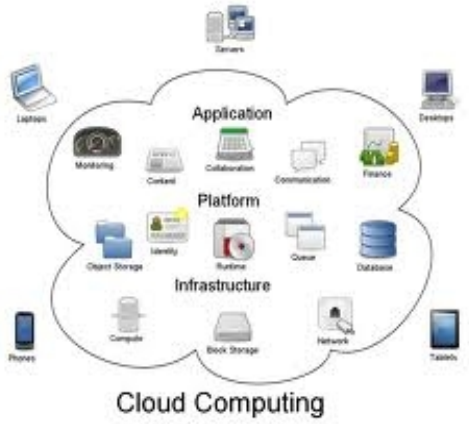
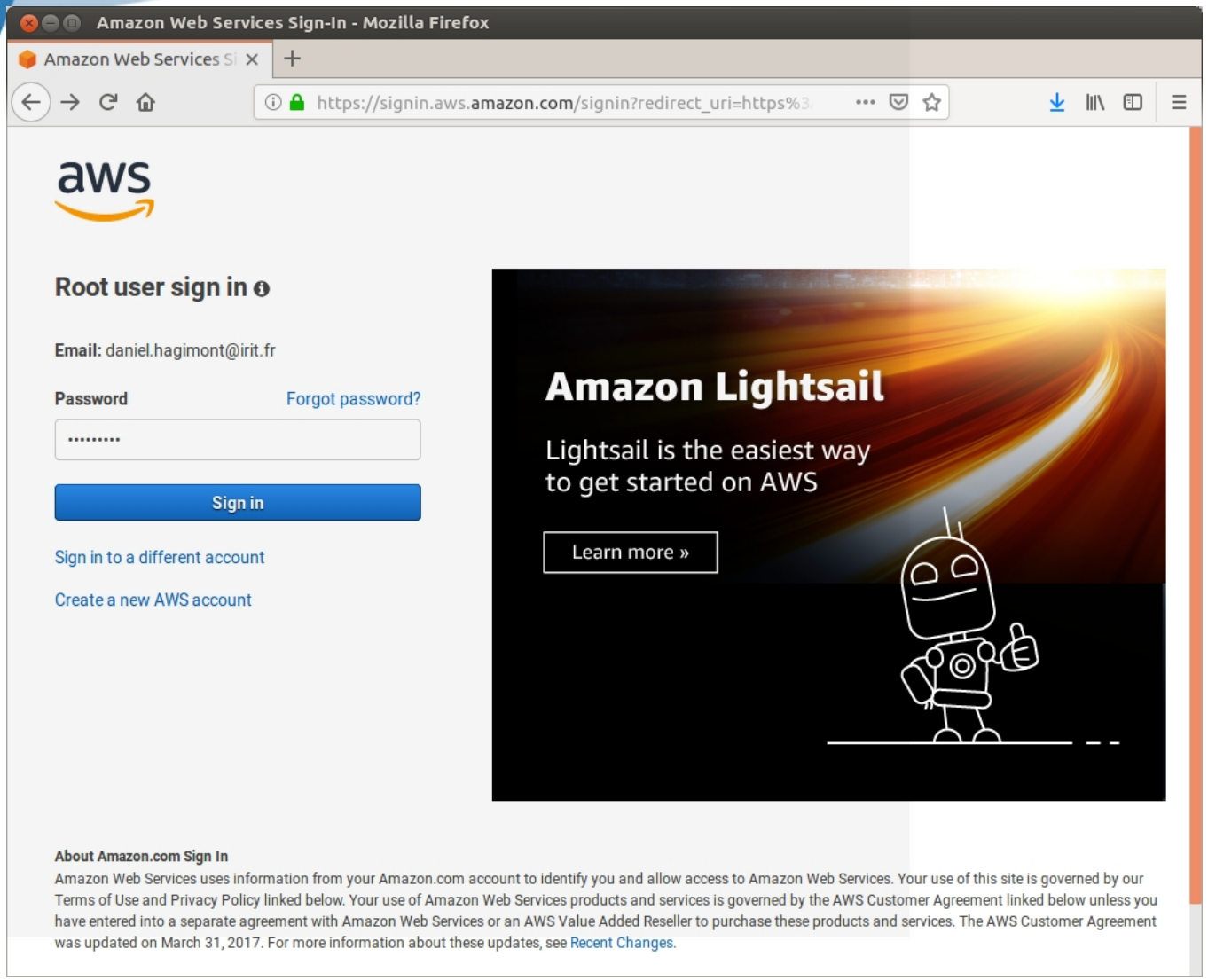
Example with Amazon Web Service

Boris Teabe et Daniel Hagimont

boris.teabe@inp-toulouse.fr



Log in AWS


Amazon Web Services Sign-In - Mozilla Firefox
Amazon Web Services Si
https://signin.aws.amazon.com/signin?redirect_uri=https%3
aws
Root user sign in
Email: daniel.hagimont@irit.fr
Password
Forgot password?
Sign in
Sign in to a different account
Create a new AWS account
Amazon Lightsail
Lightsail is the easiest way to get started on AWS
Learn more »
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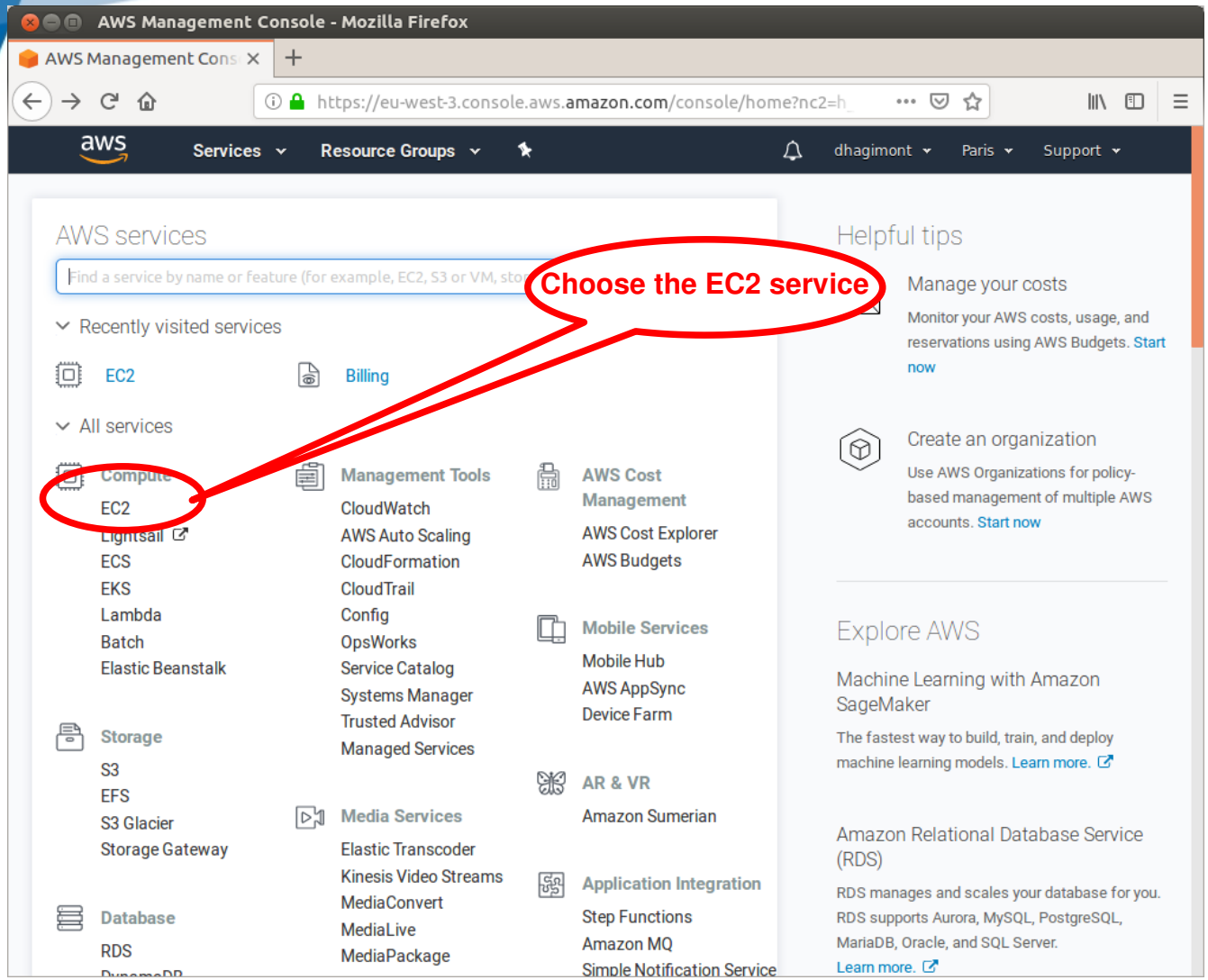
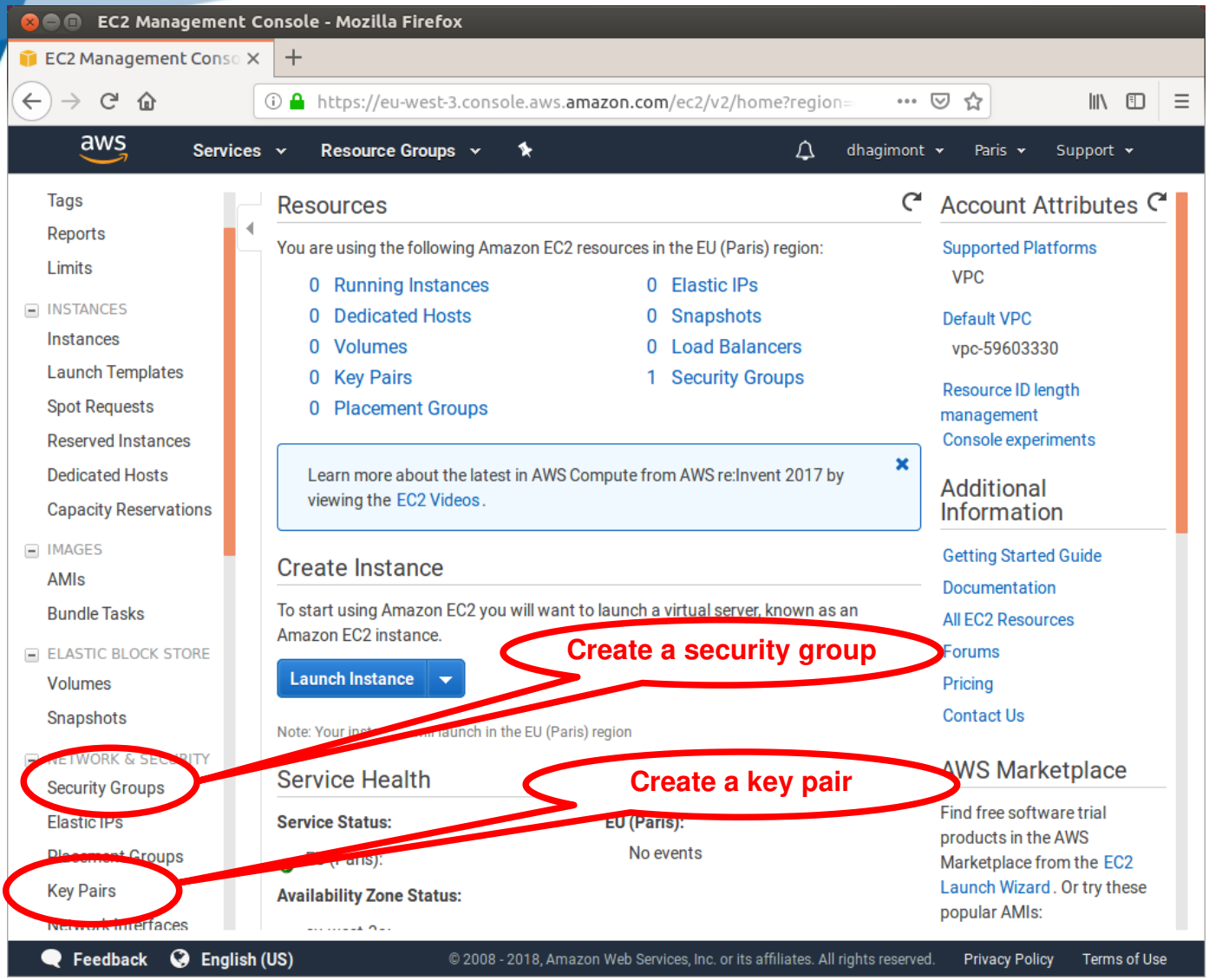
Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our Terms of Use and Privacy Policy linked below. Your use of Amazon Web Services products and services is governed by the AWS Customer Agreement linked below unless you have entered into a separate agreement with Amazon Web Services or an AWS Value Added Reseller to purchase these products and services. The AWS Customer Agreement was updated on March 31, 2017. For more information about these updates, see Recent Changes.

