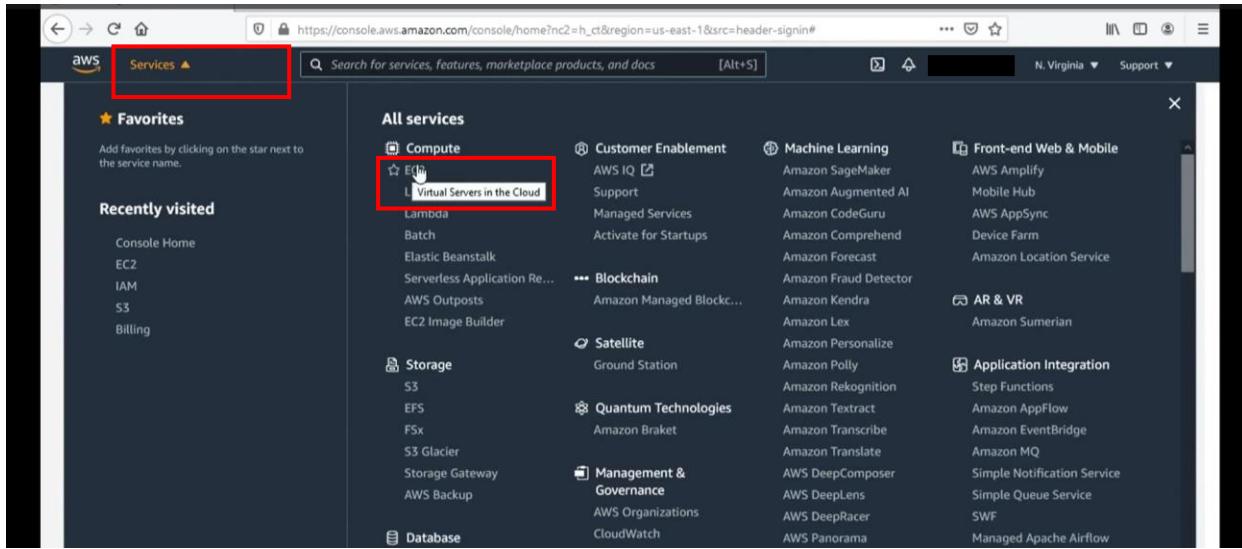


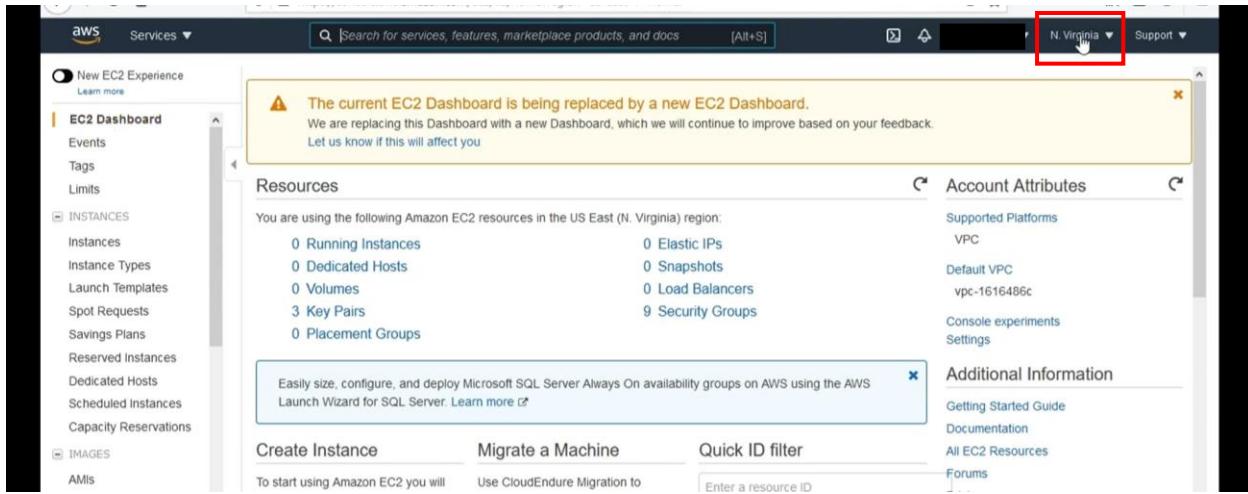
CLOUD CONCEPTS EC2

(REMOTE ACCESS OF LAUNCHED WINDOWS SERVER ON EC2)

- Search for EC2 in search bar or locate through services. EC2 is a regional service.



- Check the region. In the snapshot region mentioned is N. Virginia. There are multiple regions you can switch from dropdown arrow.



The current EC2 Dashboard is being replaced by a new EC2 Dashboard. We are replacing this Dashboard with a new Dashboard, which we will continue to improve based on your feedback. Let us know if this will affect you.

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

Count	Type
0	Running Instances
0	Dedicated Hosts
0	Volumes
3	Key Pairs
0	Placement Groups
0	Elastic IPs
0	Snapshots
0	Load Balancers
9	Security Groups

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. Learn more ↗

Region Selection

- US East (Ohio) us-east-2
- US West (N. California) us-west-1
- US West (Oregon) us-west-2
- Africa (Cape Town) af-south-1
- Asia Pacific (Hong Kong) ap-east-1
- Asia Pacific (Mumbai) ap-south-1
- Asia Pacific (Seoul) ap-northeast-2
- Asia Pacific (Singapore) ap-southeast-1
- Asia Pacific (Sydney) ap-southeast-2
- Asia Pacific (Tokyo) ap-northeast-1

- There are certain items that vary region to region e.g., price.

The current EC2 Dashboard is being replaced by a new EC2 Dashboard. We are replacing this Dashboard with a new Dashboard, which we will continue to improve based on your feedback. Let us know if this will affect you.

Resources

You are using the following Amazon EC2 resources in the US East (Ohio) region:

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

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. Learn more ↗

Account Attributes

- Supported Platforms: VPC
- Default VPC: vpc-d06ea2bb
- Console experiments: Settings

Additional Information

- Getting Started Guide

- Click on Running Instances to see the running servers if any and scroll down and click on Launch Instances. To see the specifications of different servers, see all the servers available as AMI. Amazon provides predefined packages and instances. Servers launched from that AMI will have same specification. **Each AMI will have unique ID. Region wise AMI ID differ for same AMI.**

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

- My AMIs
- AWS Marketplace
- Community AMIs
- Free tier only ⓘ

Amazon Linux 2 AMI (HVM, SSD Volume Type) - ami-0be2609ba883822ec (64-bit x86) / ami-0c582118883b46f4f (64-bit Arm)

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

macOS Catalina 10.15.7 - ami-01e2686a21e3bdff3

The macOS Catalina AMI is an EBS-backed, AWS-supported image. This AMI includes the AWS Command Line Interface, Command Line Tools for Xcode, Amazon SSM Agent, and Homebrew. The AWS Homebrew Tap includes the latest versions of multiple AWS packages included in the AMI.

