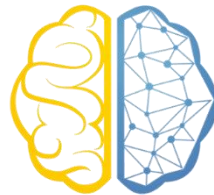


API Engineering

Week 01

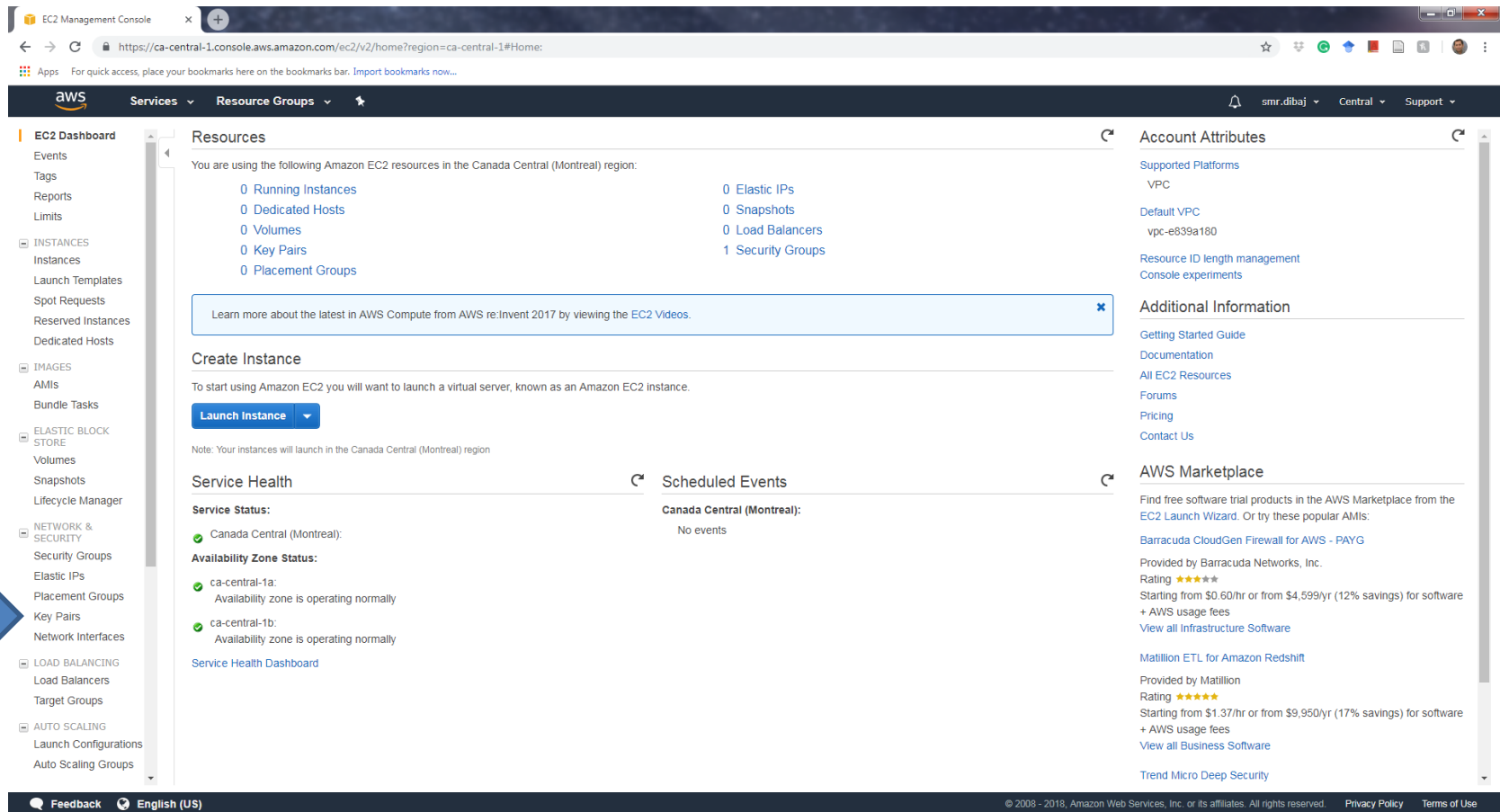


Reza Dibaj

Creating Amazon EC2 Key Pairs

Creating Amazon EC2 Key Pairs

Step 1:



The screenshot displays the AWS Management Console for the EC2 service in the Canada Central (Montreal) region. The left-hand navigation pane shows various categories: EC2 Dashboard, INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. A blue arrow points to the 'Key Pairs' link under the NETWORK & SECURITY category. The main content area is divided into several sections: Resources, Create Instance, Service Health, Scheduled Events, Account Attributes, and AWS Marketplace. The Resources section lists 0 Running Instances, 0 Elastic IPs, 0 Dedicated Hosts, 0 Snapshots, 0 Volumes, 0 Load Balancers, 0 Key Pairs, and 1 Security Groups. The Create Instance section provides a button to 'Launch Instance'. The Service Health section shows the status of the Canada Central (Montreal) region and its availability zones. The Account Attributes section lists supported platforms and default VPC. The AWS Marketplace section lists various software products available for purchase.

EC2 Management Console

https://ca-central-1.console.aws.amazon.com/ec2/v2/home?region=ca-central-1#Home:

Services Resource Groups

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Launch Templates

Spot Requests

Reserved Instances

Dedicated Hosts

IMAGES

AMIs

Bundle Tasks

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

Launch Configurations

Auto Scaling Groups

Resources

You are using the following Amazon EC2 resources in the Canada Central (Montreal) region:

- 0 Running Instances
- 0 Elastic IPs
- 0 Dedicated Hosts
- 0 Snapshots
- 0 Volumes
- 0 Load Balancers
- 0 Key Pairs
- 1 Security Groups
- 0 Placement Groups

Learn more about the latest in AWS Compute from AWS re:Invent 2017 by viewing the [EC2 Videos](#).

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

[Launch Instance](#)

Note: Your instances will launch in the Canada Central (Montreal) region

Service Health

Service Status:

- Canada Central (Montreal):

Availability Zone Status:

- ca-central-1a: Availability zone is operating normally
- ca-central-1b: Availability zone is operating normally

[Service Health Dashboard](#)

Scheduled Events

Canada Central (Montreal):

No events

Account Attributes

Supported Platforms

VPC

Default VPC

vpc-e839a180

Resource ID length management

Console experiments

Additional Information

Getting Started Guide

Documentation

All EC2 Resources

Forums

Pricing

Contact Us

AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs:

[Barracuda CloudGen Firewall for AWS - PAYG](#)

Provided by Barracuda Networks, Inc.

Rating ★★★★★

Starting from \$0.60/hr or from \$4,599/yr (12% savings) for software + AWS usage fees

[View all Infrastructure Software](#)

[Matillion ETL for Amazon Redshift](#)

Provided by Matillion

Rating ★★★★★

Starting from \$1.37/hr or from \$9,950/yr (17% savings) for software + AWS usage fees

[View all Business Software](#)

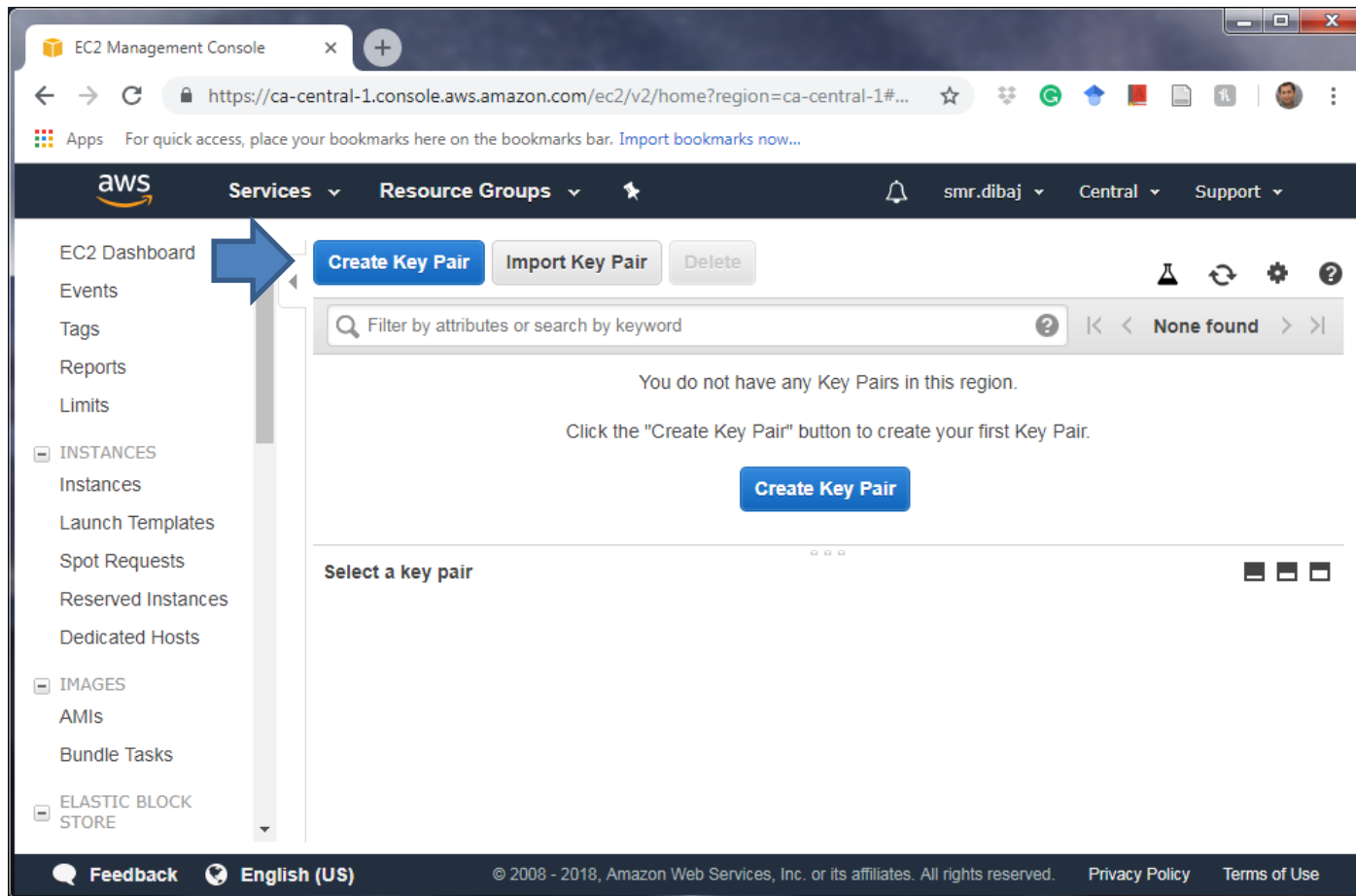
[Trend Micro Deep Security](#)