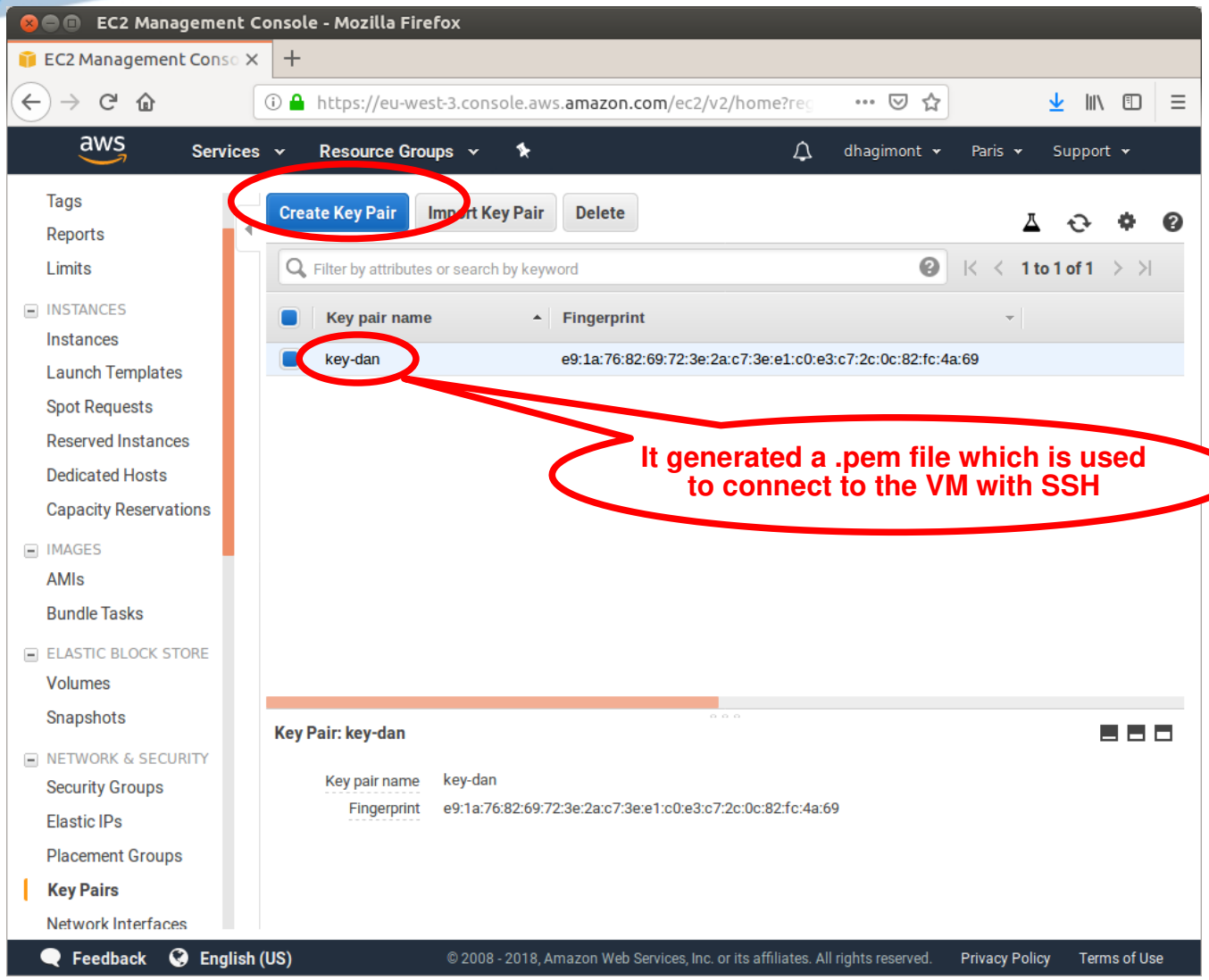
AWS services



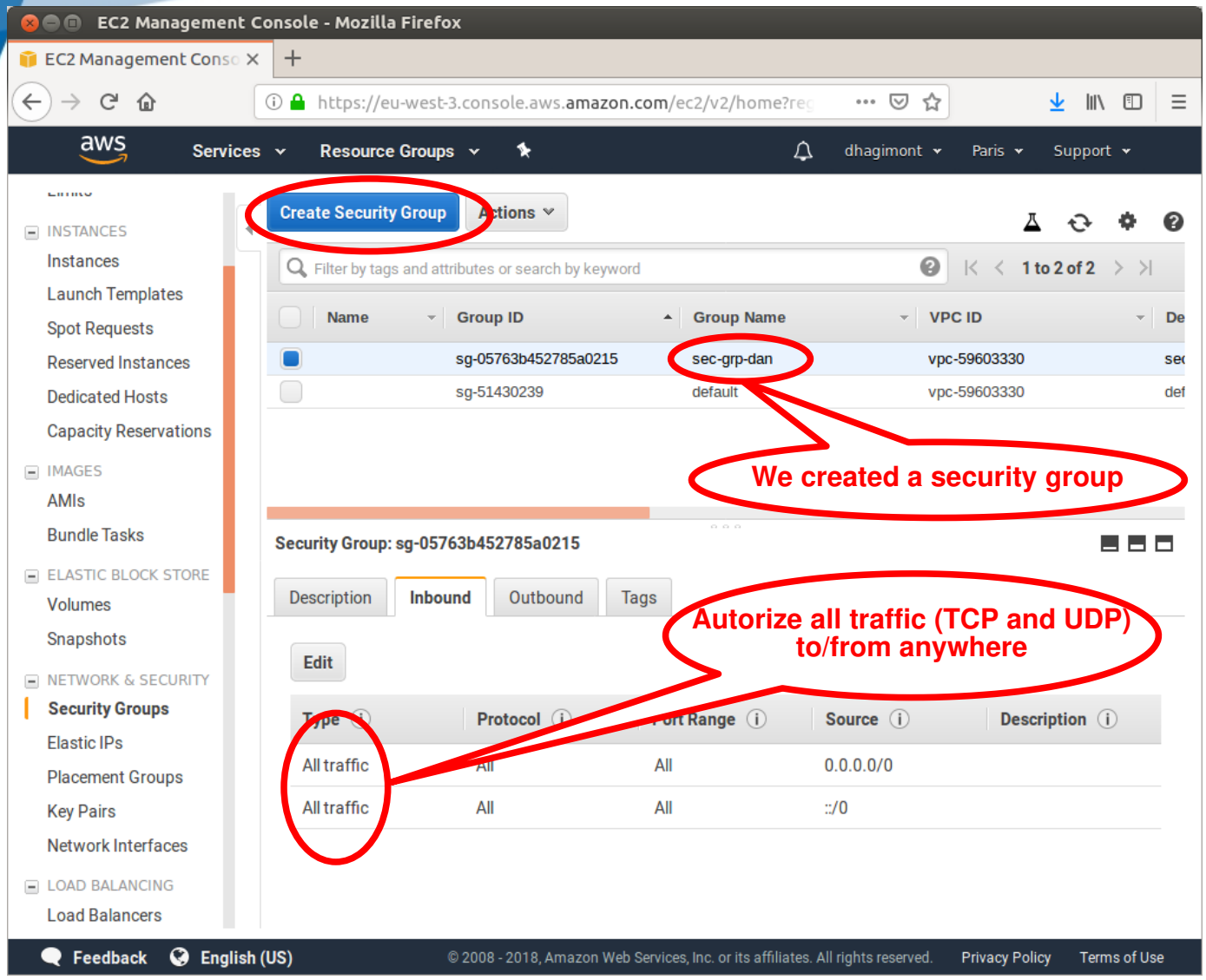
EC2 Dashboard



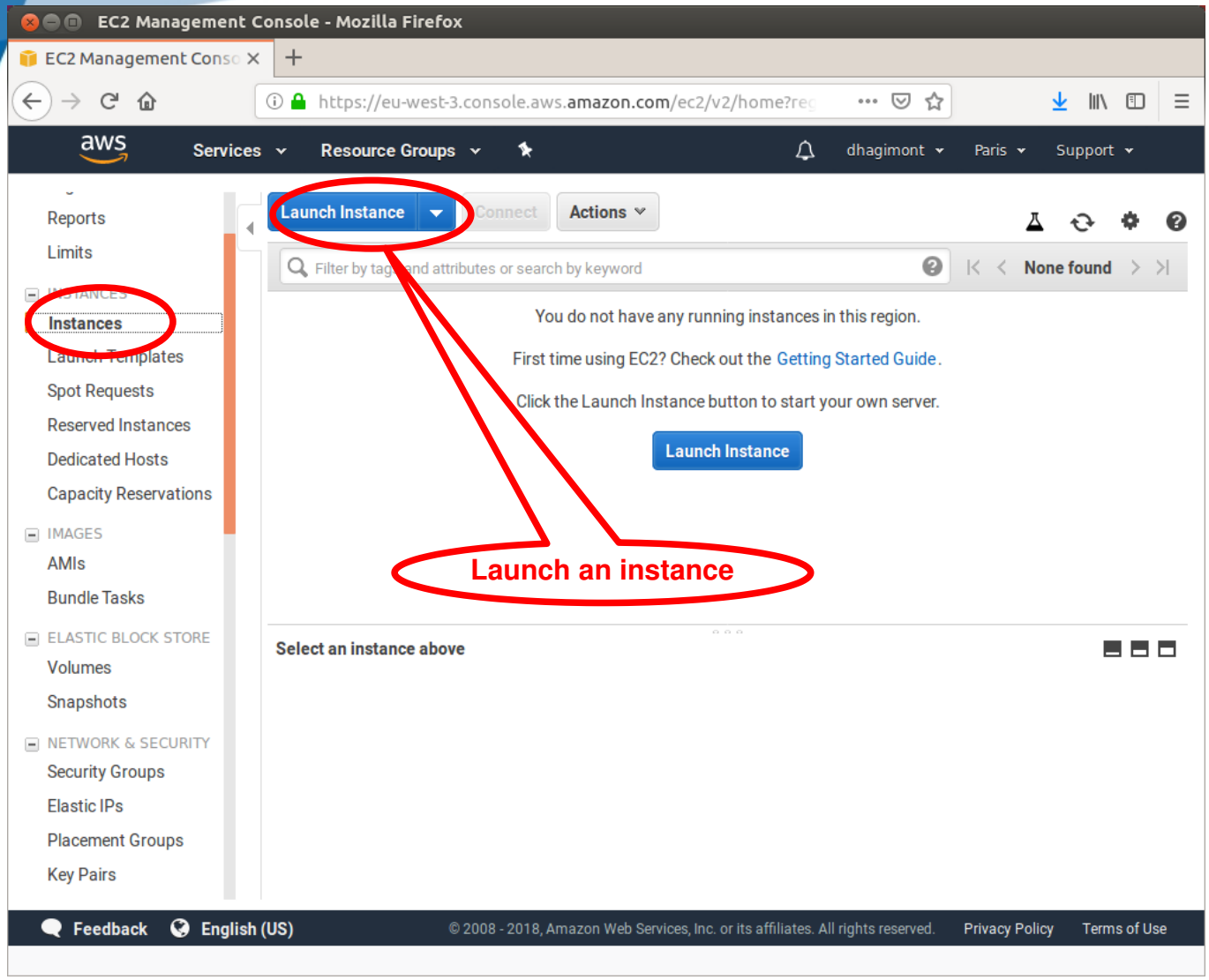
Generation of a key pair



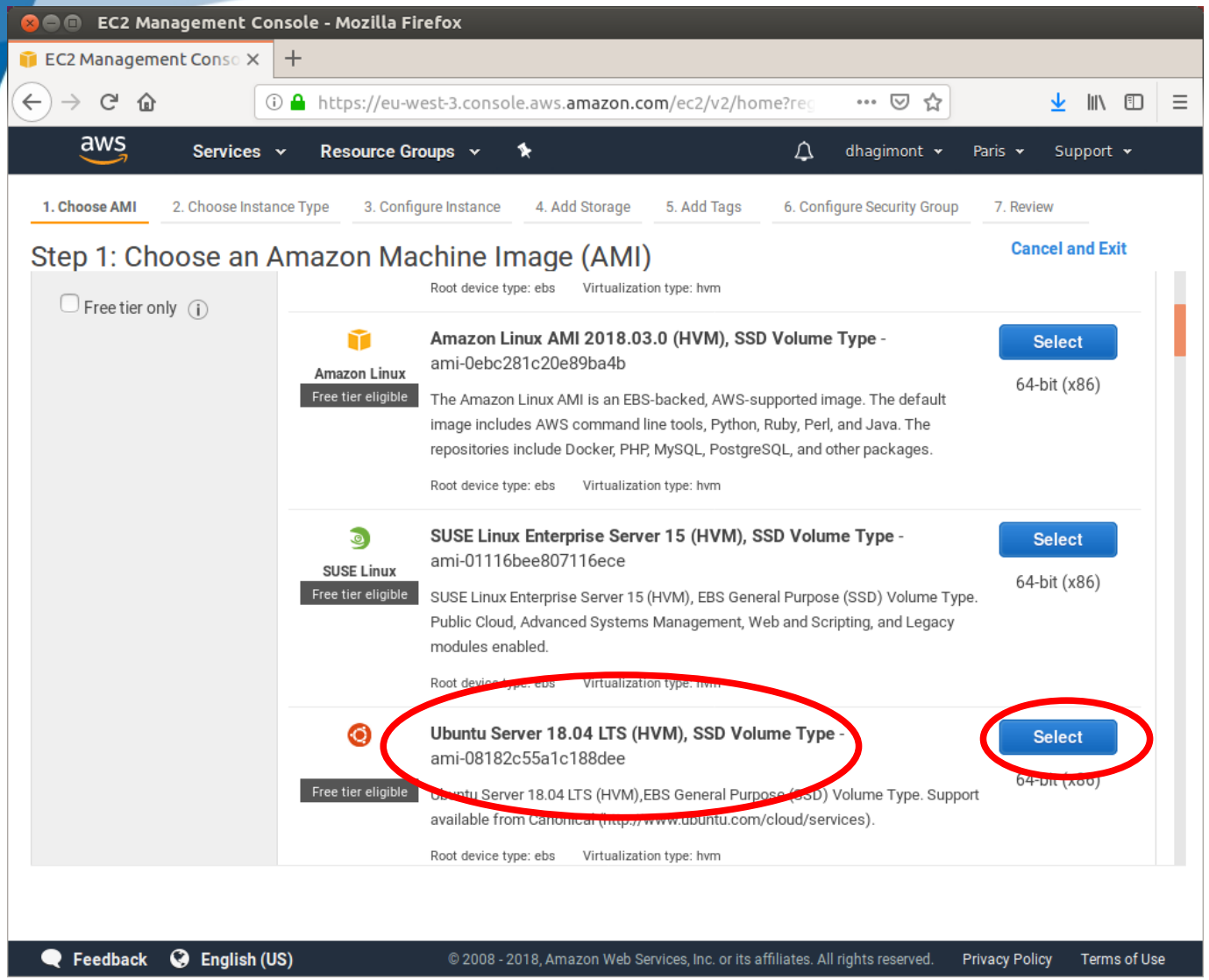
Creation of a security group



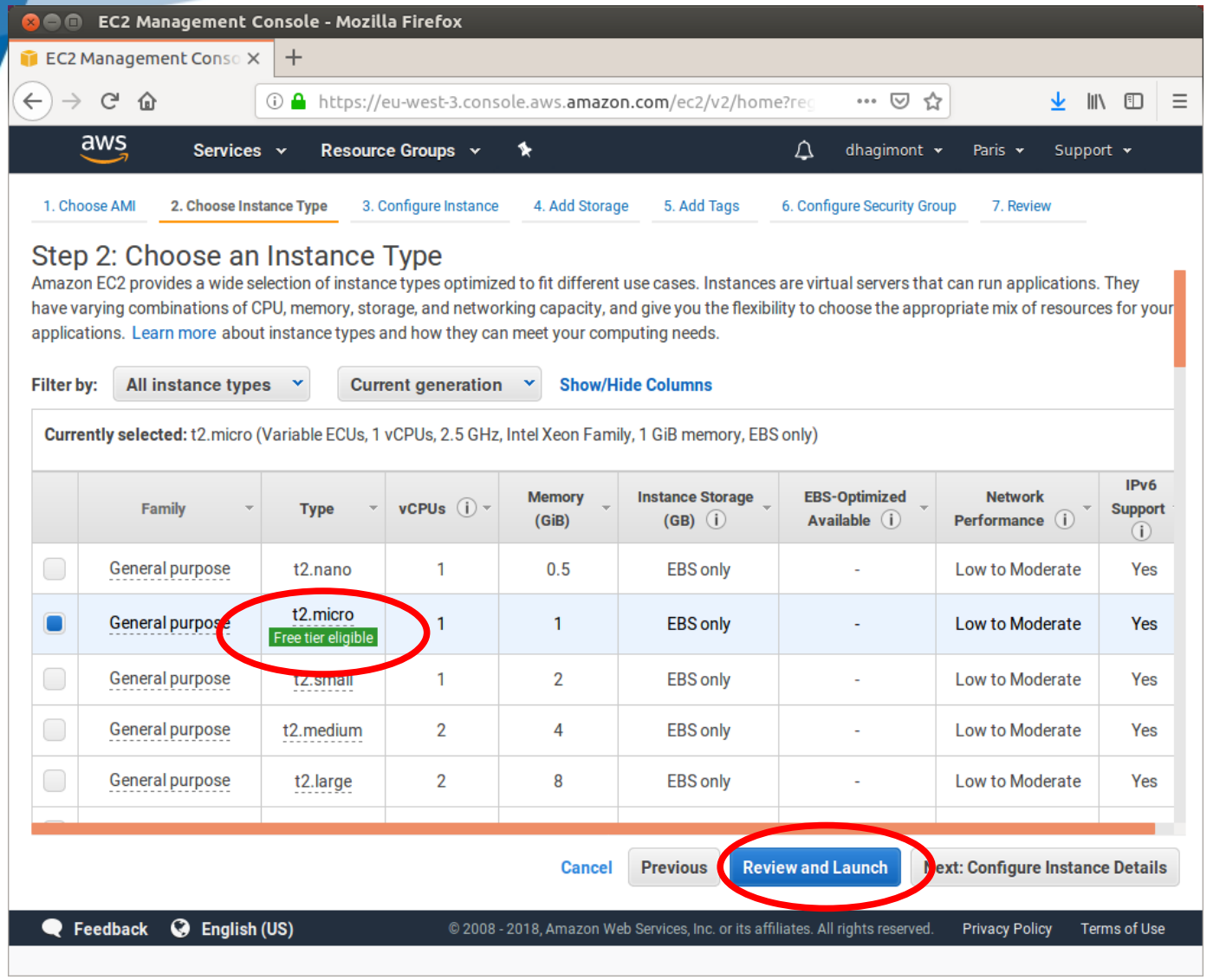
Instance management (VM)



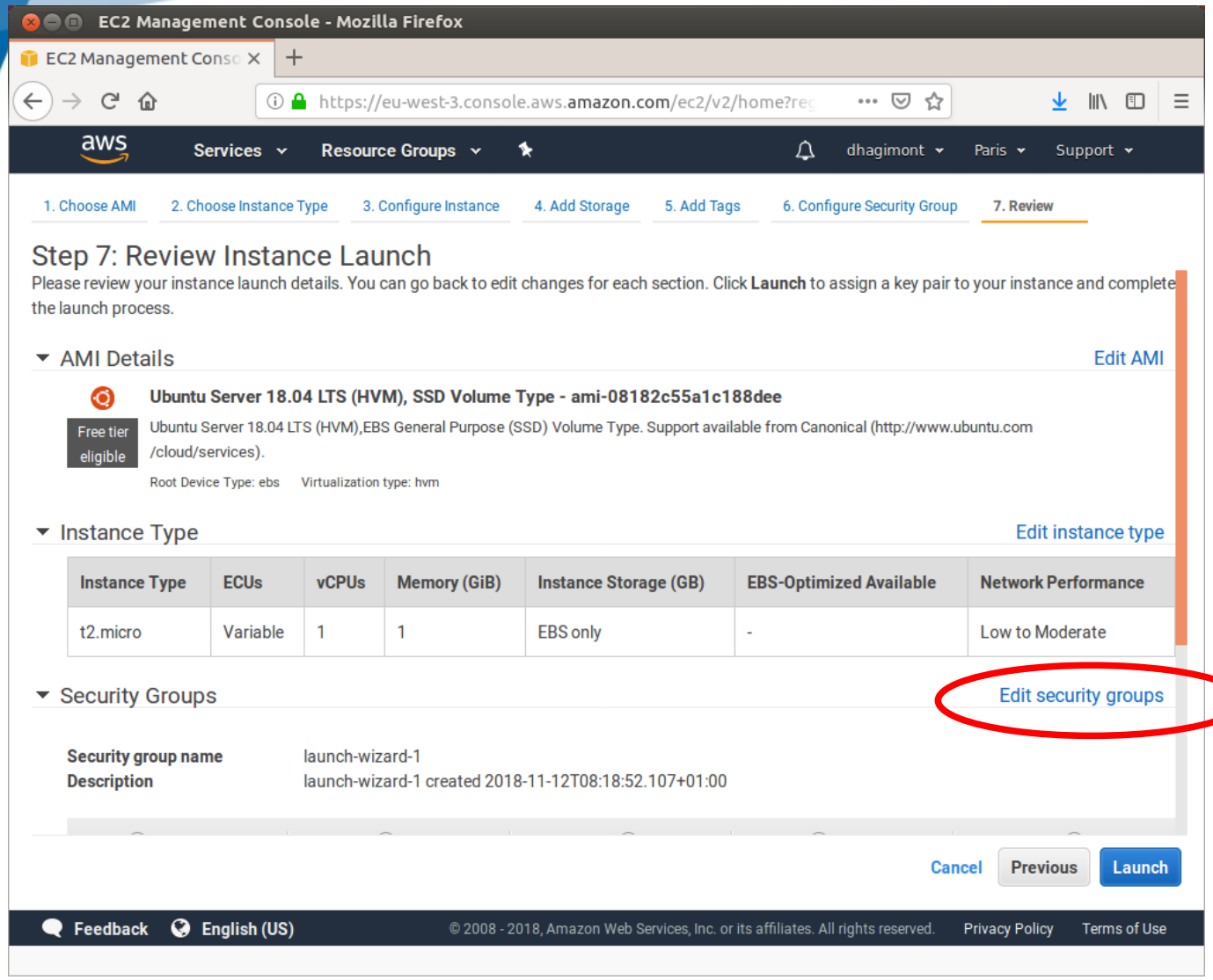
Choose the operating system



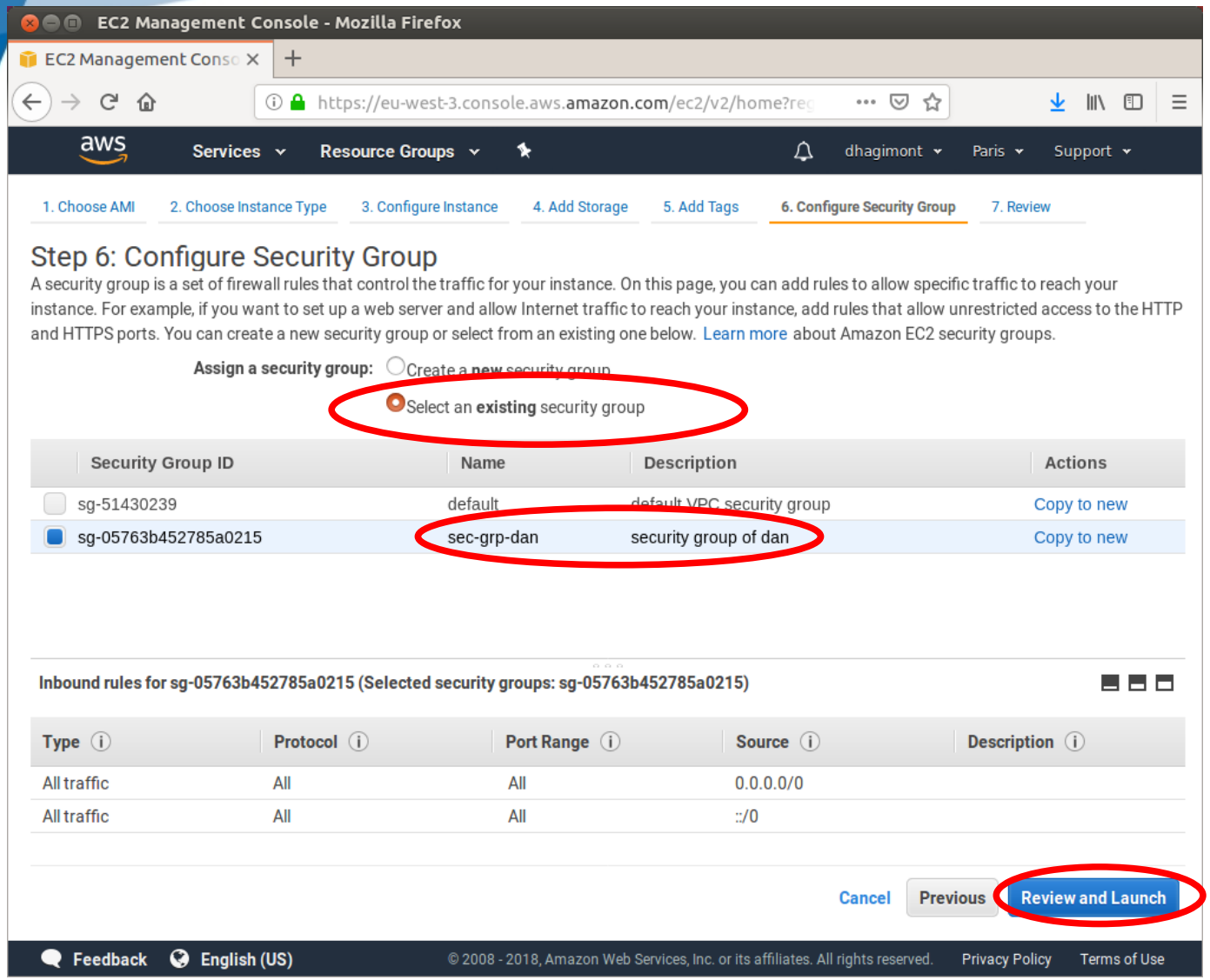
Choose the instance type



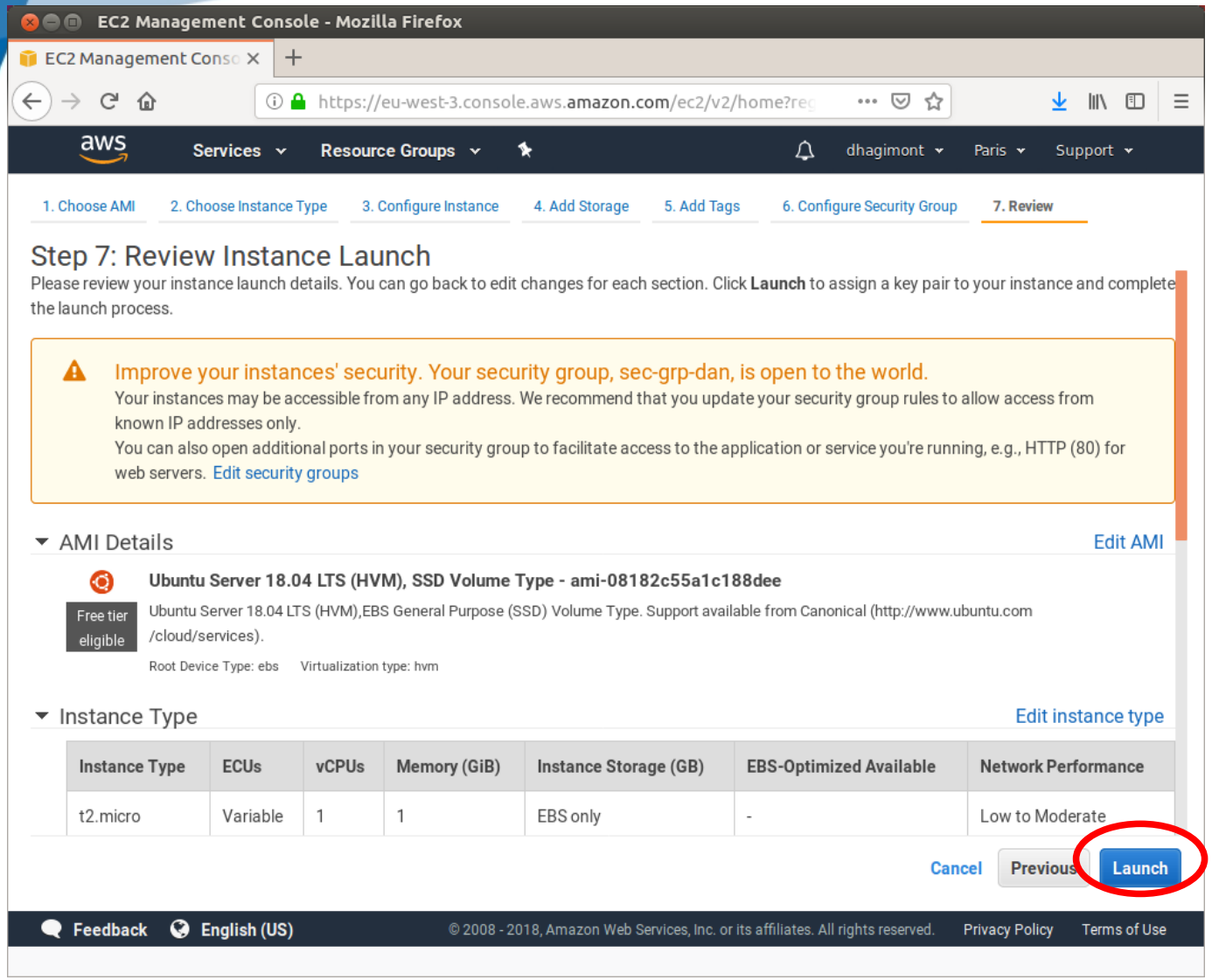
Details of the configuration



Select the security group



Summary


EC2 Management Console - Mozilla Firefox
EC2 Management Conso
https://eu-west-3.console.aws.amazon.com/ec2/v2/home?reg
aws
Services
Resource Groups
dhagimont
Paris
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 7: Review Instance Launch
Please review your instance launch details. You can go back to edit changes for each section. Click Launch to assign a key pair to your instance and complete the launch process.
Improve your instances' security. Your security group, sec-grp-dan, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.
You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. Edit security groups
AMI Details
Edit AMI
Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-08182c55a1c188dee
Free tier eligible
Ubuntu Server 18.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Root Device Type: ebs
Virtualization type: hvm
Instance Type
Edit instance type
Instance Type
ECUs
vCPUs
Memory (GiB)
Instance Storage (GB)
EBS-Optimized Available
Network Performance
t2.micro
Variable
1
1
EBS only
-
Low to Moderate
Cancel
Previous
Launch
Feedback
English (US)
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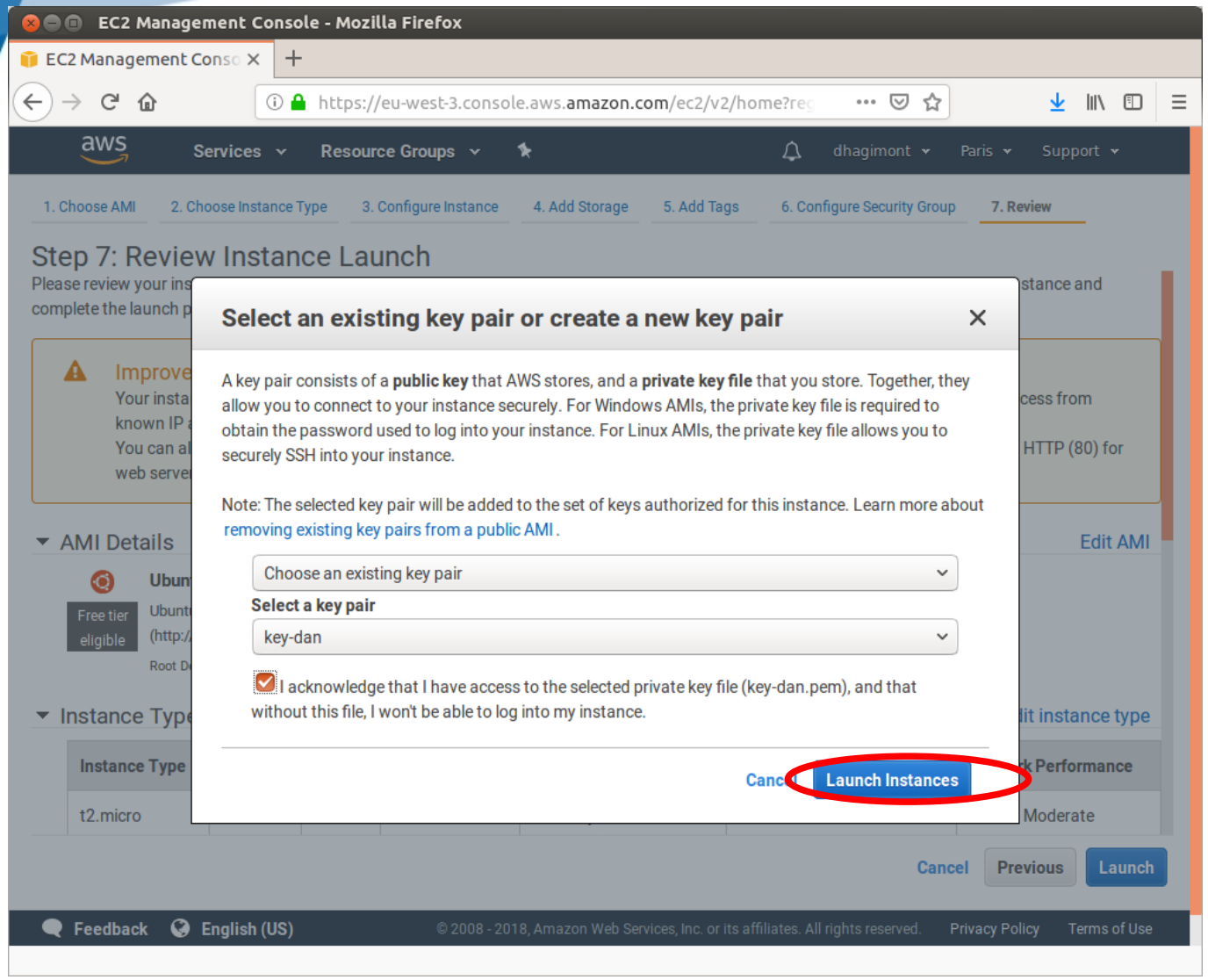
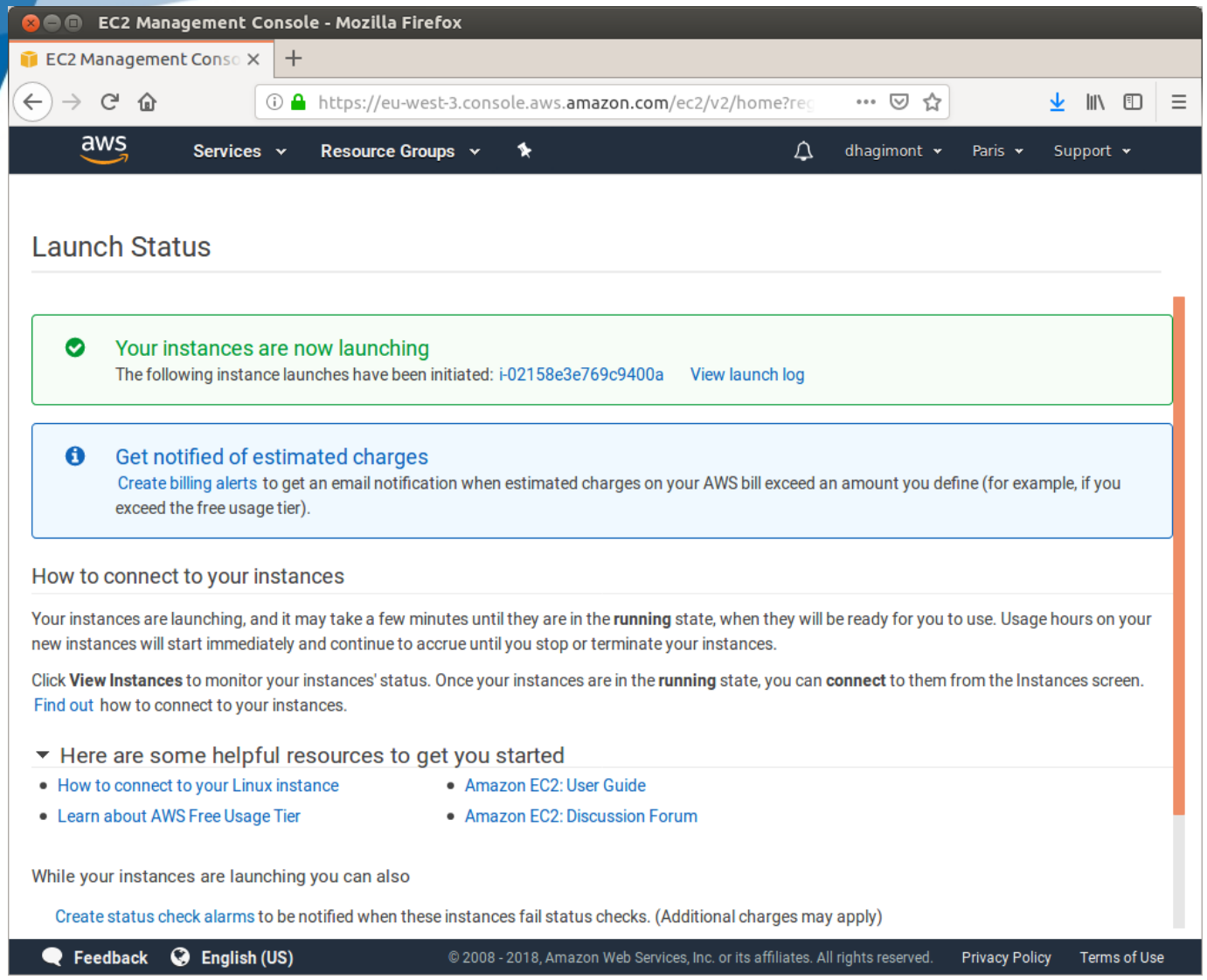
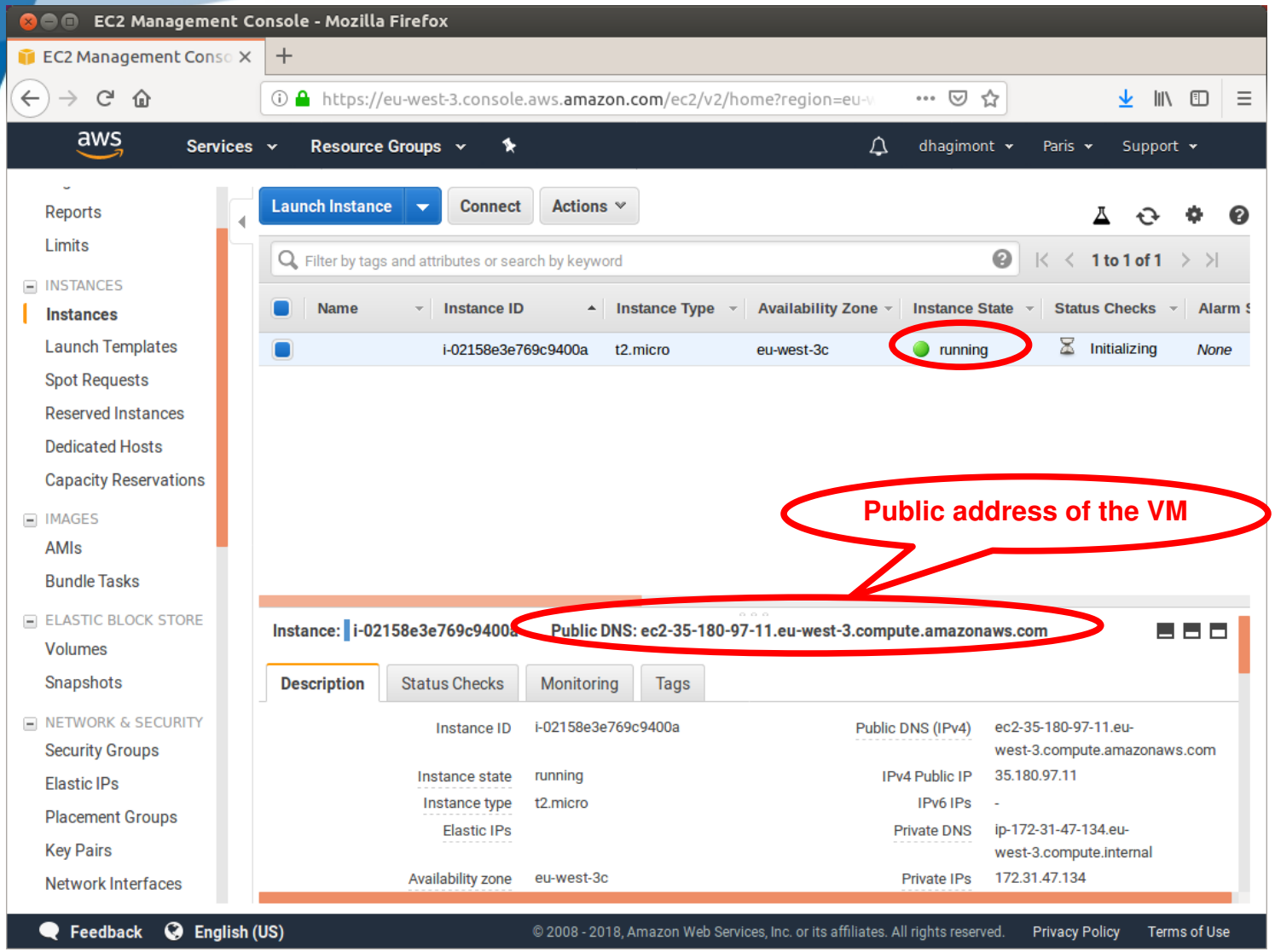
Associate a key pair