Select 64-bit (x86) 64-bit (Arm)

Step 1: Choose an Amazon Machine Image (AMI)

- Deep Learning AMI (Amazon Linux 2) Version 38.0** - ami-00f44084952227ef0
 - Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
 - Select 64-bit (x86)
- Deep Learning Base AMI (Ubuntu 18.04) Version 32.0** - ami-0404ddec9491a5a31
 - Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
 - Select 64-bit (x86)
- Deep Learning Base AMI (Ubuntu 16.04) Version 32.0** - ami-07659f7afe7d14a52
 - Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
 - Select 64-bit (x86)

- Look for AMI available in free tier. Use filter option for servers available in free tier.

Step 1: Choose an Amazon Machine Image (AMI)

- Red Hat**
 - Free tier eligible** Red Hat Enterprise Linux version 8 (HVM). EBS General Purpose (SSD) Volume Type
 - Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
 - Select 64-bit (x86)
64-bit (Arm)
- SUSE Linux**
 - Free tier eligible** SUSE Linux Enterprise Server 15 Service Pack 2 (HVM). EBS General Purpose (SSD) Volume Type. Amazon EC2 AMI Tools preinstalled; Apache 2.2, MySQL 5.5, PHP 5.3, and Ruby 1.8.7 available.
 - Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
 - Select 64-bit (x86)
64-bit (Arm)

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Free tier only ①

Search for an AMI by entering a search term e.g. "Windows"	Search by Systems Manager parameter
Quick Start	Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0be2609ba883822ec (64-bit x86) / ami-0c582118883b46f4f (64-bit Arm)
My AMIs	Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.
AWS Marketplace	Root device type: ebs Virtualization type: hvm ENA Enabled: Yes
Community AMIs	
<input checked="" type="checkbox"/> Free tier only ①	Select 64-bit (x86) 64-bit (Arm)

- If any other server type is required visit Amazon Market Place.

aws marketplace

Find and buy software that runs in the AWS Cloud, software from trusted vendors like SAP, Zend, Microsoft, as well as many open source offerings. You can now find and launch software directly within EC2 for all AWS Marketplace AMI products. View Marketplace products you are currently subscribed to by visiting Your Software in the AWS Marketplace.

Categories

- All Categories
- Infrastructure Software (3014)

Featured Software

- Barracuda CloudGen
- vSRX Next Generation
- Matillion ETL for
- Trend Micro Deep

Step 1: Choose an Amazon Machine Image (AMI)		1069 Products	169 Products	Products	Cancel and Exit
	3014 Products				
Backup & Recovery	Agile Lifecycle Management	Blockchain	ML Solutions	Analytics	Education & Research
76 Products	28 Products	65 Products	109 Products	34 Products	103 Products
Data Analytics	Application Development	Collaboration & Productivity	Data Labeling Services	Applications	Financial Services
916 Products	932 Products	189 Products	4 Products	20 Products	73 Products
High Performance Computing	Application Servers	Contact Center	Computer Vision	Device Connectivity	Healthcare & Life Sciences
339 Products	743 Products	16 Products	13 Products	37 Products	29 Products
Migration	Application Stacks	Content Management	Natural Language Processing	Device Management	Media & Entertainment
119 Products	663 Products	433 Products	19 Products	23 Products	104 Products
Network Infrastructure	Continuous Integration and Continuous Delivery	CRM	Text	Device Security	Industrial
656 Products	144 Products	86 Products	16 Products	38 Products	21 Products
Operating Systems	Infrastructure as Code	eCommerce	Image	Industrial IoT	
785 Products	112 Products	136 Products	12 Products	18 Products	
Security		al gaming			

- We can create AMI from our server and can be shared with anyone.
- Select a server available in free tier. Say Window Server 2016.

The screenshot shows the AWS Lambda console with two items listed:

- Microsoft Windows Server 2016 Base - ami-0088977e66ac3915d**: Windows edition, 64-bit (x86), Root device type: ebs, Virtualization type: hvm, ENA Enabled: Yes. It is marked as "Free tier eligible".
- SUSE Linux Enterprise Server 12 SP5 (HVM), SSD Volume Type - ami-0a16c2295ef80ff63**: SUSE Linux edition, 64-bit (x86), Root device type: ebs, Virtualization type: hvm, ENA Enabled: Yes. It is also marked as "Free tier eligible".

- Select the instance type in free tier i.e., t2 micro.

Step 2: Choose an Instance Type								
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.								
Filter by: All Instance families Current generation Show/Hide Columns								
Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, ~ 1 GiB memory, EBS only)								
	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes

- Very large servers are also available and are charged accordingly. And press configure instance details.

Step 2: Choose an Instance Type								
	d3en	d3en.12xlarge	48	192	24 x 13980	Yes	75 Gigabit	Yes
<input type="checkbox"/>	f1	f1.2xlarge	8	122	1 x 470 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	f1	f1.4xlarge	16	244	1 x 940 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	f1	f1.16xlarge	64	976	4 x 940 (SSD)	Yes	25 Gigabit	Yes
<input type="checkbox"/>	g3	g3.4xlarge	16	122	EBS only	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	g3	g3.8xlarge	32	244	EBS only	Yes	10 Gigabit	Yes
<input type="checkbox"/>	g3	g3.16xlarge	64	488	EBS only	Yes	25 Gigabit	Yes
<input type="checkbox"/>	g3s	g3s.xlarge	4	30.5	EBS only	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	g4ad	g4ad.4xlarge	16	64	1 x 600 (SSD)	Yes	Up to 10 Gigabit	Yes
<input type="checkbox"/>	g4ad	g4ad.8xlarge	32	128	1 x 1200 (SSD)	Yes	15 Gigabit	Yes
<input type="checkbox"/>	g4ad	g4ad.16xlarge	64	256	2 x 1200 (SSD)	Yes	25 Gigabit	Yes

- Now configure the of servers.
 - Number of servers = Number of servers you want to launch
 - *Launch into autoscaling group. Scale In (-)/Scale out (+): Add the servers or delete the servers automatically on traffic load. (*Will be discussed in later lectures*)

Types of Instances:

- Dedicated host
- Spot
- Reserved
- Dedicated

Default instances are on demand can be launched and used any time.

