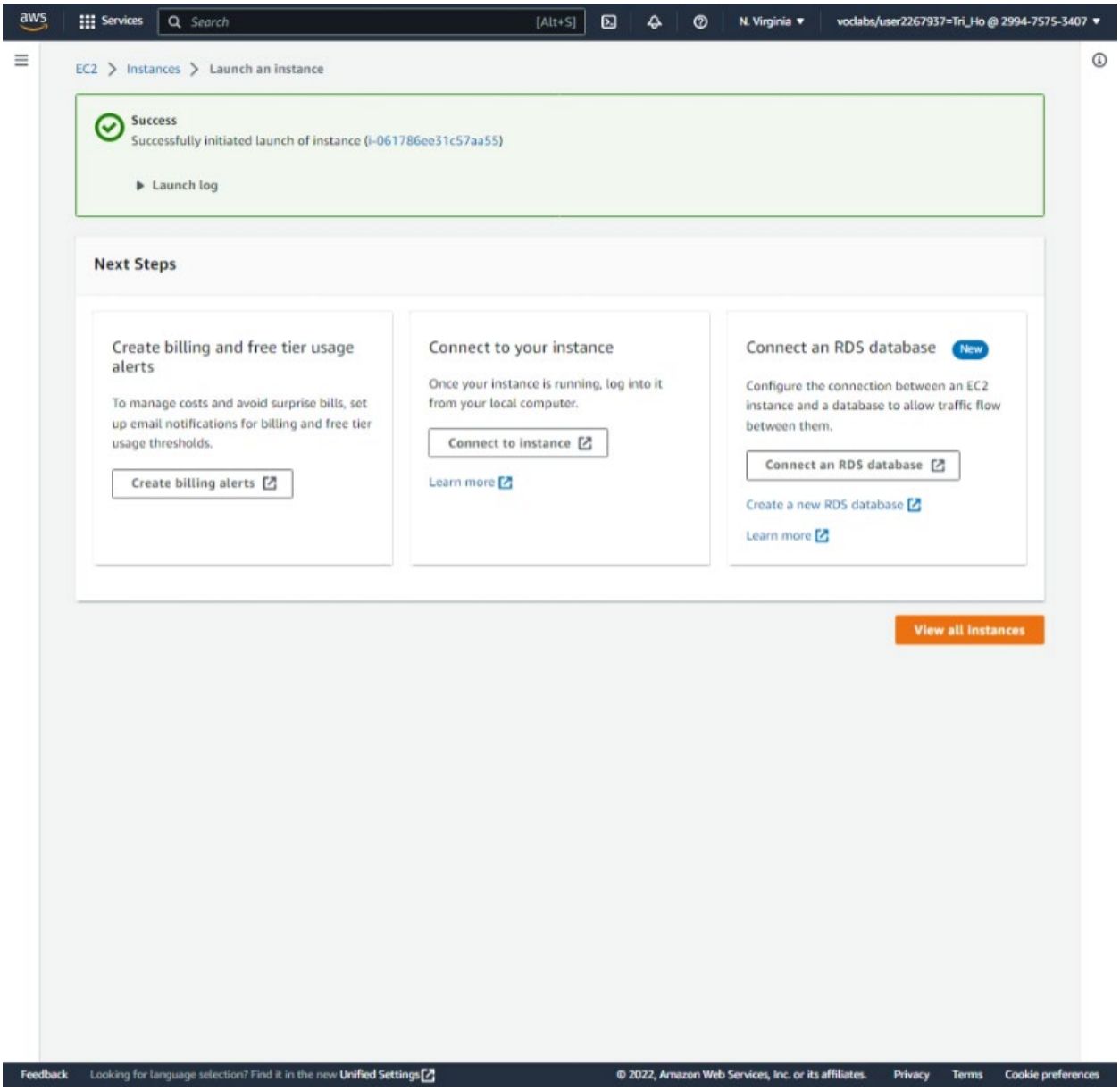
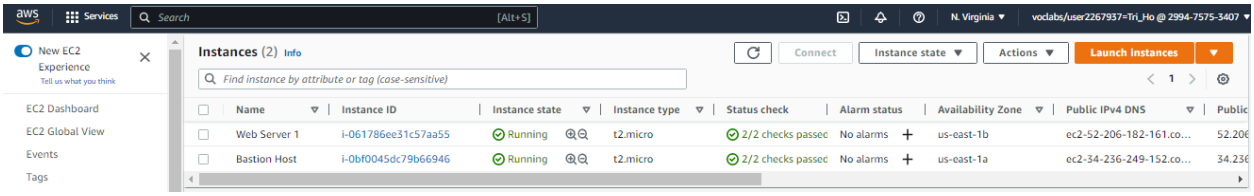
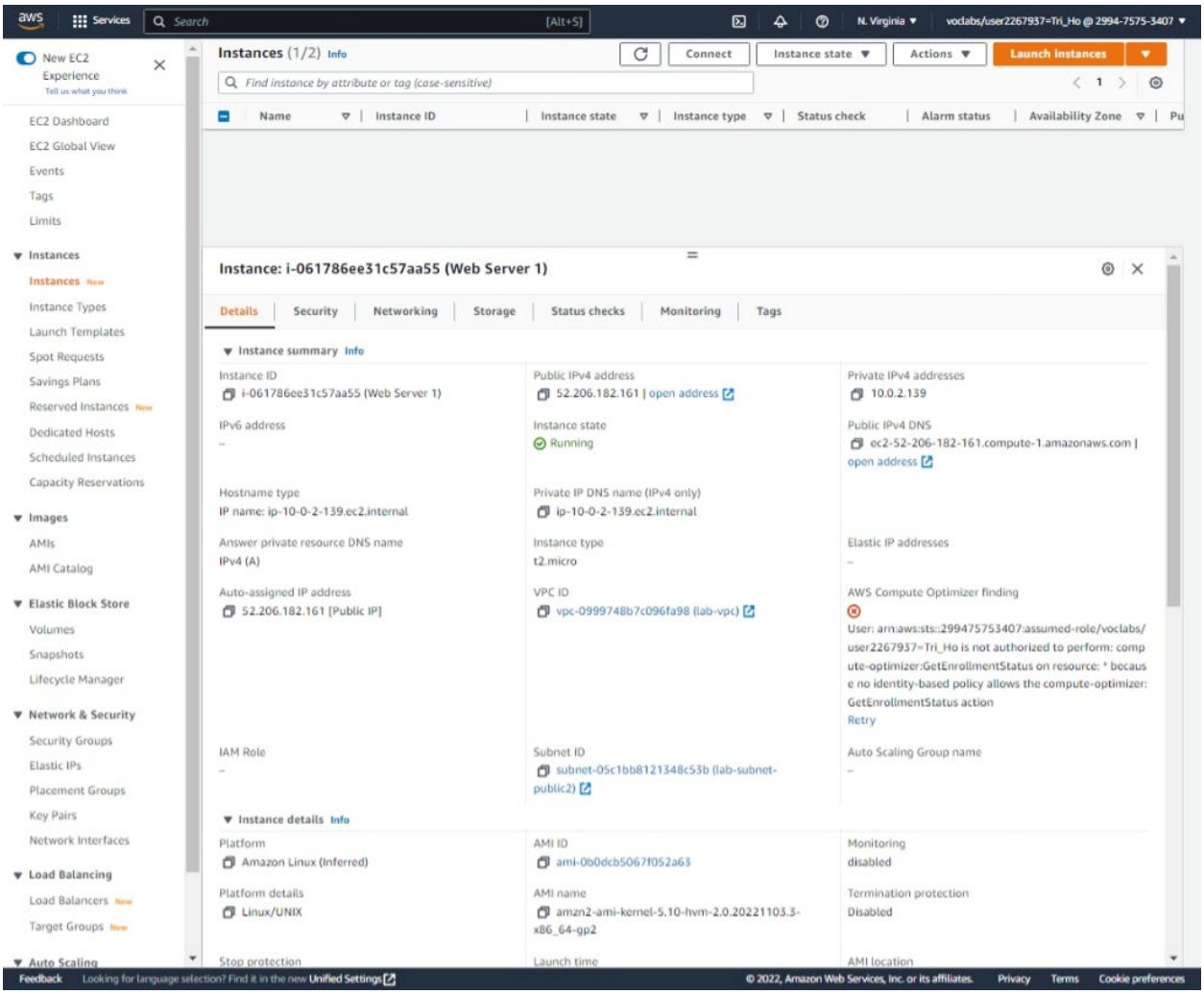
Task 4: Launch a Web Server Instance




Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
New EC2 Experience
Tell us what you think
EC2 Dashboard
EC2 Global View
Events
Tags
Instances (2) Info
Find instance by attribute or tag (case-sensitive)
Connect
Instance state
Actions
Launch instances
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
Web Server 1
i-061786ee31c57aa55
Running
t2.micro
2/2 checks passed
No alarms
us-east-1b
ec2-52-206-182-161.co...
Bastion Host
i-0bf0045dc79b66946
Running
t2.micro
2/2 checks passed
No alarms
us-east-1a
ec2-34-236-249-152.co...


Services
Search
[Alt+S]
N. Virginia
voclabs/user2267937=Tri_Ho @ 2994-7575-3407
New EC2 Experience
Tell us what you think
EC2 Dashboard
EC2 Global View
Events
Tags
Limits
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups
Auto Scaling
Instances (1/2) Info
Find instance by attribute or tag (case-sensitive)
Connect
Instance state
Actions
Launch instances
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Instance: i-061786ee31c57aa55 (Web Server 1)
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Instance summary Info
Instance ID
i-061786ee31c57aa55 (Web Server 1)
Public IPv4 address
52.206.182.161 | open address
Private IPv4 addresses
10.0.2.139
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-52-206-182-161.compute-1.amazonaws.com | open address
Hostname type
IP name: ip-10-0-2-139.ec2.internal
Private IP DNS name (IPv4 only)
ip-10-0-2-139.ec2.internal
Answer private resource DNS name
IPv4 (A)
Instance type
t2.micro
Elastic IP addresses
–
Auto-assigned IP address
52.206.182.161 [Public IP]
VPC ID
vpc-0999748b7c096fa98 (lab-vpc)
AWS Compute Optimizer finding
User: arn:aws:sts::299475753407:assumed-role/voclabs/user2267937=Tri_Ho is not authorized to perform: compute-optimizer:GetEnrollmentStatus on resource: * because no identity-based policy allows the compute-optimizer:GetEnrollmentStatus action
Retry
IAM Role
–
Subnet ID
subnet-05c1bb8121348c53b (lab-subnet-public2)
Auto Scaling Group name
–
Instance details Info
Platform
Amazon Linux (Inferred)
AMI ID
ami-0b0dcb5067f052a63
Monitoring
disabled
Platform details
Linux/UNIX
AMI name
amzn2-ami-kernel-5.10-hvm-2.0.20221103.3-x86_64-gp2
Termination protection
Disabled
Stop protection
Launch time
AMI location
Feedback
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aws Load Test RDS

Meta-Data	Value
InstanceId	*i-061786ee31c57aa55*
Availability Zone	*us-east-1b*

Current CPU Load: **1%**

Lab Complete