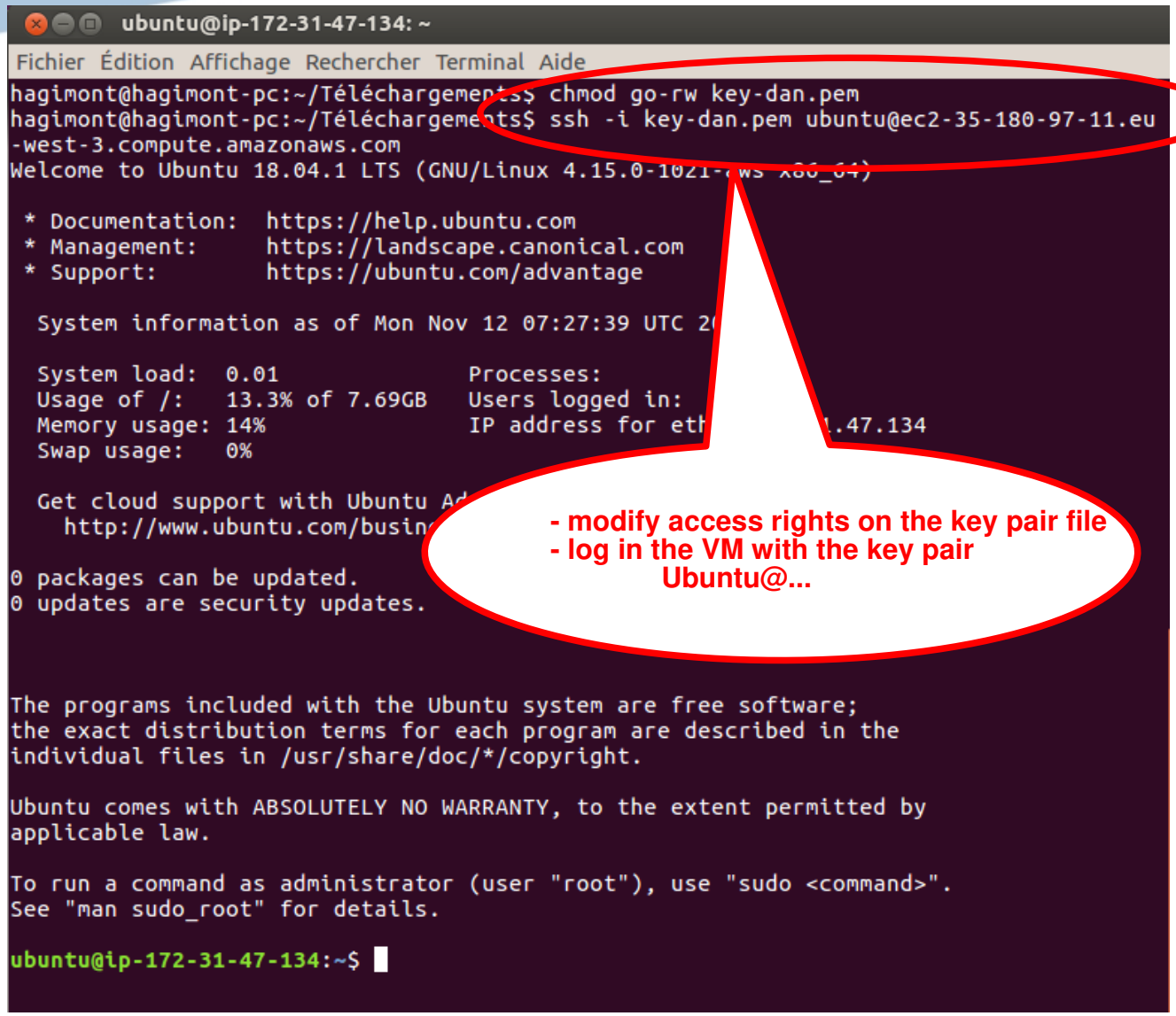
Creation is done



The instance is started

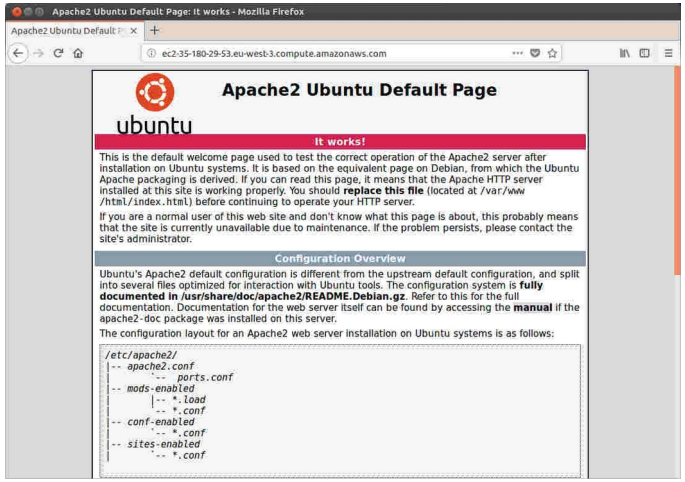


Connection with SSH



Installation of Apache2 + Php5

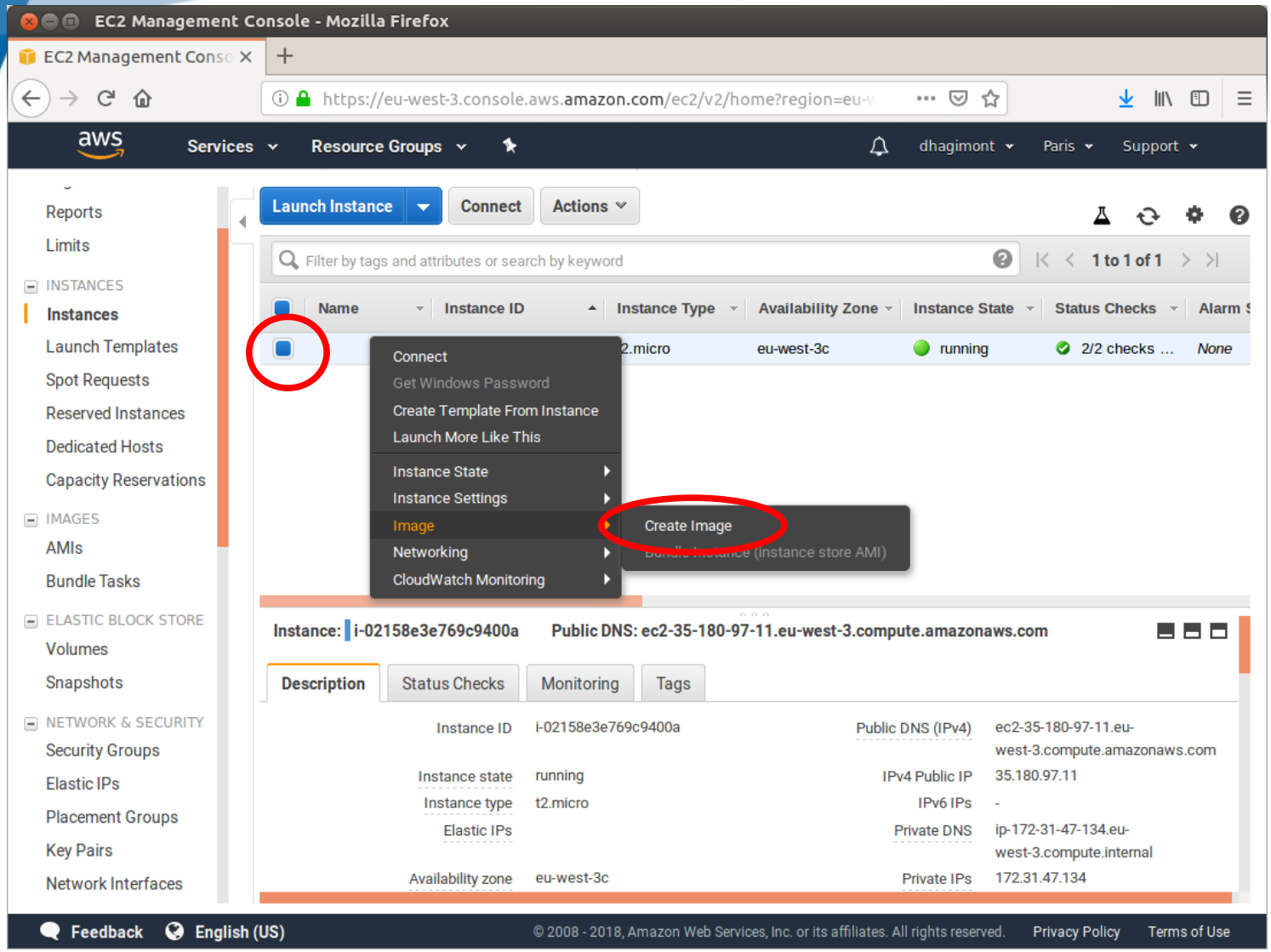
- Installation
  - sudo bash
  - apt-get update
  - apt-get install apache2 php libapache2-mod-php
  - systemctl restart apache2
- Verify that Apache is functionning
  - From a web browser:
    - http://ec2-35-180-97-11.eu-west-3.compute.amazonaws.com



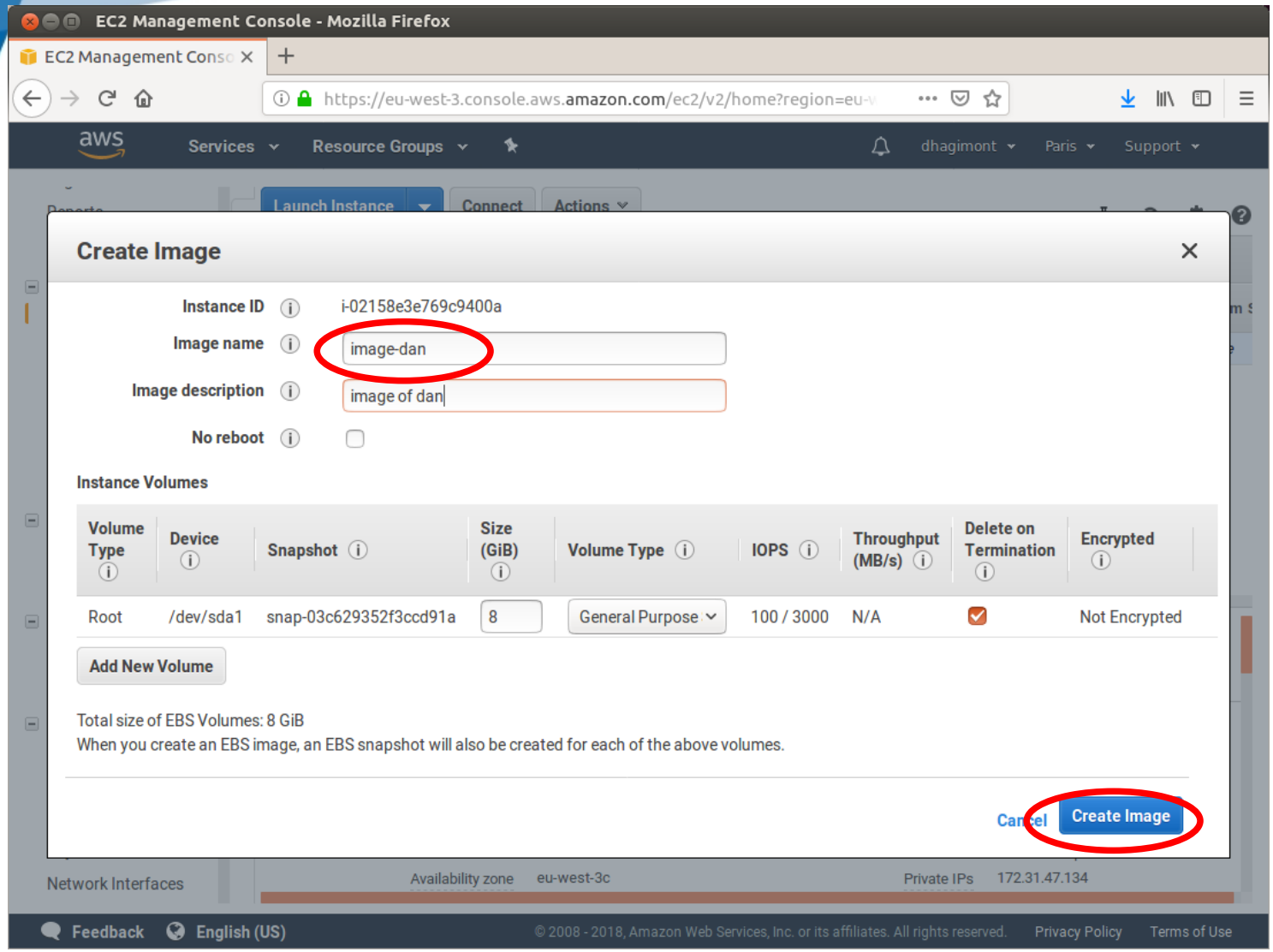
Installation of a php page

- From your machine
  - scp -i <fichier .pem> index.php ubuntu@ec2-35-180-29-53.eu-west-3.compute.amazonaws.com:.
- In the VM
  - sudo bash
  - rm /var/www/html/index.html
  - mv index.php /var/www/html/
  - chmod 777 /var/www/html/index.php