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	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-1616486c (default)"/>	<input type="button" value="Create new VPC"/>
Subnet	<input type="text" value="No preference (default subnet in any Availability Zone)"/>	<input type="button" value="Create new subnet"/>
Auto-assign Public IP	<input type="text" value="Use subnet setting (Enable)"/>	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	<input type="text" value="Open"/>	
Domain join directory	<input type="text" value="No directory"/>	<input type="button" value="Create new directory"/>
IAM role	<input type="text" value="None"/>	<input type="button" value="Create new IAM role"/>
<input type="button" value="Cancel"/> <input type="button" value="Previous"/> <input type="button" value="Review and Launch"/> <input type="button" value="Next: Add Storage"/>		

- On request spot instances.

Availability zone = physical data centers (may vary at least two AZ are required)

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	<input checked="" type="checkbox"/> Request Spot instances															
Current price	<table border="1"> <thead> <tr> <th>Availability Zone</th> <th>Current price</th> </tr> </thead> <tbody> <tr><td>us-east-1a</td><td>\$0.0081</td></tr> <tr><td>us-east-1b</td><td>\$0.0081</td></tr> <tr><td>us-east-1c</td><td>\$0.0081</td></tr> <tr><td>us-east-1d</td><td>\$0.0081</td></tr> <tr><td>us-east-1e</td><td>\$0.0081</td></tr> <tr><td>us-east-1f</td><td>\$0.0081</td></tr> </tbody> </table>		Availability Zone	Current price	us-east-1a	\$0.0081	us-east-1b	\$0.0081	us-east-1c	\$0.0081	us-east-1d	\$0.0081	us-east-1e	\$0.0081	us-east-1f	\$0.0081
Availability Zone	Current price															
us-east-1a	\$0.0081															
us-east-1b	\$0.0081															
us-east-1c	\$0.0081															
us-east-1d	\$0.0081															
us-east-1e	\$0.0081															
us-east-1f	\$0.0081															
Maximum price	\$ [e.g. 0.045 = 4.5 cents/hour (Optional)]															
Persistent request	<input type="checkbox"/> Persistent request															
Request valid to	Any time Edit															

- If you Max Price bid is \$X if anyone from anywhere in the globe bids more than \$X the server will be allocated to him/her.

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	<input checked="" type="checkbox"/> Request Spot instances															
Current price	<table border="1"> <thead> <tr> <th>Availability Zone</th> <th>Current price</th> </tr> </thead> <tbody> <tr><td>us-east-1a</td><td>\$0.0081</td></tr> <tr><td>us-east-1b</td><td>\$0.0081</td></tr> <tr><td>us-east-1c</td><td>\$0.0081</td></tr> <tr><td>us-east-1d</td><td>\$0.0081</td></tr> <tr><td>us-east-1e</td><td>\$0.0081</td></tr> <tr><td>us-east-1f</td><td>\$0.0081</td></tr> </tbody> </table>		Availability Zone	Current price	us-east-1a	\$0.0081	us-east-1b	\$0.0081	us-east-1c	\$0.0081	us-east-1d	\$0.0081	us-east-1e	\$0.0081	us-east-1f	\$0.0081
Availability Zone	Current price															
us-east-1a	\$0.0081															
us-east-1b	\$0.0081															
us-east-1c	\$0.0081															
us-east-1d	\$0.0081															
us-east-1e	\$0.0081															
us-east-1f	\$0.0081															
Maximum price	\$ [e.g. 0.045 = 4.5 cents/hour (Optional)]															

- Prices of AZ vary region wise. Uncheck Spot Instance Option.

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	<input checked="" type="checkbox"/> Request Spot instances									
Current price	<table border="1"> <thead> <tr> <th>Availability Zone</th> <th>Current price</th> </tr> </thead> <tbody> <tr><td>us-east-2a</td><td>\$0.0035</td></tr> <tr><td>us-east-2b</td><td>\$0.0035</td></tr> <tr><td>us-east-2c</td><td>\$0.0035</td></tr> </tbody> </table>		Availability Zone	Current price	us-east-2a	\$0.0035	us-east-2b	\$0.0035	us-east-2c	\$0.0035
Availability Zone	Current price									
us-east-2a	\$0.0035									
us-east-2b	\$0.0035									
us-east-2c	\$0.0035									
Maximum price	\$ [e.g. 0.045 = 4.5 cents/hour (Optional)]									
Persistent request	<input type="checkbox"/> Persistent request									
Request valid to	Any time Edit									

- Default VPC is provided by Amazon and VPCs can be created according to your need for security or any other networking purpose. Default VPC MUST NOT be DELETED.

Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-1616486c (default)	<input type="button" value="Create new VPC"/>
Subnet	vpc-1616486c (default)	<input type="button" value="Create new subnet"/>

- Select default subnet (if you have any priority to launch the server in particular AZ then select that AZ) One subnet – one Availability Zone.

You can create your own network and set your own preferences accordingly.

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	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-1616486c (default)	<input type="button" value="Create new VPC"/>
Subnet	<input type="button" value="Create new subnet"/> No preference (default subnet in any Availability Zone) subnet-94ae8aa Default in us-east-1e subnet-fa5c5e9d Default in us-east-1c subnet-3fe82c31 Default in us-east-1f subnet-1ffb2f231 Default in us-east-1d subnet-2818ca65 Default in us-east-1a subnet-93d3dcff Default in us-east-1b	
Auto-assign Public IP	<input type="button" value="Create new directory"/> No preference (default subnet in any Availability Zone)	
Placement group	<input type="button" value="Create new subnet"/> Use subnet setting (Enable)	
Capacity Reservation	<input type="button" value="Create new directory"/> Enable Disable	
Domain join directory	<input type="button" value="Create new directory"/> No directory <small>For domain join to succeed, the selected AMI must include a compatible AWS Systems Manager Agent (SSM Agent).</small>	

- Assign Public IP will assign a public IP. Enable it. (can be disabled)

Network vpc-1616486c (default)

Subnet No preference (default subnet in any Availability Zone)

Auto-assign Public IP Use subnet setting (Enable)
Use subnet setting (Disable)

Placement group Enable
Disable

Capacity Reservation No directory
For domain join to succeed, the selected AMI must include a compatible AWS Systems Manager Agent (SSM Agent).

- Placement group means physical servers can be placed along with virtual server by Amazon AZ in their vicinity with your name. Server can be linked with active directory.
- IAM Role work between services (server with VPC) or (Server with DB). IAM role can be attached if server is already launched.

