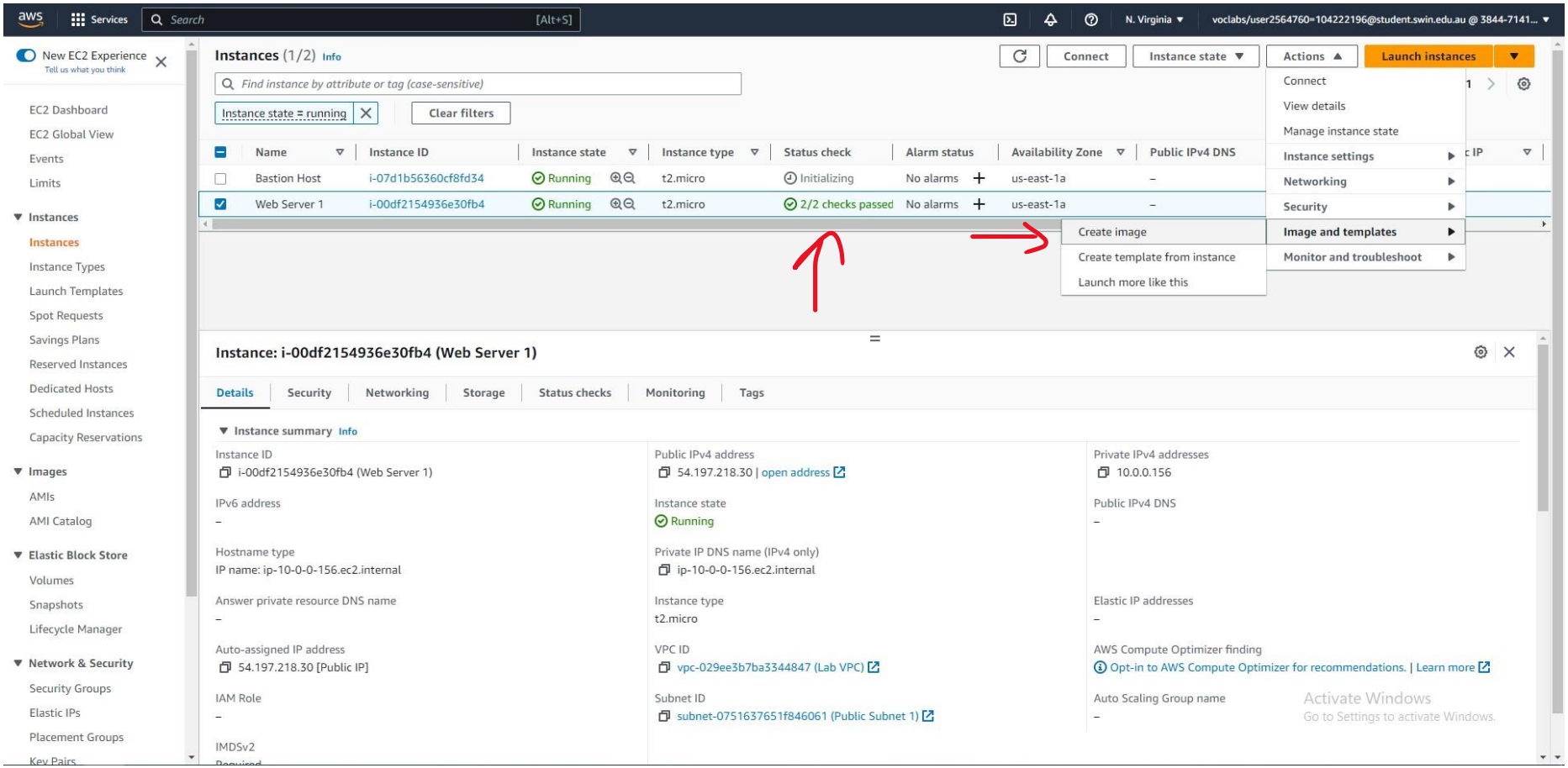
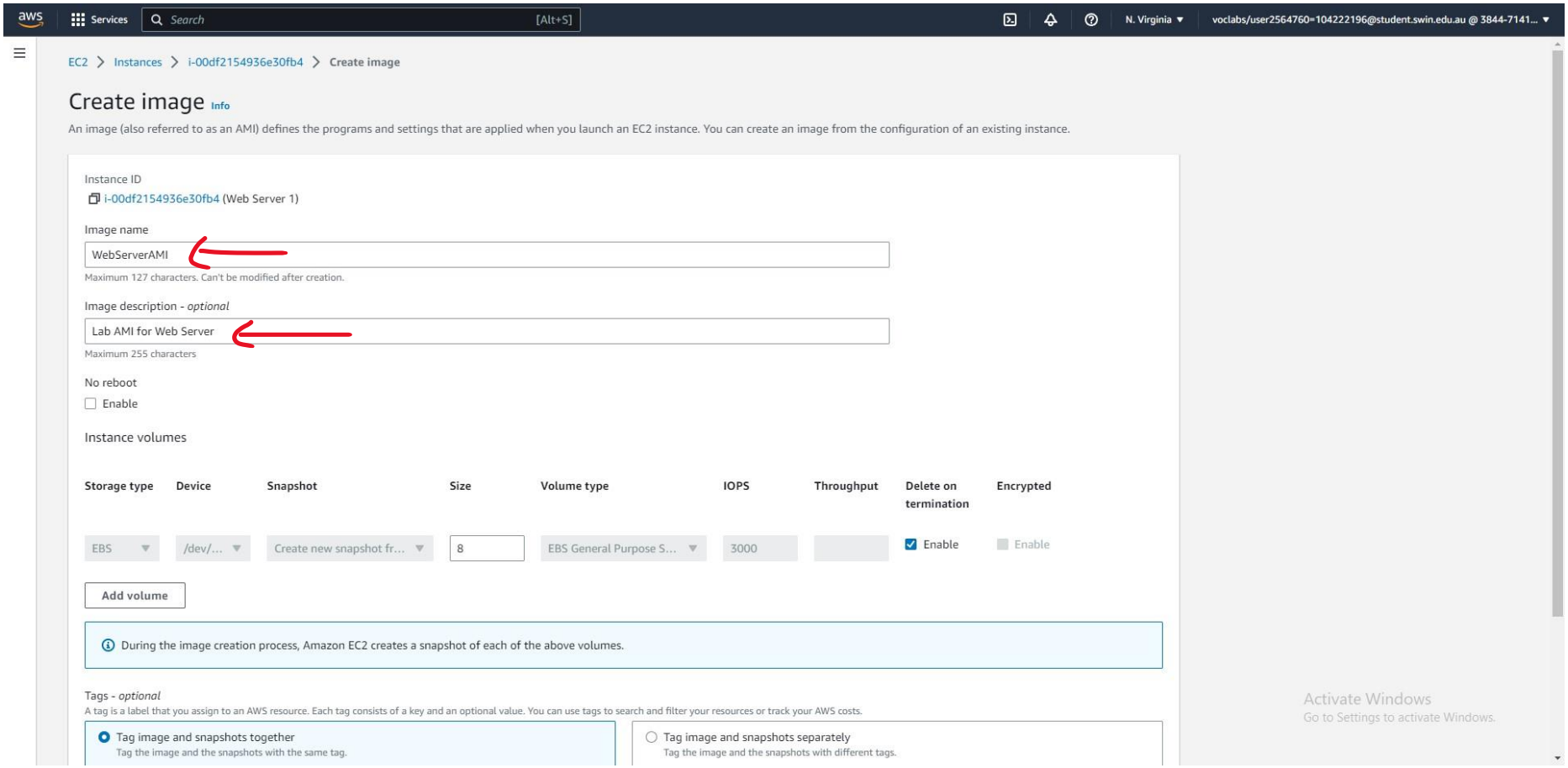
Ta Quang Tung – 104222196

COS20019 – Cloud Computing Architecture - Wk7: ACF Lab 6: Scaling and Load Balance your architecture

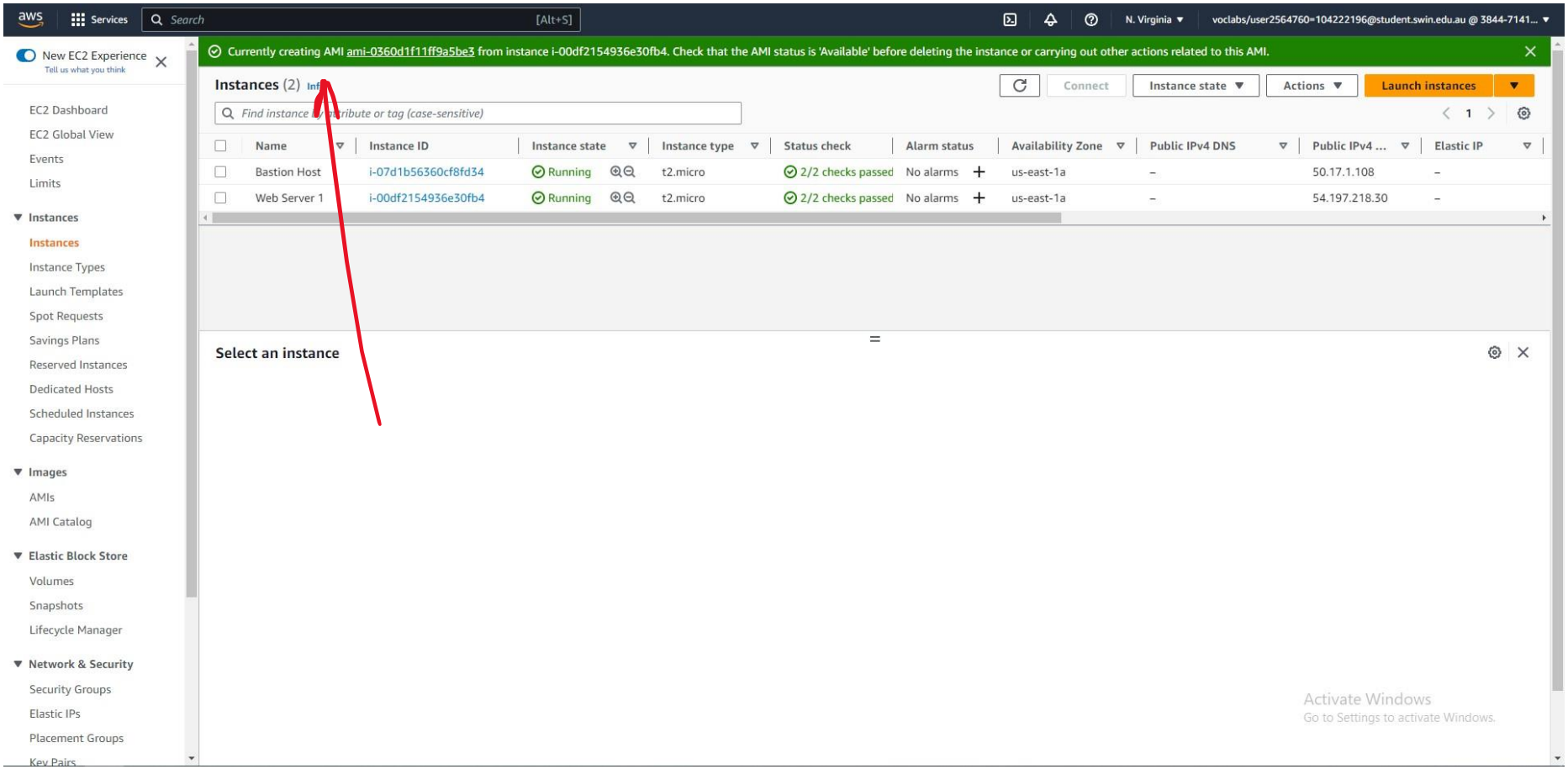
Task 1 - Create an AMI for Auto Scaling



Steps 5-8: After waiting for Web Server 1 to pass both status checks, create an AMI from it.

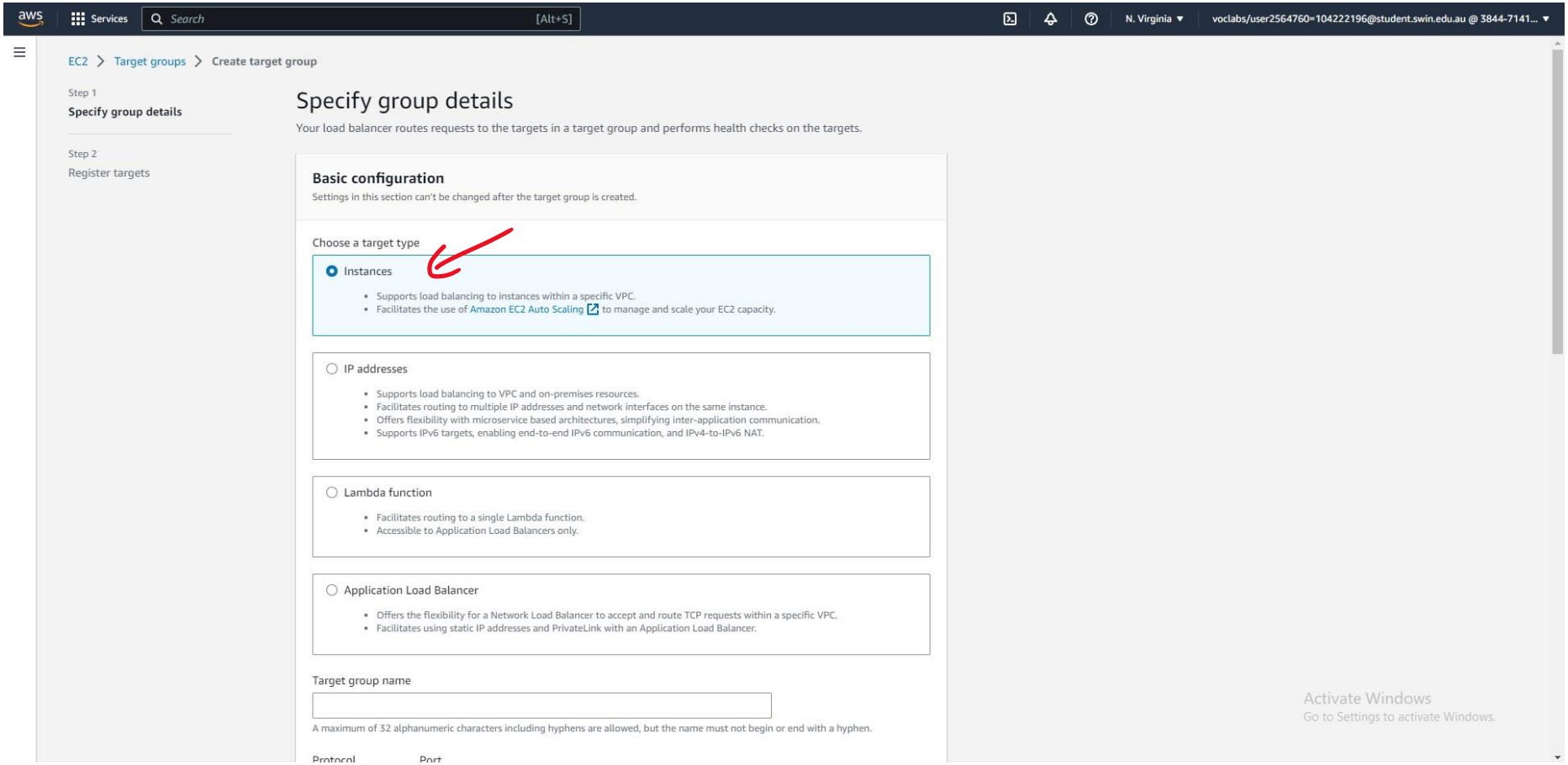


Step 9: Configure a name and description for the AMI.