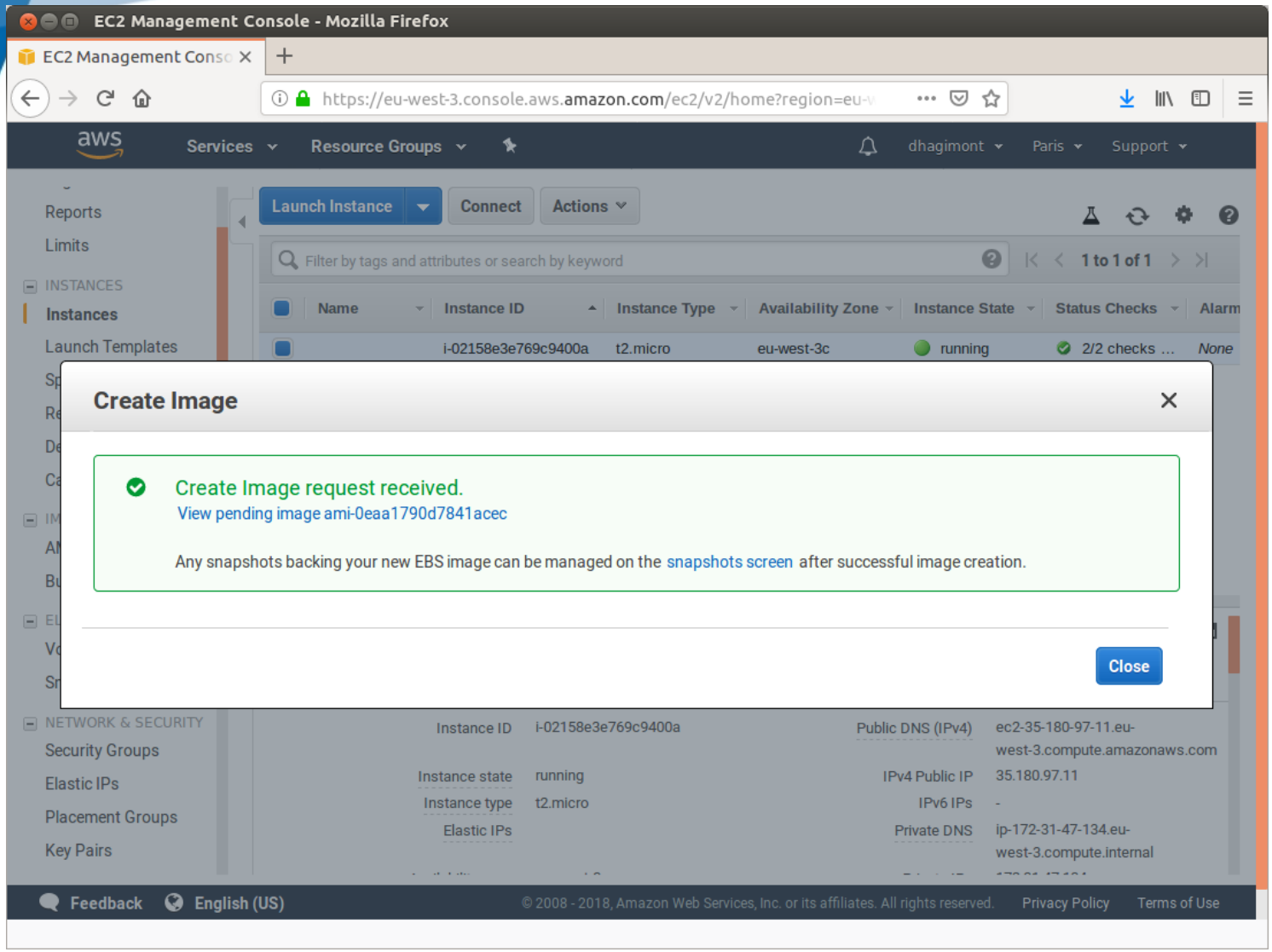
Save an image



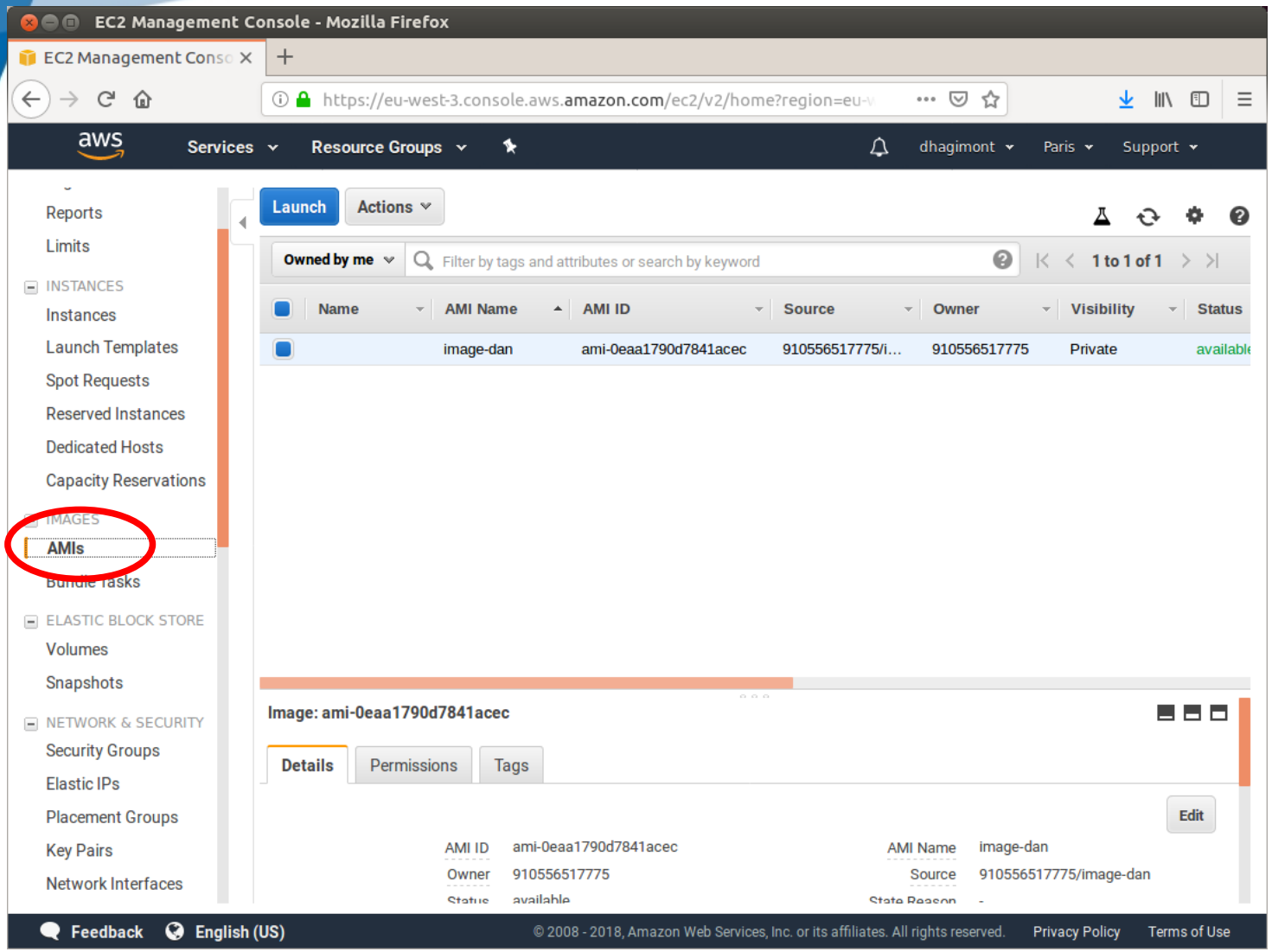
Save an image



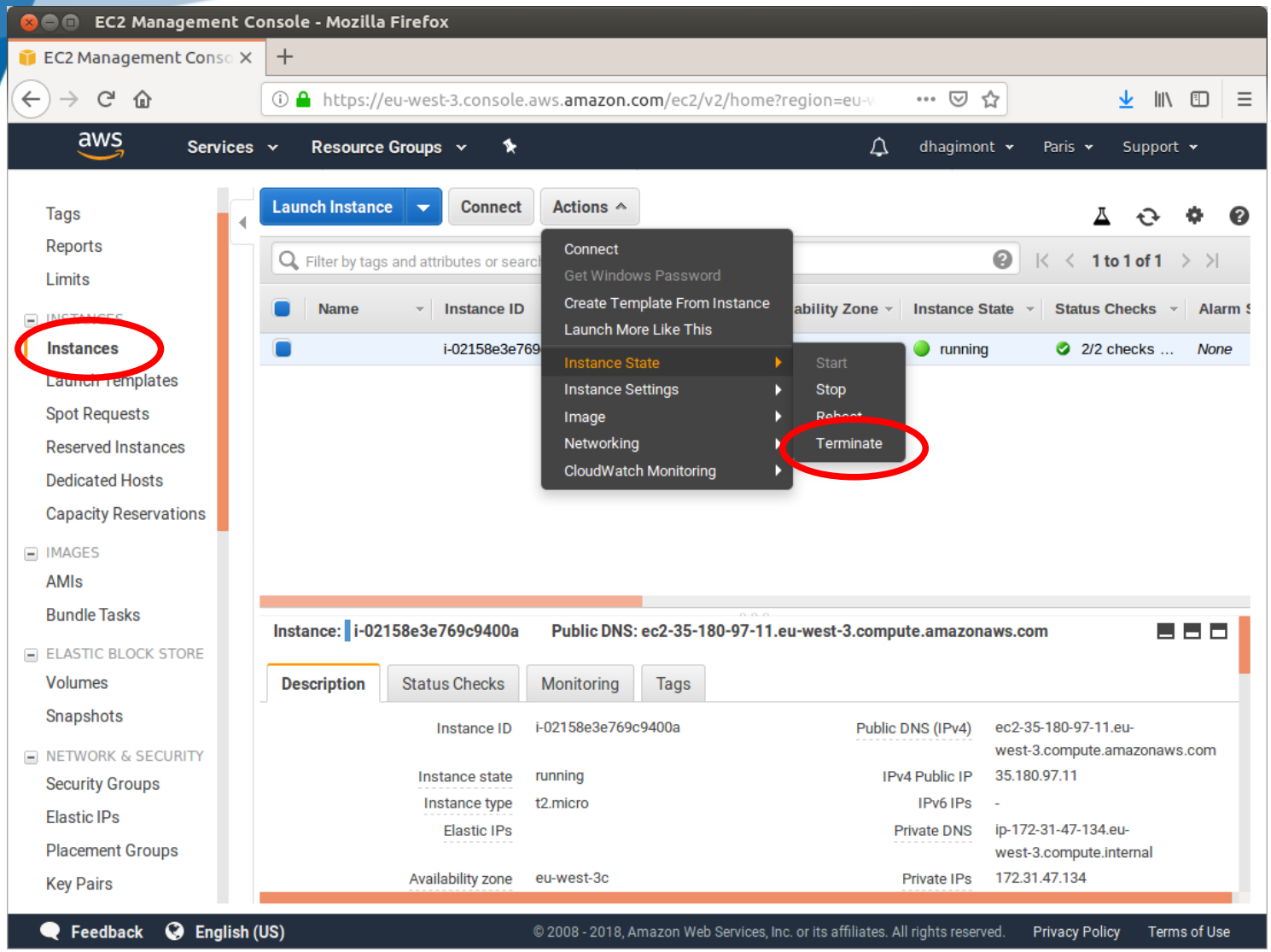
Save an image



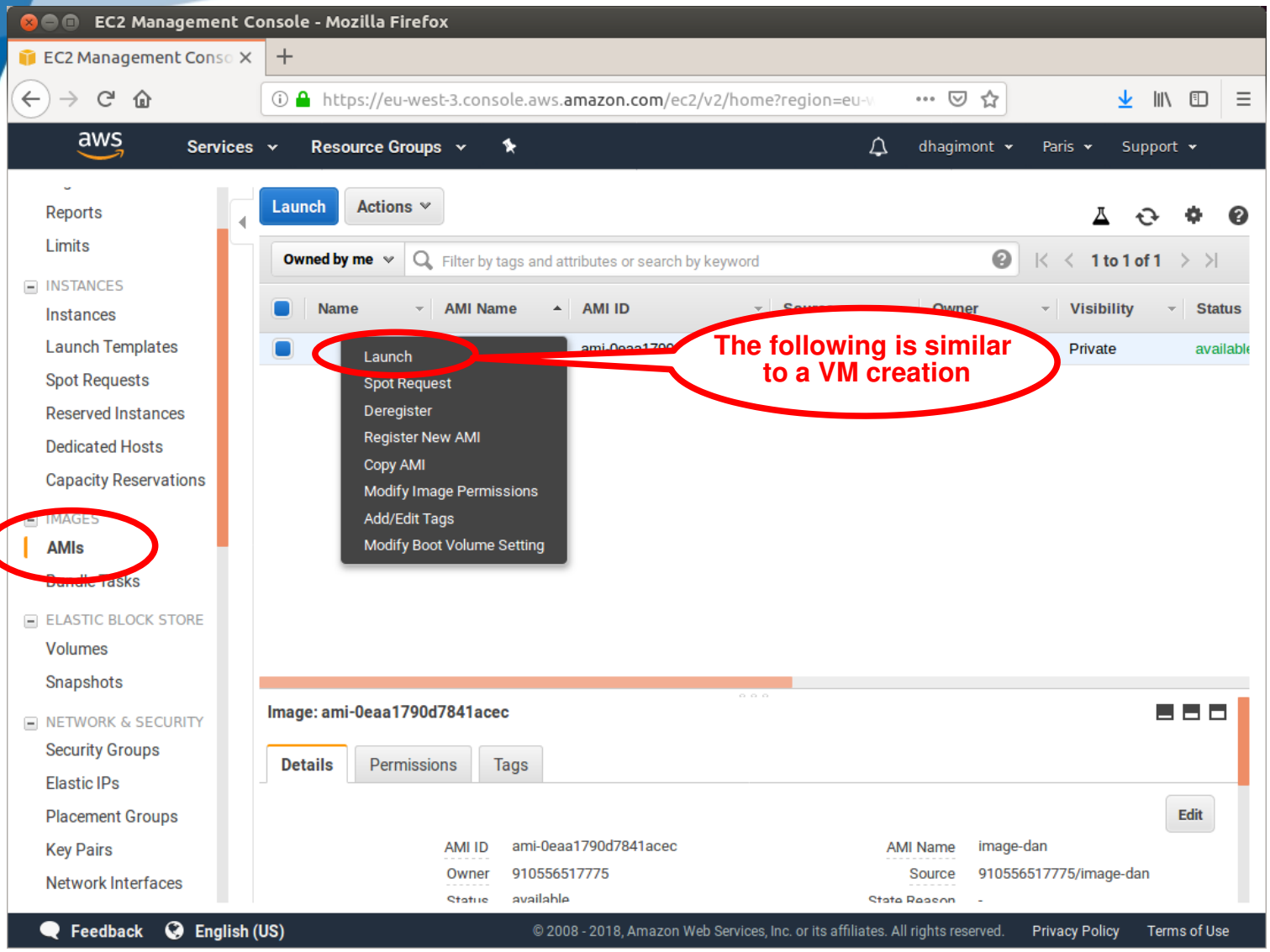
Save an image



Terminate your instance



Use an image


EC2 Management Console - Mozilla Firefox
EC2 Management Conso
https://eu-west-3.console.aws.amazon.com/ec2/v2/home?region=eu-
aws
Services
Resource Groups
dhagimont
Paris
Support
Reports
Limits
INSTANCES
Instances
Launch Templates
Spot Requests
Reserved Instances
Dedicated Hosts
Capacity Reservations
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Launch
Actions
Owned by me
Filter by tags and attributes or search by keyword
1 to 1 of 1
Name
AMI Name
AMI ID
Owner
Visibility
Status
Private
available
Launch
Spot Request
Deregister
Register New AMI
Copy AMI
Modify Image Permissions
Add/Edit Tags
Modify Boot Volume Setting
The following is similar to a VM creation
Image: ami-0eaa1790d7841acec
Details
Permissions
Tags
Edit
AMI ID
ami-0eaa1790d7841acec
AMI Name
image-dan
Owner
910556517775
Source
910556517775/image-dan
Status
available
State Reason
Feedback
English (US)
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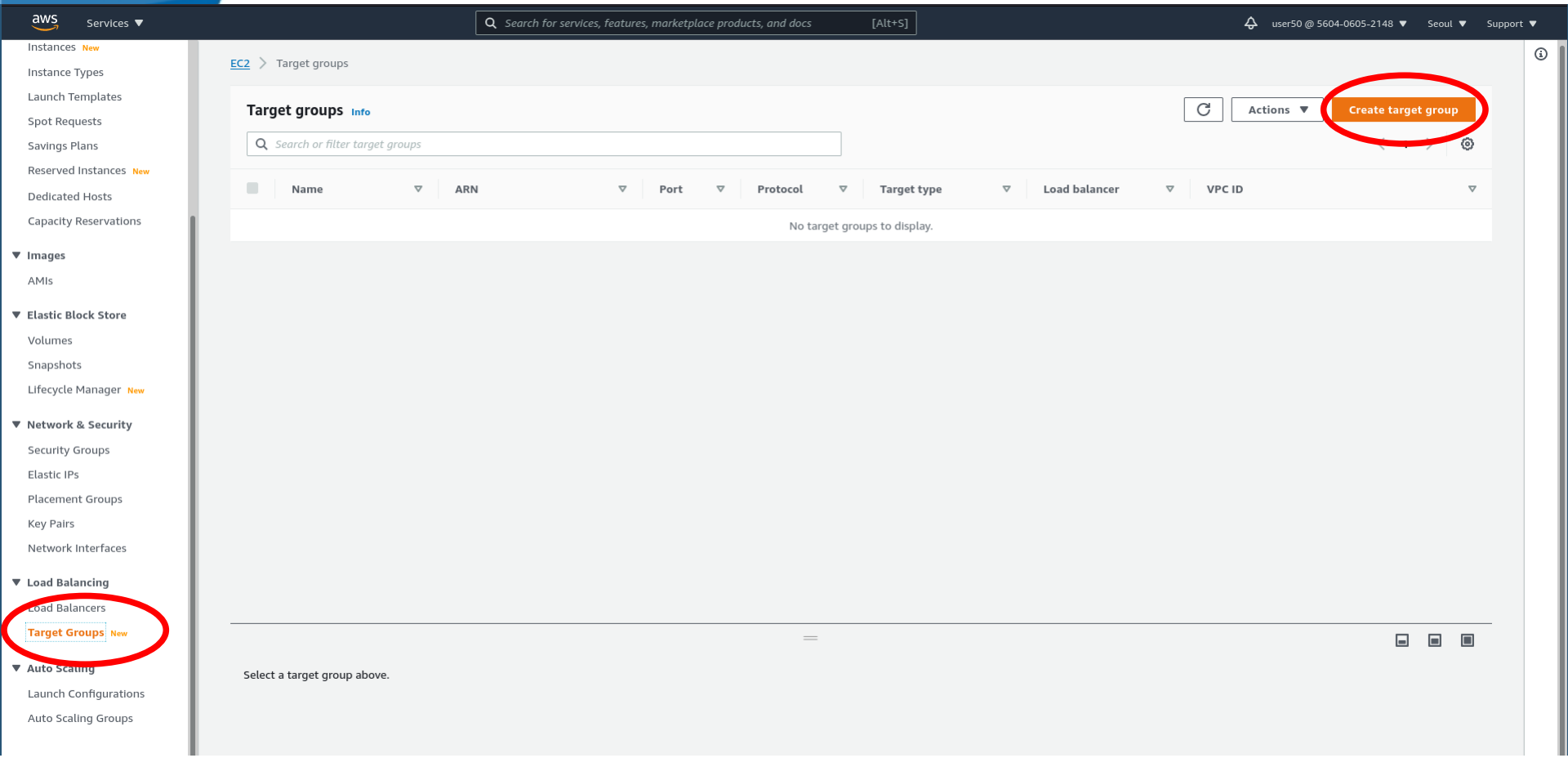
Amazon Auto Scaling

- Automatically adjust the number of instance according to
  - Monitoring information
  - Rules
- Three utilization cases
  - Maintain a fixed number of instances
  - Plan the addition/removal of instances
  - Dimension according to the load

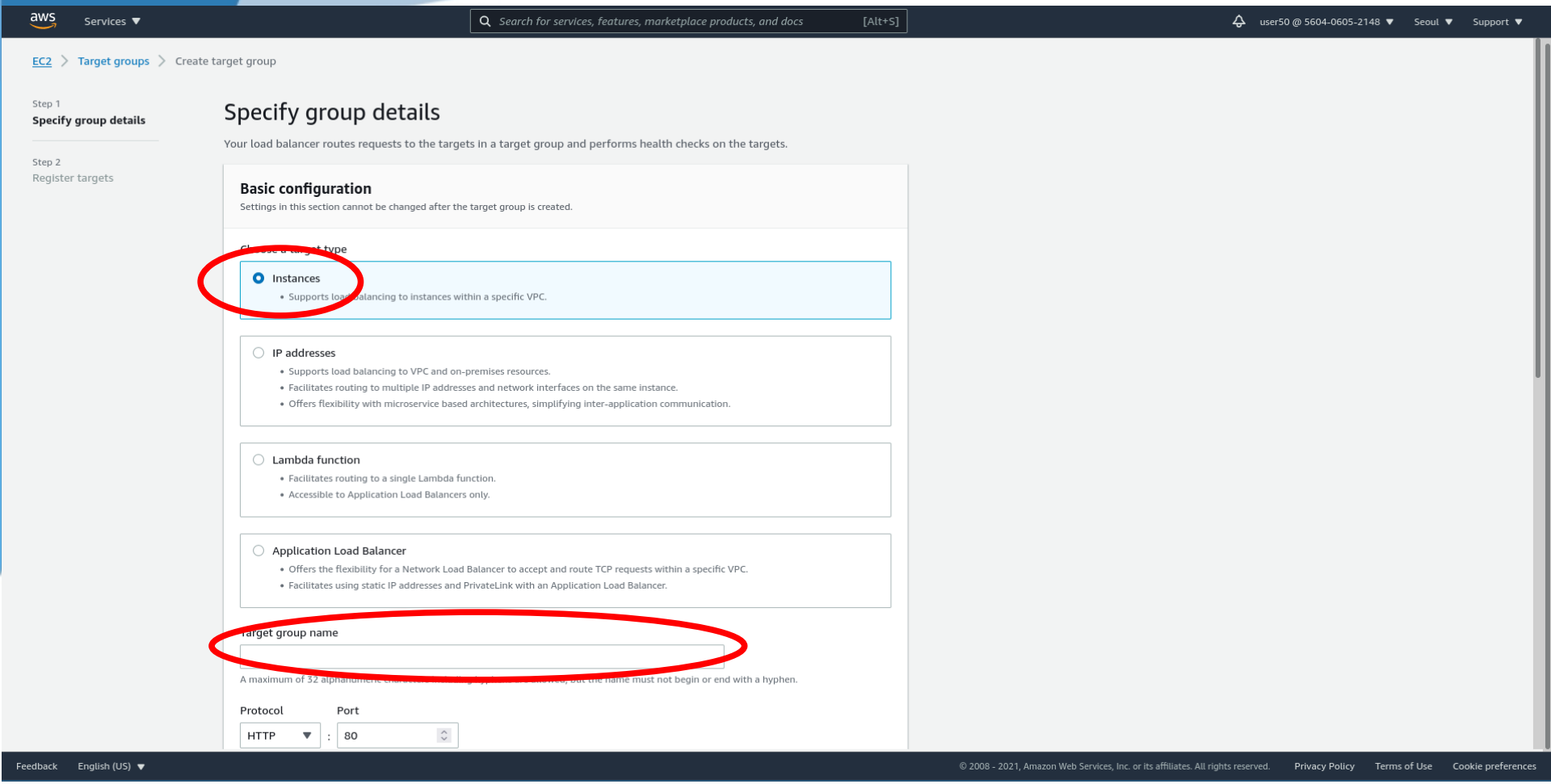
Amazon Auto Scaling

- Steps
  - Creation of a *load balanceur*
    - Load balancer between instances
  - Creation of a *Launch Configuration*
    - Type of VM which will be added
  - Creation of an *Auto Scaling Group*
    - Rules of management