Feedback English (US)

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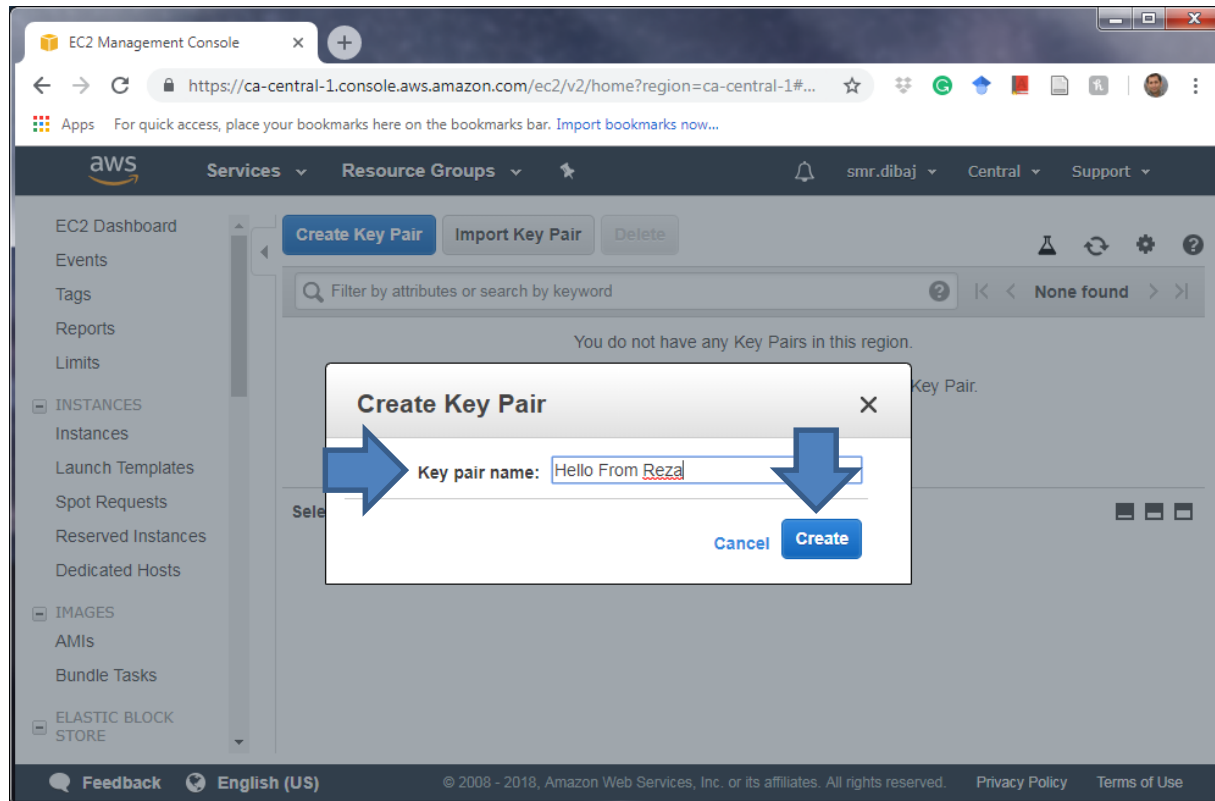
Creating Amazon EC2 Key Pairs

Step 2:



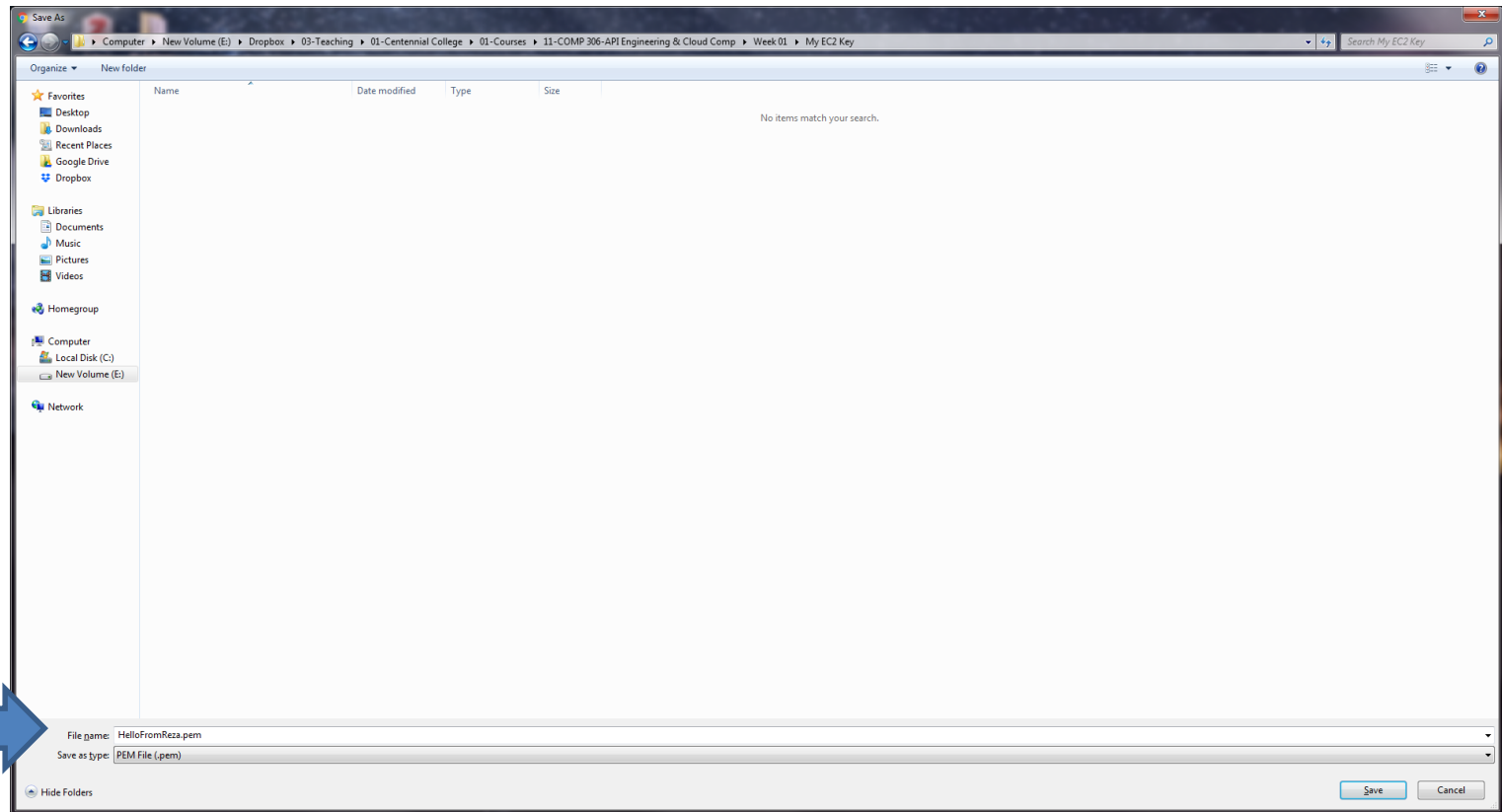
Creating Amazon EC2 Key Pairs

Step 3:



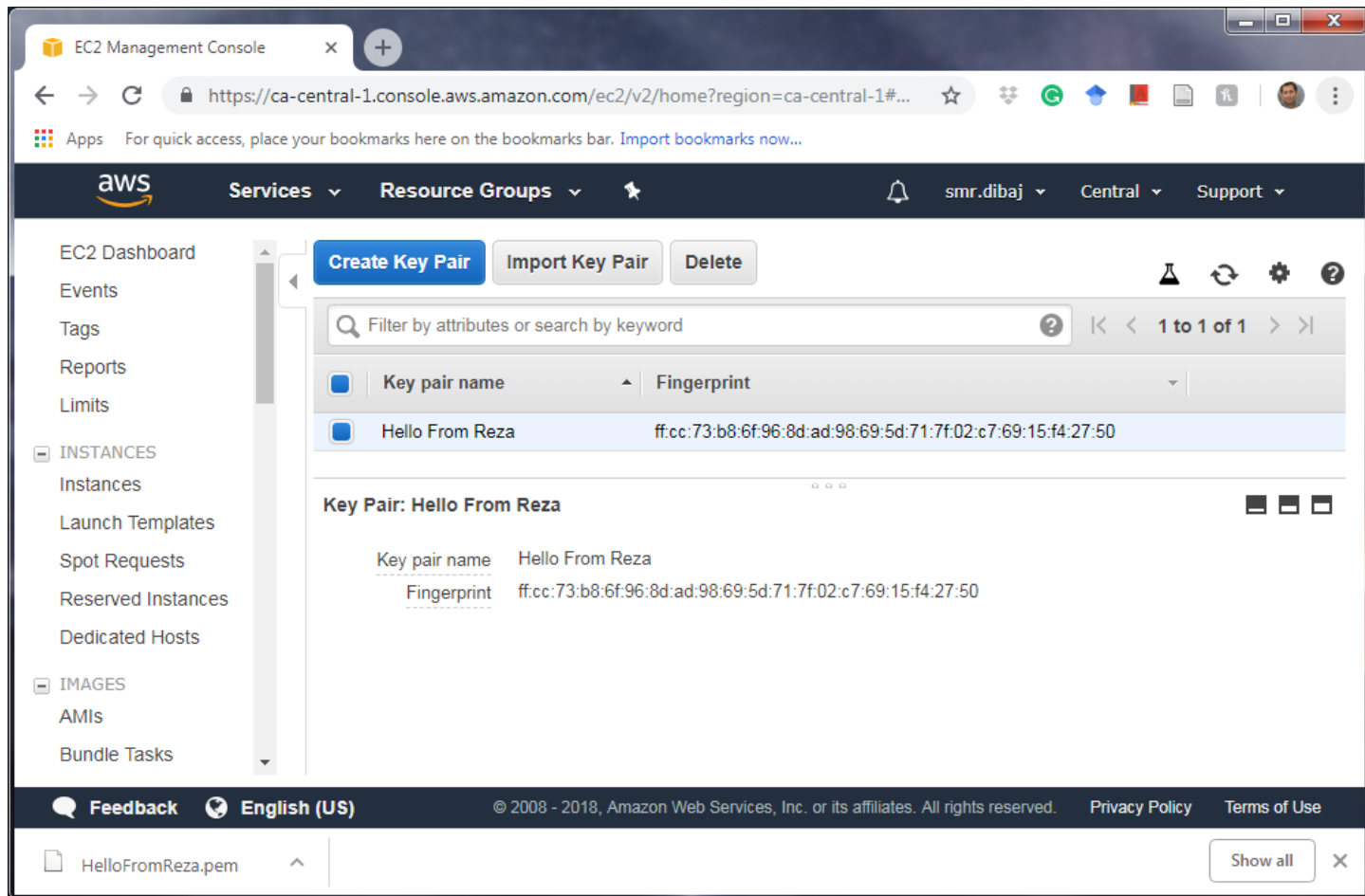
Creating Amazon EC2 Key Pairs

Step 4:



Creating Amazon EC2 Key Pairs

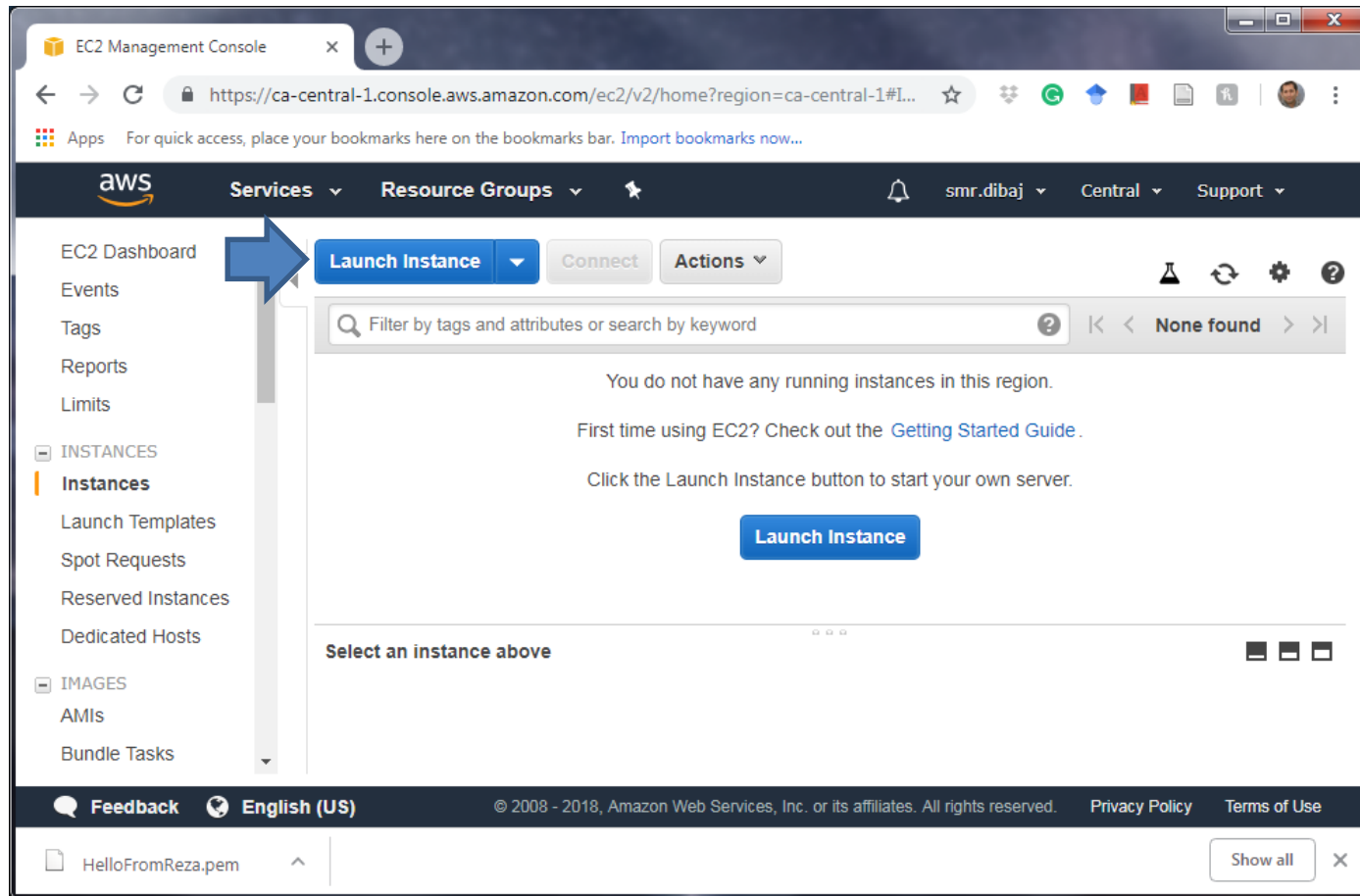
Step 5:



Launch EC2 Instance

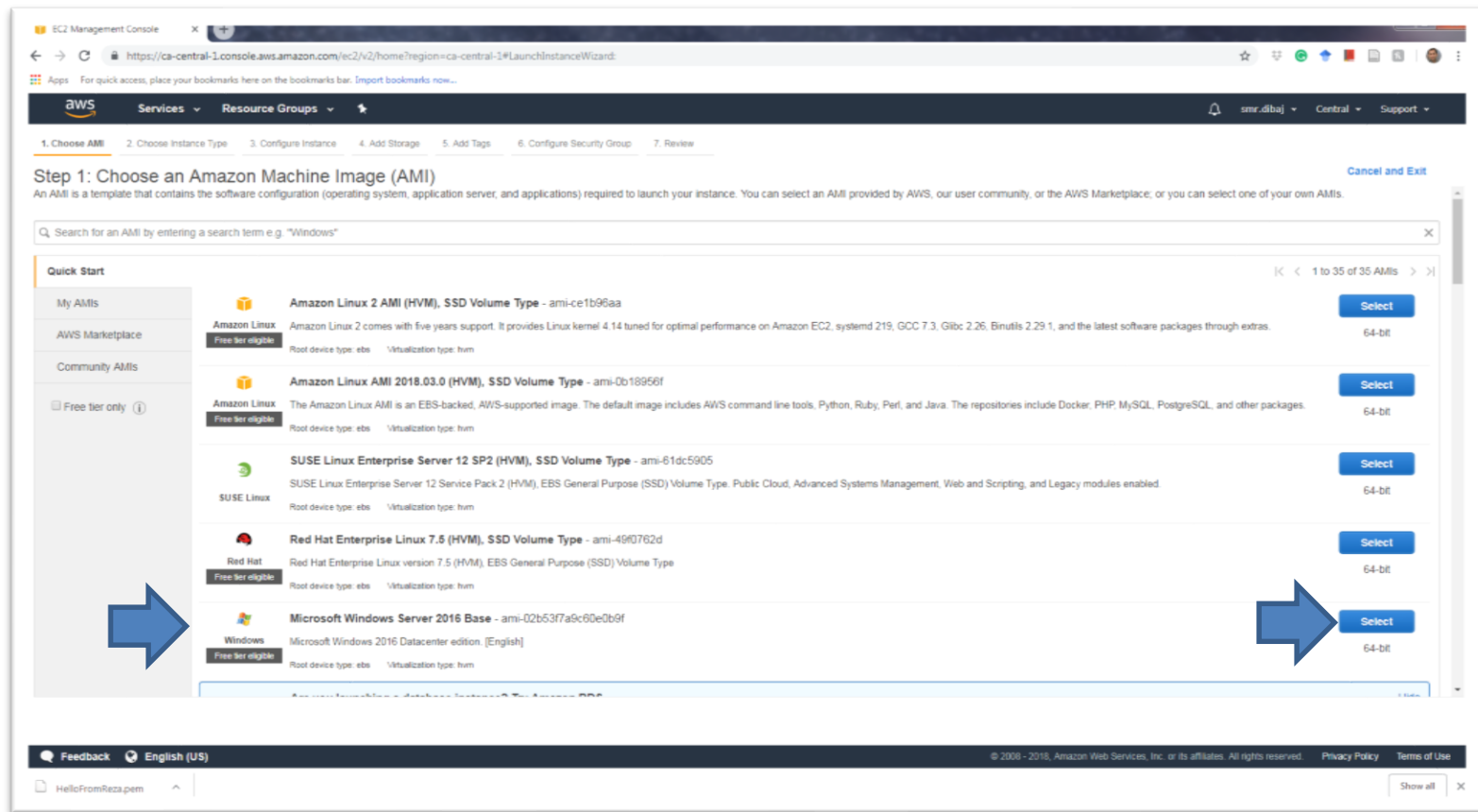
Launch EC2 Instance

Step 0:



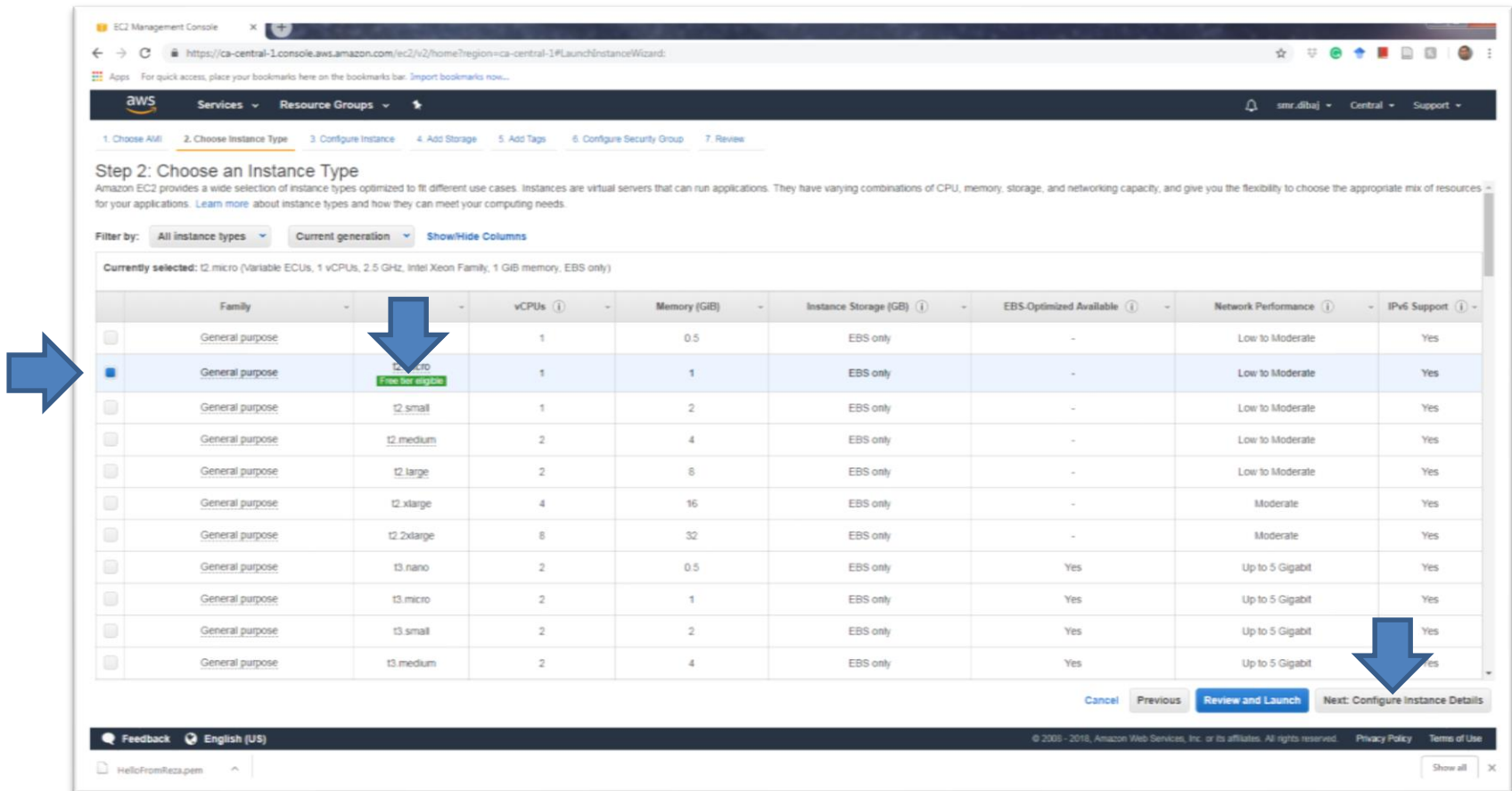
Launch EC2 Instance

Step 1:



Launch EC2 Instance

Step 2:



The screenshot shows the AWS Management Console interface for launching an EC2 instance. The page is titled "Step 2: Choose an Instance Type". Below the title, there is a description of Amazon EC2 instance types and a list of filters. The "Filter by:" section shows "All instance types" and "Current generation". The "Currently selected:" section shows "t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)".

	Family	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	2	4	EBS only	Yes	Up to 5 Gigabit	Yes

At the bottom of the page, there are buttons for "Cancel", "Previous", "Review and Launch", and "Next: Configure Instance Details". A blue arrow points to the "Next: Configure Instance Details" button.

Launch EC2 Instance

Step 3:

EC2 Management Console

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances 1 [Launch into Auto Scaling Group](#)

Purchasing option ☐ Request Spot instances

Network vpc-e839a180 (default) [Create new VPC](#)

Subnet No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP Use subnet setting (Enable)

Placement group ☐ Add instance to placement group.

Domain join directory No directory [Create new directory](#)

IAM role None [Create new IAM role](#)

Shutdown behavior Stop

Enable termination protection ☒ Protect against accidental termination

Monitoring ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

T2/T3 Unlimited ☐ Enable
Additional charges may apply.

Advanced Details

Cancel Previous **Review and Launch** Next: Add Storage

Feedback English (US)

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HelloFromReza.pem Show all

You can protect instances from being accidentally terminated. Once enabled, you won't be able to terminate this instance via the API or the AWS Management Console until termination protection has been disabled.

Launch EC2 Instance

Step 4:

EC2 Management Console

https://ca-central-1.console.aws.amazon.com/ec2/v2/home?region=ca-central-1#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-03b28a9a4a9679a4d	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

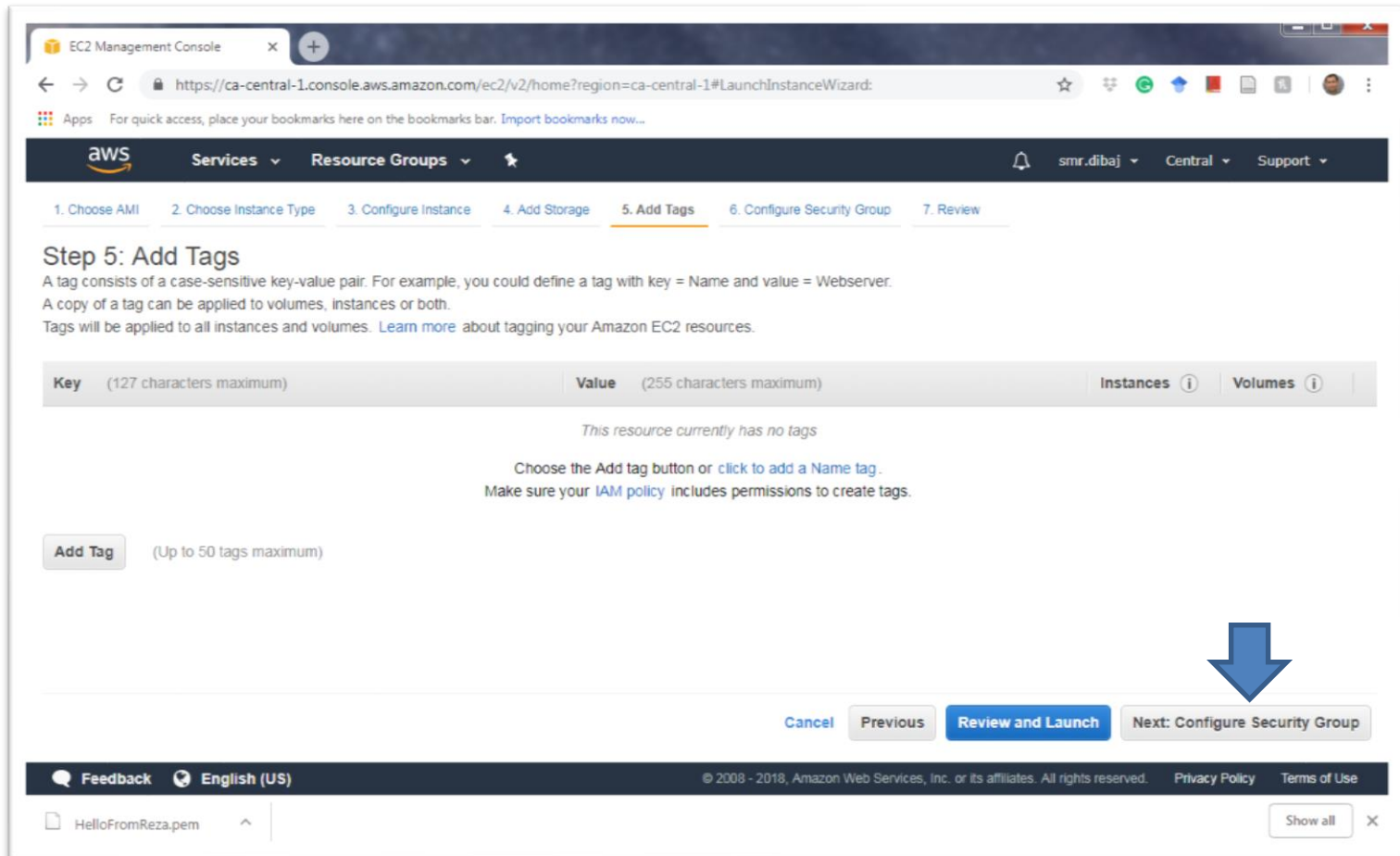
Feedback English (US)

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HelloFromReza.pem [Show all](#)

Launch EC2 Instance

Step 5:



The screenshot shows the AWS Management Console's EC2 Launch Wizard at Step 5: Add Tags. The breadcrumb trail at the top indicates the progress: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags (current step), 6. Configure Security Group, and 7. Review. The main heading is "Step 5: Add Tags". Below it, explanatory text states: "A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources."

There are two input fields: "Key" (127 characters maximum) and "Value" (255 characters maximum). To the right of these fields are tabs for "Instances" and "Volumes". Below the input fields, a message says "This resource currently has no tags". Further down, instructions read: "Choose the Add tag button or [click to add a Name tag](#). Make sure your [IAM policy](#) includes permissions to create tags."

An "Add Tag" button is present, with a note "(Up to 50 tags maximum)". At the bottom of the wizard, there are four buttons: "Cancel", "Previous", "Review and Launch" (highlighted in blue), and "Next: Configure Security Group". A large blue arrow points down to the "Review and Launch" button.

The footer of the console includes a "Feedback" link, the language "English (US)", copyright information "© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.", and links to "Privacy Policy" and "Terms of Use". A notification bar at the very bottom shows a file named "HelloFromReza.pem" with a "Show all" link and a close button.

Launch EC2 Instance

Step 6:

EC2 Management Console

https://ca-central-1.console.aws.amazon.com/ec2/v2/home?region=ca-central-1#LaunchInstanceWizard:

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a **new** security group
☐ Select an **existing** security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

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Launch EC2 Instance

Step 7:

The screenshot shows the AWS Management Console's 'Launch Instance Wizard' at Step 7: Review Instance Launch. The breadcrumb trail at the top indicates the following steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review (the current step).

A yellow warning box at the top states: "Improve your instances' security. Your security group, launch-wizard-1, 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](#)".