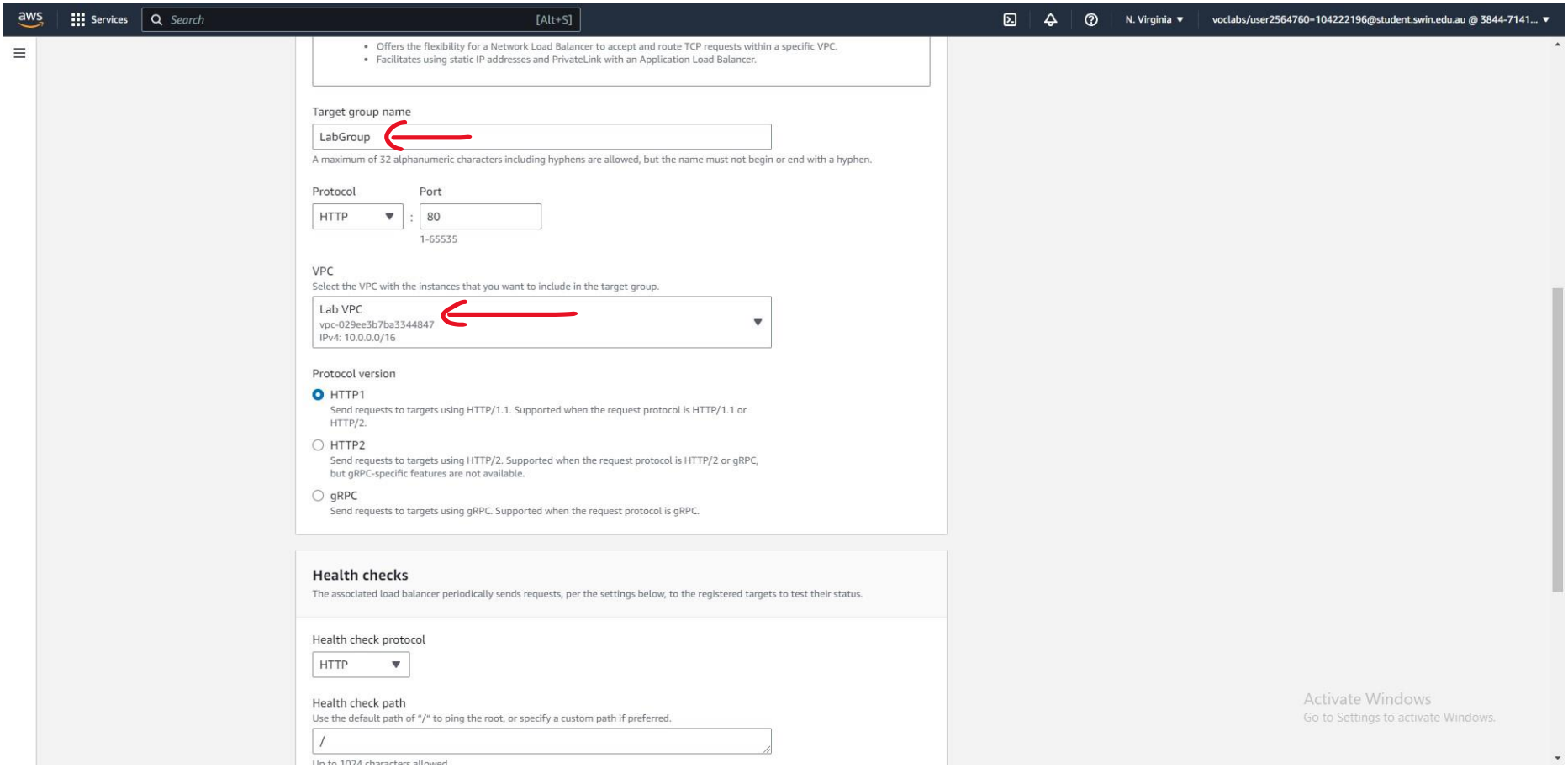


Step 10: The AMI is being created.

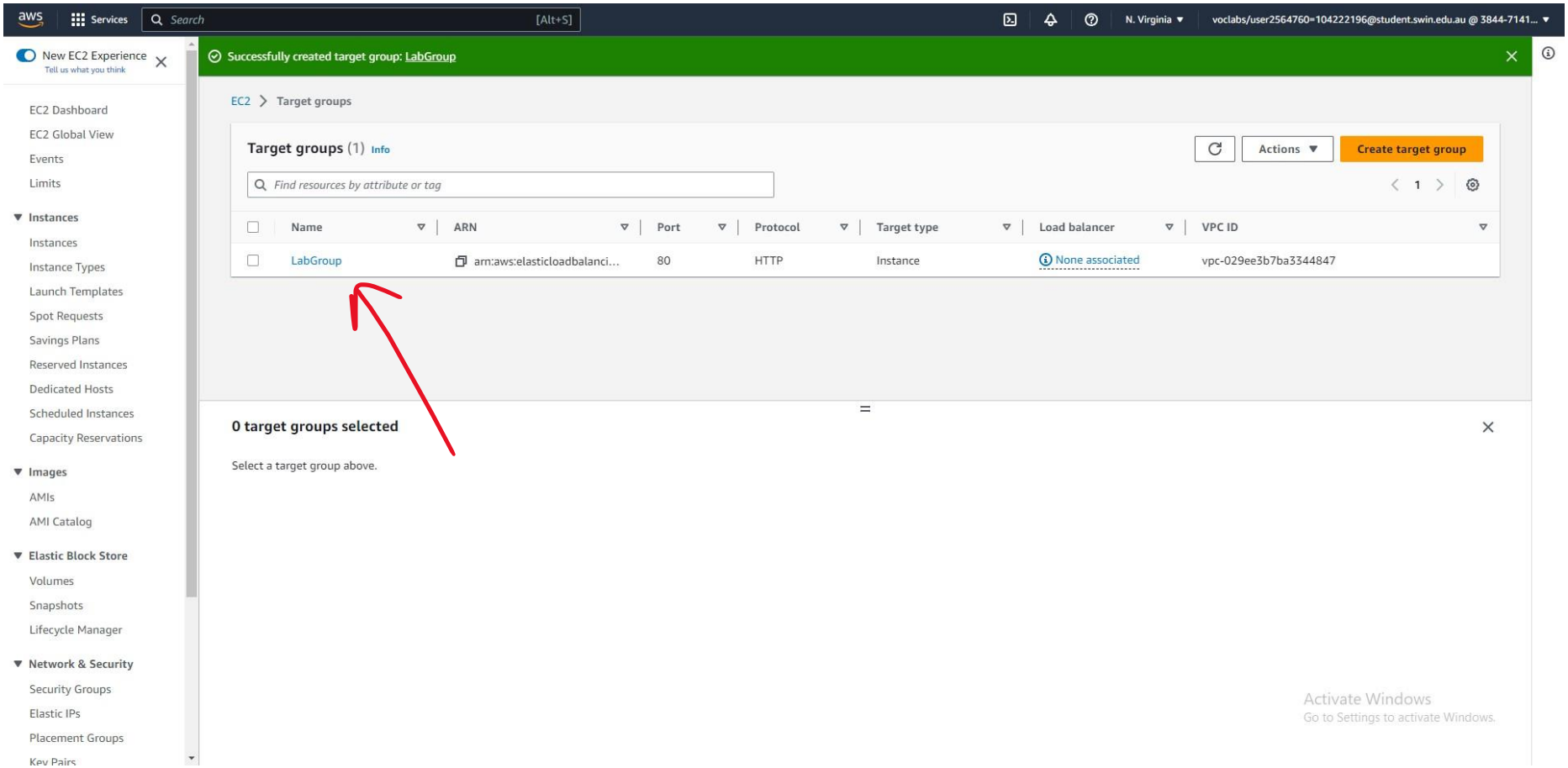
Task 2 - Create a Load Balancer



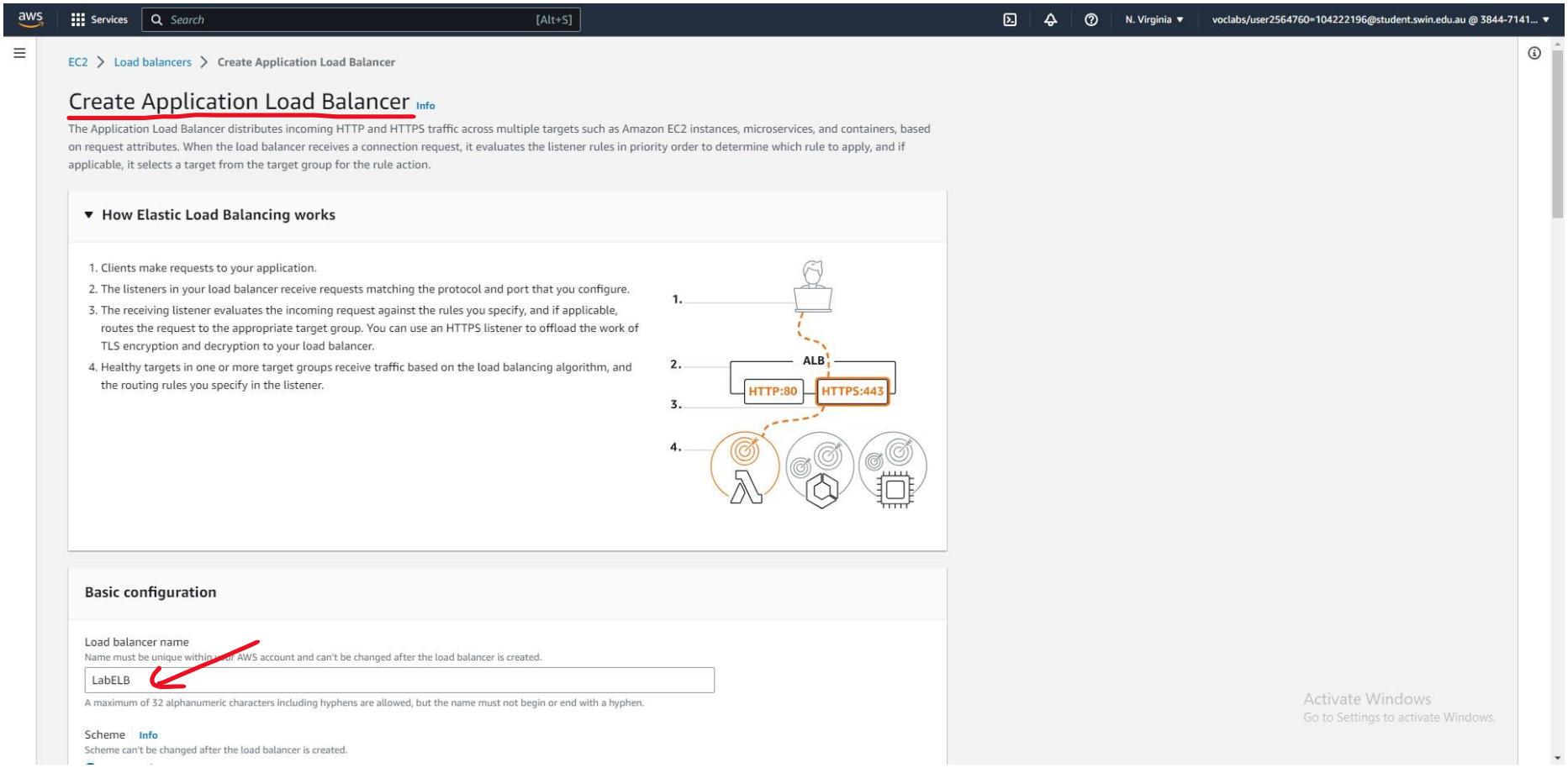
Step 11: Create a target group – Choose target type of Instances.



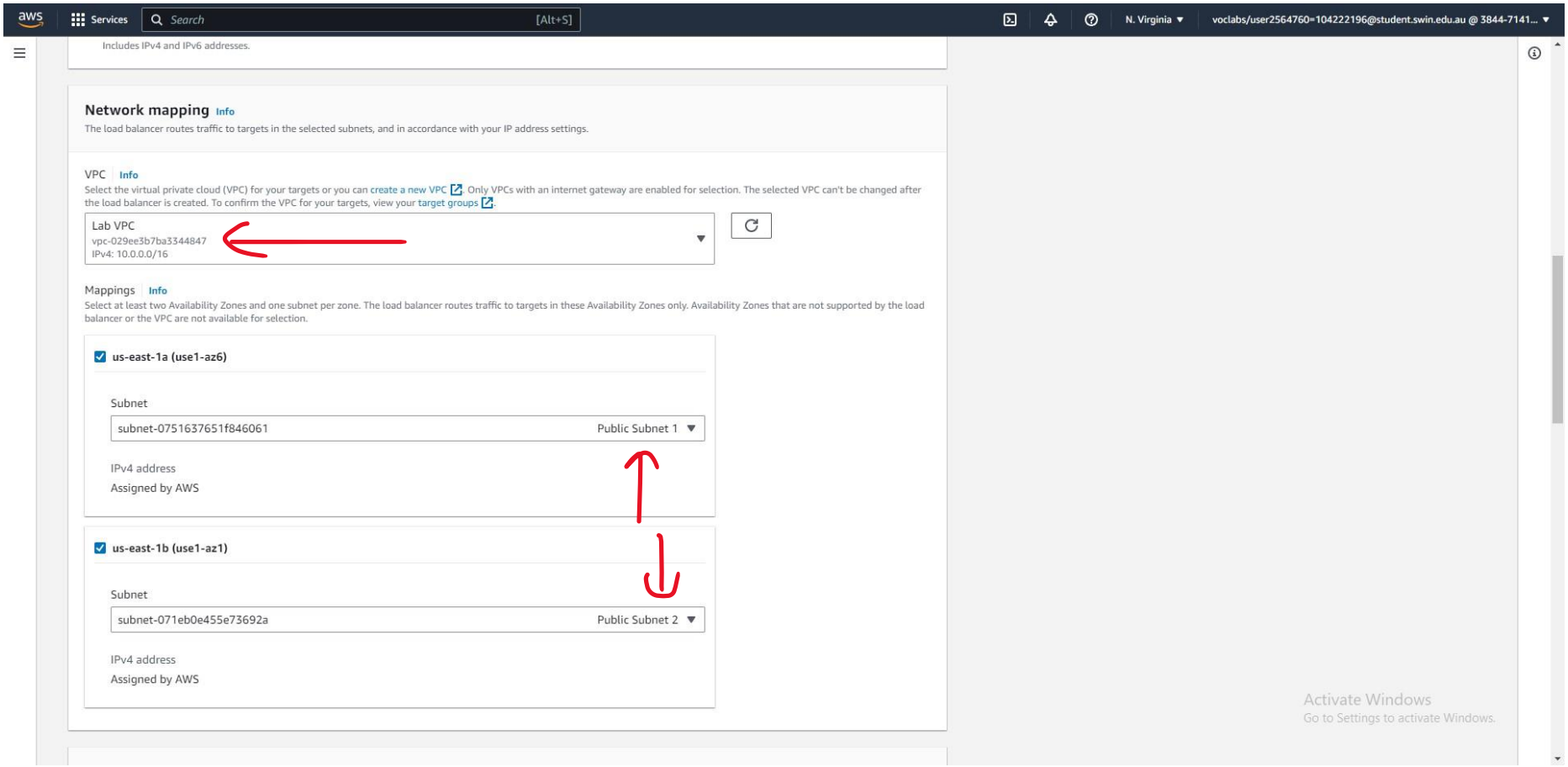
Step 11: Create a target group – Enter the group name of LabGroup and select the Lab VPC.