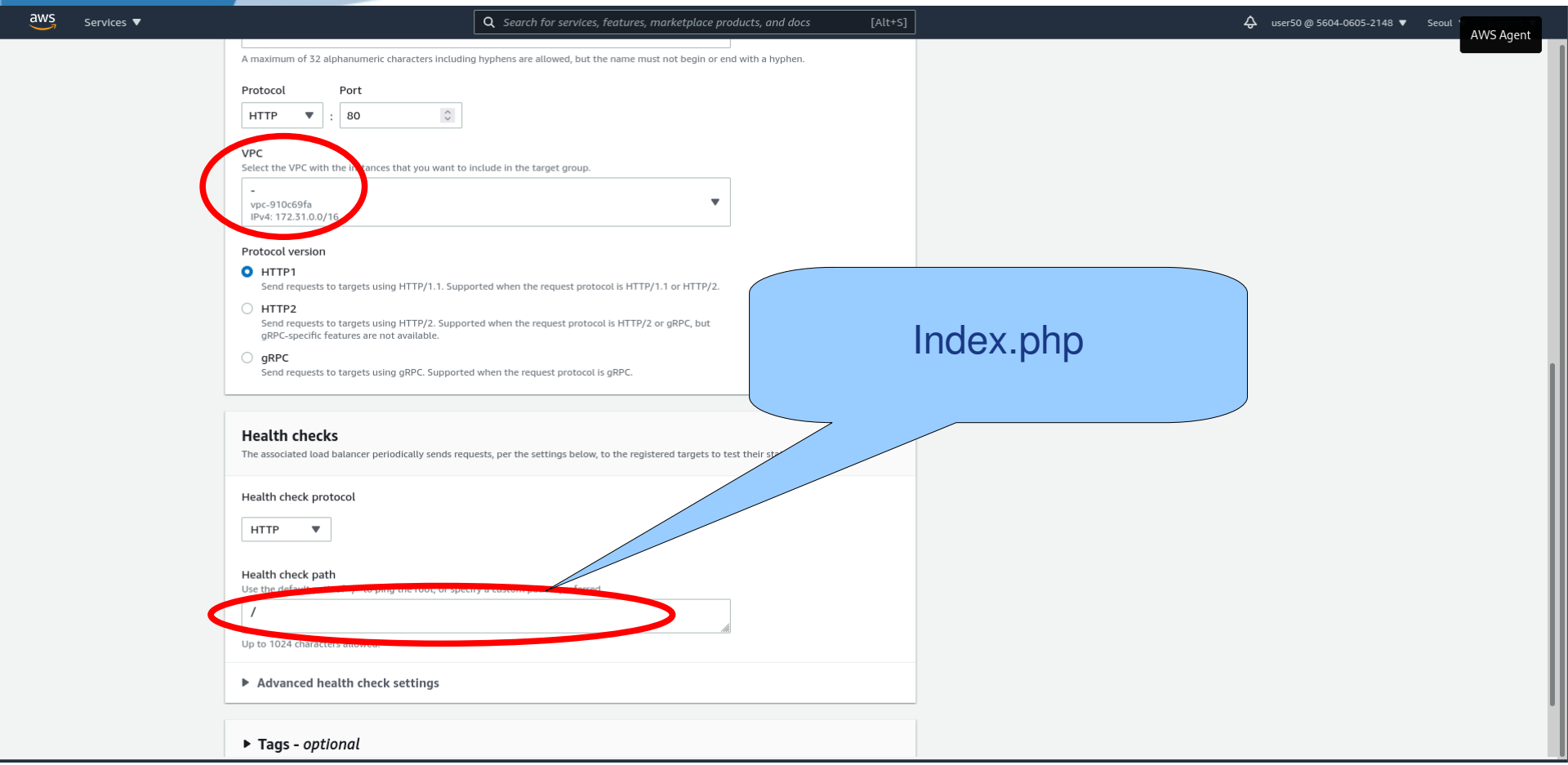
Creation of a load balancer



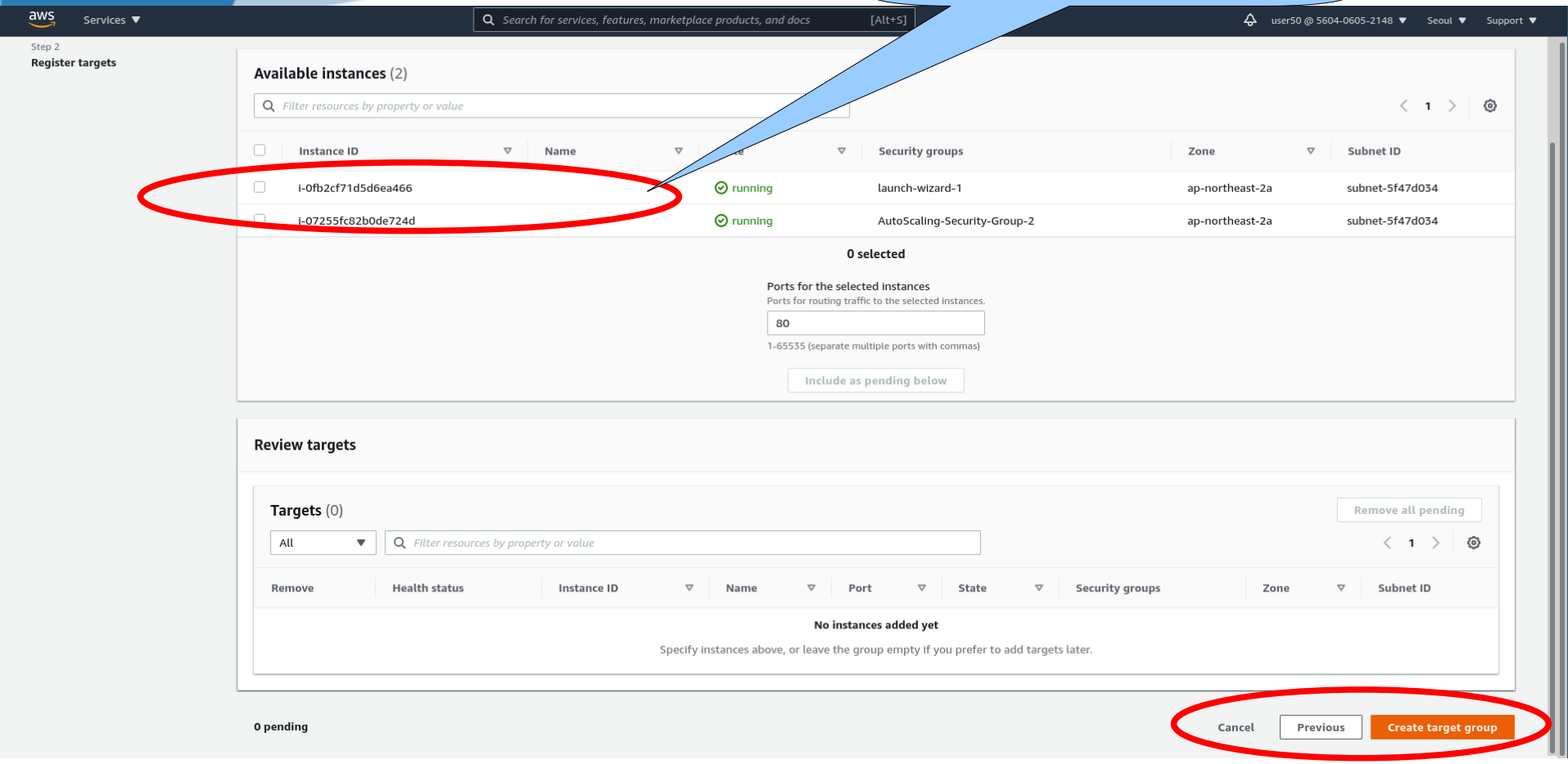
Creation of a load balancer



Creation of a load balancer



Creation of a load balancer



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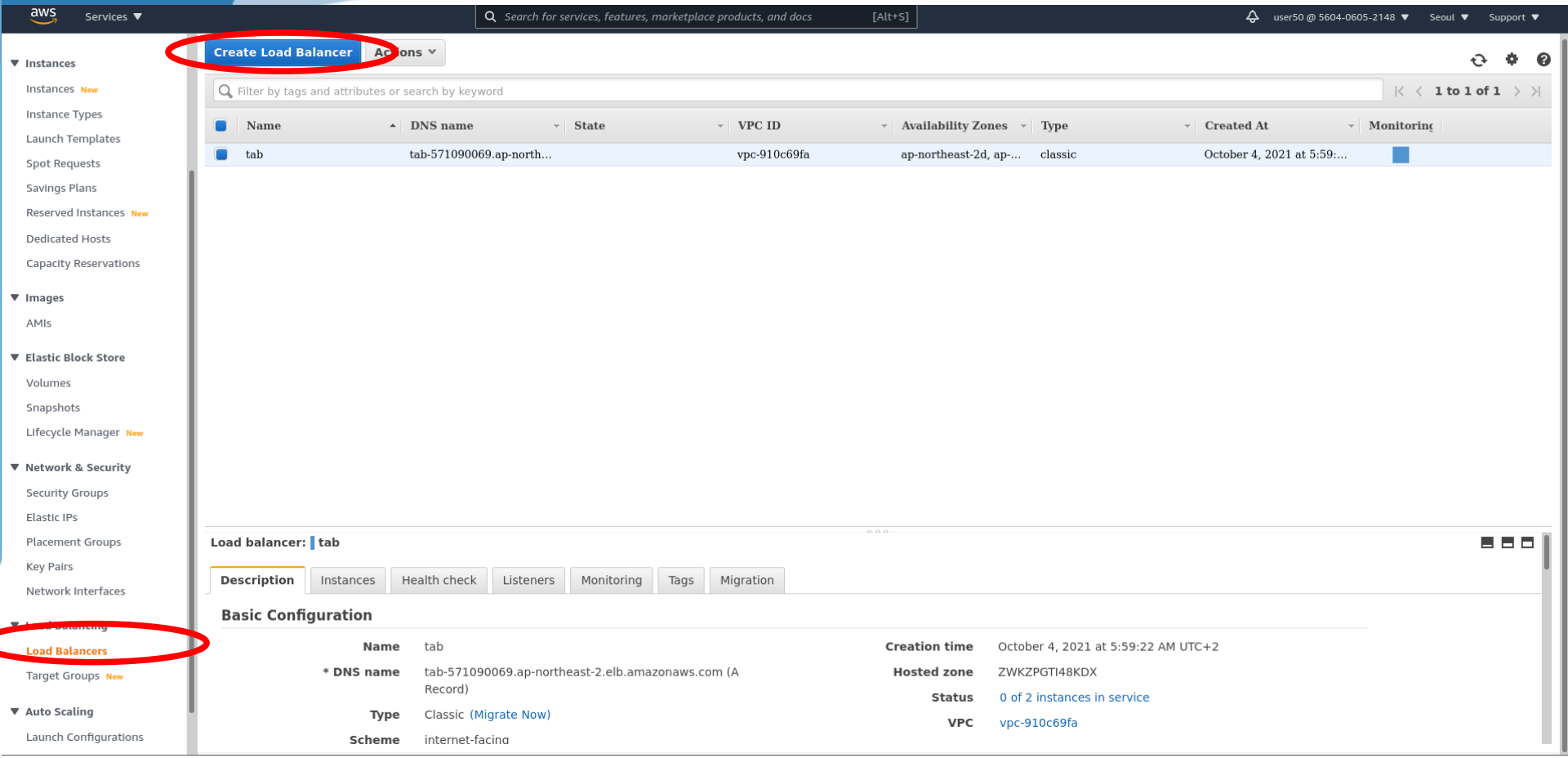
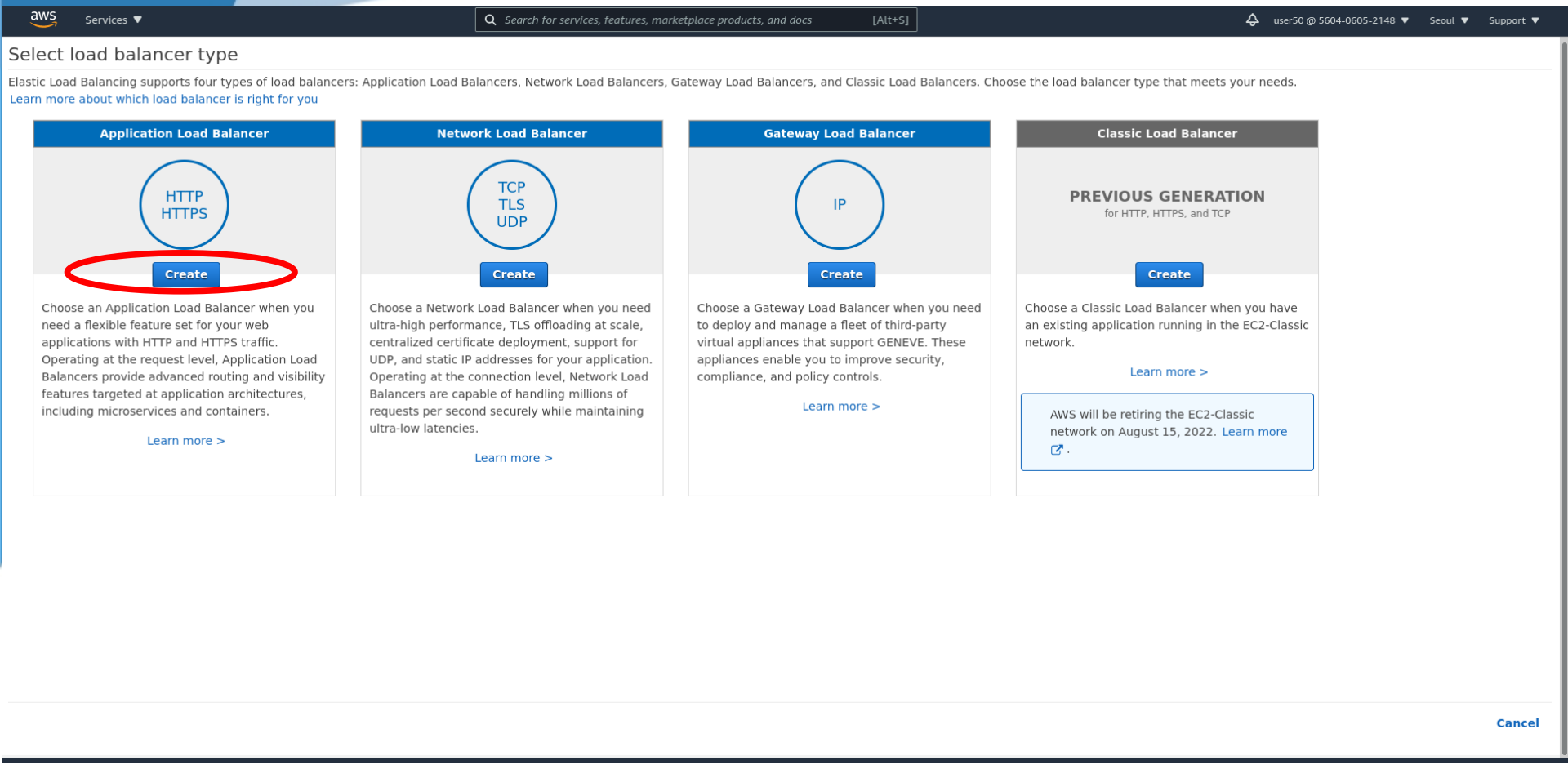
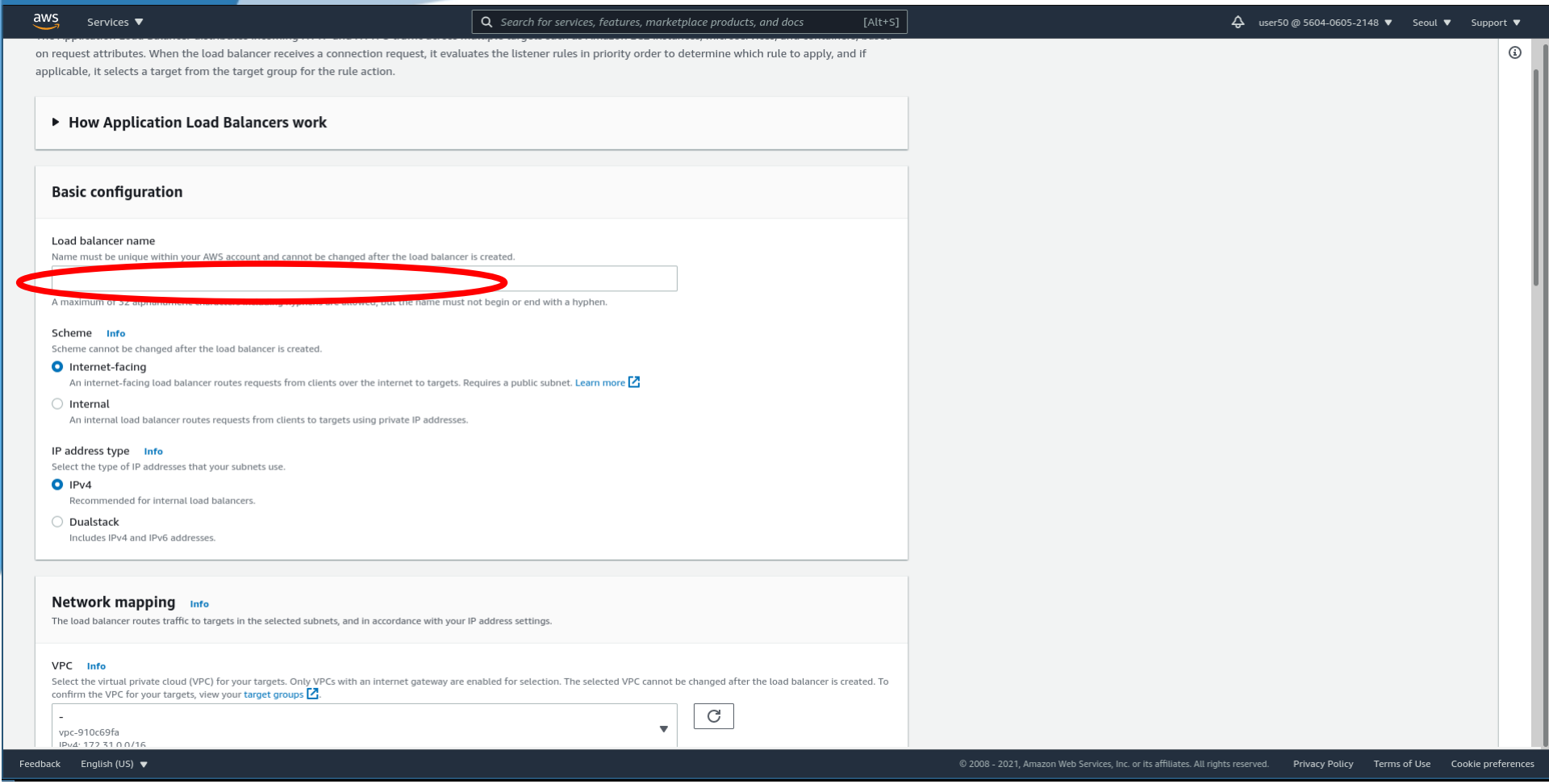