Placement group Add instance to placement group

Capacity Reservation

Domain join directory No directory
For domain join to succeed, the selected AMI must include a compatible AWS Systems Manager Agent (SSM Agent).

IAM role None
For domain join to succeed, select an IAM role that has the AWS managed policies AmazonSSMManagedInstanceCore and AmazonSSMDirectoryServiceAccess attached to it. [Learn more](#)

Other options will be discussed at Associate level.

Shutdown behavior	<input type="button" value="Stop"/>
Stop - Hibernate behavior	<input type="button" value="Stop"/> <input type="button" value="Terminate"/> <input type="checkbox"/> PROTECT against accidental termination
Enable termination protection	<input type="checkbox"/>
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring <small>Additional charges apply</small>
Tenancy	Shared - Run a shared hardware instance <small>Additional charges will apply for dedicated tenancy.</small>
Elastic Graphics	<input type="checkbox"/> Add Graphics Acceleration <small>Additional charges apply</small>
Credit specification	<input type="checkbox"/> Unlimited

- If you want to run a script at launch state of the server paste or attach it in optional Text box

Step 3: Configure Instance Details

Credit specification: Unlimited
Additional charges may apply

Advanced Details

Enclave	<input type="checkbox"/> Enable
Metadata accessible	Enabled
Metadata version	V1 and V2 (token optional)
Metadata token response hop limit	1
User data	<input checked="" type="radio"/> As text <input type="radio"/> As file <input type="checkbox"/> Input is already base64 encoded <pre>(Optional)</pre>

- Type of script (shell script)

```
#!/bin/bash
yum update -y
yum install httpd -y
service httpd start
chkconfig httpd on
cd /var/www/html
aws s3 sync s3://00786 .
```

- Next step is adding storage: Storage is of two types: In object level storage has unstructured data and is used a storage device i.e., windows can be copied but cannot be installed. In Block Level storage OS is installed and stored as well i.e., install the window or any other game. Server storage is Block level storage.
- In t2 there is one CPU and 1 GB Ram. Default Storage HDD is 30 GB

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	Encryption
Root	/dev/sda1	snap-0fa5e835f6c8495ed	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.

For highly critical queried no delay is tolerated and system must not slow down. Recommended is provisioned SSD IOPS (INPUT OUTPUT OPERATIONS). See the number of operations performed by particular HDDs (volume types).

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0fa5e835f6c8495ed	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
	Add New Volume							

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0fa5e835f6c8495ed	30	Provisioned IOPS SSD (io1)	1500	N/A	<input checked="" type="checkbox"/>	Not Encrypted
	Add New Volume							

- Delete on termination -> When the server is shut down the HDD attached is also deleted. (Can be unchecked) For new storage on need basis the size can be changed, or new storage can be added.

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	Encryption
Root	/dev/sda1	snap-0fa5e835f6c8495ed	30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
EBS	xvdb	Search (case-insensitively)	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input 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.

- If you are in a production environment and have multiple servers. Say one server is working with DB and other server is with your website. Servers can be labelled with a tag for naming. Key value will be attached to instances and Volumes (Hard drive).
- Name will not be attached to the volume if value is added when server is in running state.

Step 5: Add Tags

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.

Key	(128 characters maximum)	Value	(256 characters maximum)	Instances	Volumes
This resource currently has no tags					
Choose the Add tag button or click to add a Name tag. Make sure your IAM policy includes permissions to create tags.					
Add Tag	(Up to 50 tags maximum)				
Key	(128 characters maximum)	Value	(256 characters maximum)	Instances	Volumes
Name		first-server		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Add another tag	(Up to 50 tags maximum)				

- Configuring security groups: To secure the server we use security group.

Ex. Windows firewall saves our system from malicious activities. VPC can also be used to secure the infrastructure, but the security groups are just like a firewall for the server. You can set the type of traffic coming to the server or will go to the internet from the server.

Ex. Allow only one IP or block the type of IP.

- The new Sec Grp type is RDP for window. Port is defined by default. IP -> any type of traffic is allowed. You can also select myIP only you are allowed to access the server.

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: launch-wizard-2
Description: launch-wizard-2 created 2021-01-02T09:32:00+15:00

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	Custom	0.0.0.0/0

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.

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: launch-wizard-2
Description: launch-wizard-2 created 2021-01-02T09:32:00+15:00

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	Custom	0.0.0.0/0

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.

Step 6: Configure Security Group

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Assign a security group: Create a new security group
 Select an existing security group

Security group name: launch-wizard-2
Description: launch-wizard-2 created 2021-01-02T09:32:00+15:00

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	My IP	182.185.207.97/32

- For Existing security groups:

If creating security group for the first-time check create new security group if once created use the created security group (from already existing). Multiple security groups can be created.

The screenshot shows the 'Step 6: Configure Security Group' page. At the top, there are tabs: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group (which is highlighted), and 7. Review. Below the tabs is a table listing security groups:

Security Group ID	Name	Description	Action
sg-08eda3cec4a2078e6	aurangzaib-ssh	aurangzaib ssh	Copy to new
sg-0c46cb005dbcfc24c	awais-ssh	awais-ssh	Copy to new
sg-6beb853e	default	default VPC security group	Copy to new
sg-0823847102b123925	launch-wizard-1	launch-wizard-1 created 2020-07-27T08:40:43.074+05:00	Copy to new
sg-004e1155c8076fd41	RDSsecurity	RDSsecurity	Copy to new
sg-083646794276be2fb	test	test	Copy to new
sg-02bf6f1146ab911c4	website	website	Copy to new
sg-016105243a4dd7082	windows	windows	Copy to new
sg-077beff6c9ff11820	windows111	windows111	Copy to new

Select a security group above to view its inbound rules.

- In review and launch all the details are shown.

The screenshot shows the 'Step 7: Review Instance Launch' page. At the top, there are tabs: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review (which is highlighted). A warning message is displayed: **⚠ Improve your instances' security. Your security group, window-server, 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

Microsoft Windows Server 2016 Base - ami-0088977e66ac3915d
Free tier eligible Microsoft Windows 2016 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm

If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the License Mobility Form. Don't show me this again

Instance Type

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

- Now click on launch.

The screenshot shows the 'Step 7: Review Instance Launch' page with a modal dialog titled 'Select an existing key pair or create a new key pair'. The dialog contains the following text: 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.