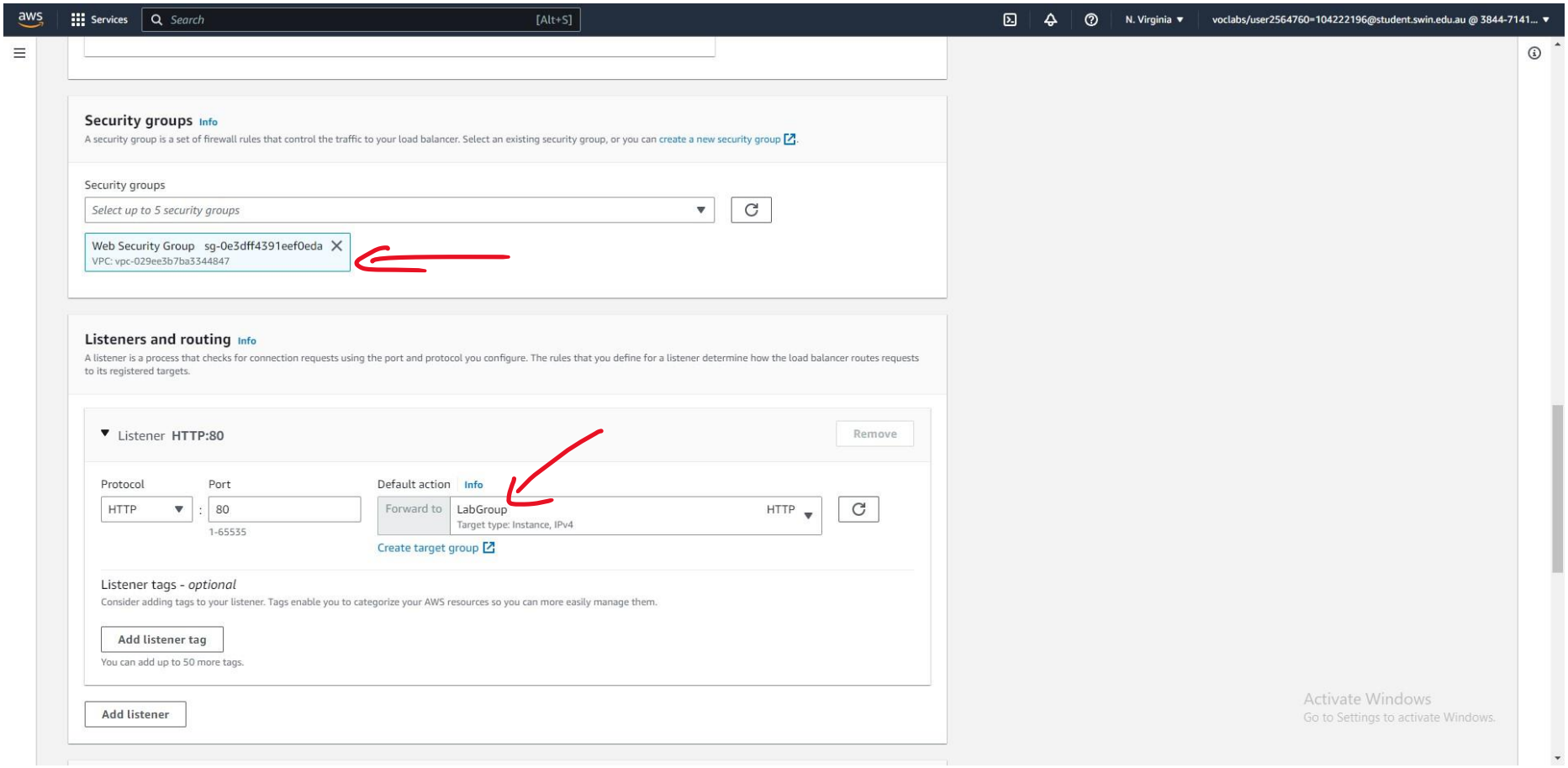
Steps 12-13: The target group has been created.



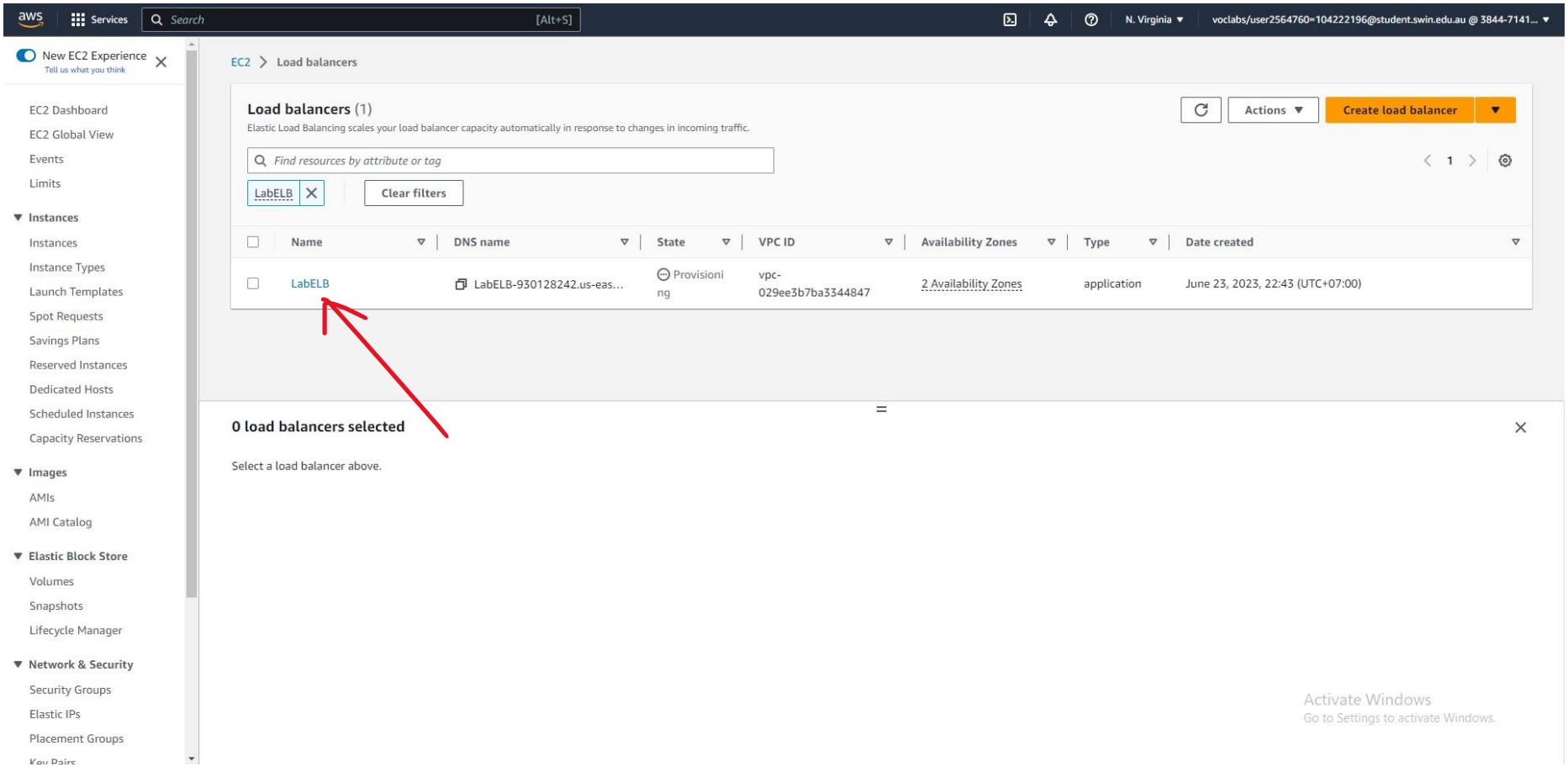
Steps 14-17: Create an Application Load Balancer – Enter the name LabELB.



Step 18: Create an Application Load Balancer – Under network mapping, choose the Lab VPC and the two public subnets.

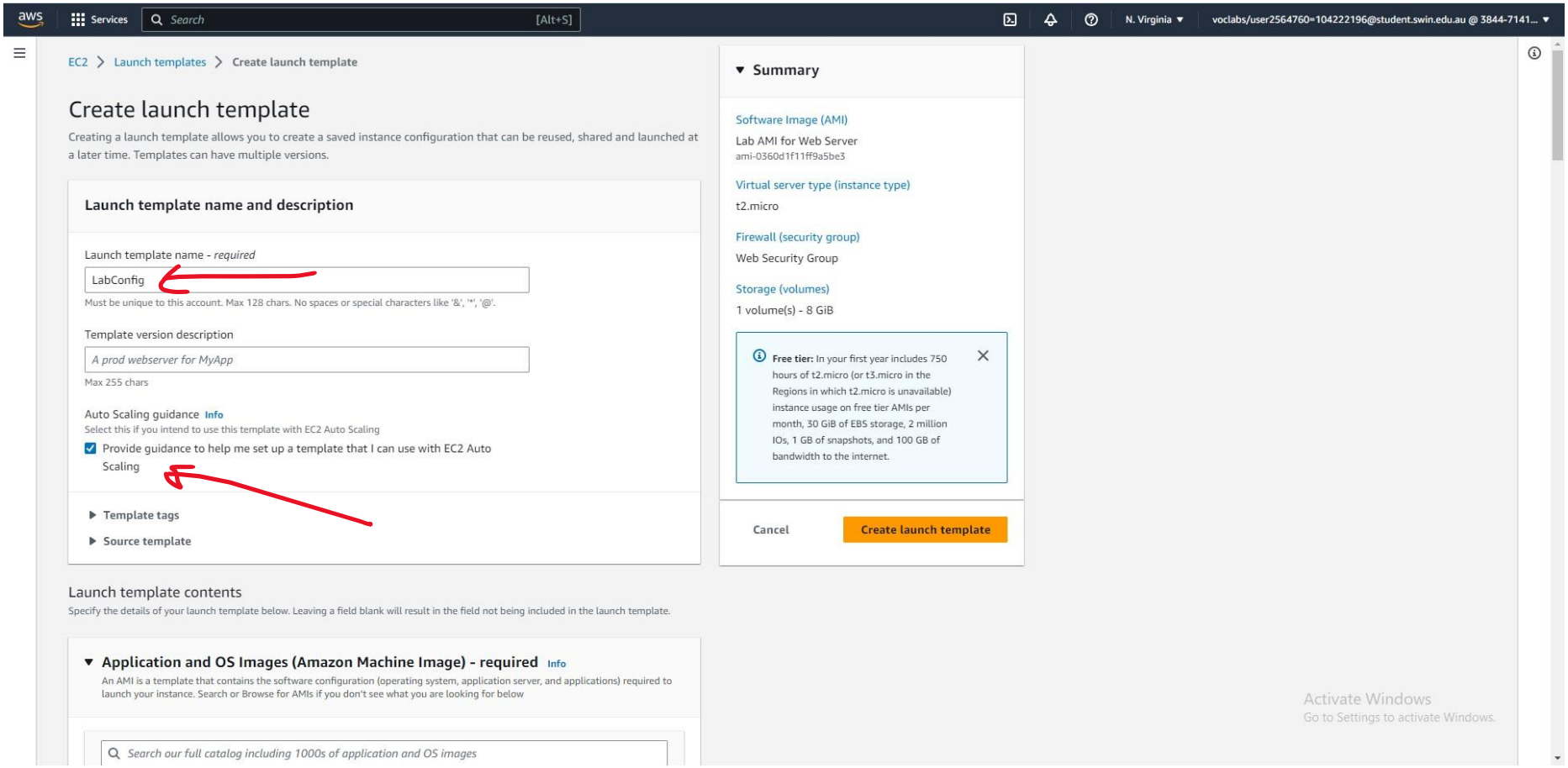


Steps 19-20: Create an Application Load Balancer – Assign only the Web Security Group and set the default action to forward to LabGroup.

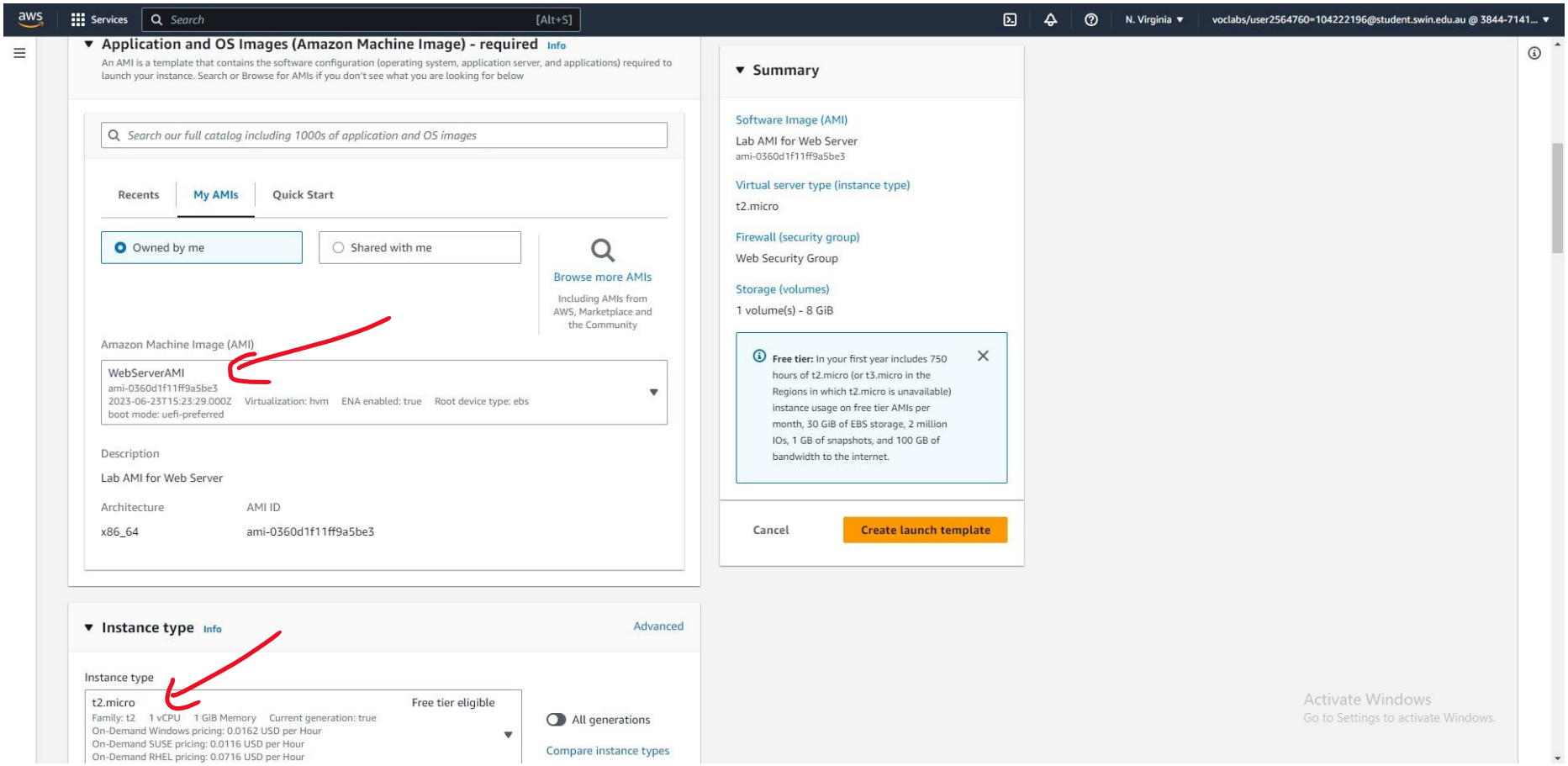


Step 21: The load balancer has been created.