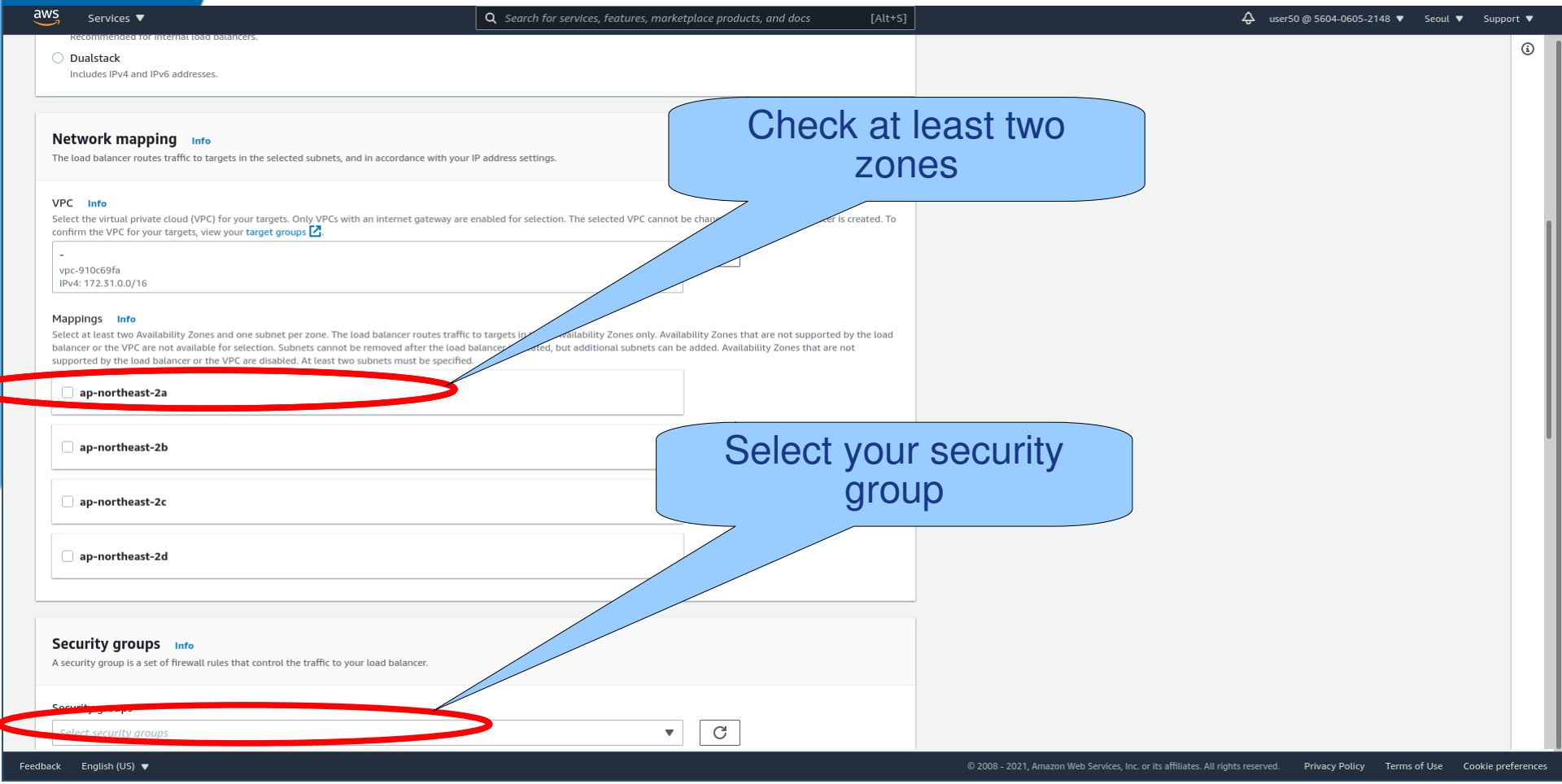
Creation of a load balancer



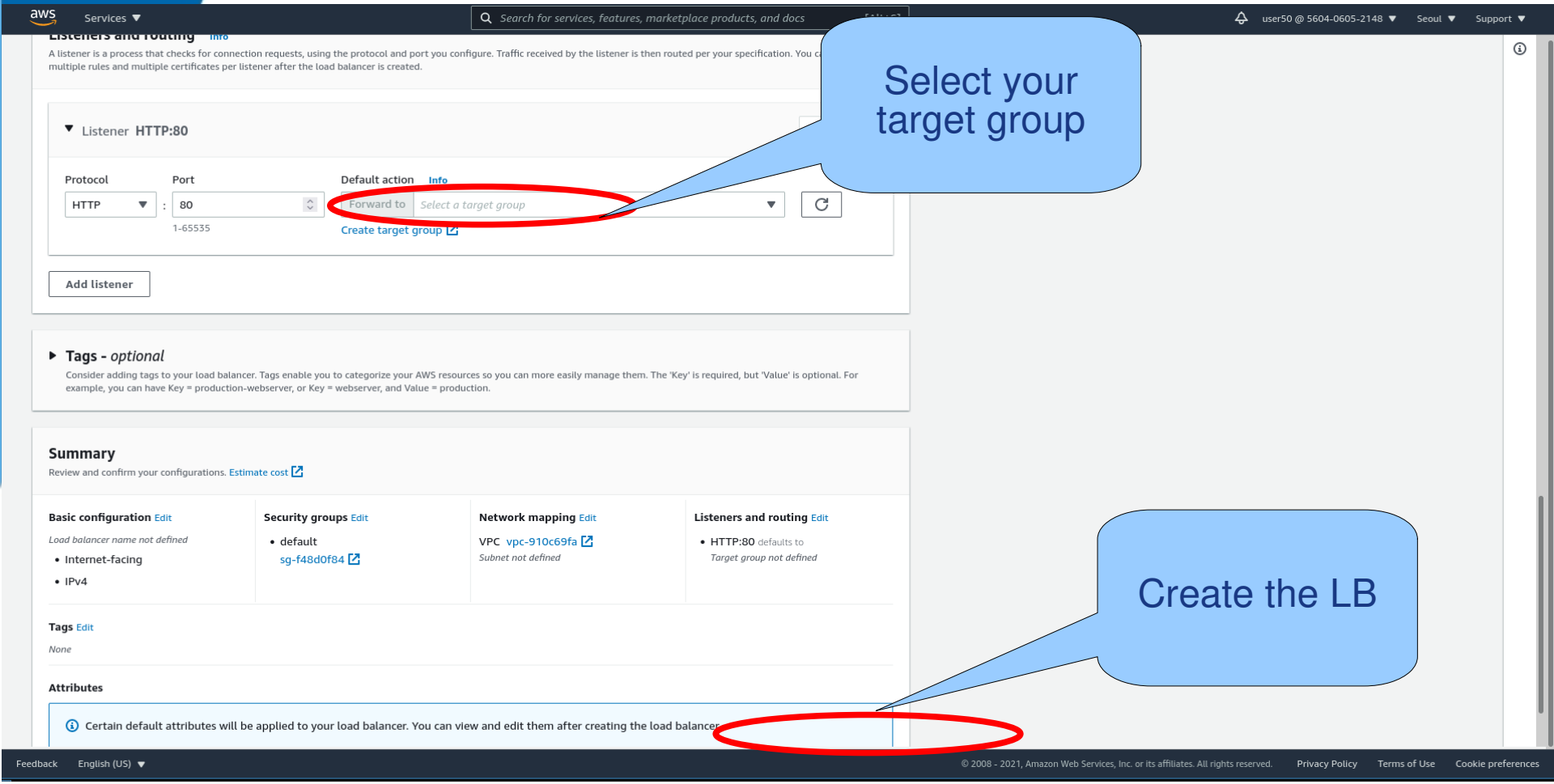
Creation of a load balancer



Creation of a load balancer



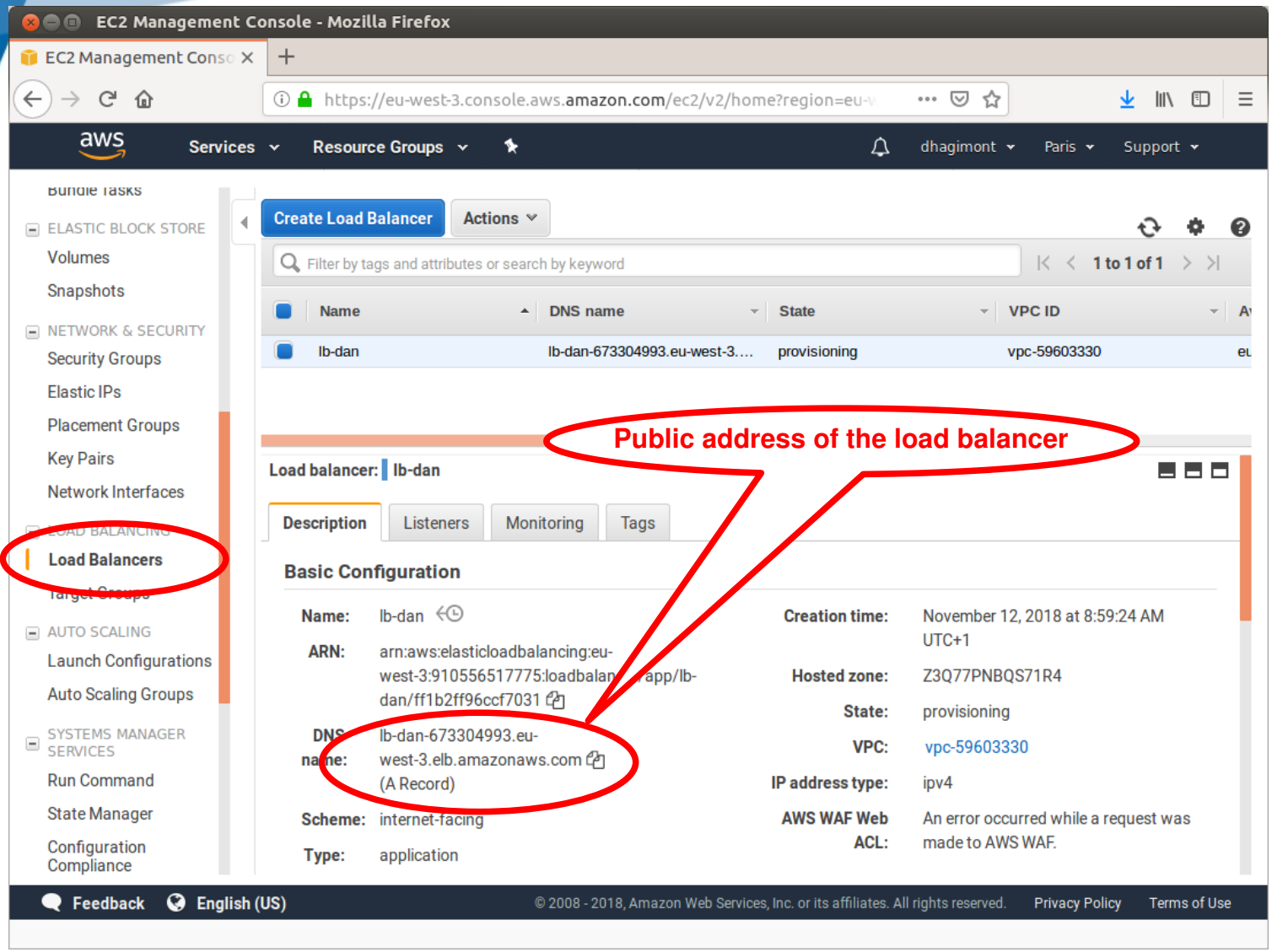
Creation of a load balancer



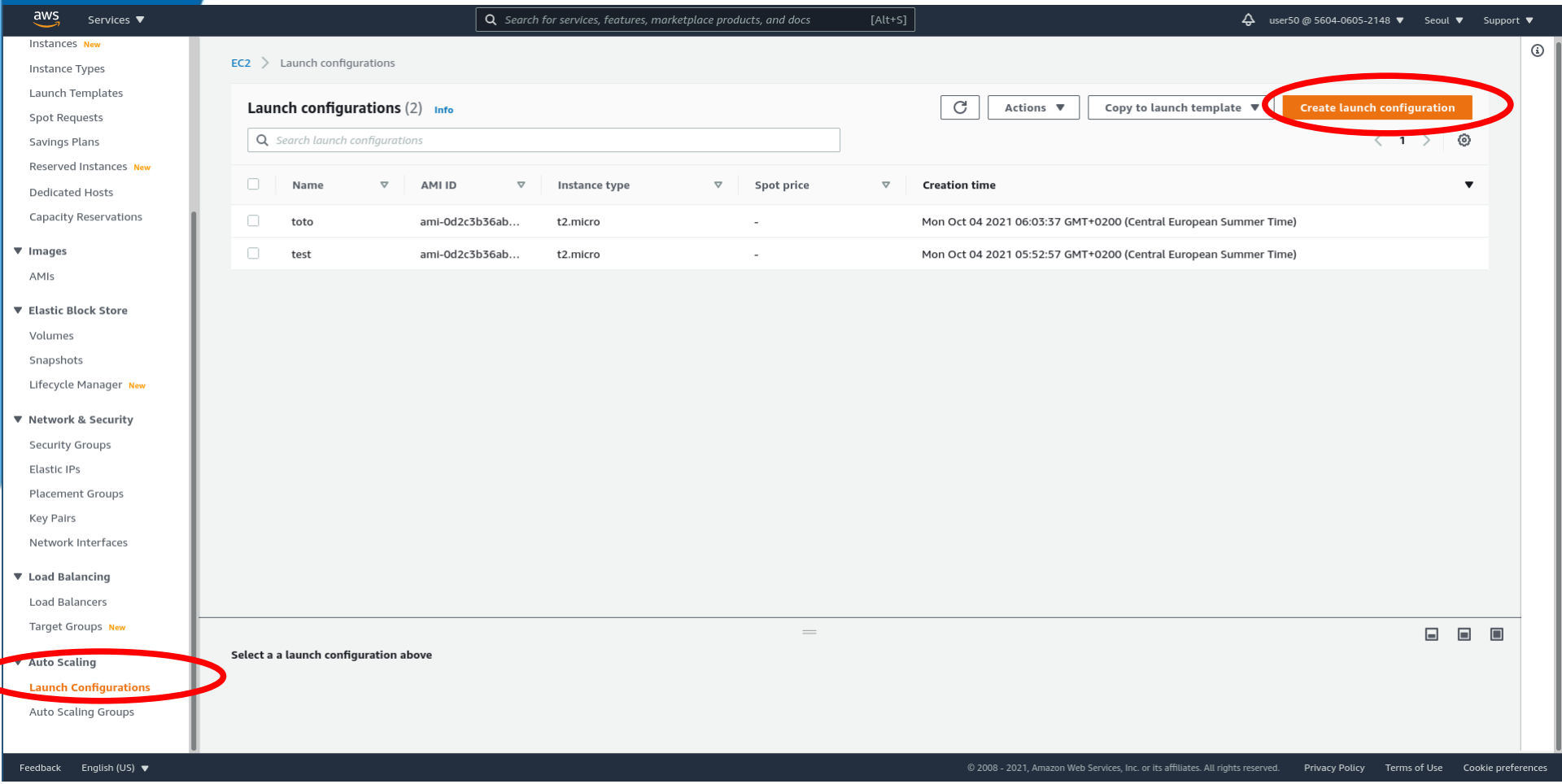
Select your target group

Create the LB

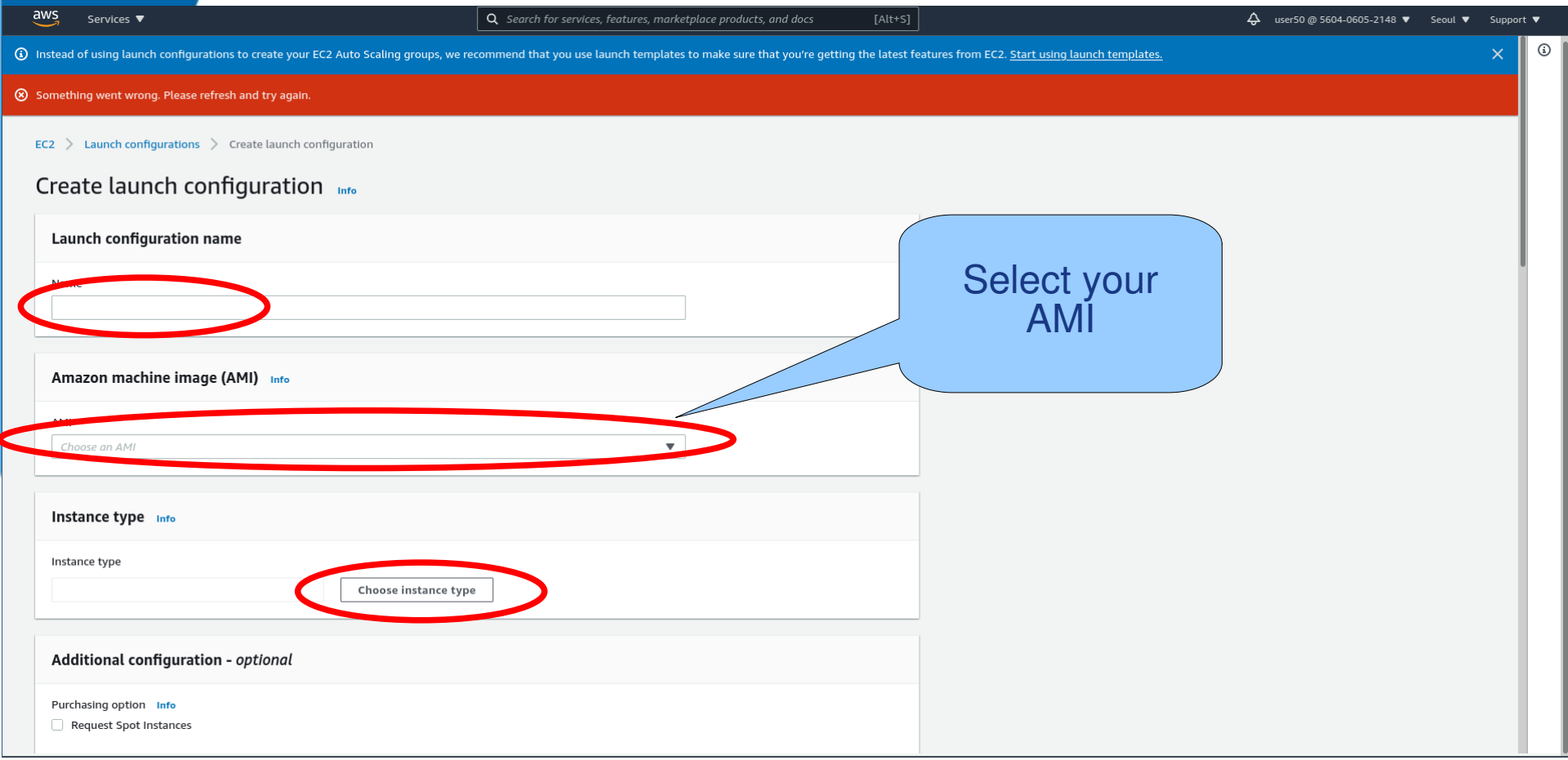
Creation of a load balancer



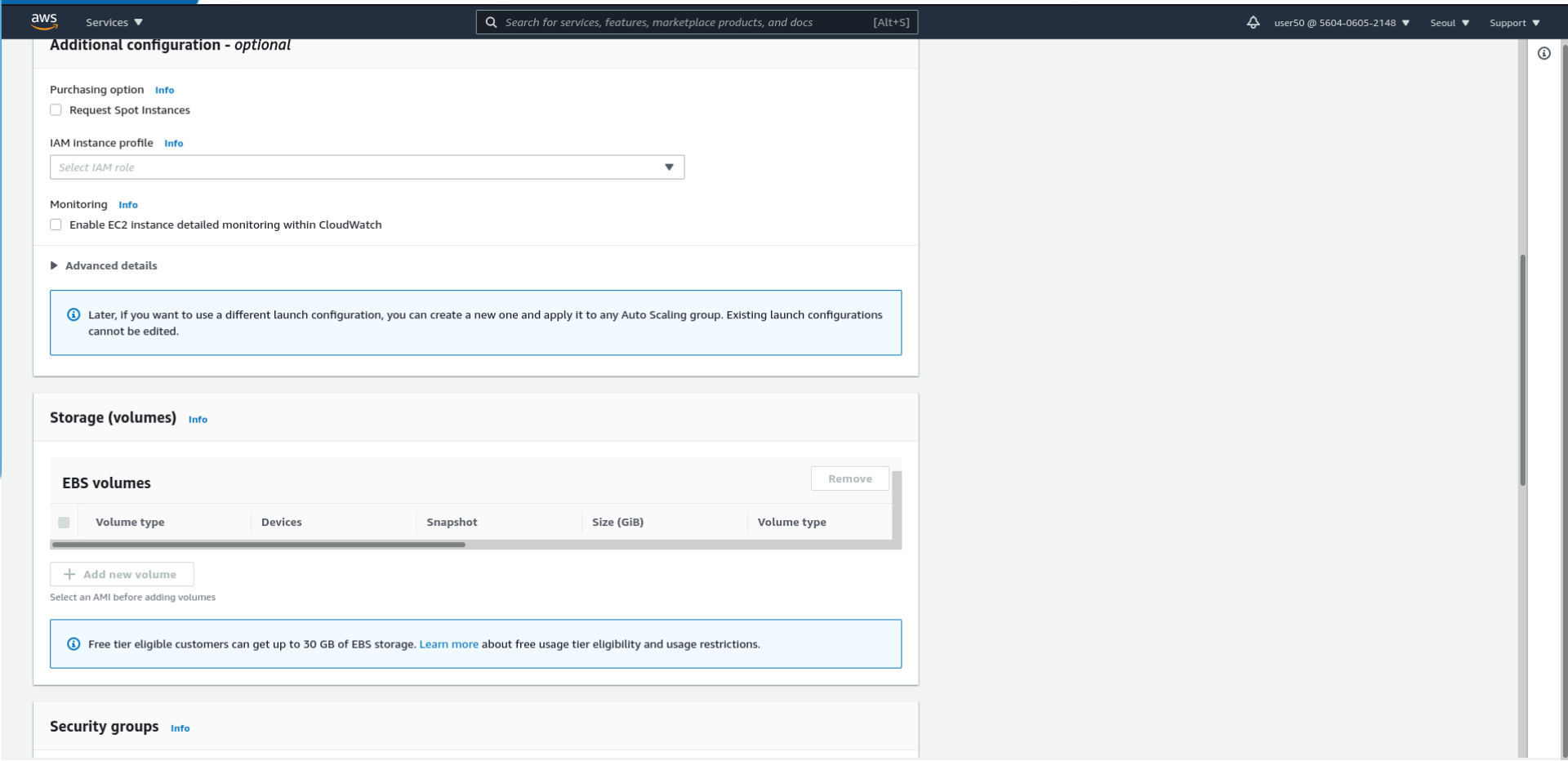
Creation of an auto scaling group



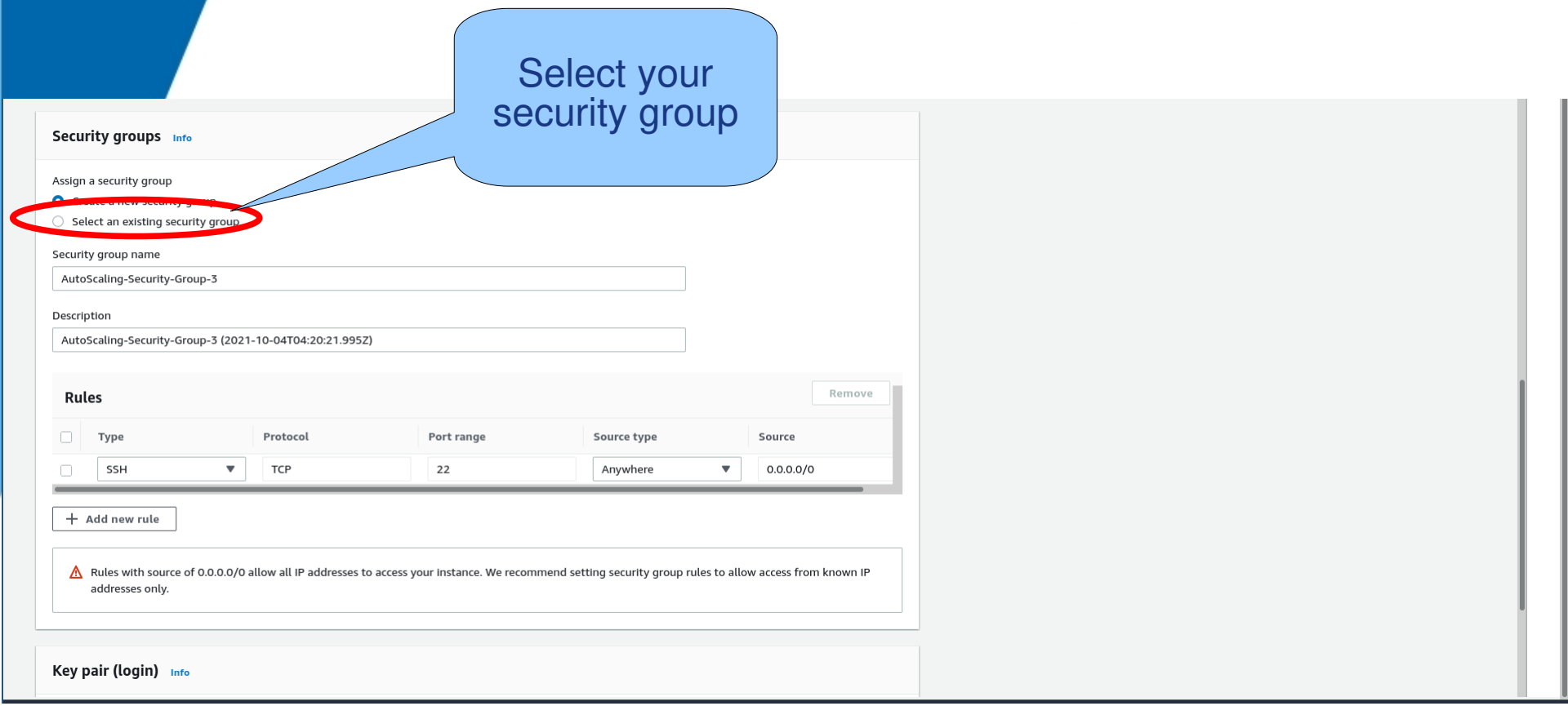
Creation of a launch configuration



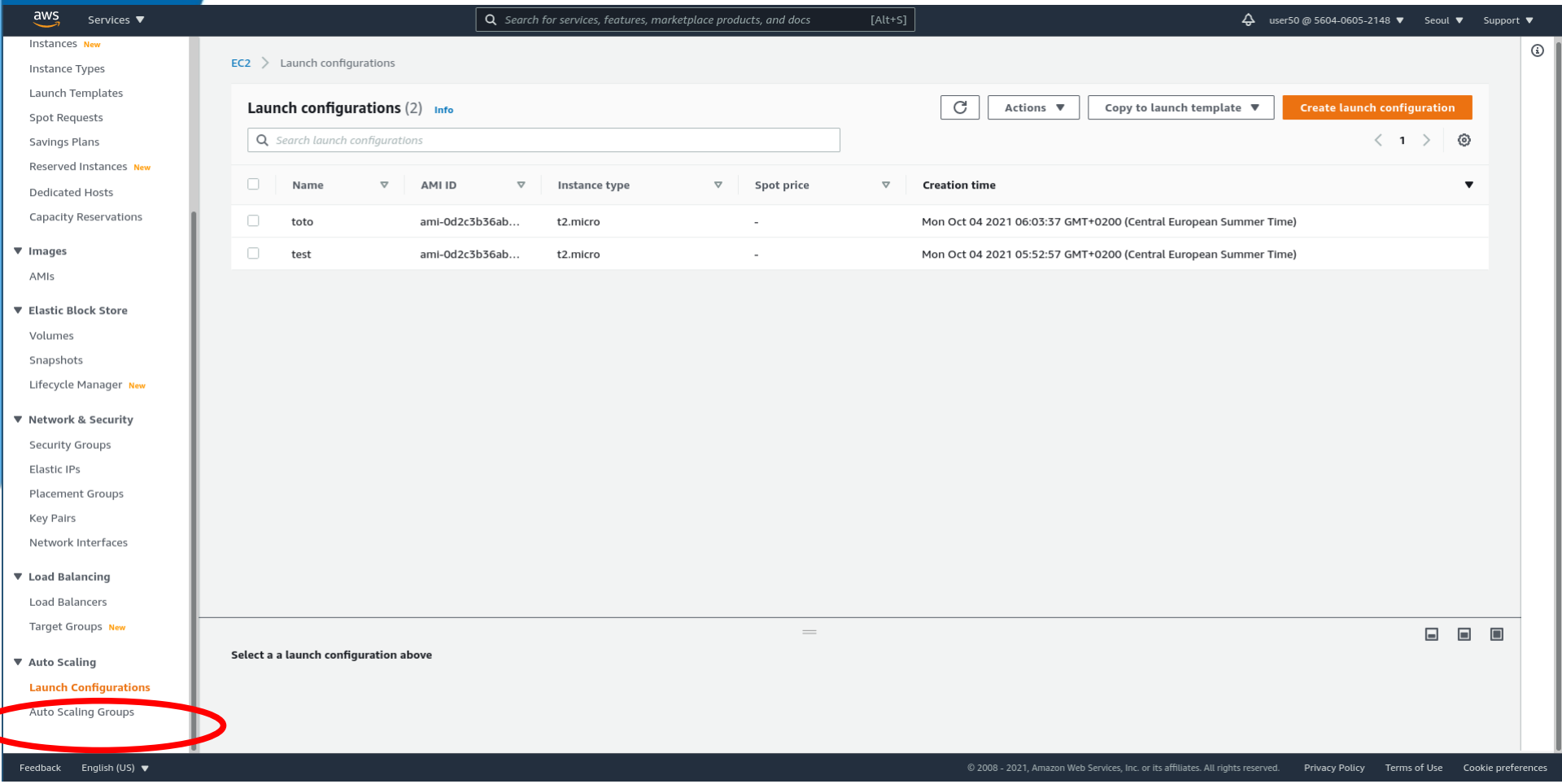
Creation of a launch configuration



Creation of a launch configuration



Creation of an auto scaling group



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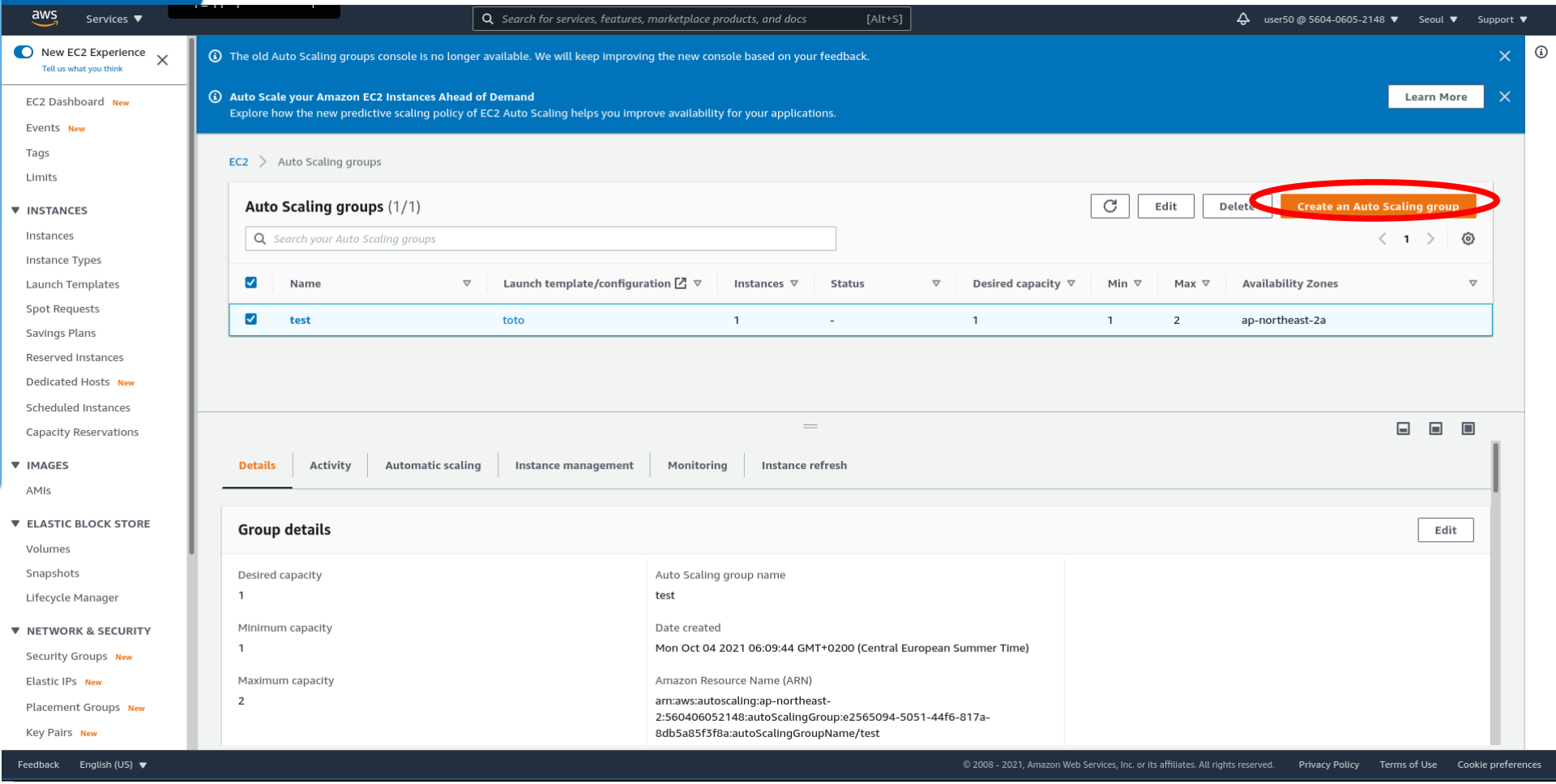
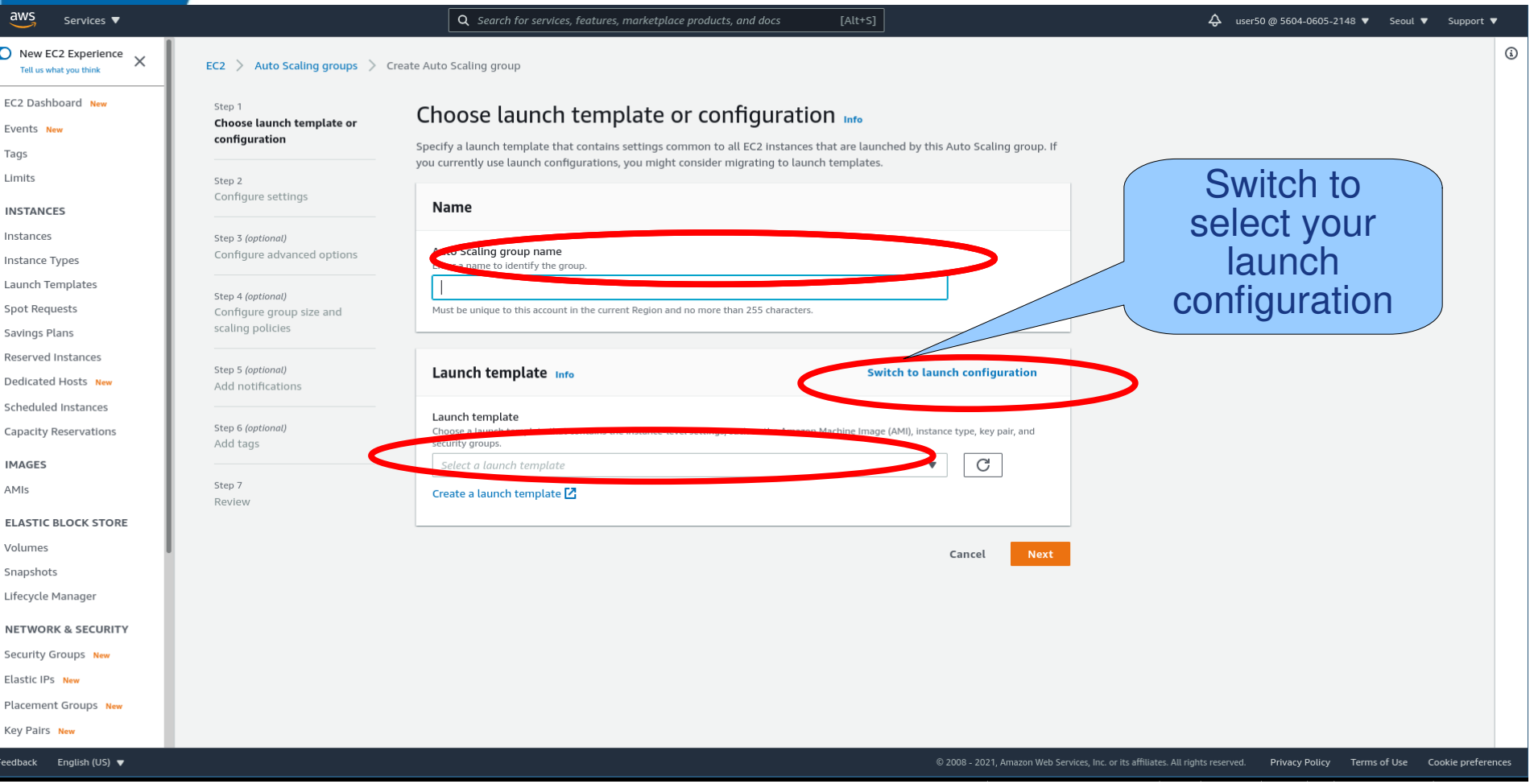
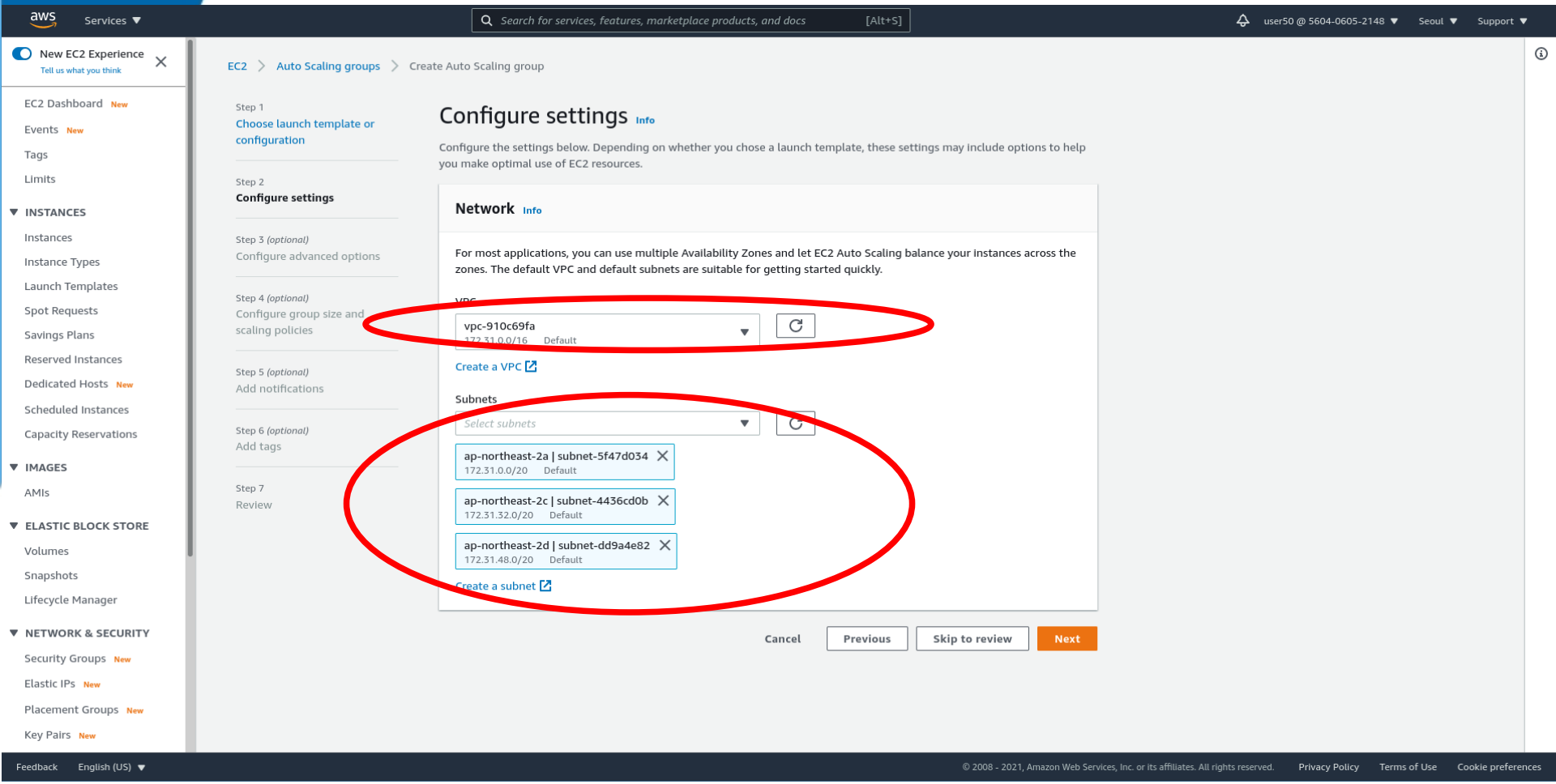