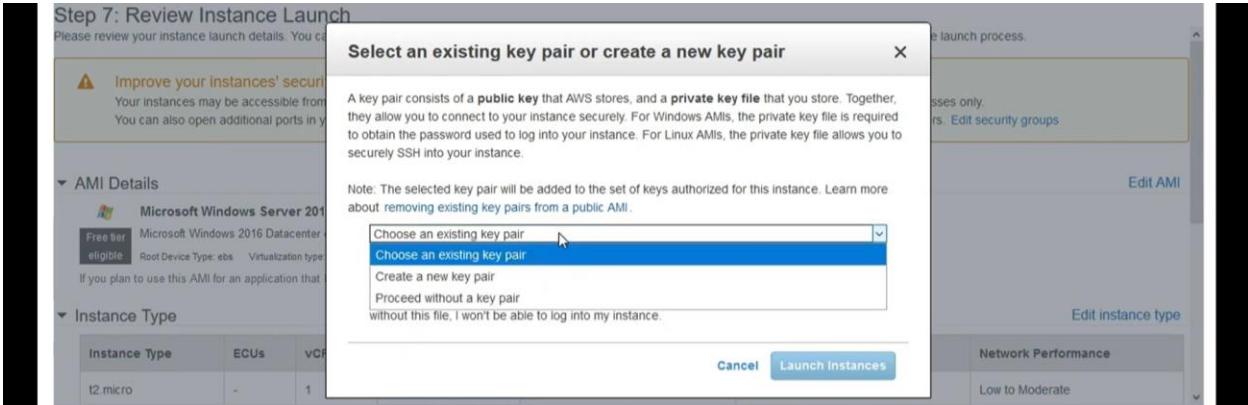
Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Choose an existing key pair: awais
Select a key pair: awais

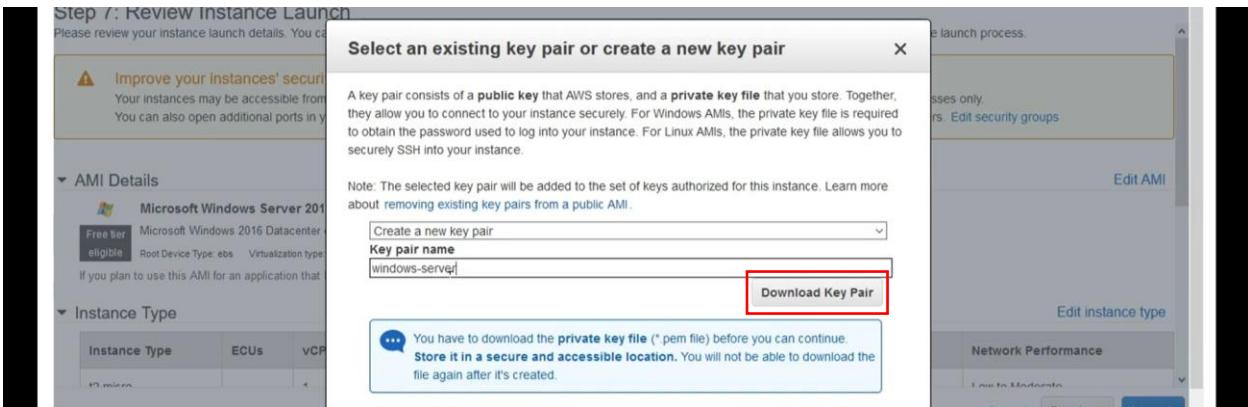
I acknowledge that I have access to the selected private key file (awais.pem), and that without this file, I won't be able to log into my instance.

Cancel Launch Instances

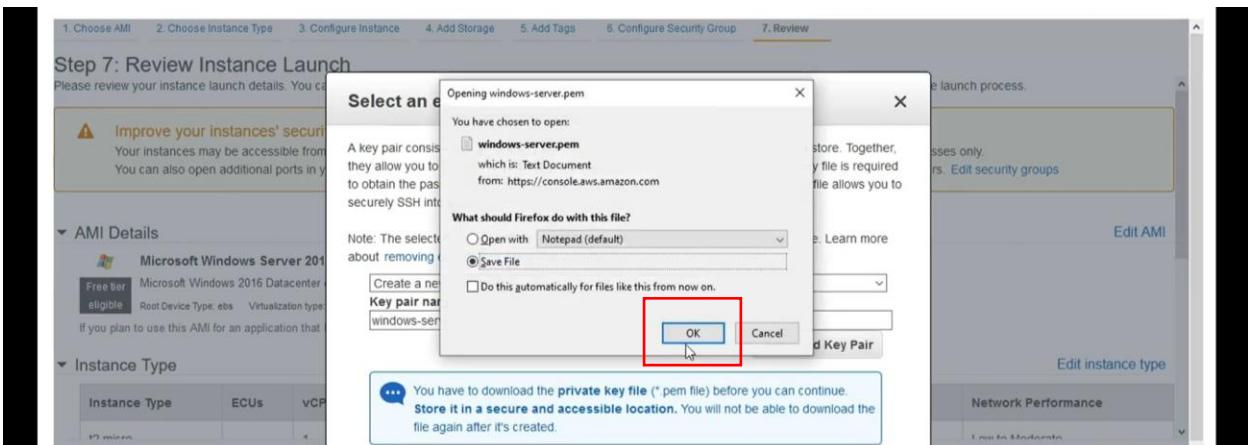
- Key pair is required to make any changes or error removal from the server. Key pair file is mandatory to keep. With lost/forgotten key pair server will be/remain launched but inaccessible.



- Choose existing or create a new one.



- Click download key pair and save the key pair file.



Or use existing key pair like:

Step 7: Review Instance Launch

Please review your instance launch details. You can always change them later.

AMI Details

Microsoft Windows Server 2016 Datacenter
Free tier eligible Root Device Type: ebs Virtualization type: HVM

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	-	1

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
awsaws [selected]
windows-server

Network Performance
Low to Moderate

- Click launch Instances.

Step 7: Review Instance Launch

Please review your instance launch details. You can always change them later.