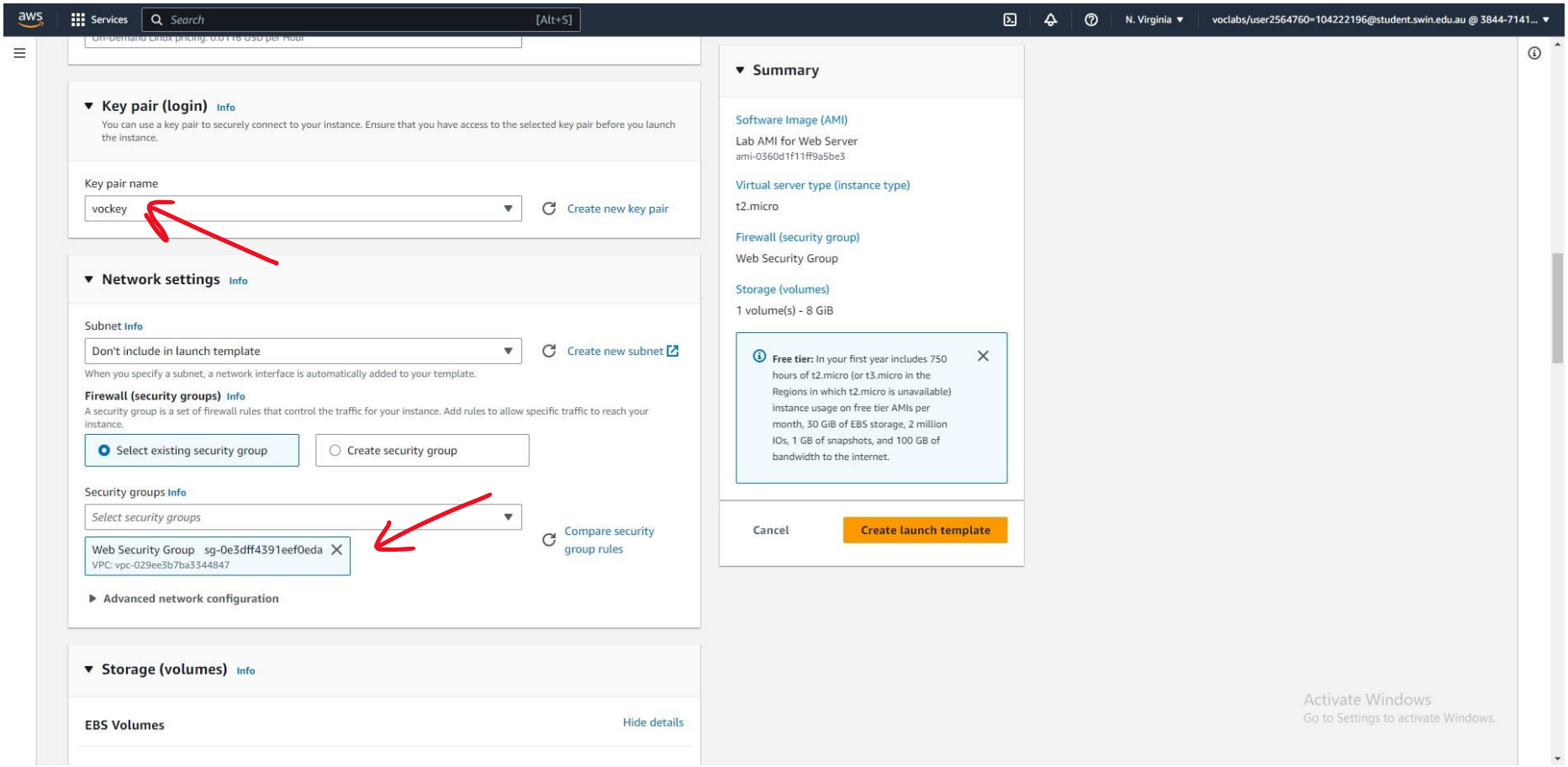
Task 3 - Create a Launch Template and an Auto Scaling Group



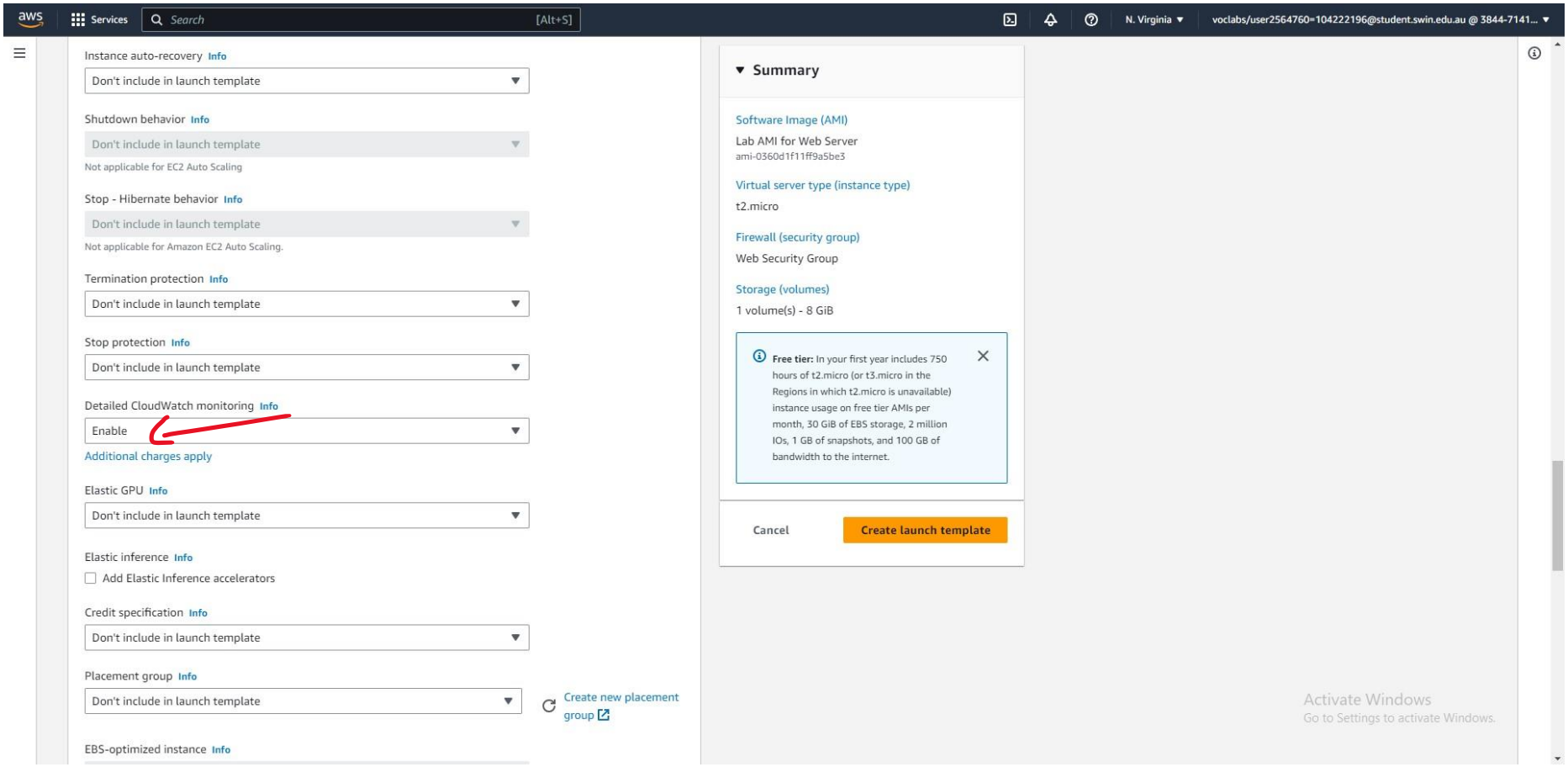
Steps 22-24: Create a launch template – Set the name to LabConfig and enable Provide Guidance.



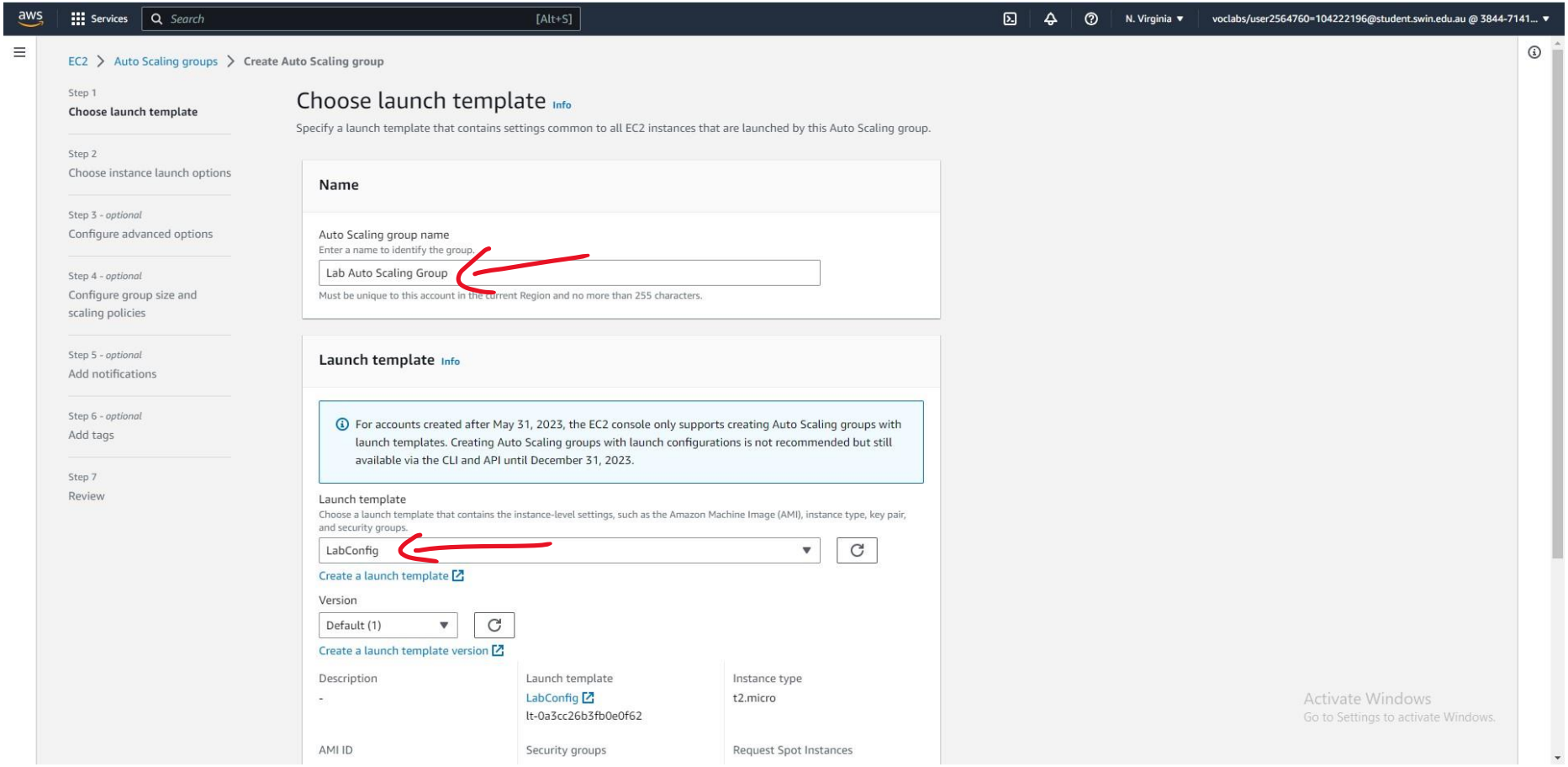
Step 24: Create a launch template – Choose the Web Server AMI and instance type t2.micro.



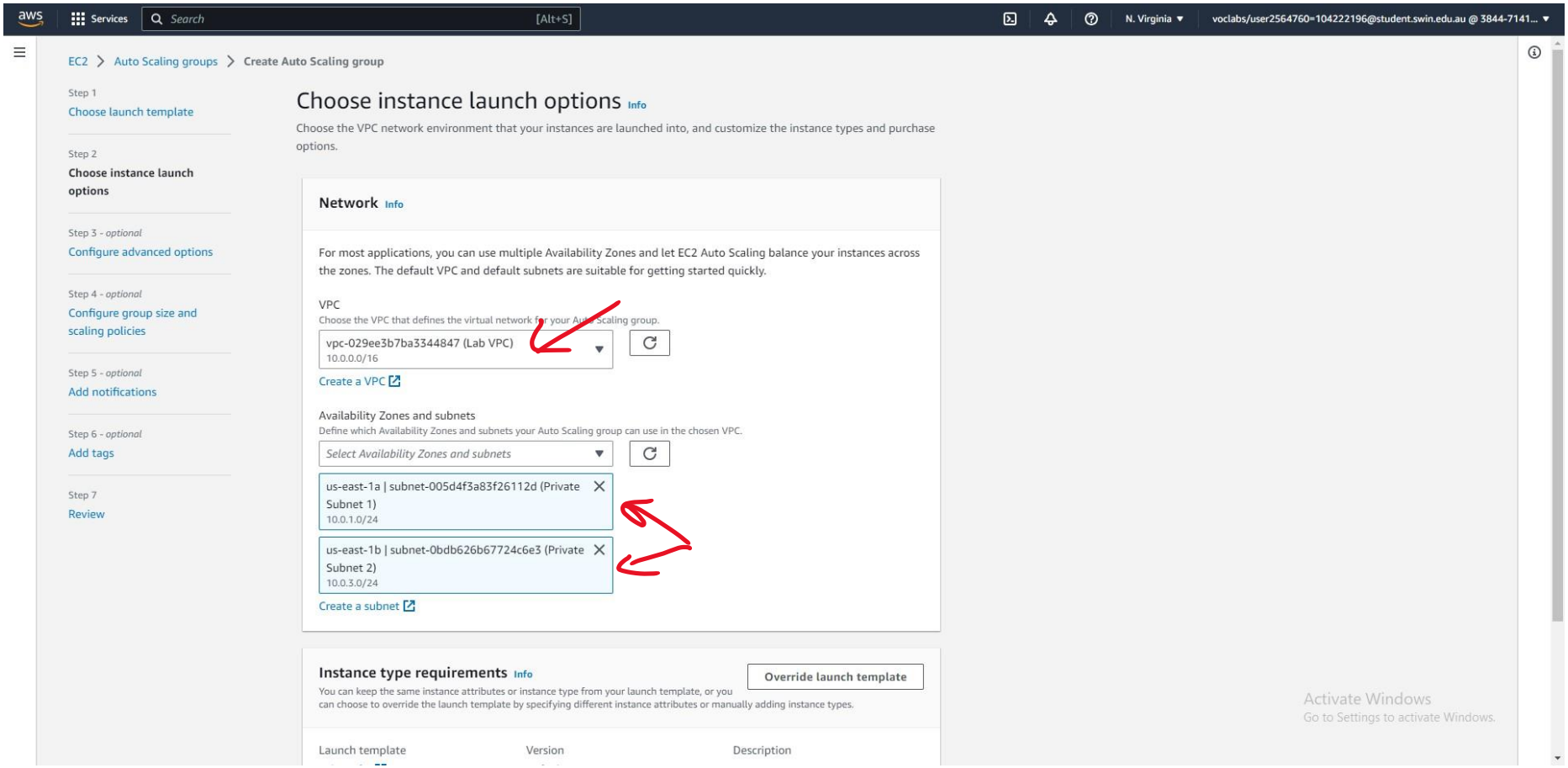
Step 24: Create a launch instance – Choose vockey and assign the Web Security group.



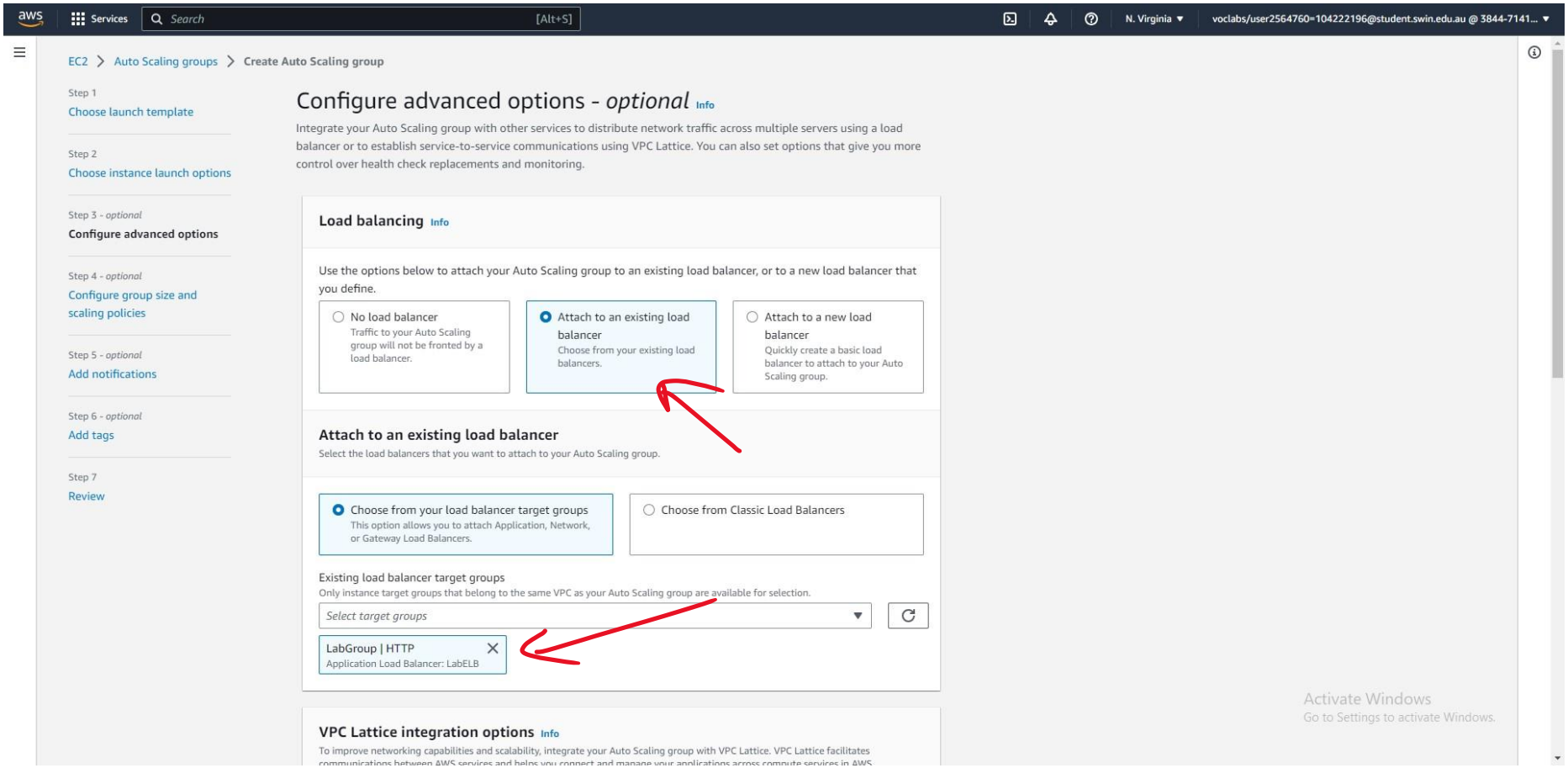
Step 24: Create a launch template – Enable detailed CloudWatch monitoring.