The 'AMI Details' section shows the selected AMI: "Microsoft Windows Server 2016 Base - ami-02b53f7a9c60e0b9f". It is a "Free tier eligible" AMI, Microsoft Windows 2016 Datacenter edition, [English], with Root Device Type: ebs and Virtualization type: hvm. A link to the "License Mobility Form" is provided.

The 'Instance Type' section displays a table of available instance types:

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

At the bottom right, a blue arrow points to the "Launch" button, which is highlighted in blue. Other buttons include "Cancel" and "Previous".

The footer of the console shows "Feedback", "English (US)", and copyright information: "© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use".

Launch EC2 Instance

Step 8:

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

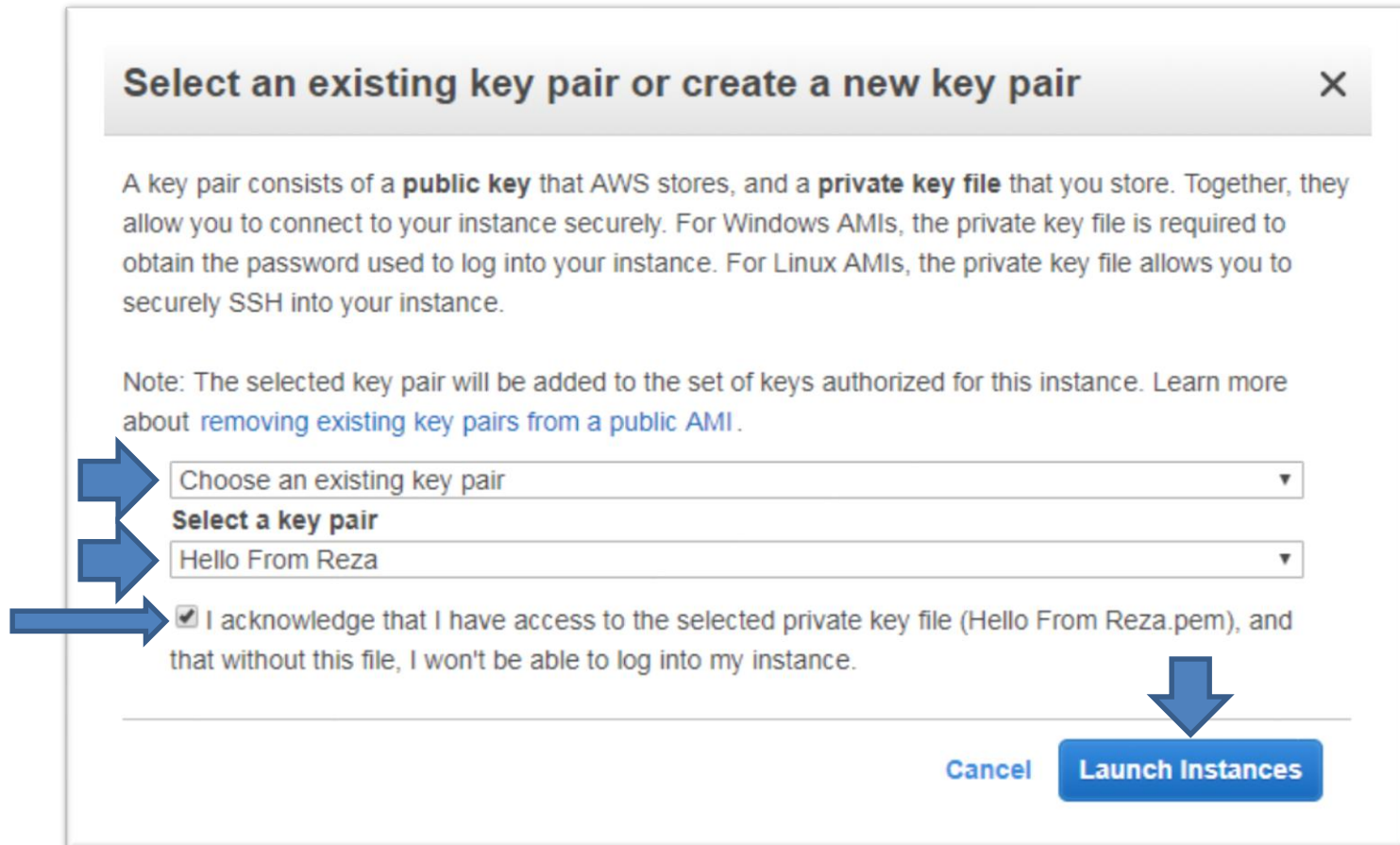
Select a key pair

Hello From Reza

☒ I acknowledge that I have access to the selected private key file (Hello From Reza.pem), and that without this file, I won't be able to log into my instance.