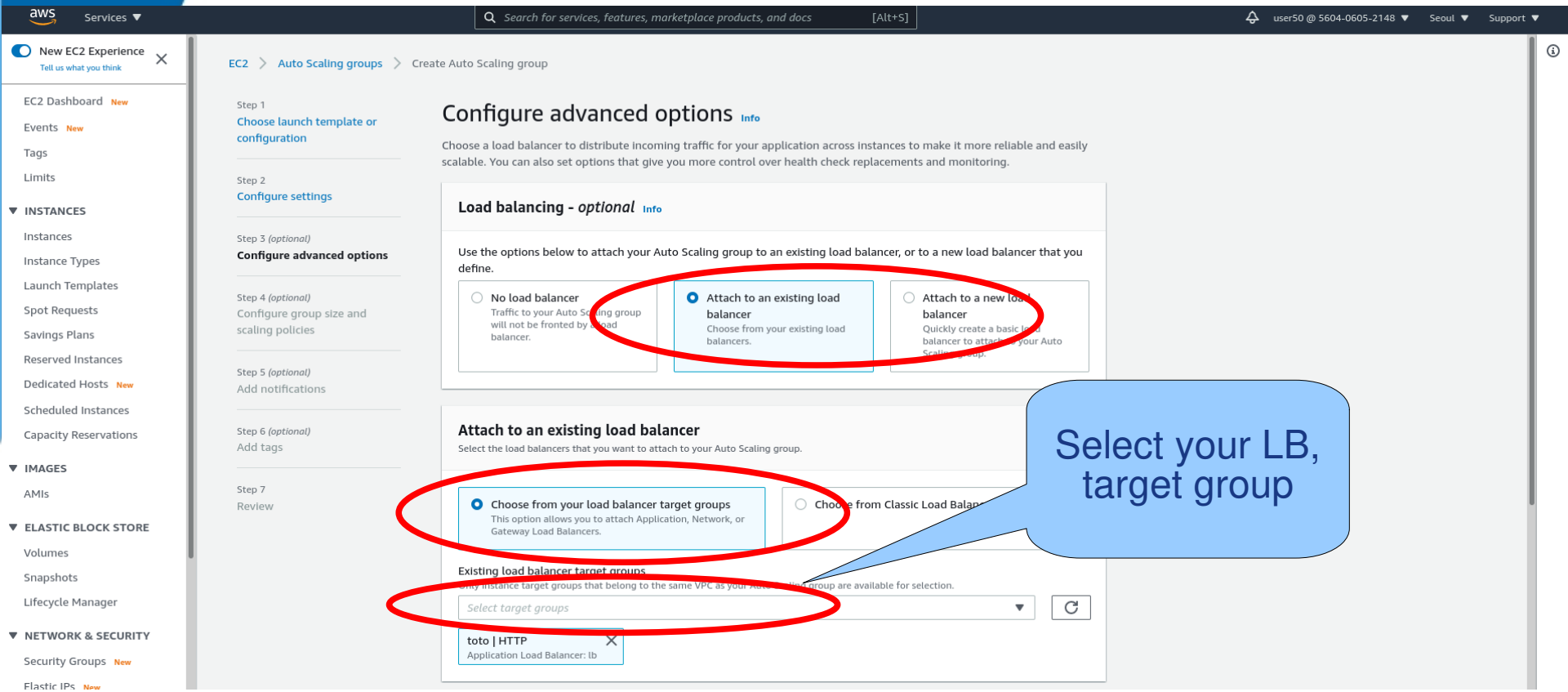
Creation of an auto scaling group



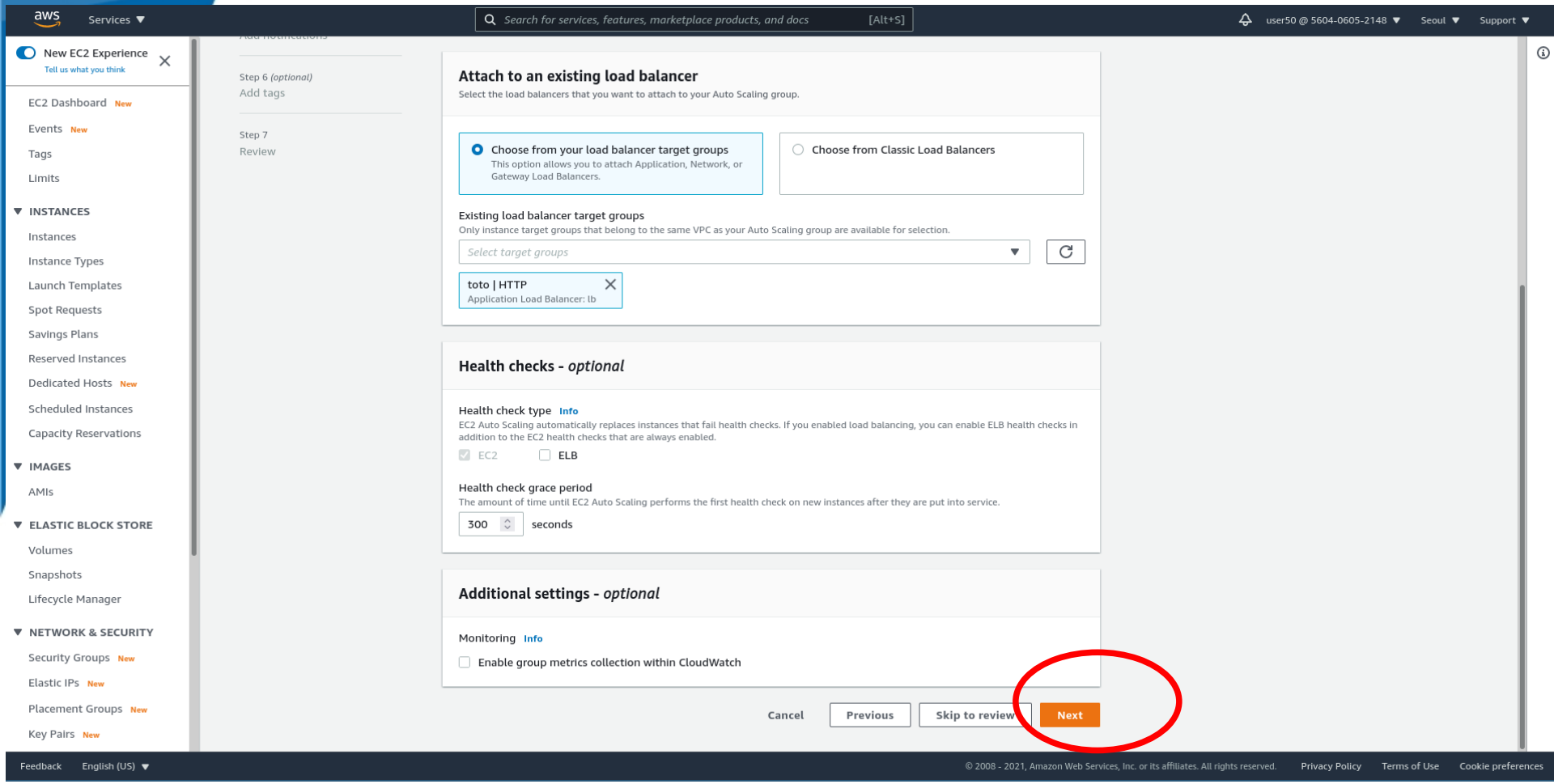
Creation of an auto scaling group



Creation of an auto scaling group



Creation of an auto scaling group



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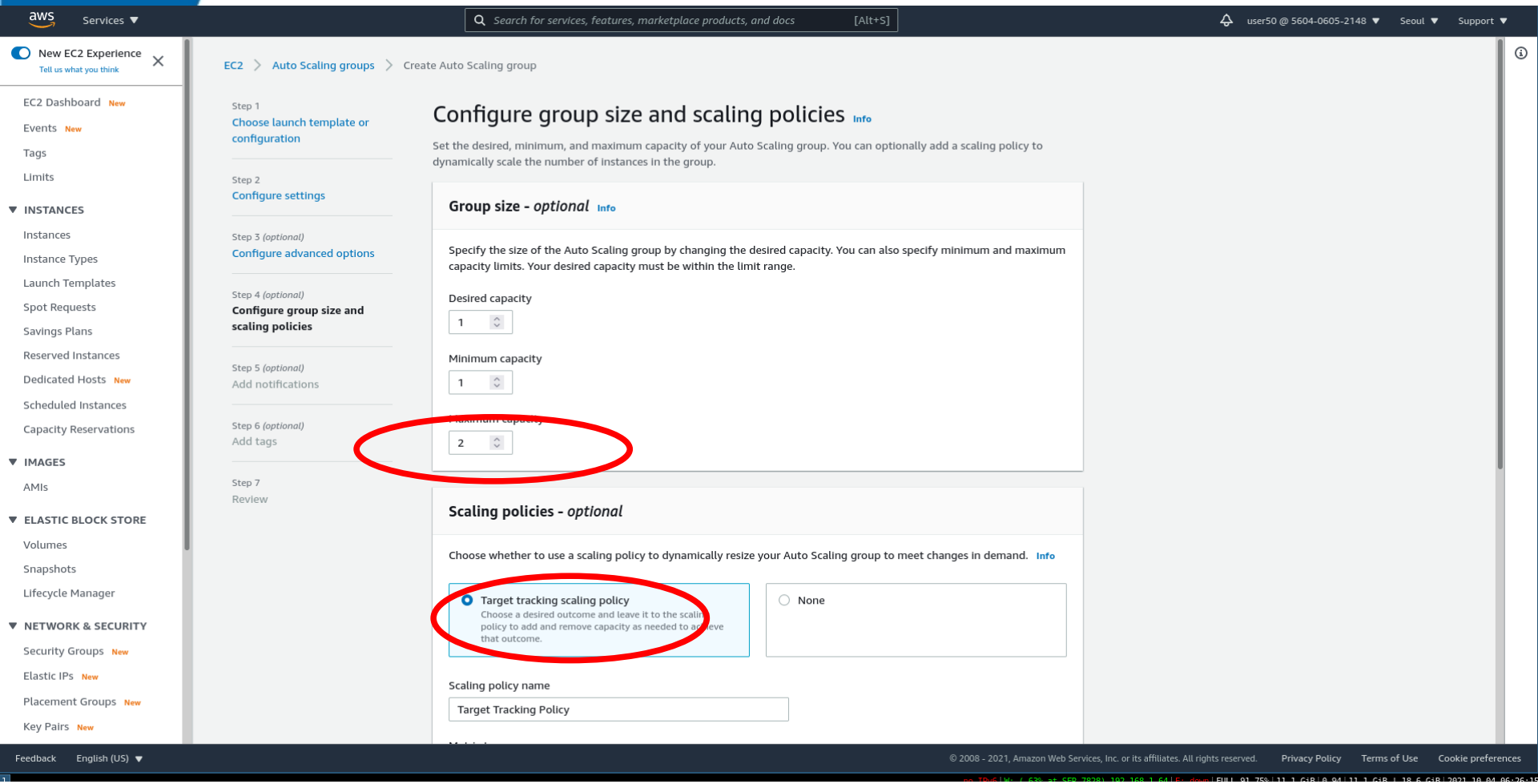
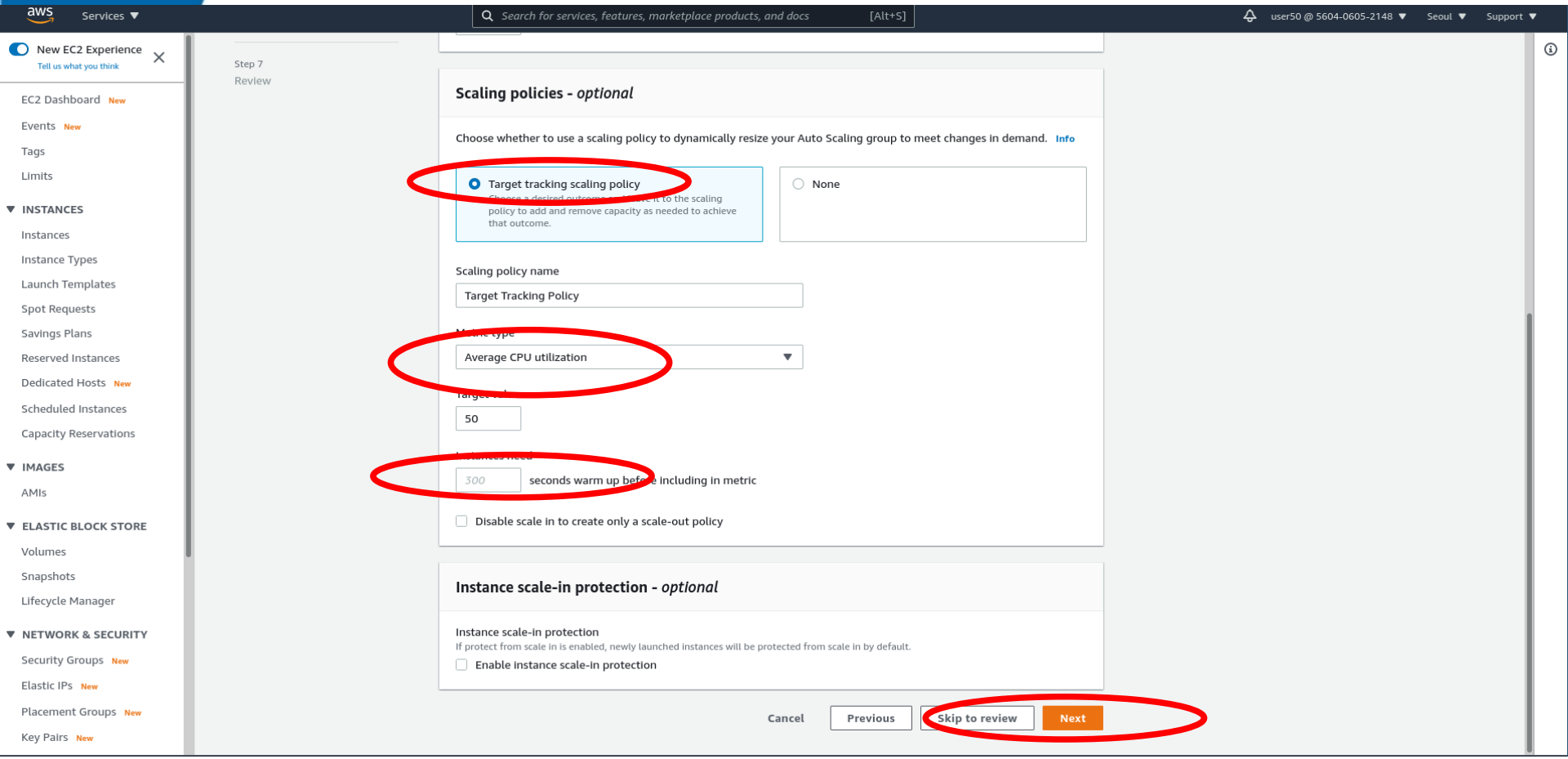


Creation of an auto scaling group



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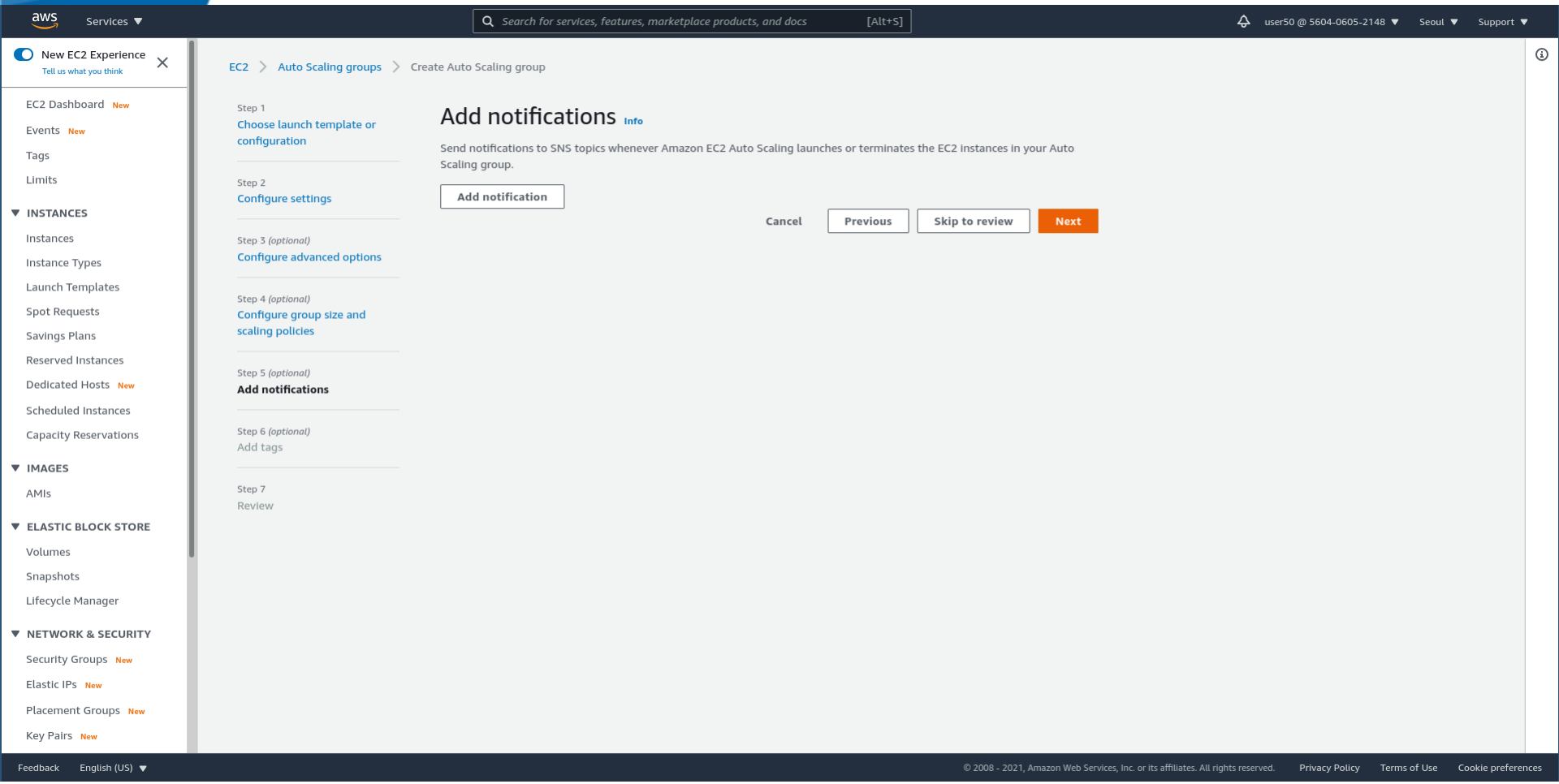

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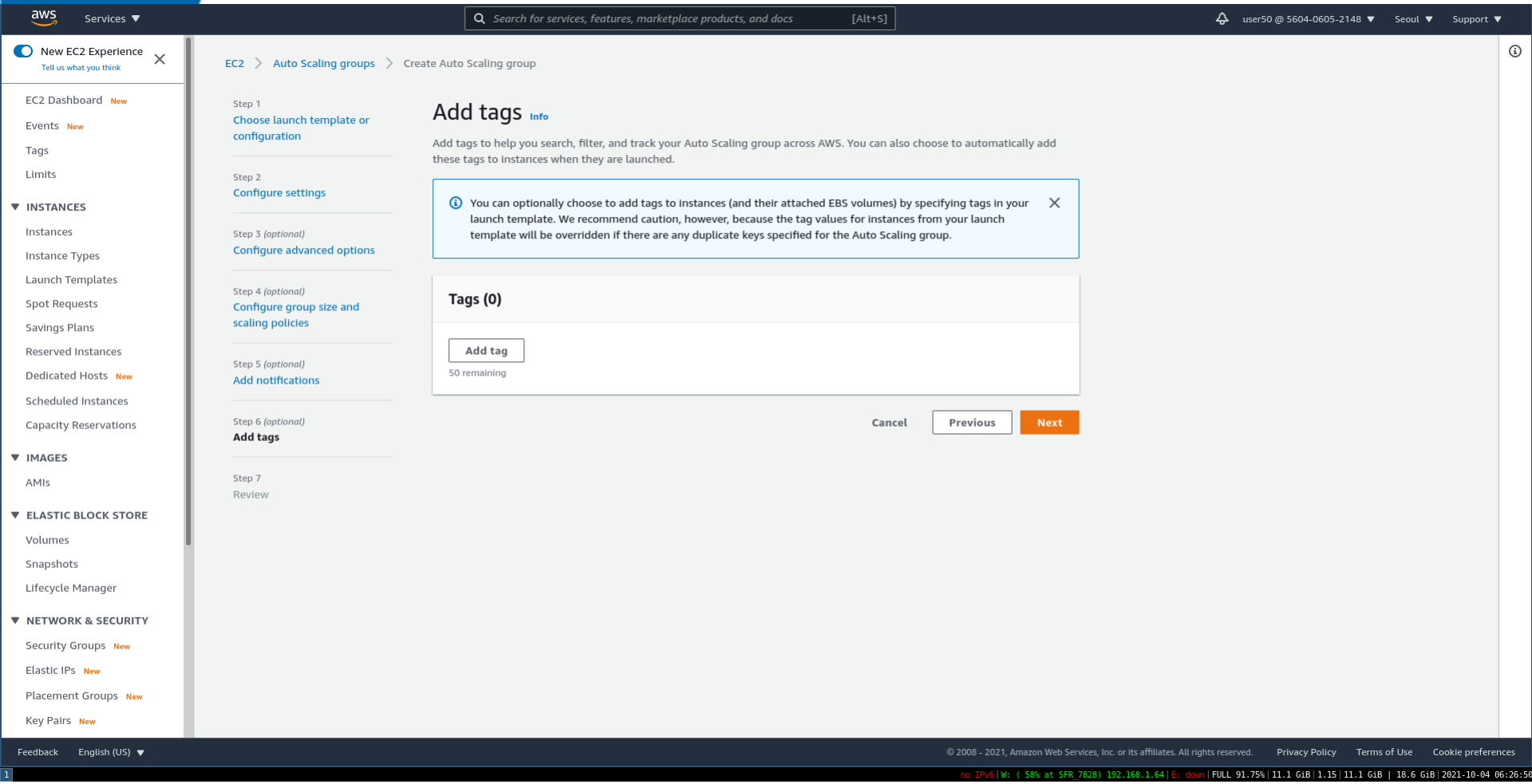

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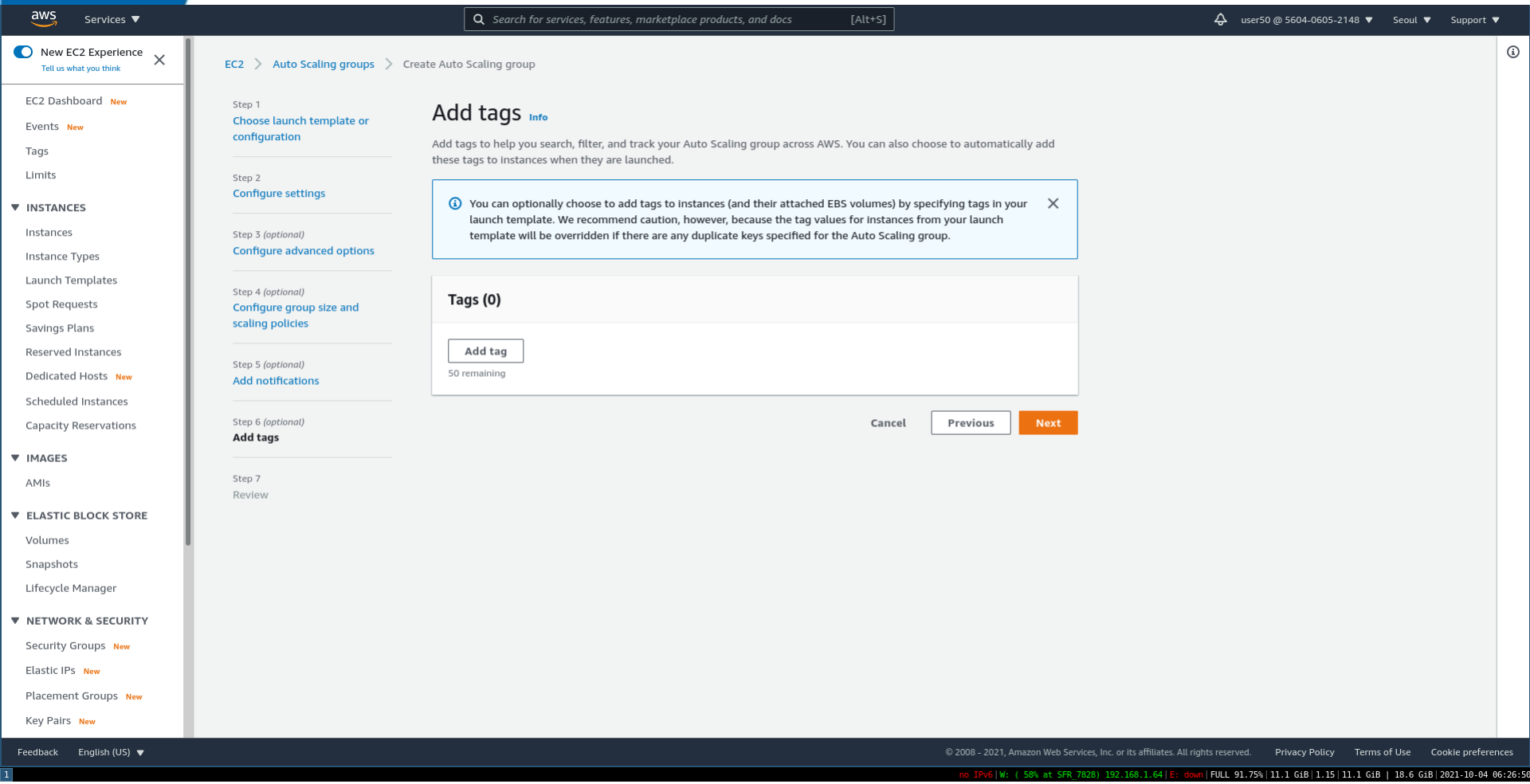