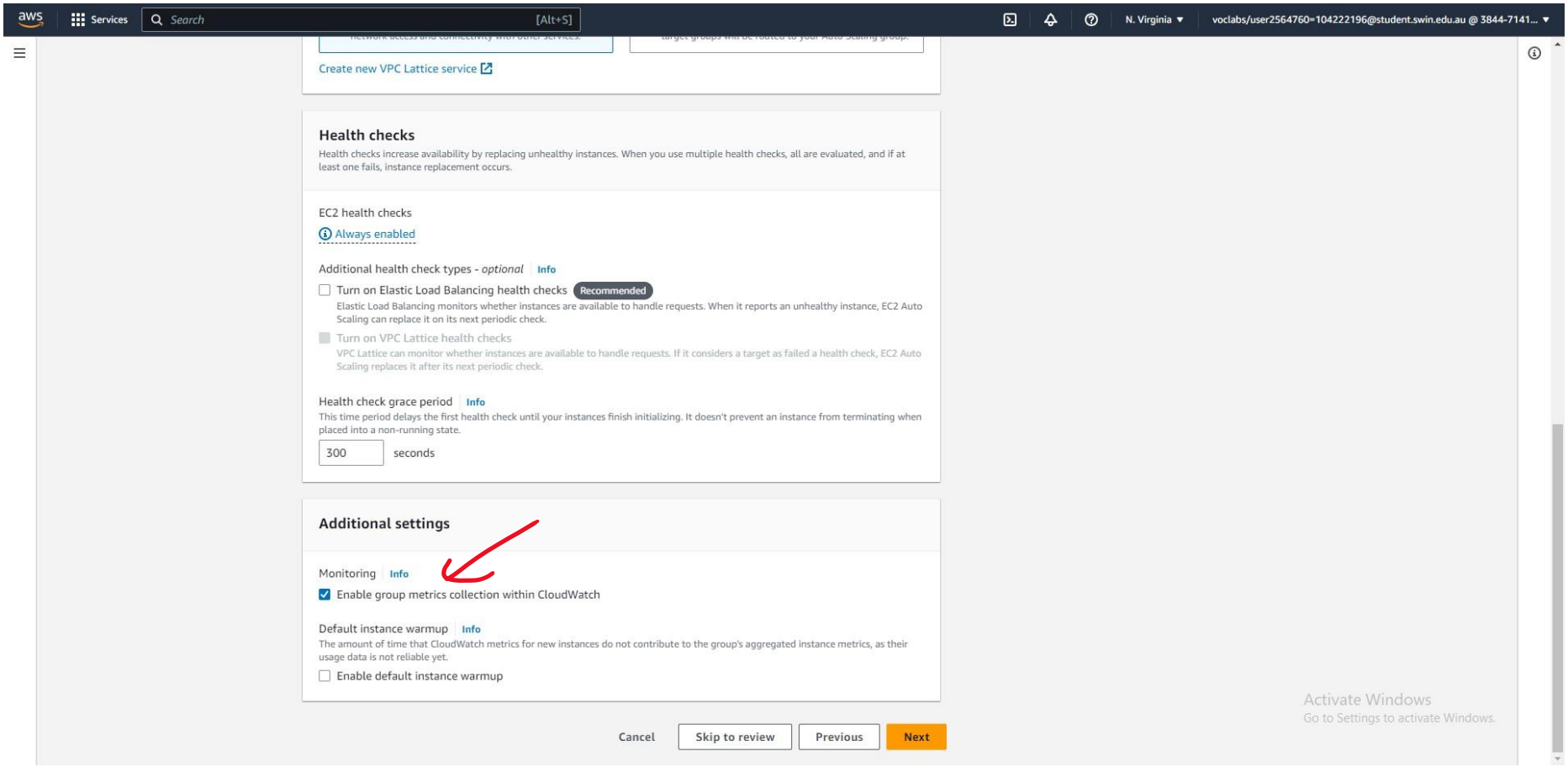


Steps 25-27: Create an Auto Scaling group - Step 1 – Enter a group name and select the LabConfig as the launch template.

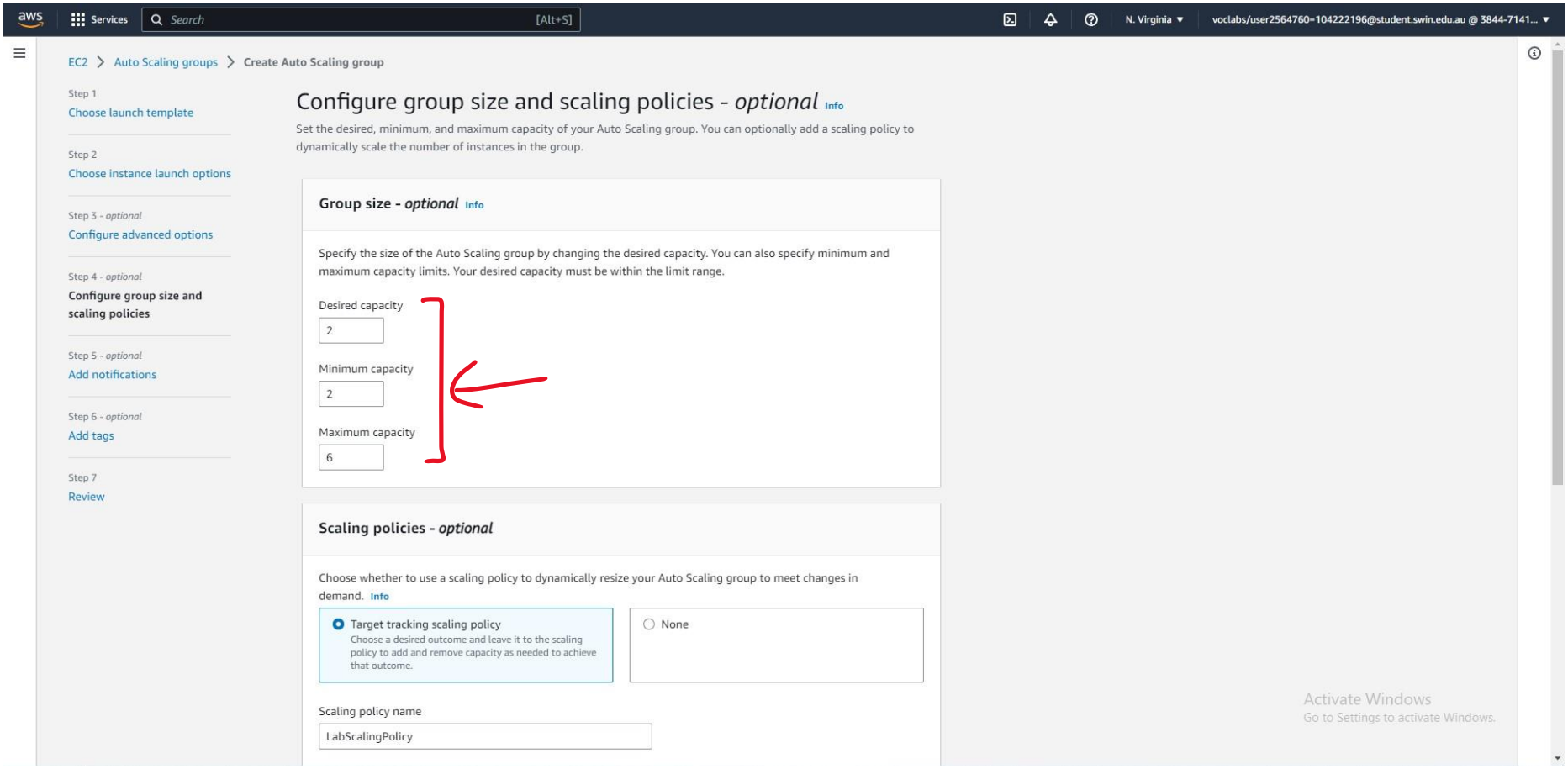


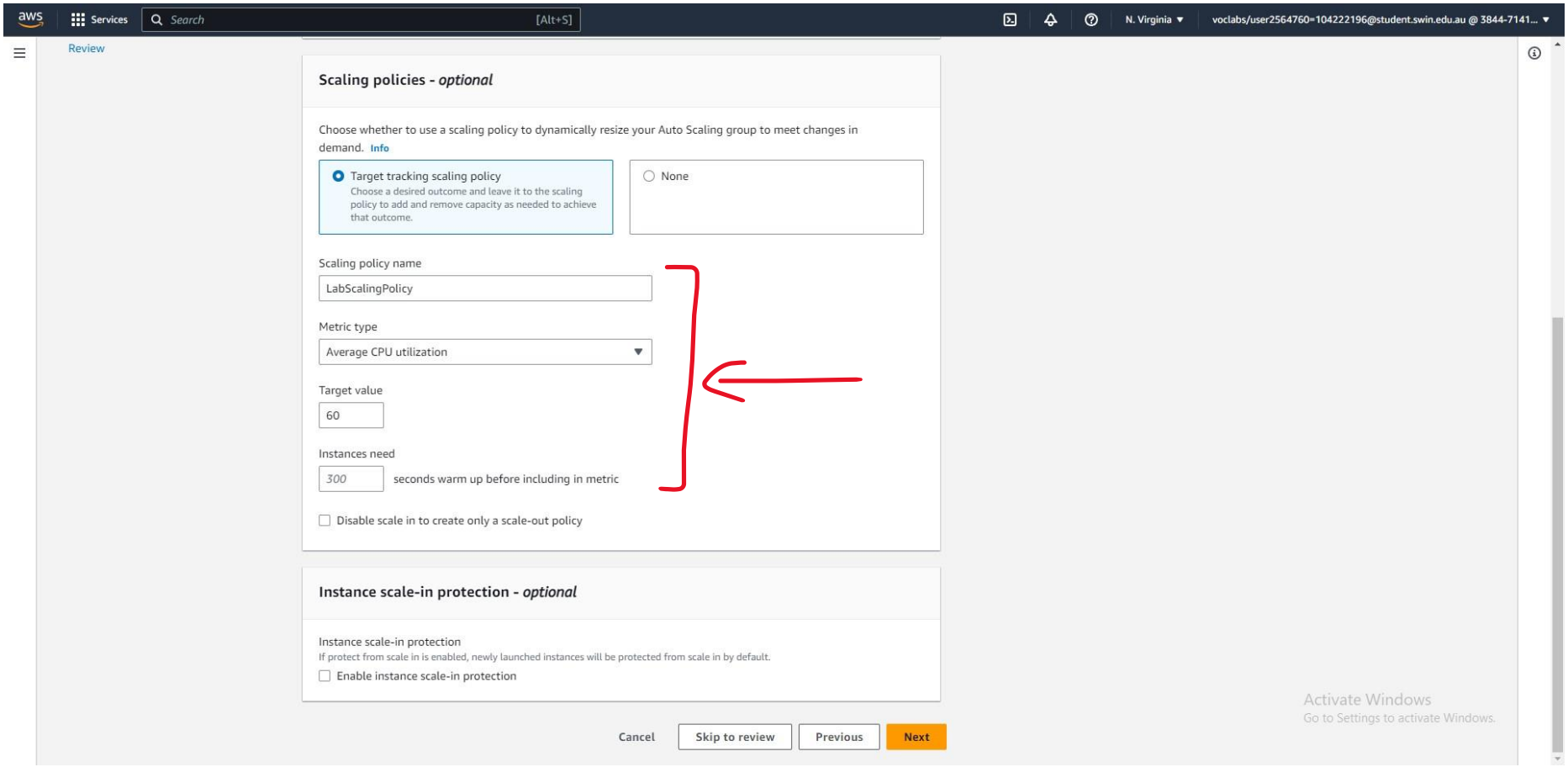
Step 28: Create an Auto Scaling group – Step 2 – Choose the Lab VPC and private subnets 1 and 2 to launch new instances in.


aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user2564760=104222196@student.swin.edu.au @ 3844-7141...
EC2 > Auto Scaling groups > Create Auto Scaling group
Step 1
Choose launch template
Step 2
Choose instance launch options
Step 3 - optional
Configure advanced options
Step 4 - optional
Configure group size and scaling policies
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Configure advanced options - optional Info
Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over health check replacements and monitoring.
Load balancing Info
Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.
No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.
Attach to an existing load balancer
Choose from your existing load balancers.
Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.
Attach to an existing load balancer
Select the load balancers that you want to attach to your Auto Scaling group.
Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.
Choose from Classic Load Balancers
Existing load balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.
Select target groups
LabGroup | HTTP
Application Load Balancer: LabELB
VPC Lattice integration options Info
To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates
Activate Windows
Go to Settings to activate Windows.