AMI Details

Microsoft Windows Server 2016 Datacenter
Free tier eligible Root Device Type: ebs Virtualization type: HVM

Instance Type

Instance Type	ECUs	vCPUs
t2.micro	-	1

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
windows-server

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

Network Performance
Low to Moderate

Launch Status

Your instances are now launching

The following instance launches have been initiated: [10646e5b16d83bf4c1](#) View launch log

Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Launch Status



Initiating Instance Launches

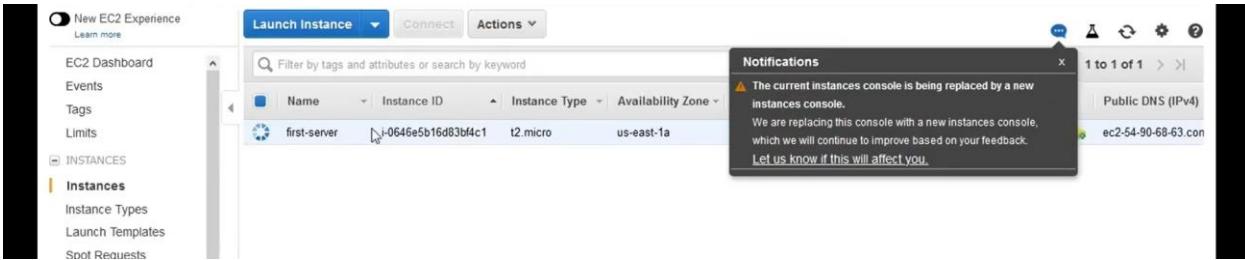
Please do not close your browser while this is loading

Creating security groups... Successful

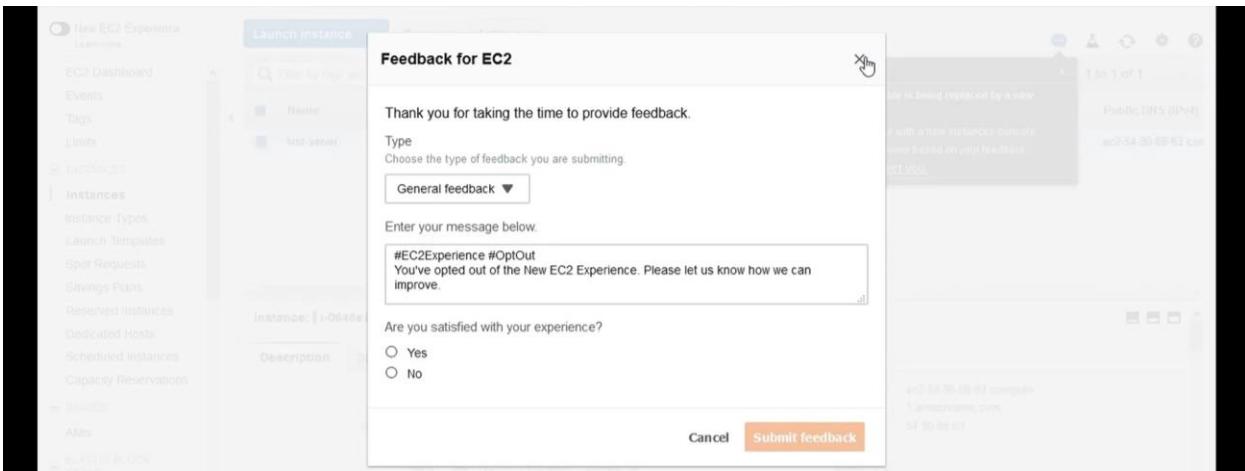
Authorizing inbound rules... Successful

Initiating launches...

- Your launched server (in initialising state)



- May ask for feedback.



- Instance is in Running state.



- Scroll horizontally to see different parameters.



- Parameters / configurations can be changed with running server. And viewed as well.

The screenshot shows the AWS EC2 Instances page with several tabs visible on the left sidebar: New EC2 Experience, EC2 Dashboard, Events, Tags, Limits, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images, AMIs, and Elastic Block.

The main content area displays the details of an instance named "i-0646e5b16d83bf4c1 (first-server)". The instance is running in the "us-east-1a" availability zone. The "Description" tab is selected, showing the following details:

Attribute	Value
Instance ID	i-0646e5b16d83bf4c1
Instance state	running
Instance type	t2.micro
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more
Private DNS	ip-172-31-18-44.ec2.internal
Private IPs	172.31.18.44
Secondary private IPs	VPC ID: vpc-1616486c
EBS-optimized	False

The "Status Checks" tab shows the following status checks:

Status Check	State
Health	Initializing
System Health	None

The "Monitoring" tab shows the following monitoring details:

Metric	Value
CPU Utilization	0.0%
Memory Utilization	0.0%
Disk I/O	0.0%
Network In	0.0%
Network Out	0.0%

The "Tags" tab shows the following tags:

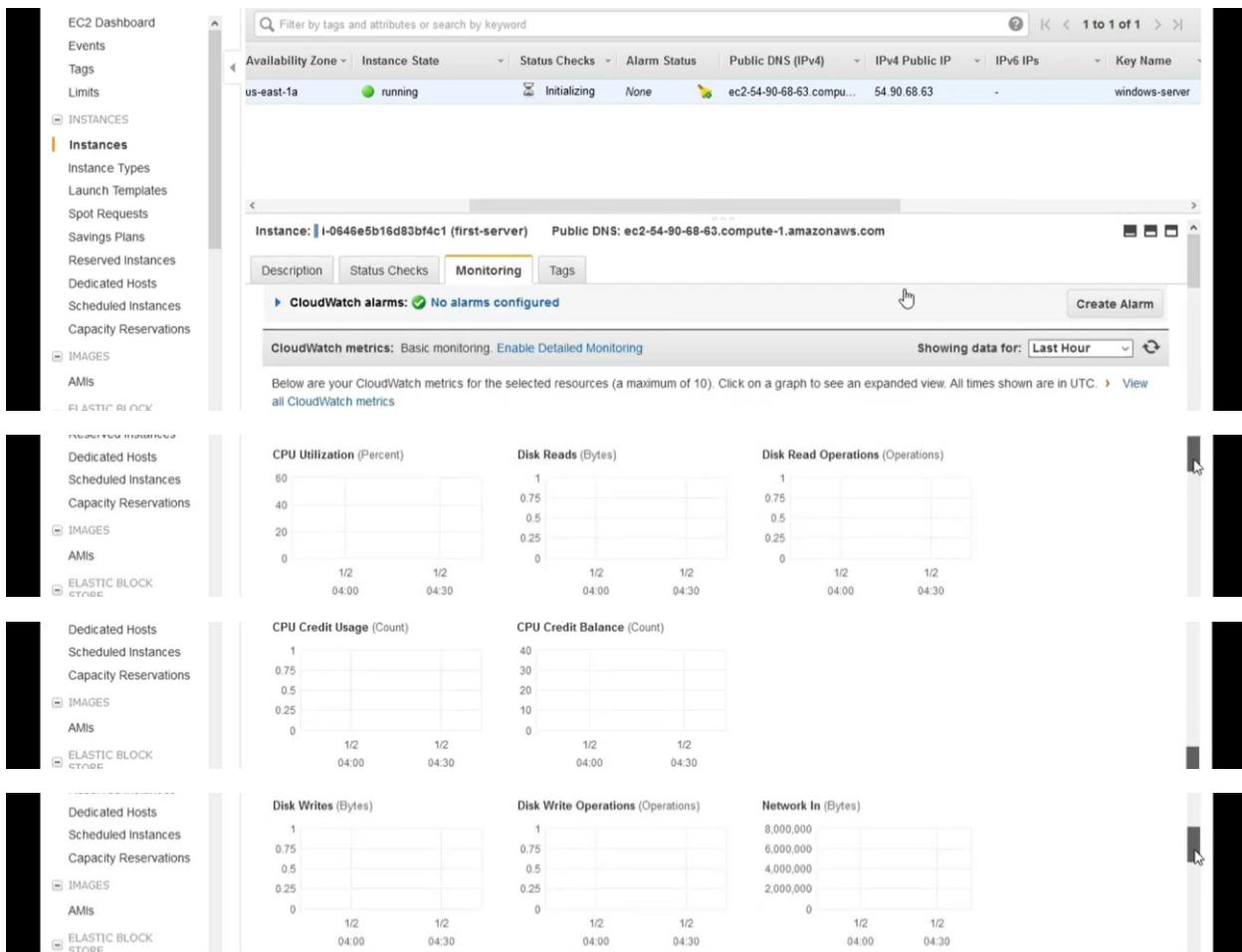
Key	Value
aws:cloudwatch:logs:group	/aws/lambda/windows-server
aws:cloudwatch:logs:log-stream	Windows_Server-2016-English-Full-Base-2020.12.09 (ami-0088977e66ac3915d)