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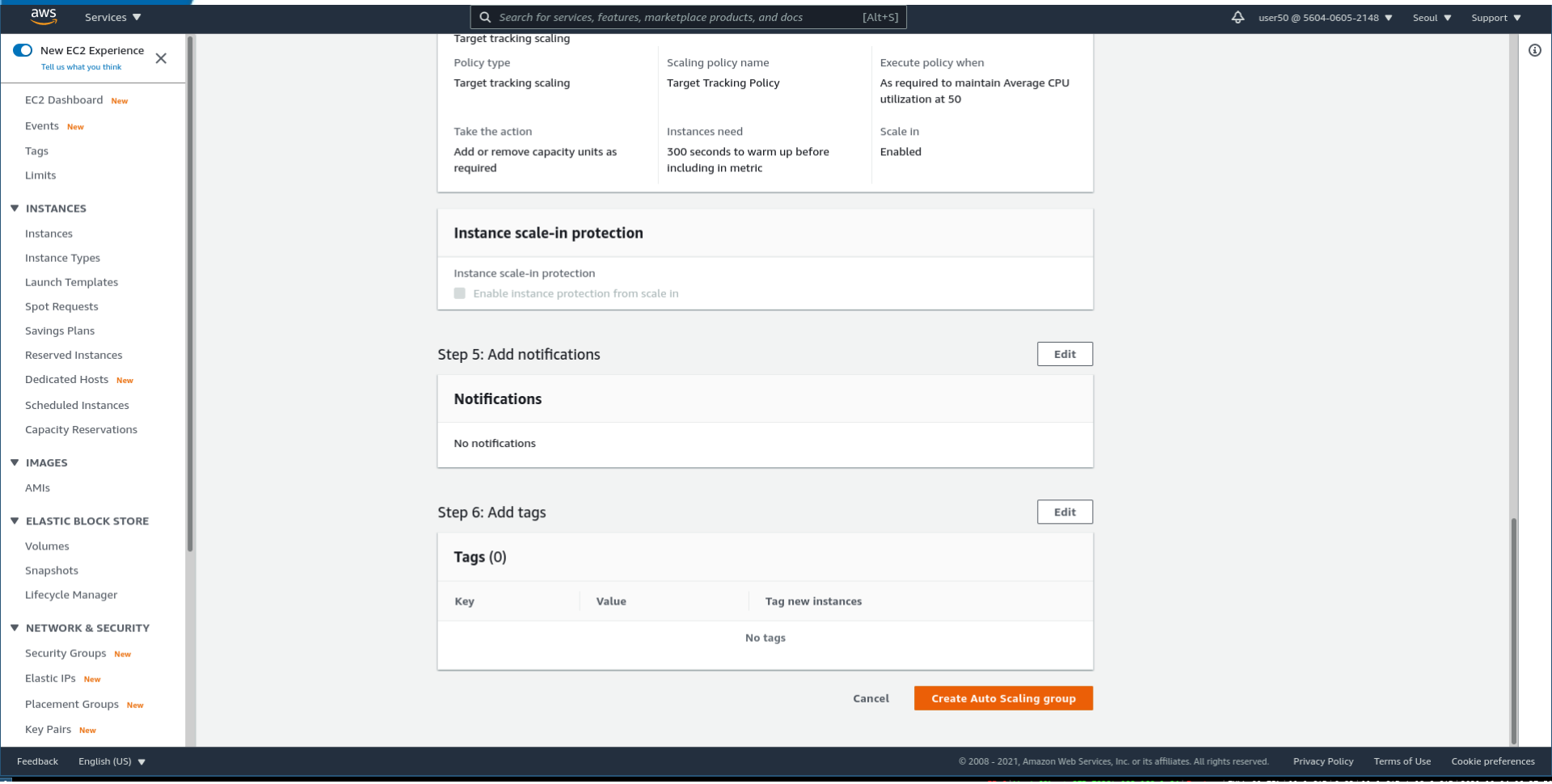

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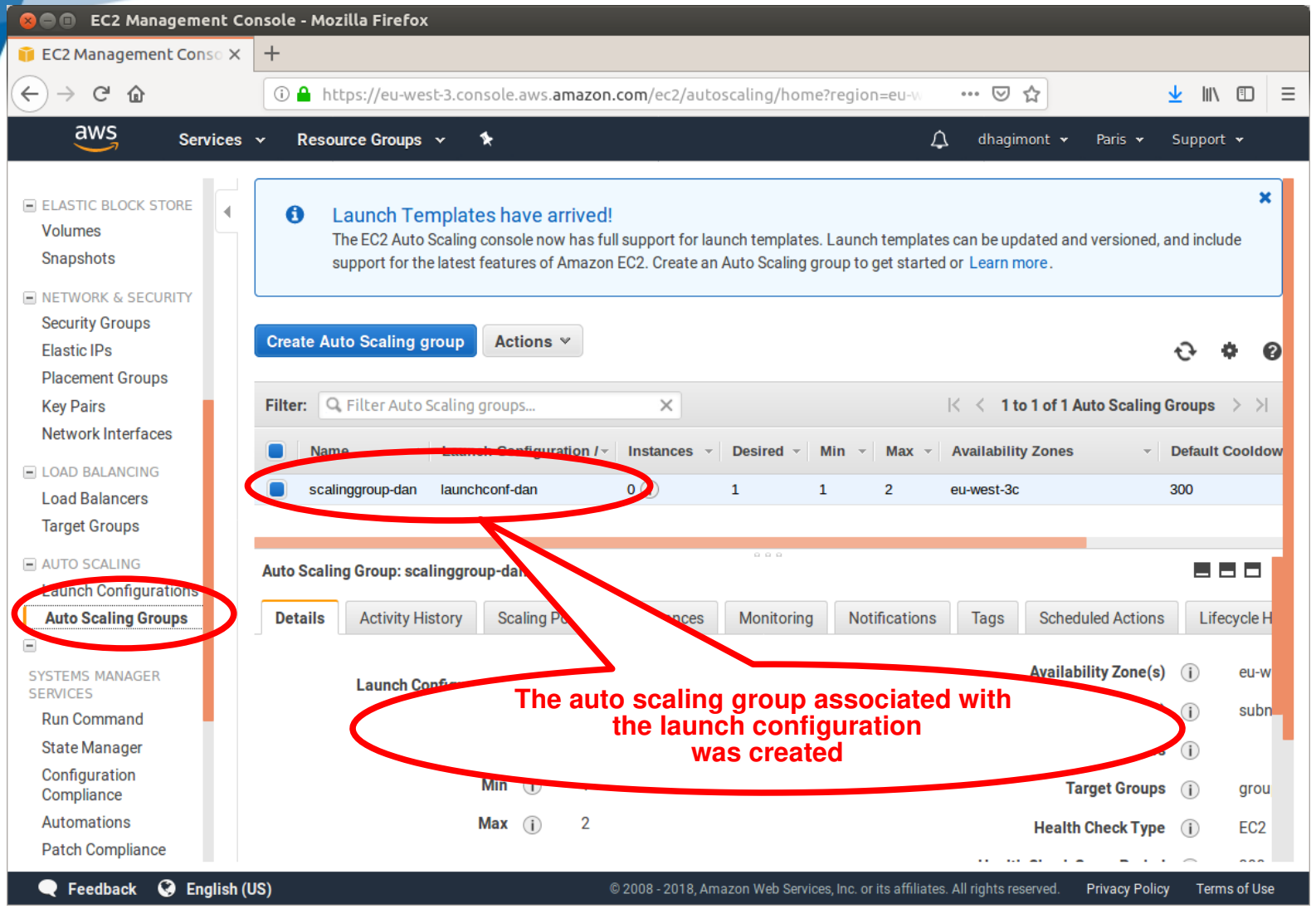

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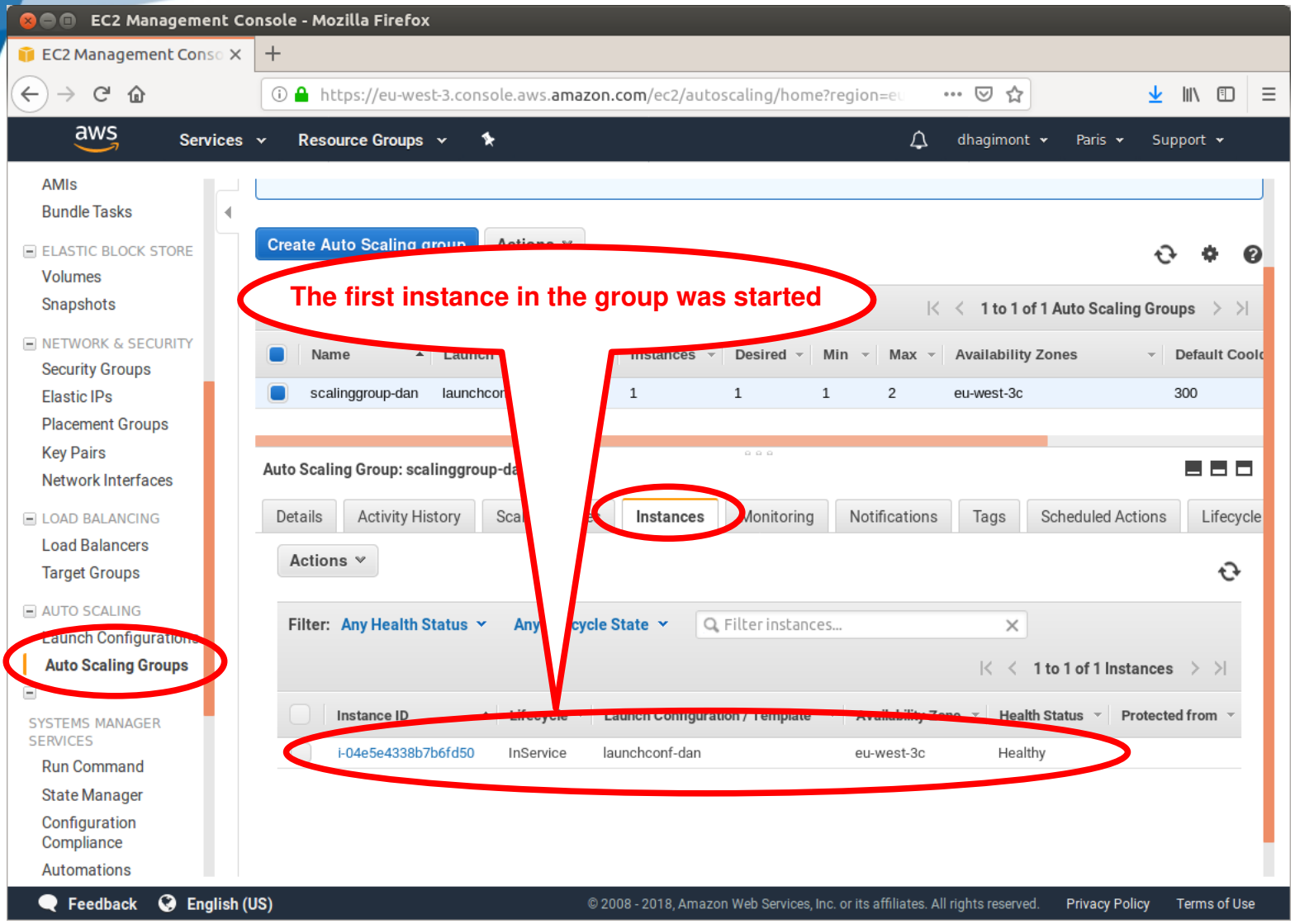

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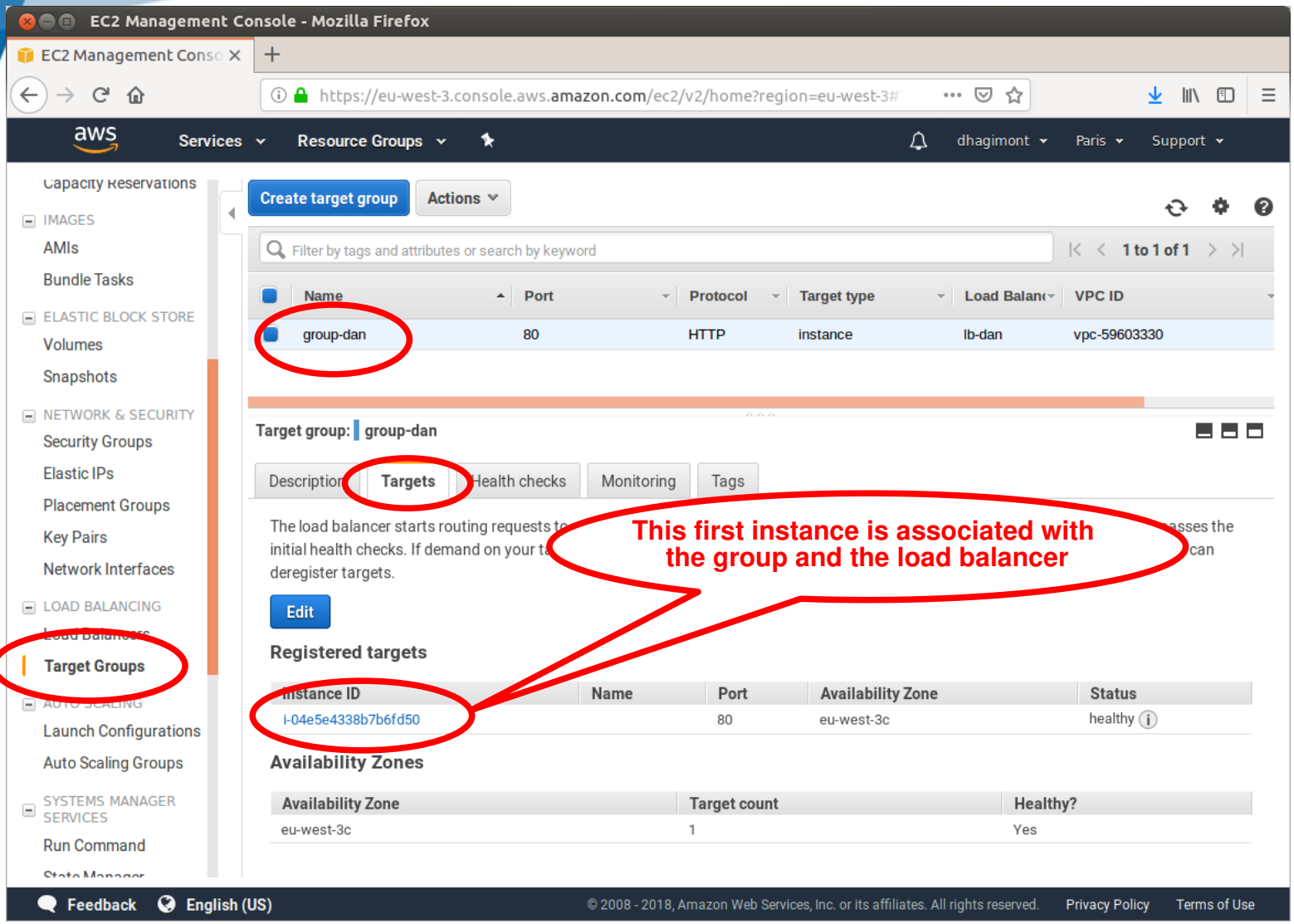

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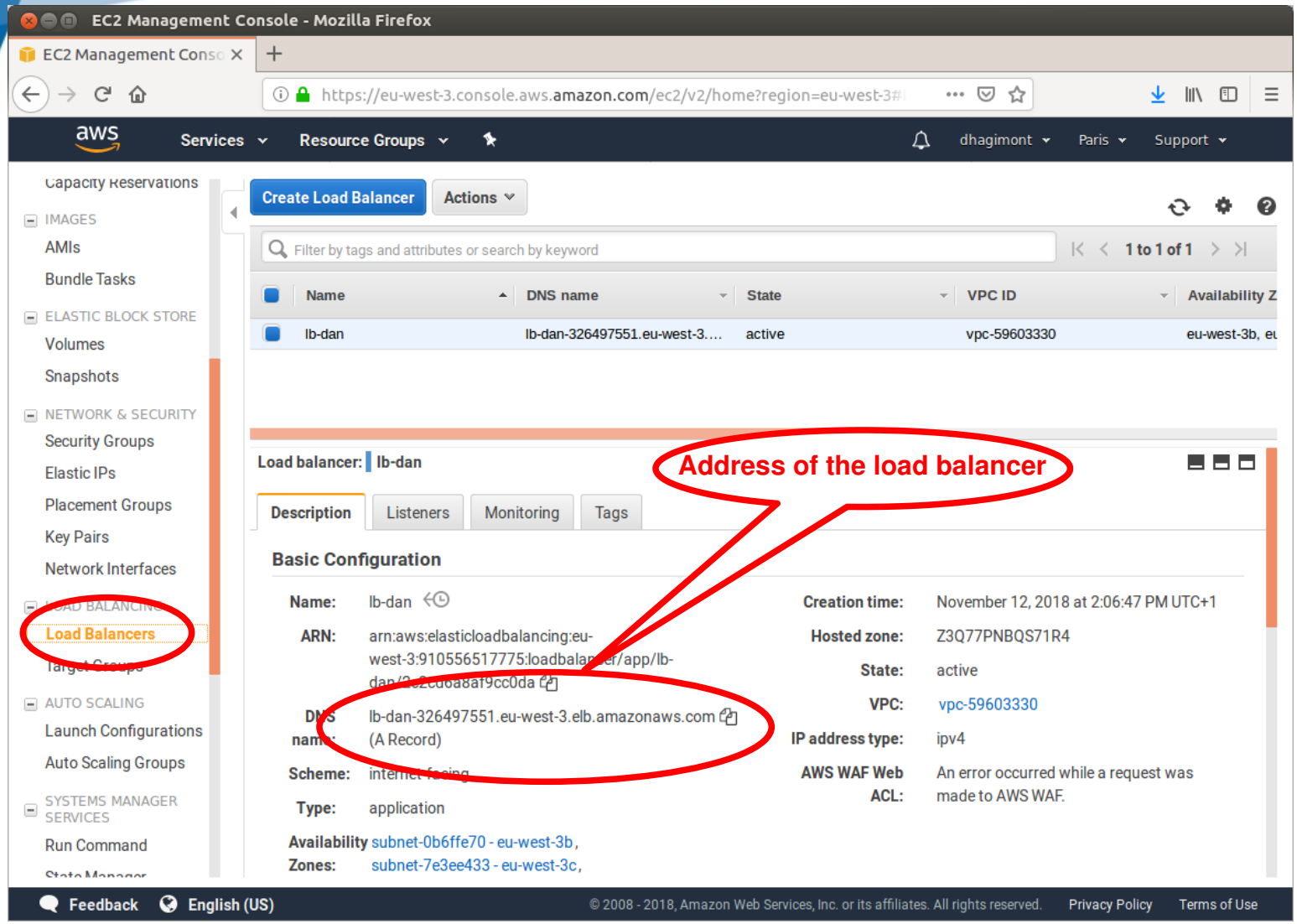
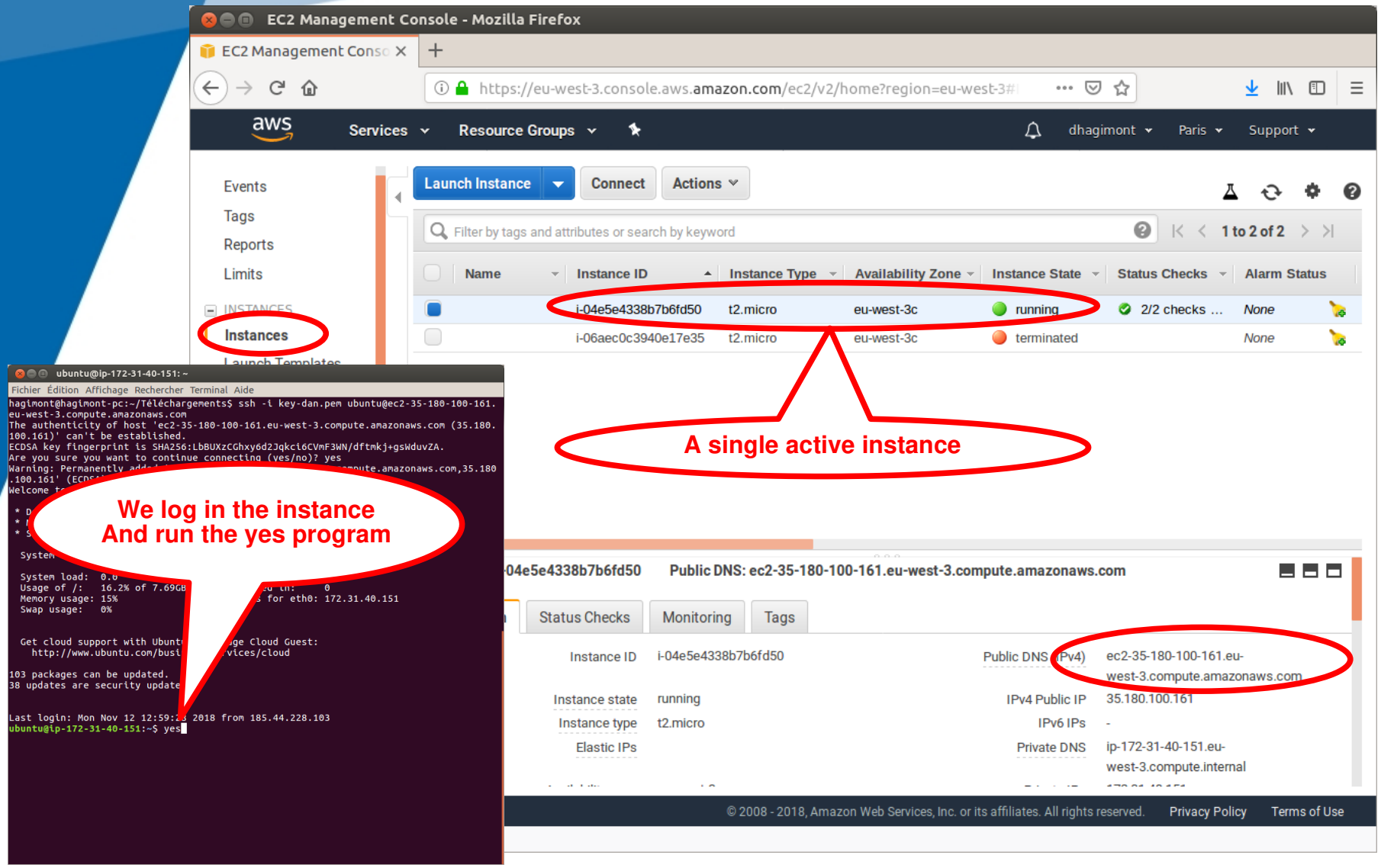


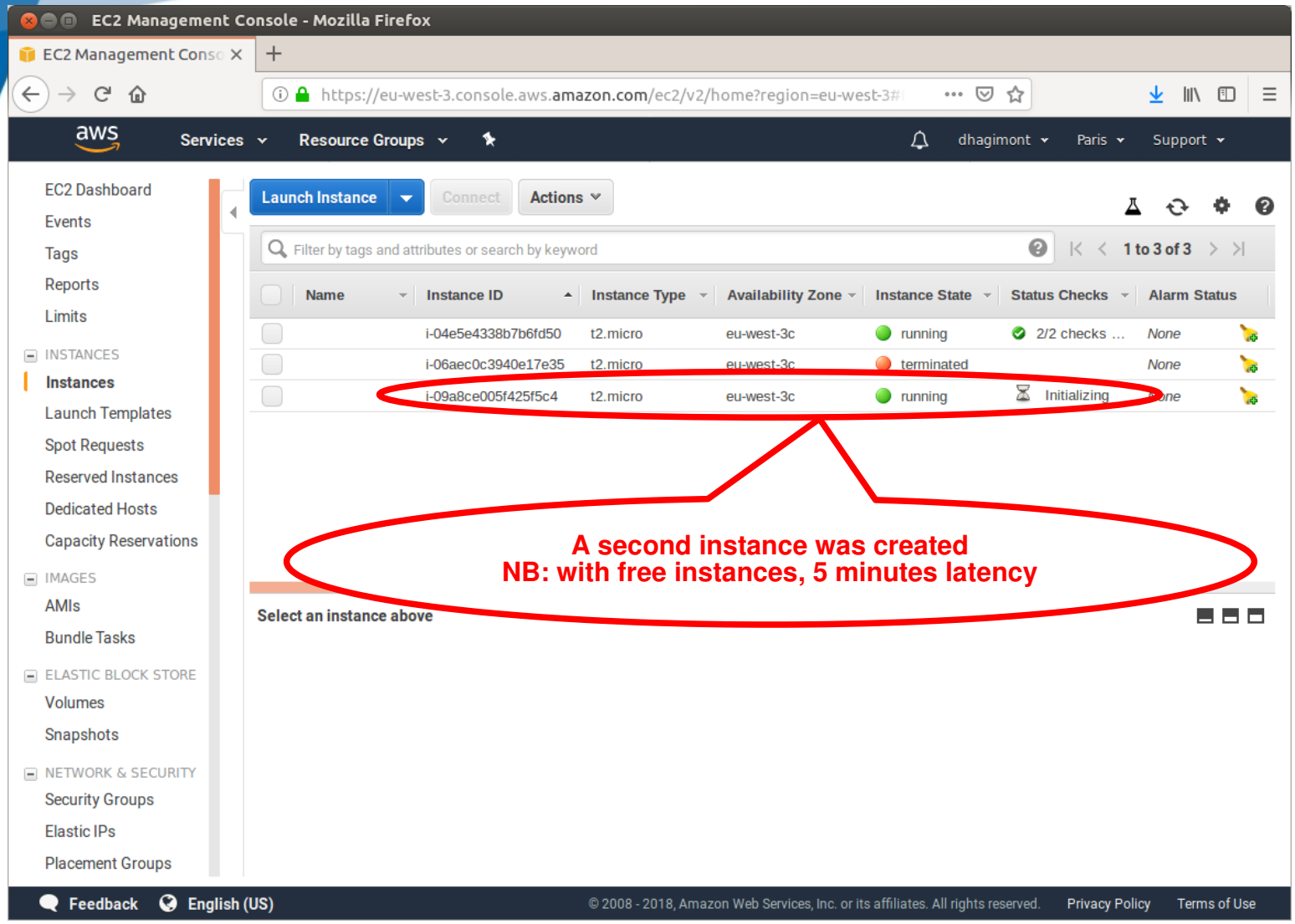
The load balancer relays the requests

You can reload many times the page,
it's always the same IP address

Overloading the application



Auto scaling



Load balancing between the 2 instances

You can reload many times the page, you should have different IP addresses, i.e. the load is balanced between the 2 instances