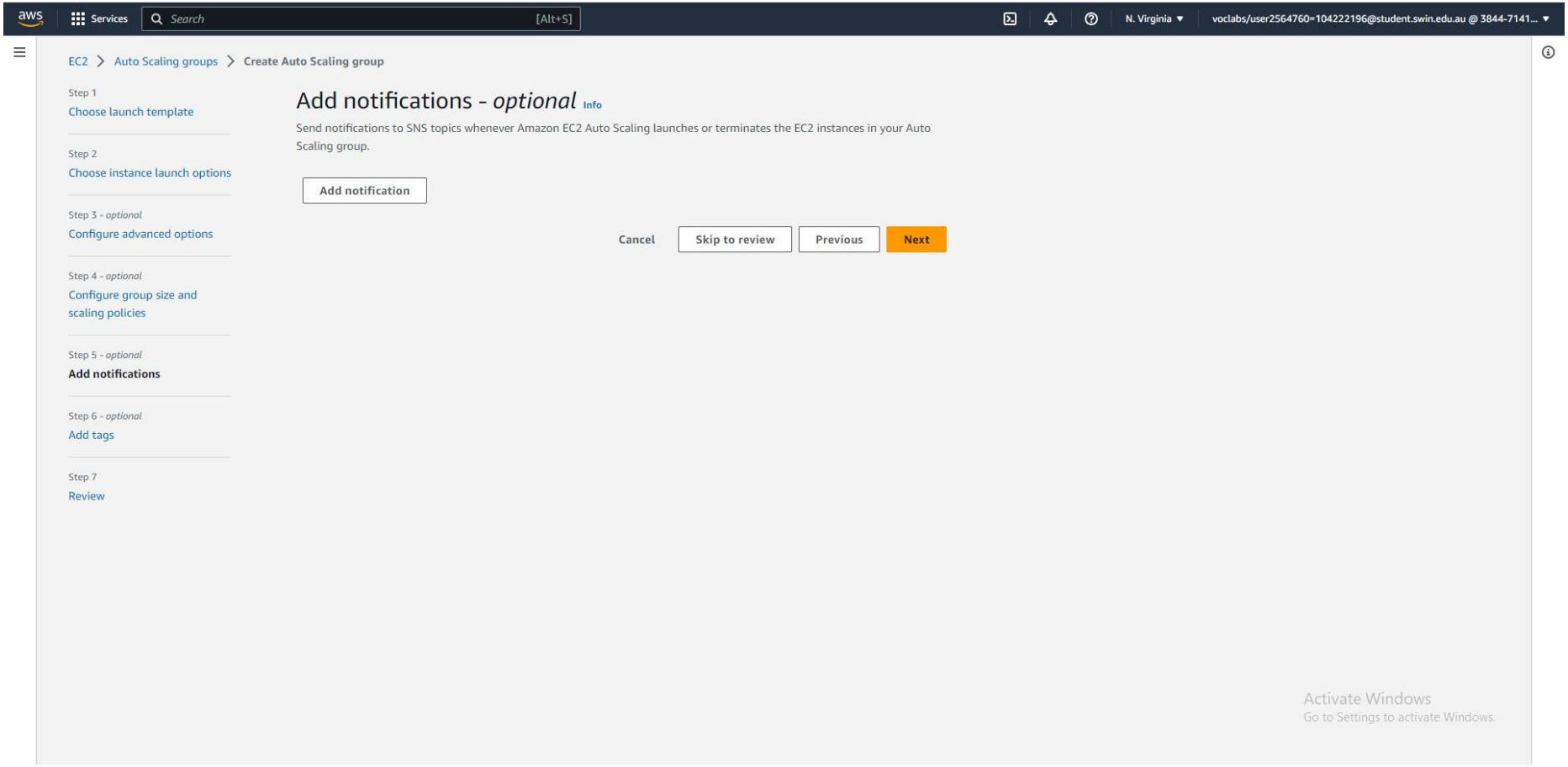


Step 29 – Create an Auto Scaling group – Step 3 – Attach the group to an existing load balancer, set the target group to LabGroup and enable group metrics collection within CloudWatch.

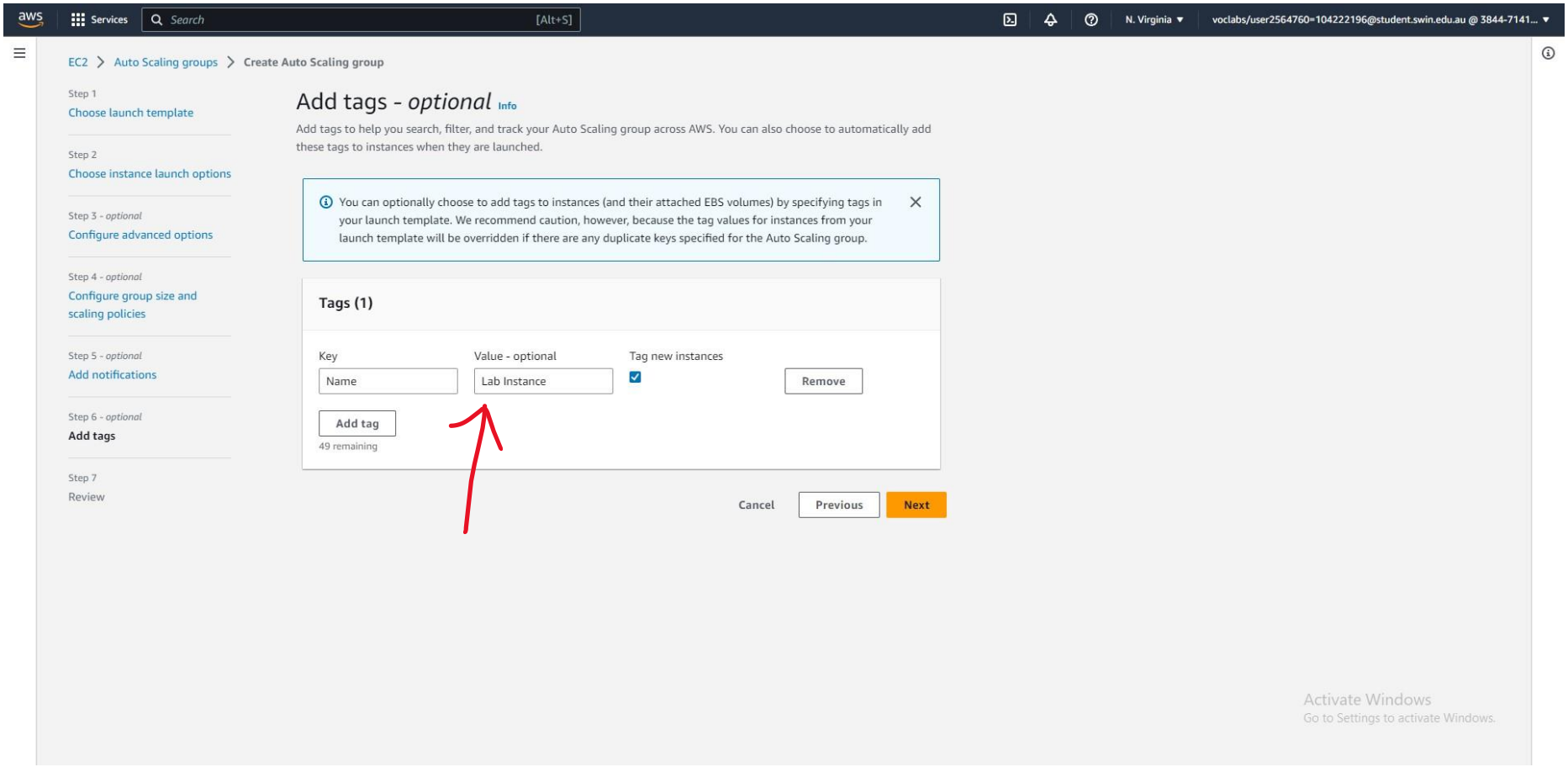

aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user2564760=104222196@student.swin.edu.au @ 3844-7141...
EC2 > Auto Scaling groups > Create Auto Scaling group
Step 1
Choose launch template
Step 2
Choose instance launch options
Step 3 - optional
Configure advanced options
Step 4 - optional
Configure group size and scaling policies
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Configure group size and scaling policies - optional Info
Set the desired, minimum, and maximum capacity of your Auto Scaling group. You can optionally add a scaling policy to dynamically scale the number of instances in the group.
Group size - optional Info
Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum capacity limits. Your desired capacity must be within the limit range.
Desired capacity
2
Minimum capacity
2
Maximum capacity
6
Scaling policies - optional
Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand. Info
Target tracking scaling policy
Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.
None
Scaling policy name
LabScalingPolicy
Activate Windows
Go to Settings to activate Windows.



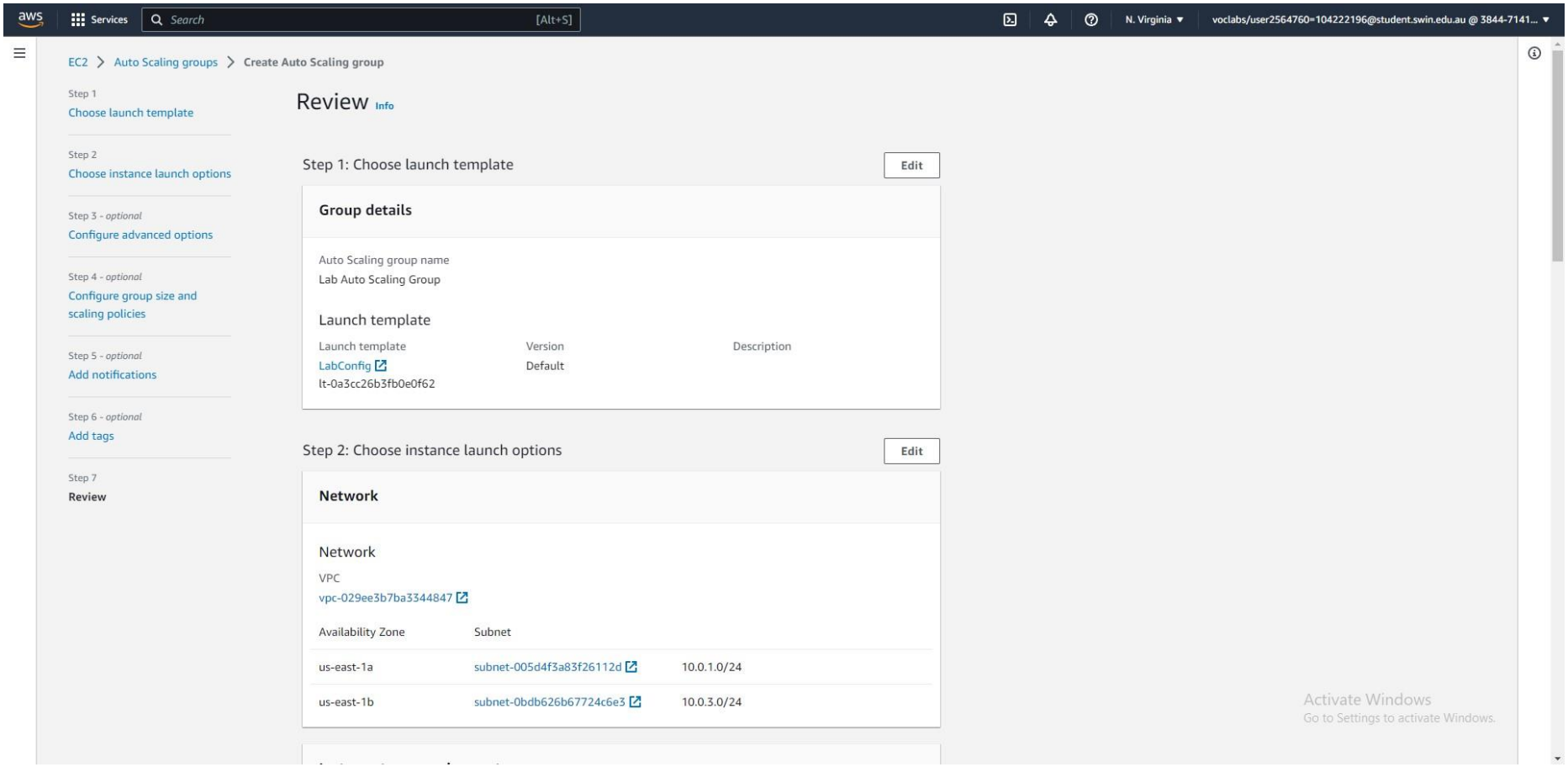
Step 30 – Create an Auto Scaling group – Step 4 – Configure the group size and scaling policies.



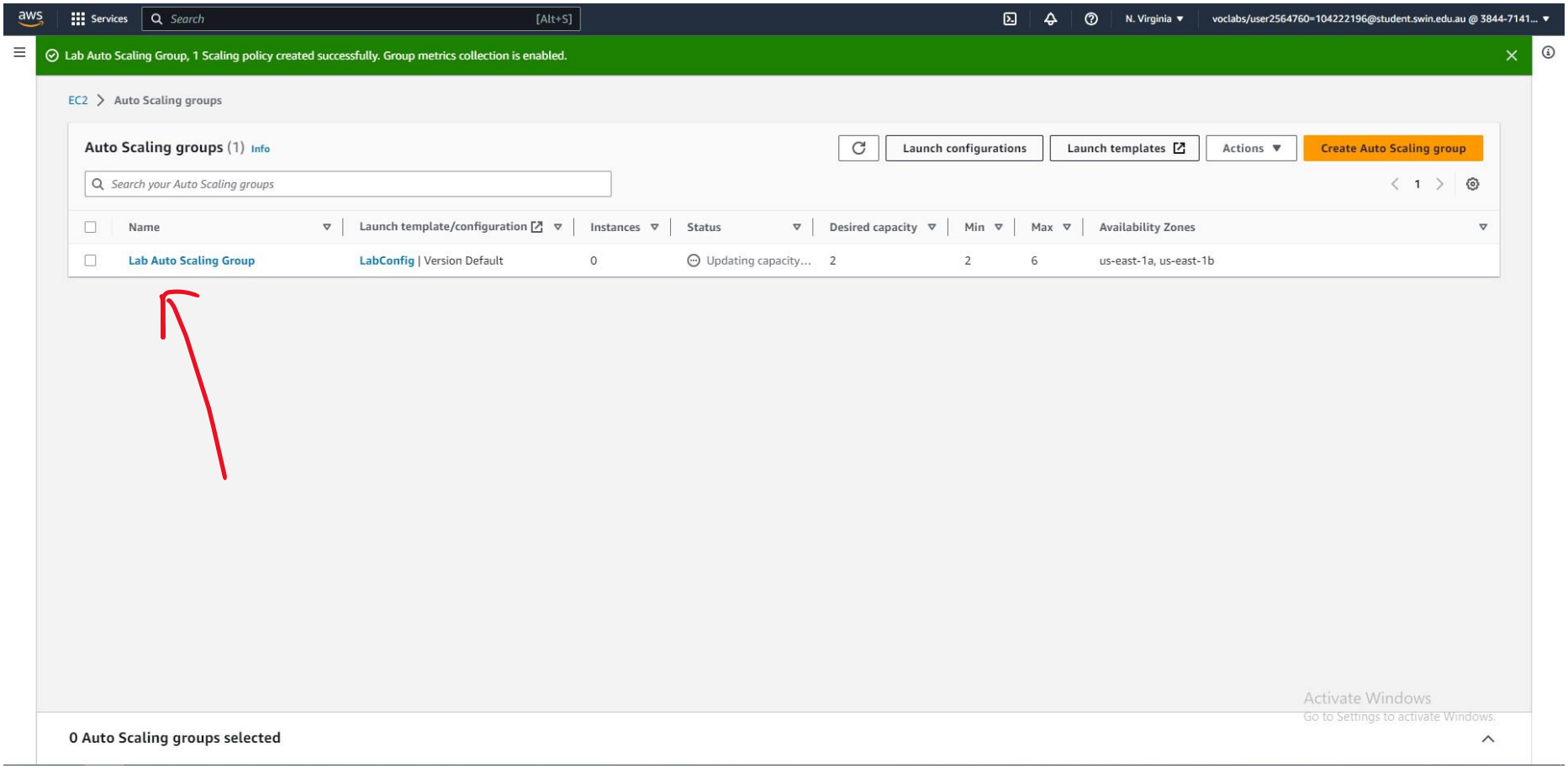
Step 31 – Create an Auto Scaling group – Step 5 – Leave as default.



Step 32 – Create an Auto Scaling group – Step 6 – Add a name tag which will be applied to all instances.