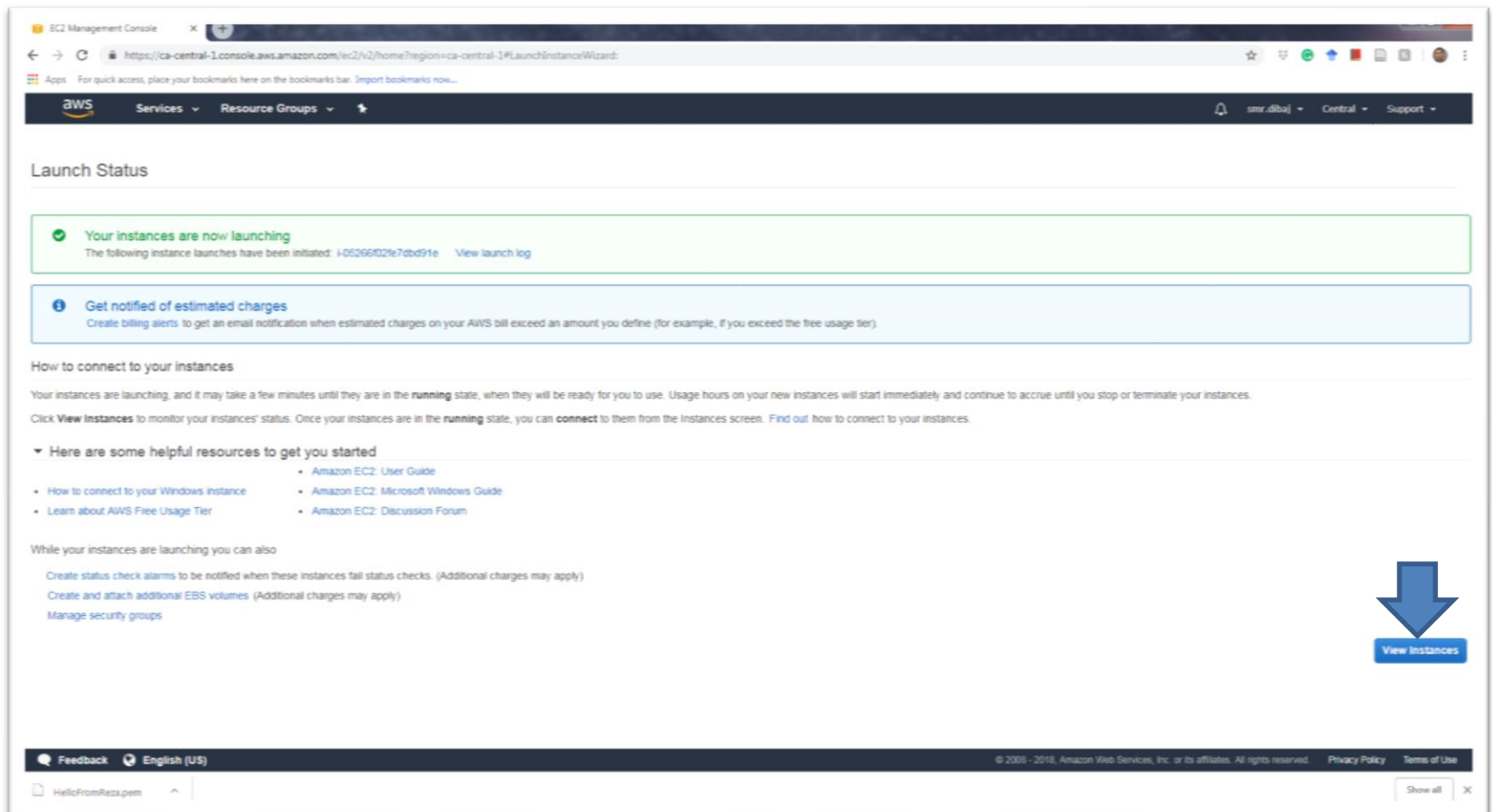
Cancel

Launch Instances



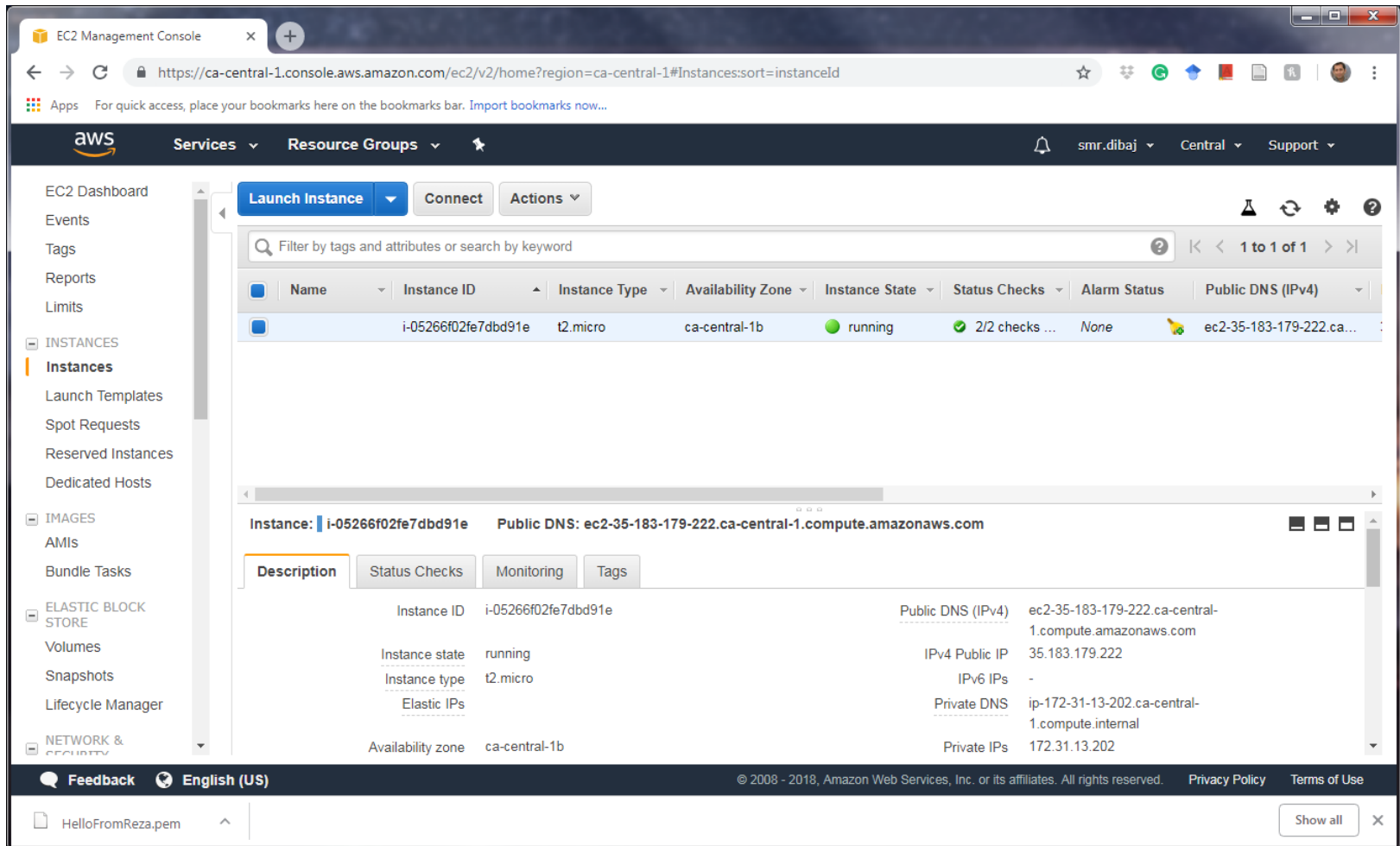
Launch EC2 Instance

Step 9:



Launch EC2 Instance

Step 10:



The screenshot displays the AWS Management Console for the EC2 service. The left-hand navigation pane lists various AWS services, with 'INSTANCES' selected. The main content area shows a table of EC2 instances. One instance is listed with the ID 'i-05266f02fe7dbd91e', type 't2.micro', and state 'running'. Below the table, the details for this instance are shown, including its public DNS, IP addresses, and availability zone.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-05266f02fe7dbd91e	t2.micro	ca-central-1b	running	2/2 checks ...	None	ec2-35-183-179-222.ca...

Instance: i-05266f02fe7dbd91e		Public DNS: ec2-35-183-179-222.ca-central-1.compute.amazonaws.com	
Description			
Instance ID	i-05266f02fe7dbd91e	Public DNS (IPv4)	ec2-35-183-179-222.ca-central-1.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.183.179.222
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-13-202.ca-central-1.compute.internal
Availability zone	ca-central-1b	Private IPs	172.31.13.202

Launch EC2 Instance

EC2 Management Console

https://ca-central-1.console.aws.amazon.com/ec2/v2/home?region=ca-central-1#Home:

aws Services Resource Groups

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Launch Templates

Spot Requests

Reserved Instances

Dedicated Hosts

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Resources

You are using the following Amazon EC2 resources in the Canada Central (Montreal) region:

- 1 Running Instances
- 0 Elastic IPs
- 0 Dedicated Hosts
- 0 Snapshots
- 1 Volumes
- 0 Load Balancers
- 1 Key Pairs
- 2 Security Groups
- 0 Placement Groups

Learn more about the latest in AWS Compute from AWS re:Invent 2017 by viewing the [EC2 Videos](#).

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 Instance.

Launch Instance

Note: Your instances will launch in the Canada Central (Montreal) region

Service Health

Service Status:

- Canada Central (Montreal):

Availability Zone Status:

Scheduled Events

Canada Central (Montreal):

No events

Account Attributes

Supported Platforms

VPC

Default VPC

vpc-e839a180

Resource ID length management

Console experiments

Additional Information

Getting Started Guide

Documentation

All EC2 Resources

Forums

Pricing

Contact Us

AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs:

Parasoft CloudScan EMail for AWS

Feedback English (US)

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HelloFromReza.pem

Show all

Launch EC2 Instance

The screenshot displays the AWS Management Console for the EC2 service. The left-hand navigation pane includes sections for EC2 Dashboard, INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. The main content area shows a list of instances with a table containing columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS (IPv4). One instance is listed with ID i-05266f02fe7dbd91e, type t2.micro, in the ca-central-1b zone, and is in a 'running' state. Below the table, the details for this instance are shown, including its Public DNS, IPv4 and IPv6 public IPs, private DNS, and private IPs. The bottom of the console features a footer with feedback, language settings, and copyright information.

EC2 Management Console

https://ca-central-1.console.aws.amazon.com/ec2/v2/home?region=ca-central-1#Instances:sort=instanceId

Services Resource Groups

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-05266f02fe7dbd91e	t2.micro	ca-central-1b	running	2/2 checks ...	None	ec2-35-183-179-222.ca...

Instance: i-05266f02fe7dbd91e Public DNS: ec2-35-183-179-222.ca-central-1.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID	i-05266f02fe7dbd91e	Public DNS (IPv4)	ec2-35-183-179-222.ca-central-1.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.183.179.222
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-13-202.ca-central-1.compute.internal
Availability zone	ca-central-1b	Private IPs	172.31.13.202

Feedback English (US)

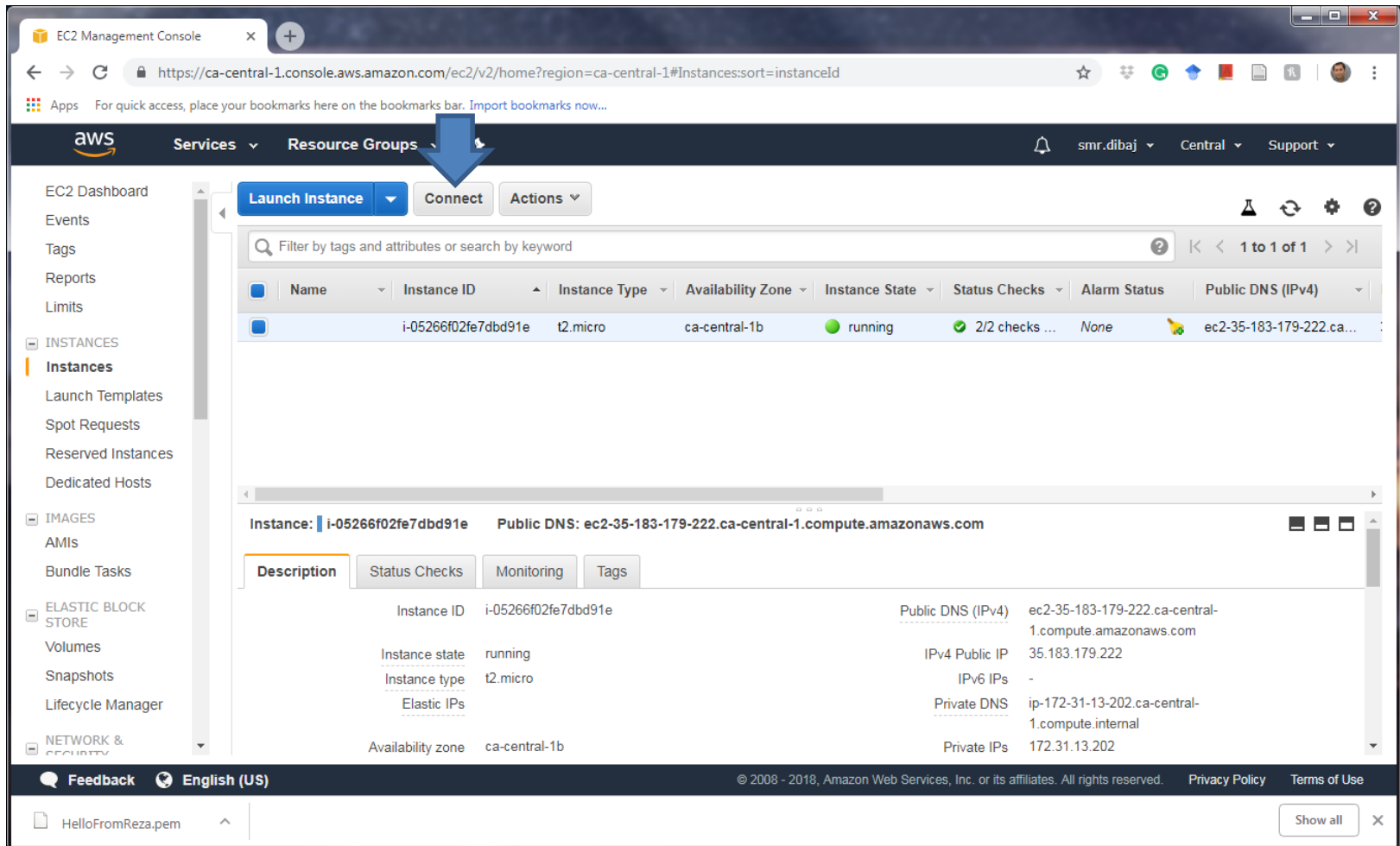
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HelloFromReza.pem Show all

Connect to Launched Instance

Launch EC2 Instance

Step 11:



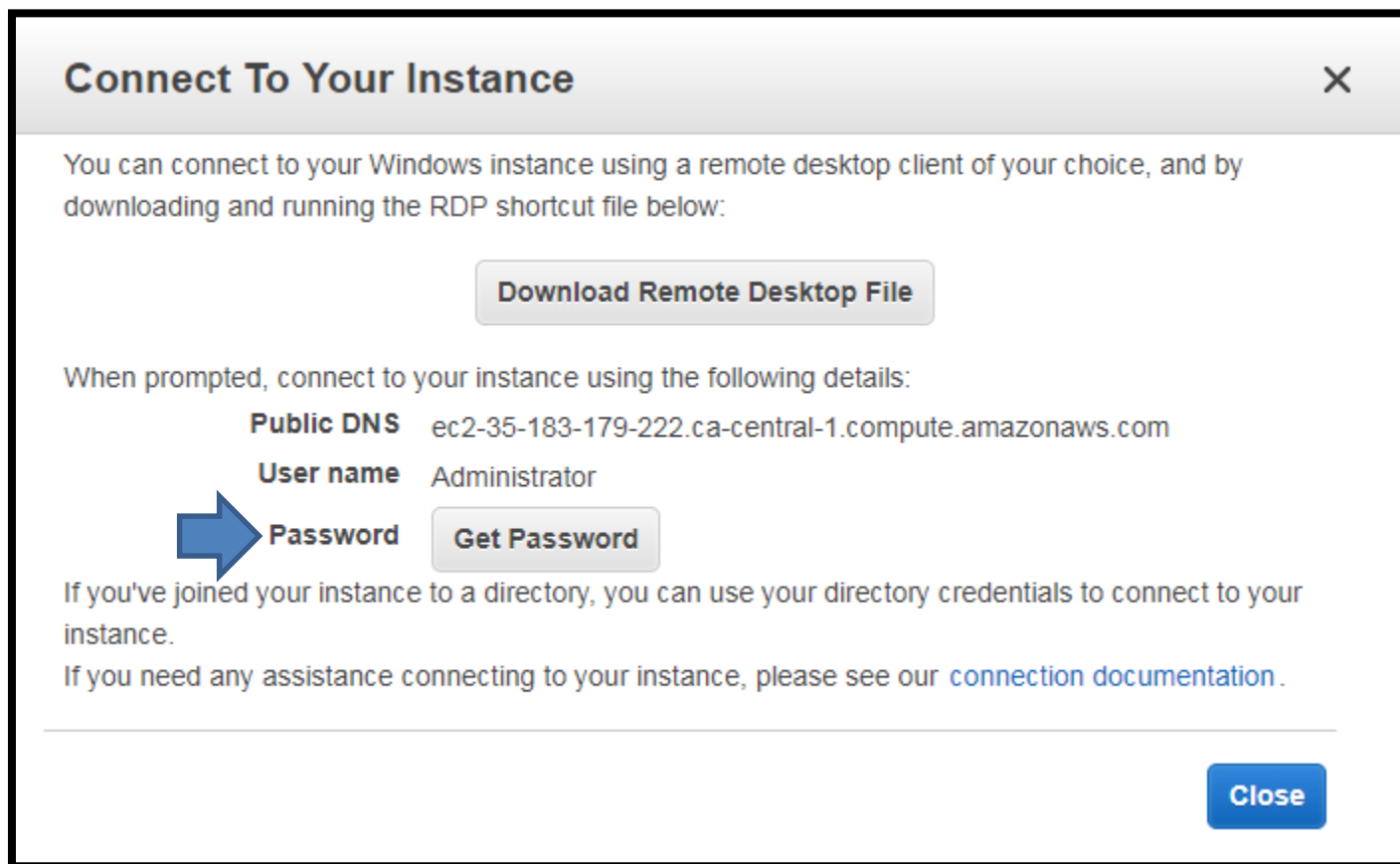
The screenshot displays the AWS EC2 Management Console interface. A blue arrow points to the 'Launch Instance' button in the top navigation bar. The main content area shows a table with one EC2 instance, 'i-05266f02fe7dbd91e', which is in a 'running' state. Below the table, the details for this instance are shown, including its Public DNS, IP addresses, and availability zone.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-05266f02fe7dbd91e	t2.micro	ca-central-1b	running	2/2 checks ...	None	ec2-35-183-179-222.ca...

Instance: i-05266f02fe7dbd91e		Public DNS: ec2-35-183-179-222.ca-central-1.compute.amazonaws.com	
Instance ID	i-05266f02fe7dbd91e	Public DNS (IPv4)	ec2-35-183-179-222.ca-central-1.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.183.179.222
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-13-202.ca-central-1.compute.internal
Availability zone	ca-central-1b	Private IPs	172.31.13.202

Launch EC2 Instance

Step 12:



Launch EC2 Instance

Step 13:

Connect To Your Instance > Get Password

The following Key Pair was associated with this instance when it was created.

Key Name Hello From Reza.pem

In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

Key Pair Path No file chosen

Or you can copy and paste the contents of the Key Pair below:

Open

Computer > New Volume (E:) > Dropbox > 03-Teaching > 01-Centennial College > 01-Courses > 11-COMP 306-A

Organize New folder

Name	Date modified	Type	Size
HelloFromReza.pem	21/09/2018 11:06 ...	PEM File	2 KB

Back

Close

Launch EC2 Instance

Step 14:

Connect To Your Instance > Get Password

The following Key Pair was associated with this instance when it was created.


Key Name Hello From Reza.pem

In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

Key Pair Path HelloFromReza.pem

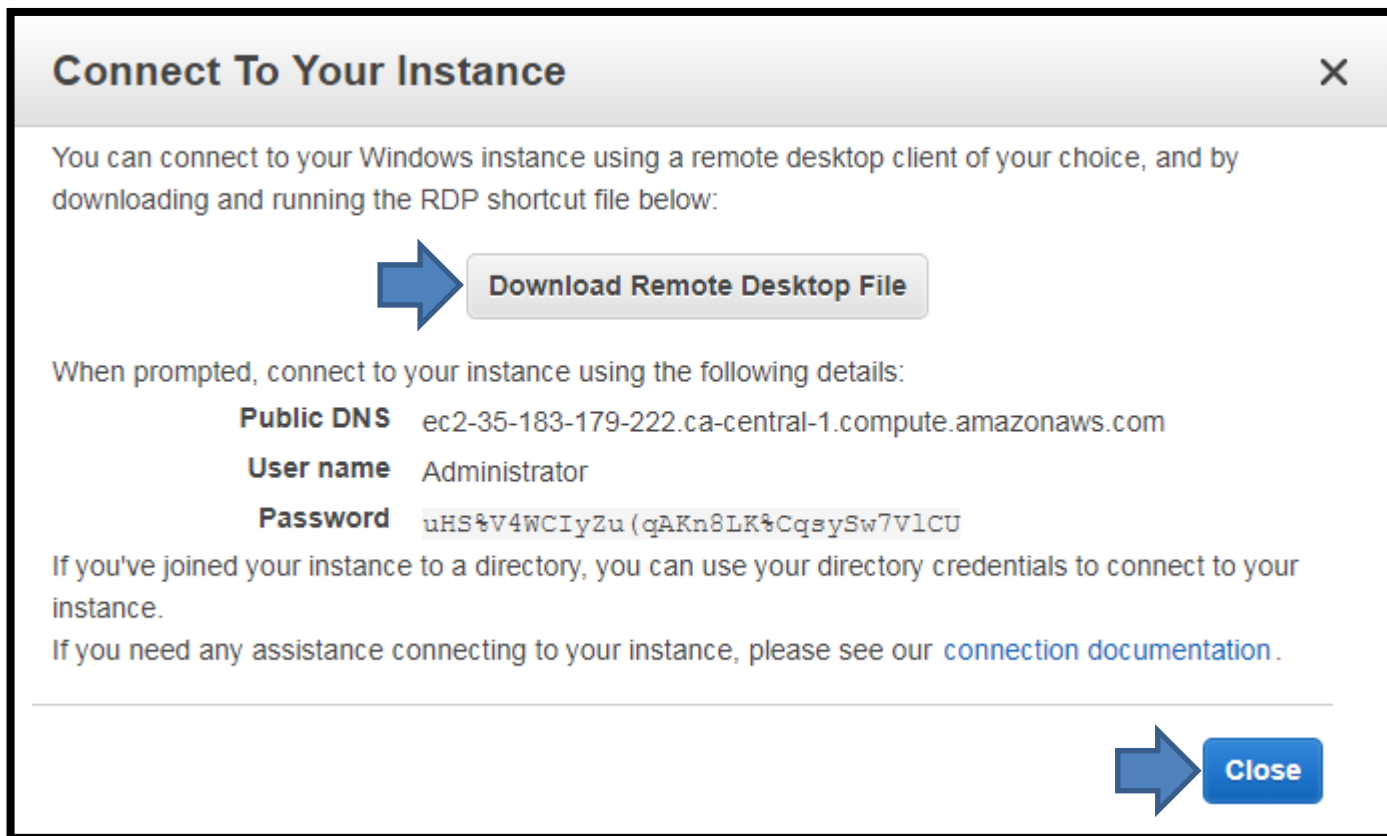
Or you can copy and paste the contents of the Key Pair below:

```
-----BEGIN RSA PRIVATE KEY-----
MIIIEowIBAAKCAQEAoTqLrGgODmNL/SgR1sM1OK0AvrlZgKNOsOUqE6YWExKmuNY1L0pUJZvUE
8H4
4drAl33qt3yLa3z9BpuohZujvrVgBiXk19IEPTDPqROgFxrPjN0YKwOa04c+co4gb6OqLtMuLH8h
zT5Y4FNoQII9ojjEAiLpMnZs4bfXNvTWCKW7jon4X6wDxXF/U7yOYSDPhIXmNges6Lb3ofqEu5Ji
n3VvAfikBEBHWlib8et8nCV+rQ7IbPle3JNZFpCDQNYXGhdUJ5R/n/RXpEFEKeh6KXT7O1/qTC8h
```