A tooltip for the "Security groups" section indicates: "The security groups to which the instance belongs. A security group is a collection of firewall rules that restrict the network traffic for the instance. Click View rules to see the rules for the specific group." The "Security groups" section lists "windows-server" and provides links to view inbound and outbound rules.

The "Actions" tab shows the following actions:

- Launch Instance
- Connect
- Actions

- Can see resource utilization from monitoring tab.



- Other Tabs can be seen.



- You can add the rules for security group/servers/volumes with the running server.



EC2 Dashboard

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Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

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IMAGES

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Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Availability Zone: us-east-1a | Instance State: running | Status Checks: Initializing | Alarm Status: None | Public DNS (IPv4): ec2-54-90-68-63.compute-1.amazonaws.com | IPv4 Public IP: 54.90.68.63 | IPv6 Public IP: - | IPv6 IPs: - | Key Name: server

Instance: i-0646e5b16d83bf4c1 (first-server) | Public DNS: ec2-54-90-68-63.compute-1.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID: i-0646e5b16d83bf4c1 | Public DNS (IPv4): ec2-54-90-68-63.compute-1.amazonaws.com | Instance state: running | Instance type: t2.micro | Finding: Opt-in to AWS Compute Optimizer for recommendations. Learn more | Private DNS: ip-172-31-18-44.ec2.internal | Private IPs: 172.31.18.44 | Availability zone: us-east | Security groups: window-server | Secondary private IPs: - | Scheduled events: No scheduled events

Open Link in New Tab

Open Link in New Window

Open Link in New Private Window

Bookmark This Link

Save Link As...

Save Link to Pocket

Copy Link Location

Search Google for "window-server"

Send Link to Device

This Frame

Inspect Accessibility Properties

Inspect Element (Q)

Create Security Group Actions

Group ID: sg-0eb302251c057c42a | Add filter

Name: sg-0eb302251c057c42a | Group Name: window-server

Security Group: sg-0eb302251c057c42a

Description Inbound Outbound Tags

Group name: window-server | Group ID: sg-0eb302251c057c42a | Group description: window-server | VPC ID: vpc-1616486c

Notifications

The current Security Groups console is being replaced by a new Security Groups console. We are replacing this console with a new Security Groups console, which we will continue to improve based on your feedback. Let us know if this will affect you.

Create Security Group Actions

Group ID: sg-0eb302251c057c42a | Add filter

Name: sg-0eb302251c057c42a | Group Name: window-server

Security Group: sg-0eb302251c057c42a

Description Inbound Outbound Tags

Edit

Type: RDP | Protocol: TCP | Port Range: 3389 | Source: 0.0.0.0/0 | Description:

Notifications

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Create Security Group Actions

Group ID: sg-0eb302251c057c42a | Add filter

Name: sg-0eb302251c057c42a | Group Name: window-server

Edit inbound rules

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

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel Save

New EC2 Experience

Create Security Group Actions

Group ID: sg-0eb302251c057c42a Add filter

Name	Group ID	Group Name
	sg-0eb302251c057c42a	window-server

Notifications

The current Security Groups console is being replaced by a new Security Groups console. We are replacing this console with a new Security Groups console, which we will continue to improve based on your feedback.

Let us know if this will affect you.

Type Protocol Port Range Source

RDP TCP 3389 Custom 0.0.0.0/0 e.g. SSH for Admin Desktop

All TCP TCP 0 - 65535 Custom CIDR, IP, Security Group or Prefix List e.g. SSH for Admin Desktop

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel Save

New EC2 Experience

Create Security Group Actions

Group ID: sg-0eb302251c057c42a Add filter

Name	Group ID	Group Name
sg-0eb302251c057c42a	sg-0eb302251c057c42a	window-server

Notifications

The current Security Groups console is being replaced by a new Security Groups console. We are replacing this console with a new Security Groups console, which we will continue to improve based on your feedback.

Let us know if this will affect you.

Description Inbound Outbound Tags

Edit

Type	Protocol	Port Range	Destination	Description
All traffic	All	All	0.0.0.0/0	

- See the instance name is same as server name.

New EC2 Experience

Launch Instance Connect Actions

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
first-server	i-0646e5b16d83bf4c1	t2.micro	us-east-1a	running	Initializing	None	ec2-54-90-68-63.con

New EC2 Experience

Create Volume Actions

Name	Volume ID	Size	Volume Type	IOPS	Throughput	Snapshot	Created	Availability Zone	State
first-server	vol-0499d262...	30 GiB	gp2	100	-	snap-07845d9...	January 2, 2021 at ...	us-east-1a	i

- Create new volume.

Volumes > Create Volume

Create Volume

Outposts ARN

Volume Type

Size (GiB) (Min: 1 GiB, Max: 16384 GiB)

IOPS 300 / 3000 (Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS)

Throughput (MB/s) Not applicable

Availability Zone*

Snapshot ID

Volumes > Create Volume

Create Volume

Volume Type

Size (GiB) Max: 16384 GiB

IOPS Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS

Throughput (MB/s)

Availability Zone*

Snapshot ID

Encryption Encrypt this volume

- Now attach the hard with server
- Create snapshot means to create a copy of your hard
- To create copy of complete server AMI is to be created.