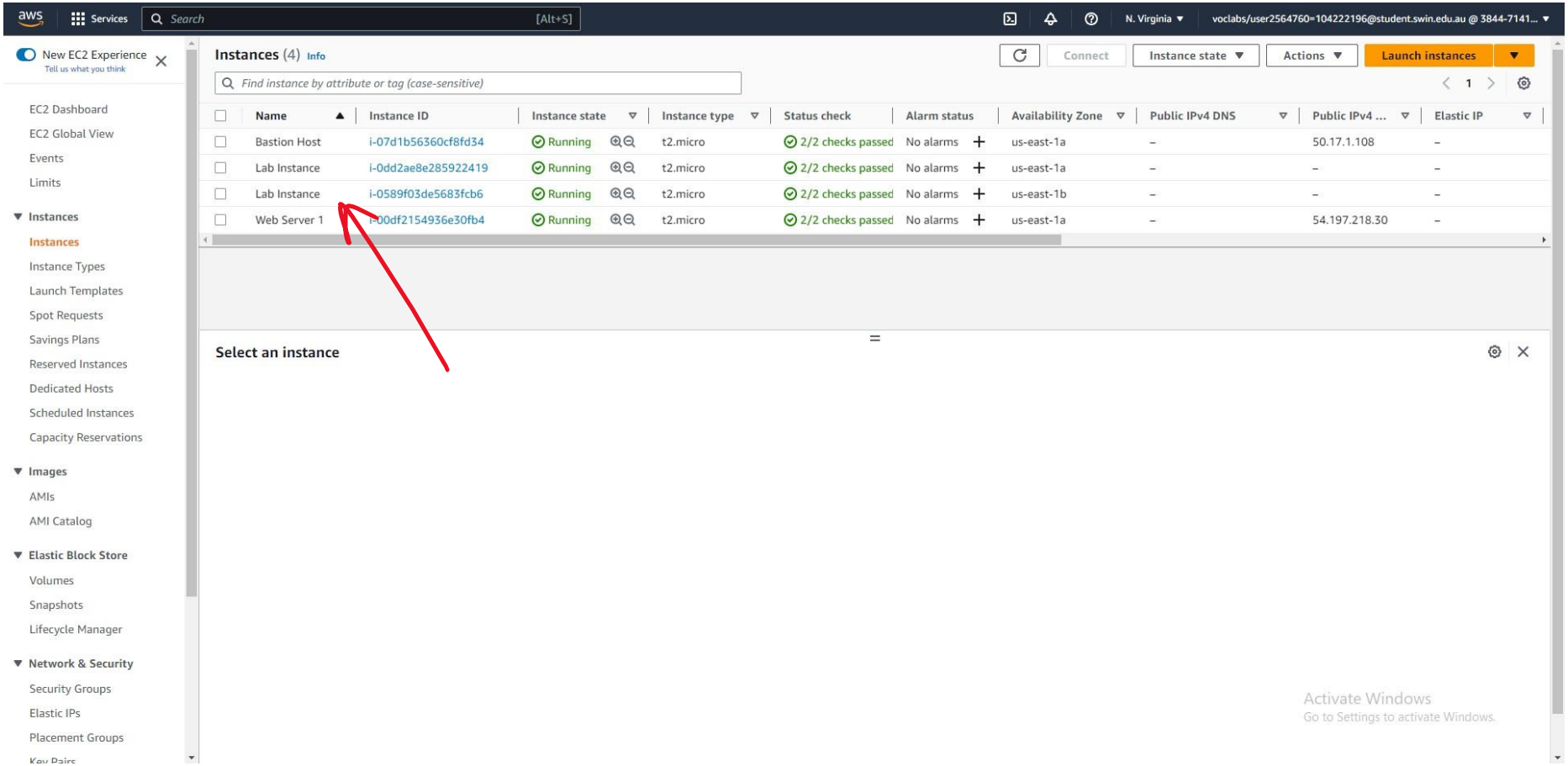


Step 33 – Create an Auto Scaling group – Review.

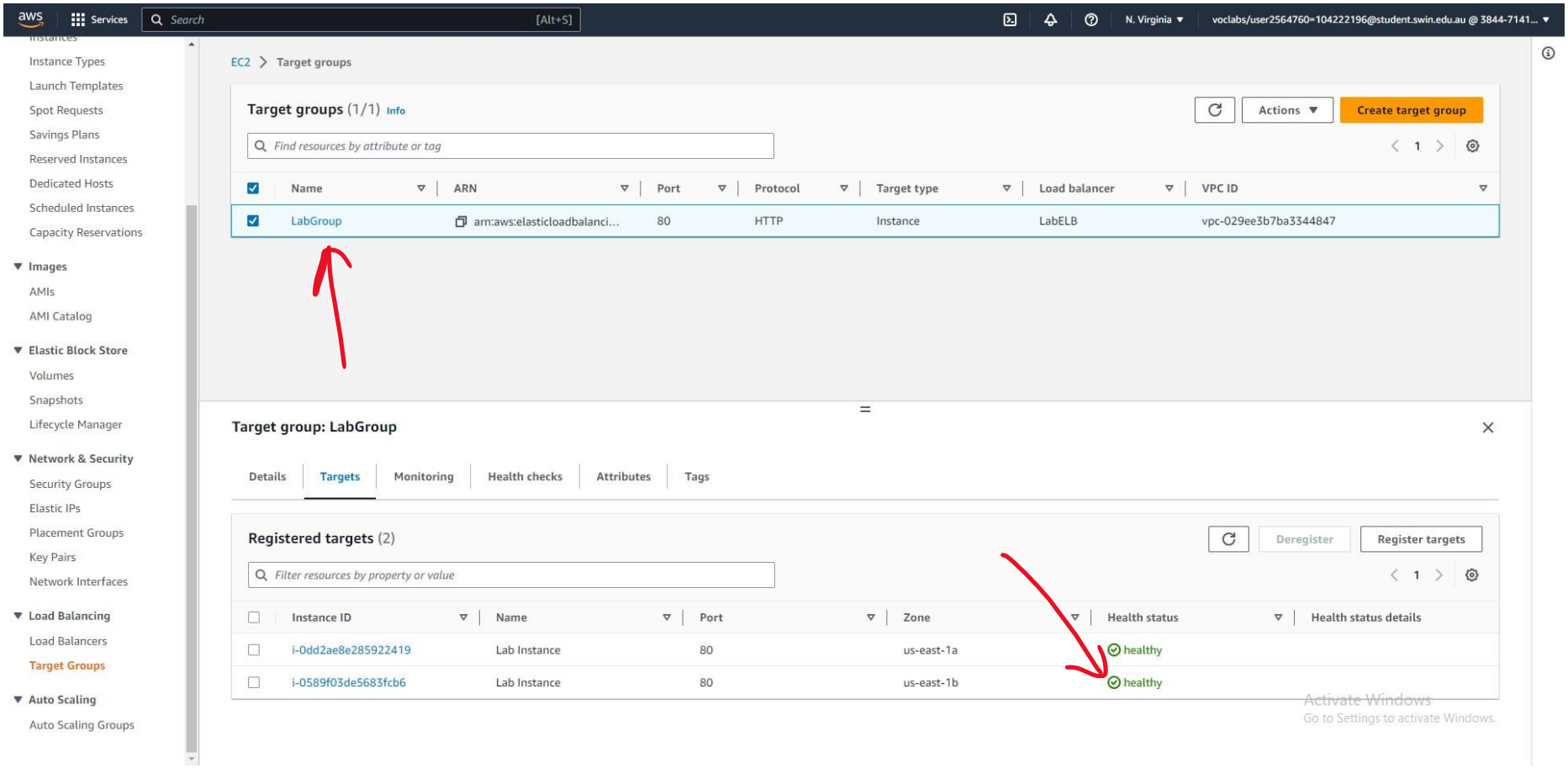


Step 33: The scaling group has been created successfully.

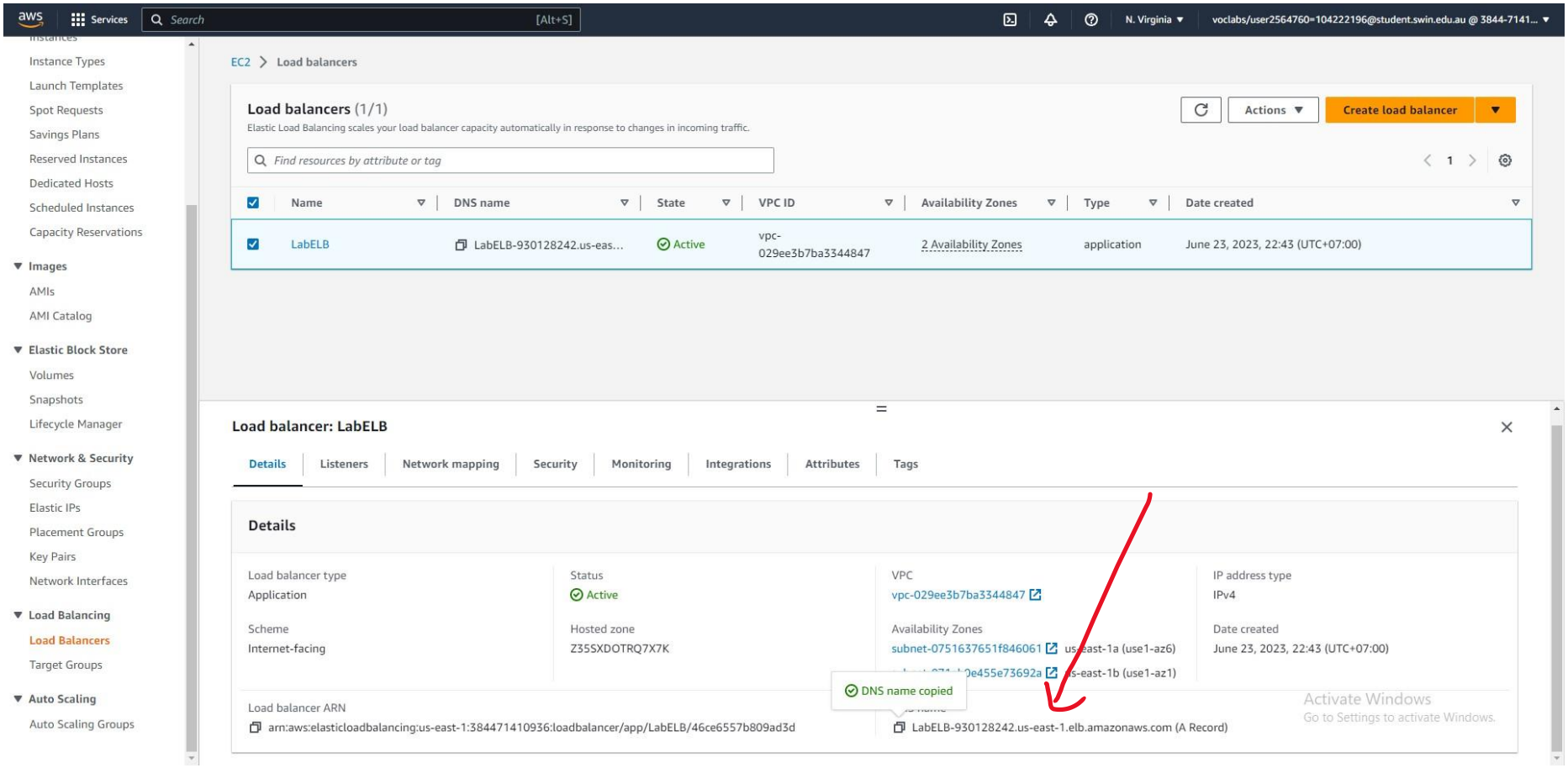
Task 4: Verify that Load Balancing is Working



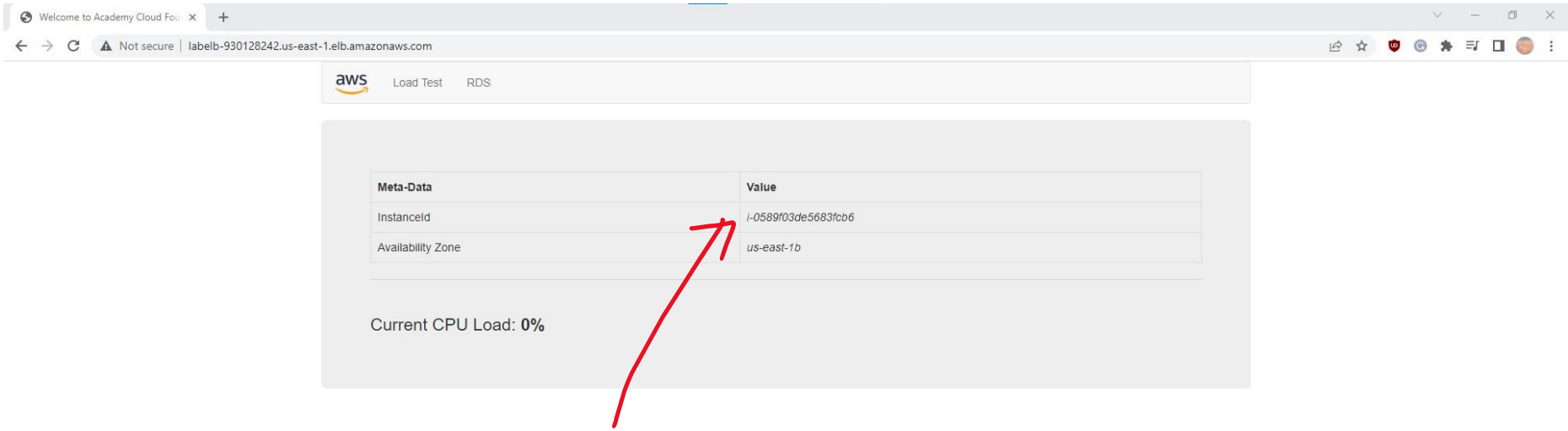
Step 44: Two Lab Instances have been launched by Auto Scaling.



Steps 45-48: The “Targets” tab of the LabGroup target group shows two healthy Lab Instances launched by Auto Scaling.

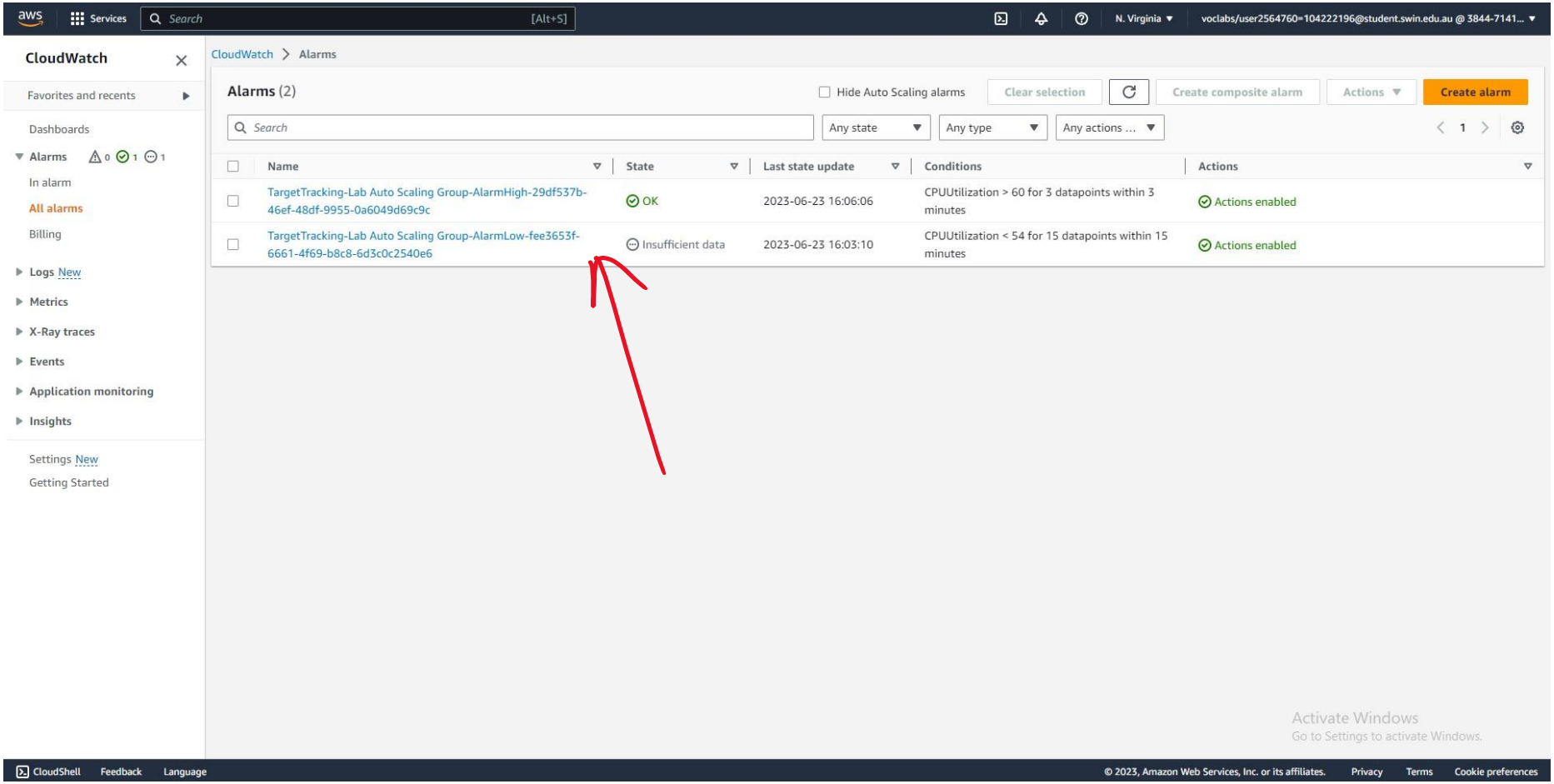


Steps 49-51: Copy the DNS name of the LabELB load balancer.