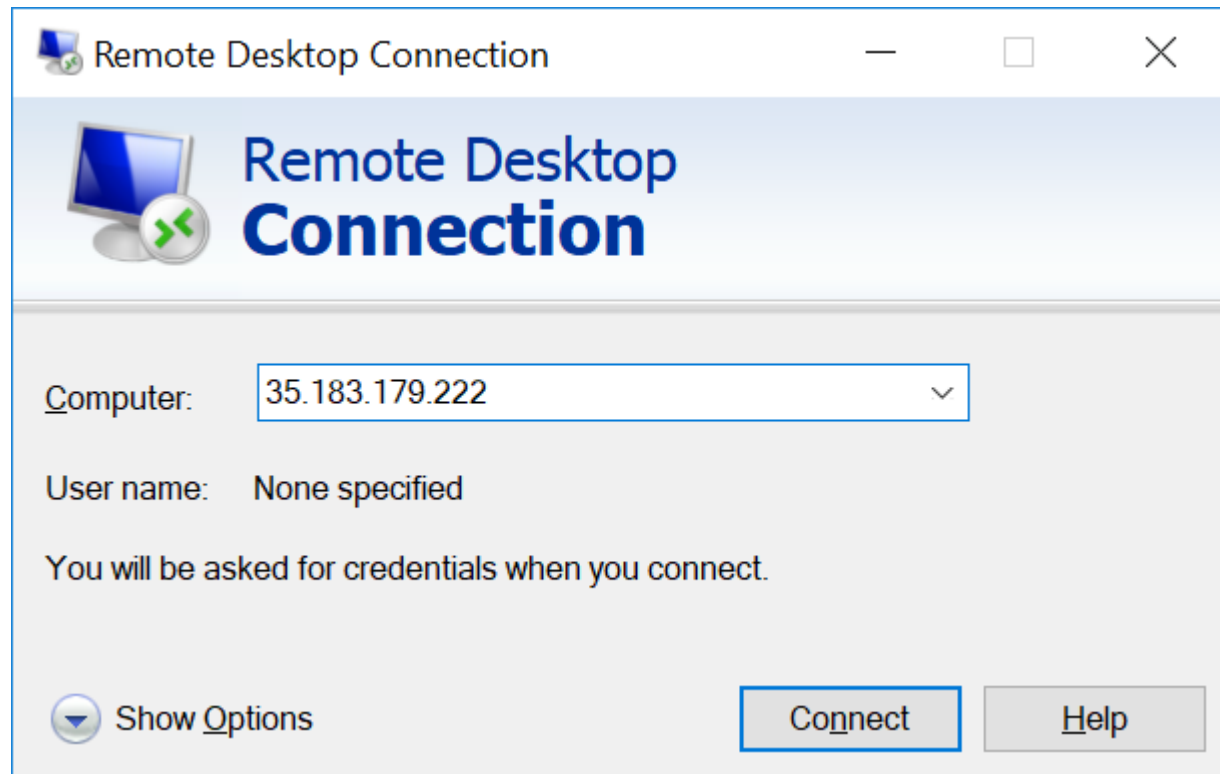
Launch EC2 Instance

Step 15:



Launch EC2 Instance

Step 16:



Launch EC2 Instance

Step 17:

The image shows a screenshot of the 'Connect To Your Instance' page from the AWS Management Console. The page provides instructions on how to connect to a Windows instance using a remote desktop client. It includes a 'Download Remote Desktop File' button and a table of connection details. A blue arrow points from the 'Password' field in the table to a Windows Security dialog box that is open over the page. The dialog box is titled 'Enter your credentials' and contains a 'Password' input field, the text 'DESKTOP-DN9T11L\Administrator', and a 'Remember me' checkbox. The dialog box also has 'OK' and 'Cancel' buttons. A 'Close' button is visible at the bottom right of the screenshot area.

Connect To Your Instance

You can connect to your Windows instance using a remote desktop client of your choice by downloading and running the RDP shortcut file below:

[Download Remote Desktop File](#)

When prompted, connect to your instance using the following details:

Public DNS	ec2-35-183-179-222.ca-central-1.compute.amazonaws.com
User name	Administrator
Password	uHS#V4WCIyZu(qAKn8LK&CqsySw7V1CU

If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Windows Security

Enter your credentials

These credentials will be used to connect to ec2-35-183-179-222.ca-central-1.compute.amazonaws.com.

Administrator

Password

DESKTOP-DN9T11L\Administrator

☐ Remember me

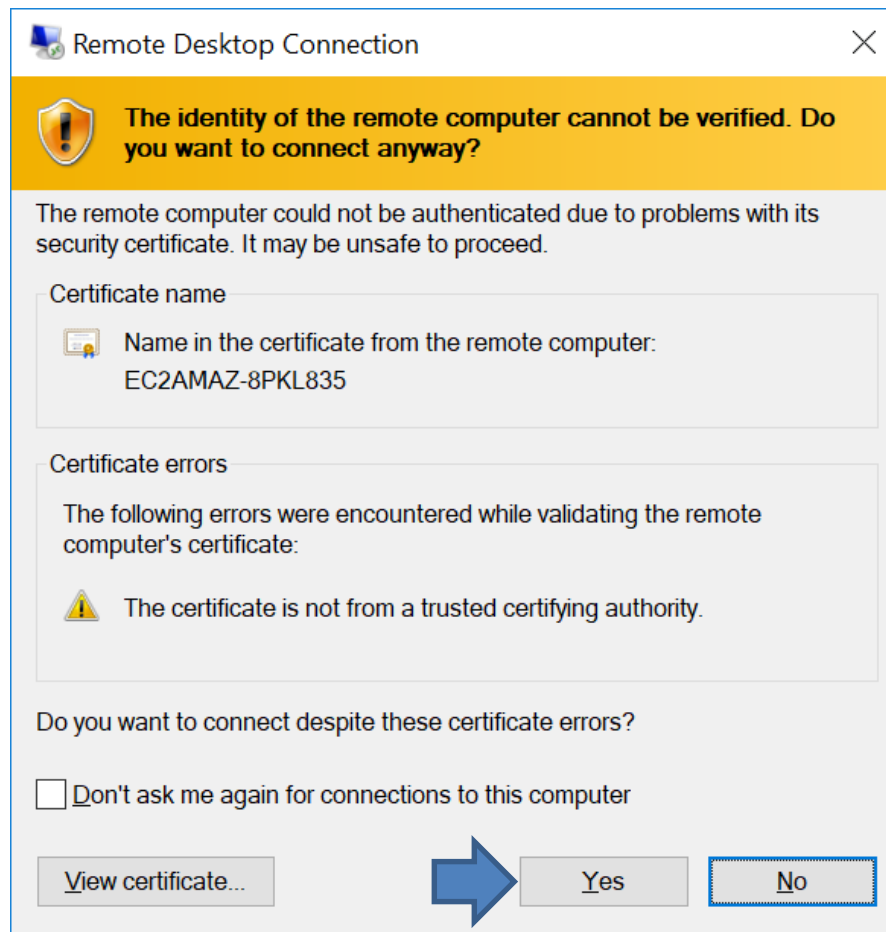
[More choices](#)

OK Cancel

Close

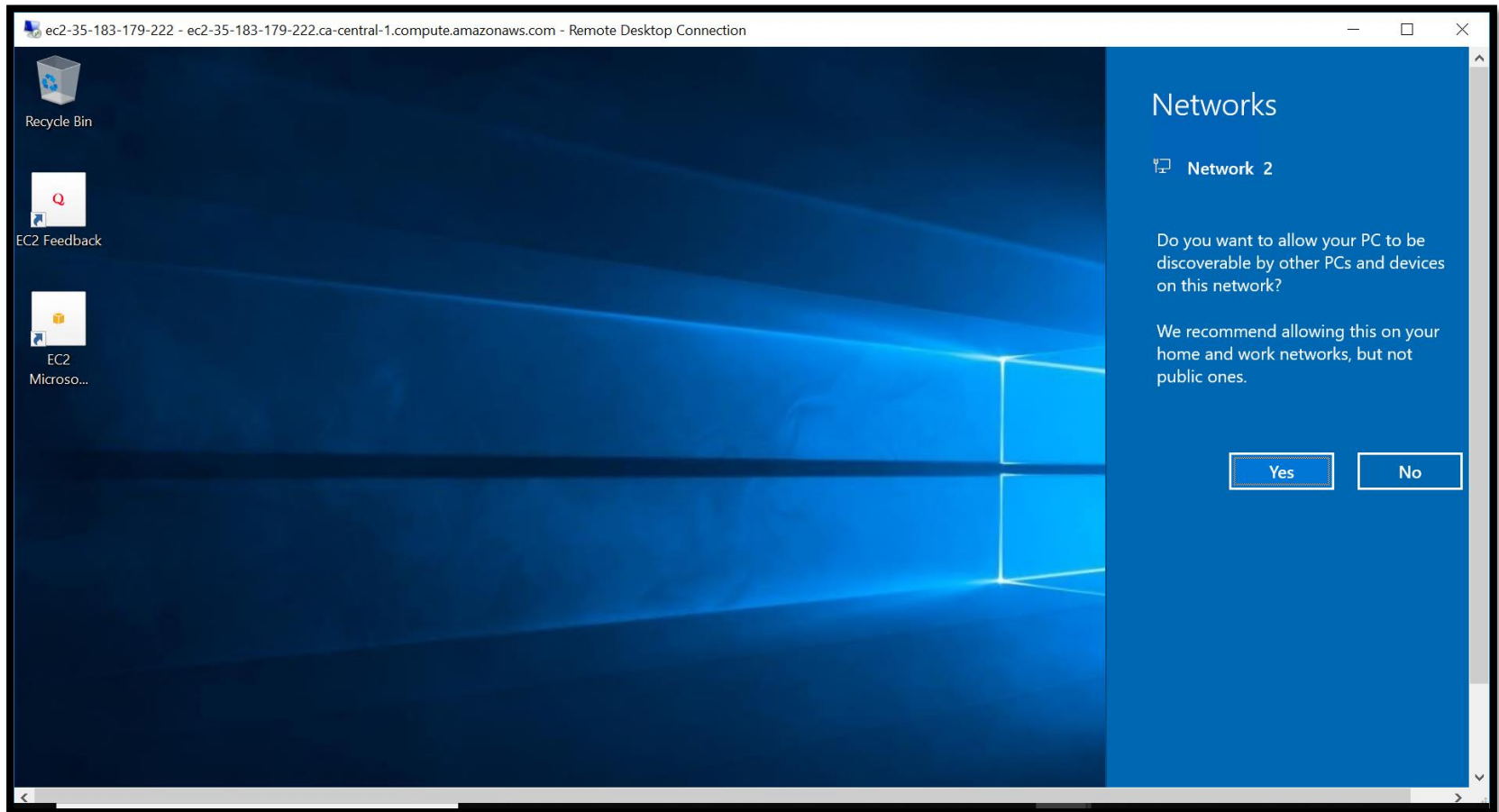
Launch EC2 Instance

Step 18:



Launch EC2 Instance

Step 19:



Thank you