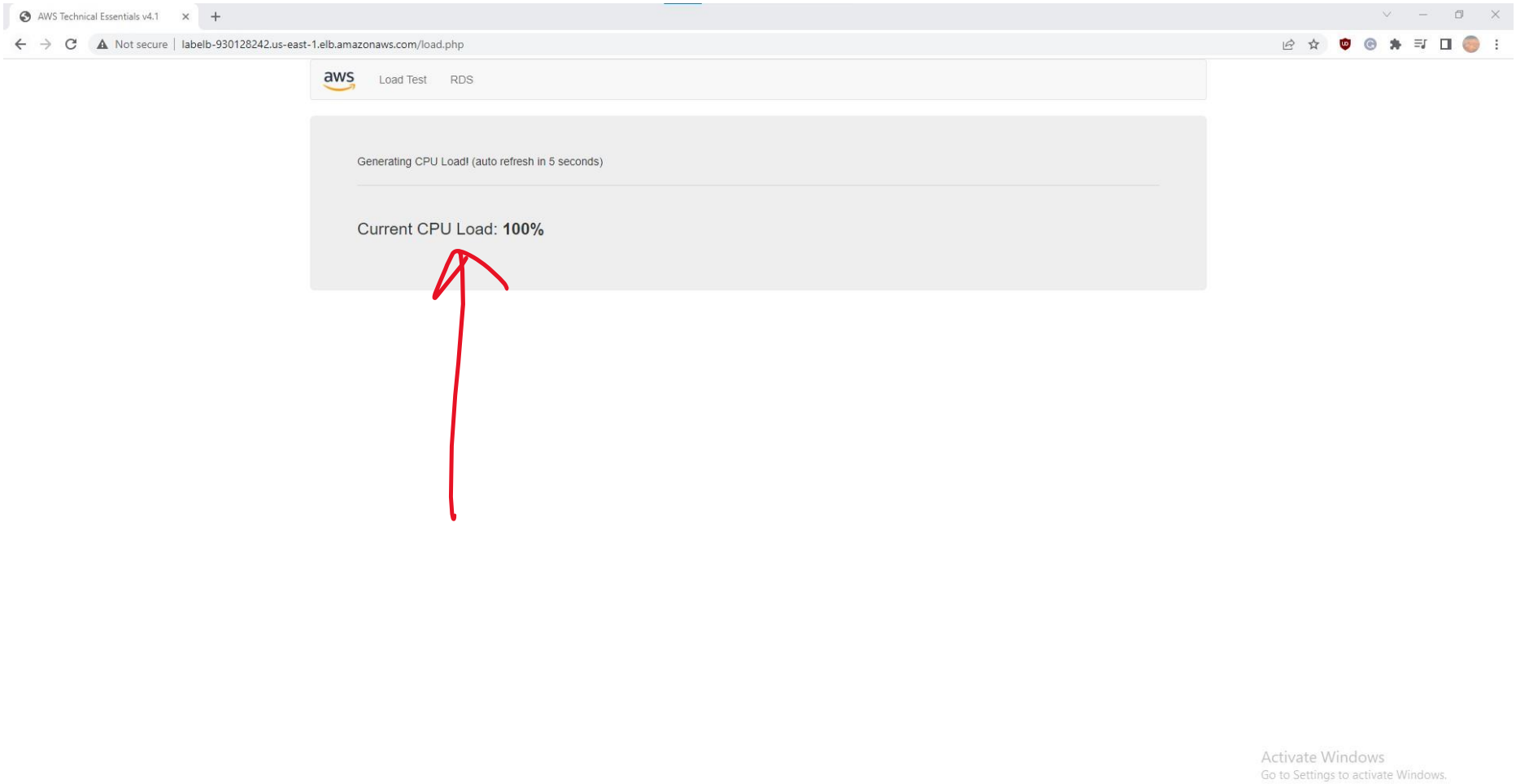


Step 52: Open the DNS name in a new tab. The request was sent to an EC2 instance.

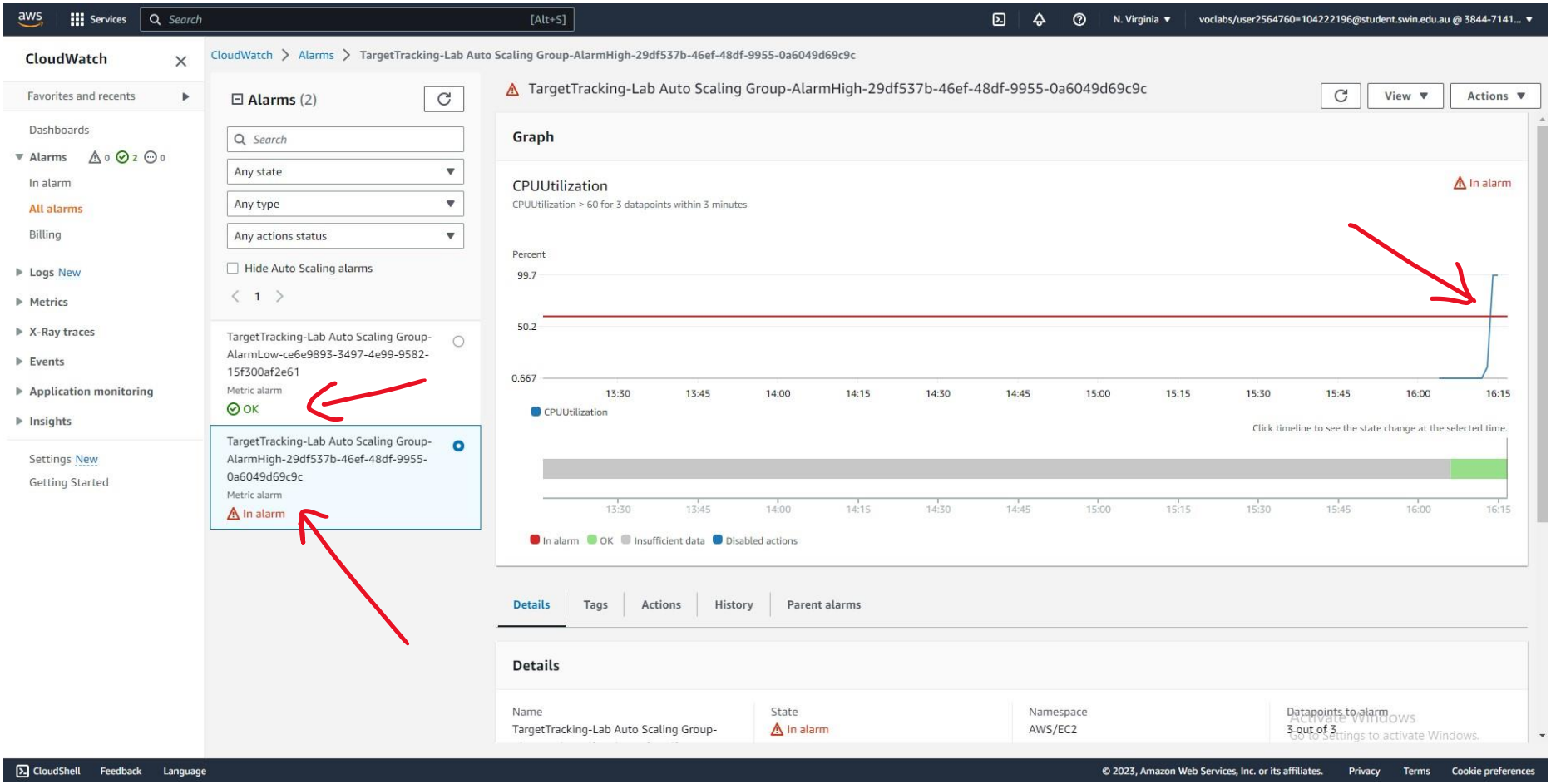
Task 5 - Test Auto Scaling



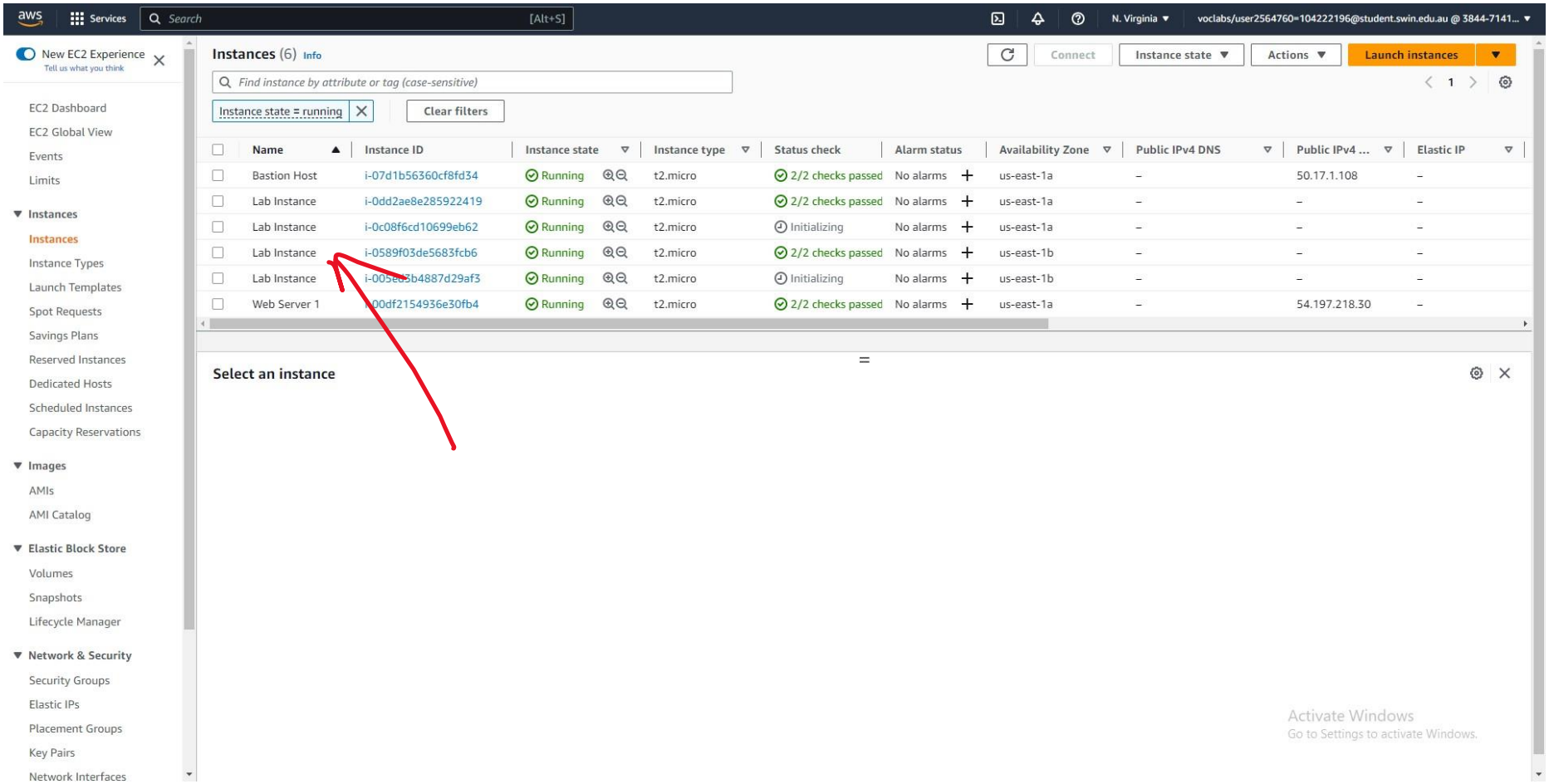
Steps 52-55: CloudWatch shows two alarms, one of which is OK.



Steps 56-57: Choose Load Test in the web application to generate a high load.

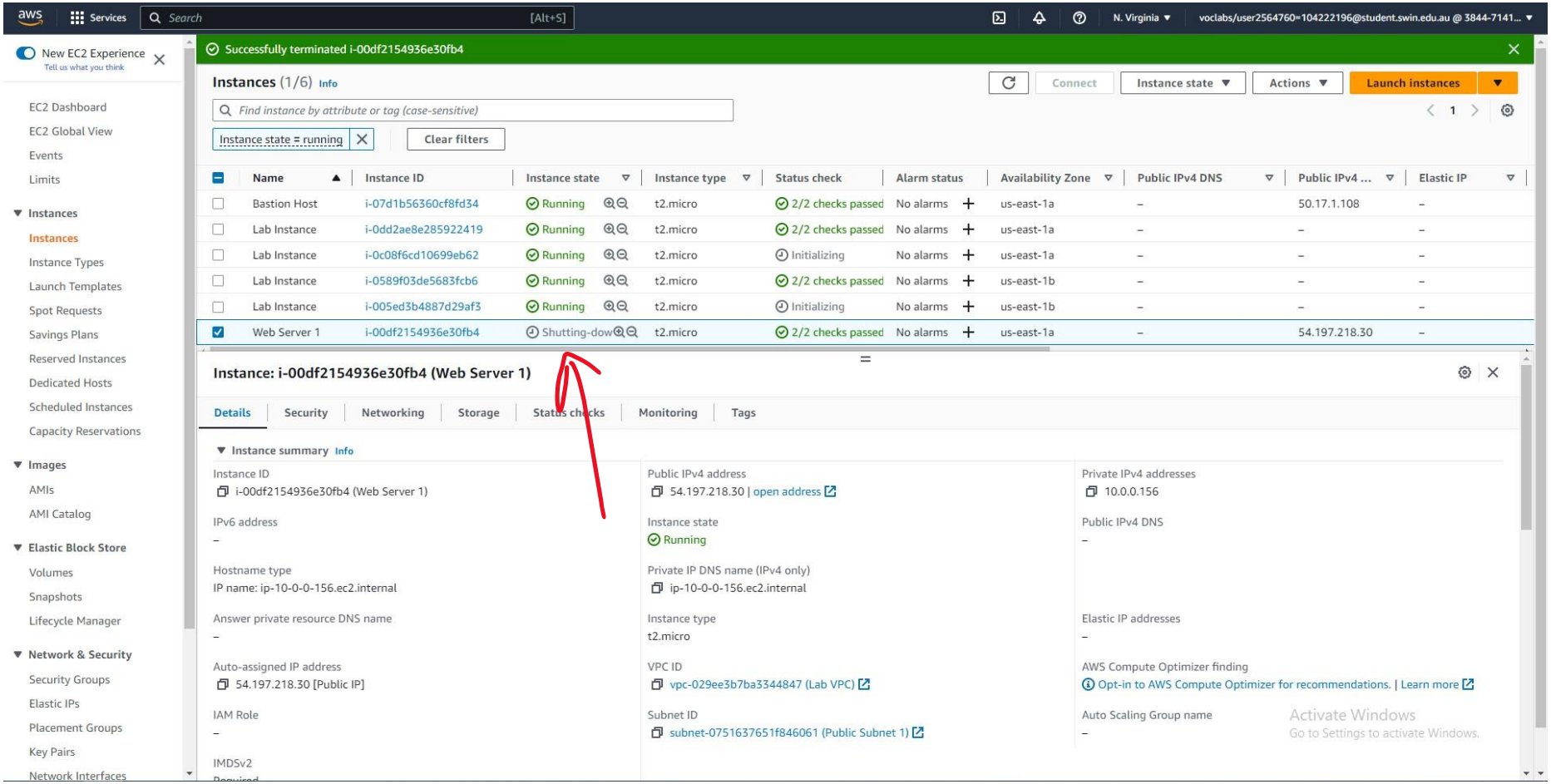


Steps 58-59: After creating the load, AlarmLow changes to OK and AlarmHigh changes to In alarm. CPU utilization is over 60%.



Steps 60-61: More Lab Instances have been launched by Auto Scaling to accommodate the increased CPU usage.

Task 6 - Terminate Web Server 1



Steps 62-64: Successfully terminated Web Server 1.