New EC2 Experience [Learn more](#)

EC2 Dashboard

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Configure Plans

Create Volume

Actions ^

Modify Volume

Create Snapshot

Create Snapshot Lifecycle Policy

Delete Volume

Attach Volume

Detach Volume

Force Detach Volume

Change Auto-Enable IO Setting

Add/Edit Tags

Launch Instance

Connect

Get Windows Password

Create Template From Instance

Launch More Like This

Instance State

Instance Settings

Image

Networking

CloudWatch Monitoring

Create Image

Bundle Instance (instance store AMI)

Volume Type: gp2 | IOPS: 100 | Throughput: - | Snapshot: snap-07845d9... | Created: January 2, 2021 at ... | Availability Zone: us-east-1a | Status: healthy

Instance: i-0646e5b16d83bf4c1 (first-server) Public DNS: ec2-54-90-68-63.compute-1.amazonaws.com

- Now access the window server through its public IP.



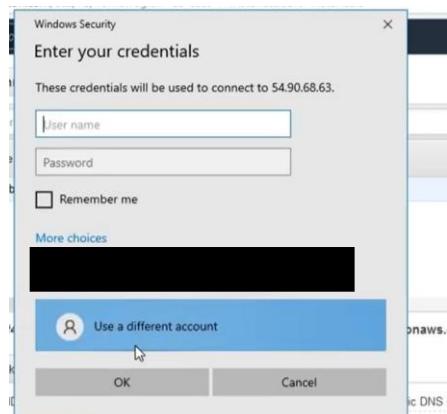
- From your desktop through remote desktop connection.



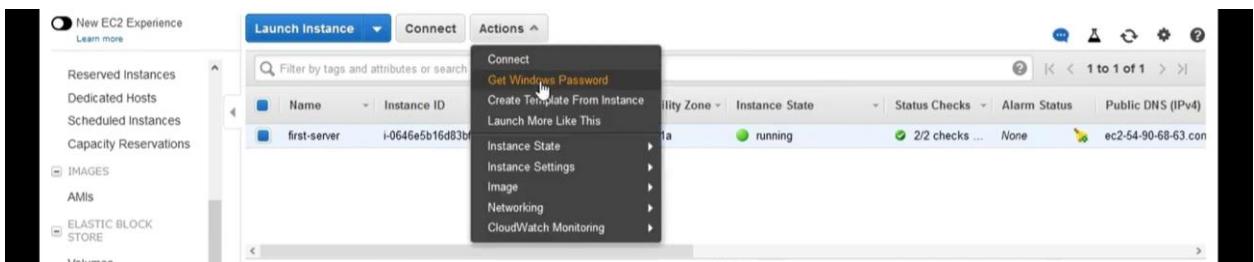
Paste the public IP of server.



- Enter your credentials for a different user.



- Get credentials to set new user



- Attach key pair file (browse on your system)

The screenshot shows the AWS EC2 console with the 'first-server' instance selected. A modal dialog box titled 'Retrieve Default Windows Administrator Password' is open. It asks for the 'Key Pair Path' and provides a 'Browse...' button. Below it, there's a text area with placeholder text: 'Or you can copy and paste the contents of the Key Pair below:' followed by a large text box containing a long RSA private key string. At the bottom right of the dialog are 'Cancel' and 'Decrypt Password' buttons.

Retrieve Default Windows Administrator Password

To access this instance remotely (e.g. Remote Desktop Connection), you will need your Windows Administrator password. A default password was created when the instance was launched and is available encrypted in the system log.

To decrypt your password, you will need your key pair for this instance. Browse to your key pair, or copy and paste the contents of your private key file into the text area below, then click Decrypt Password.

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

Key Name windows-server

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 selected.

Or you can copy and paste the contents of the Key Pair below:
Paste contents of private key file here

The screenshot shows the AWS EC2 console with the 'first-server' instance selected. The 'Retrieve Default Windows Administrator Password' dialog box is open, showing the pasted private key content in the text area. The key starts with '-----BEGIN RSA PRIVATE KEY-----' and contains several lines of encoded data.

Retrieve Default Windows Administrator Password

To access this instance remotely (e.g. Remote Desktop Connection), you will need your Windows Administrator password. A default password was created when the instance was launched and is available encrypted in the system log.

To decrypt your password, you will need your key pair for this instance. Browse to your key pair, or copy and paste the contents of your private key file into the text area below, then click Decrypt Password.

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

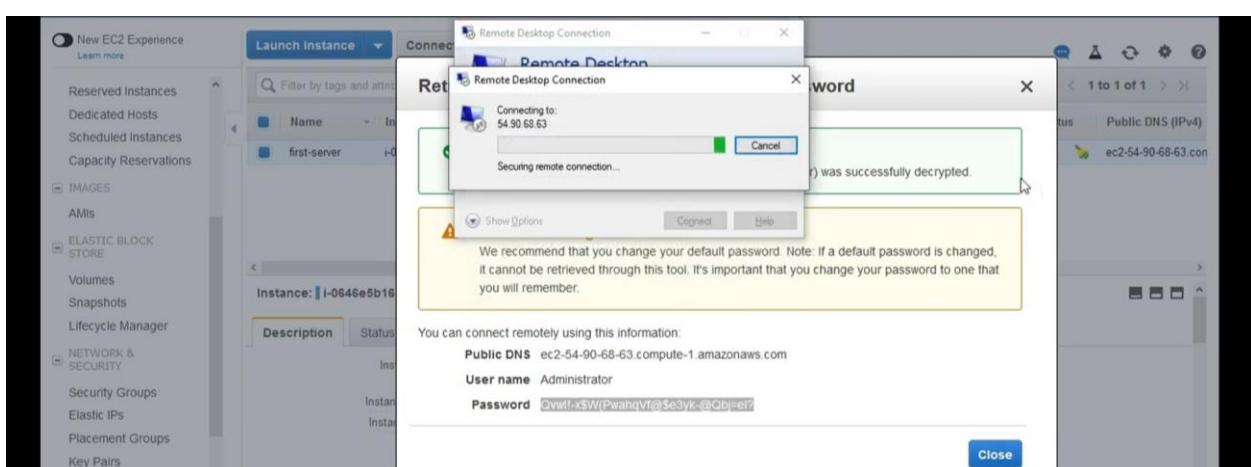
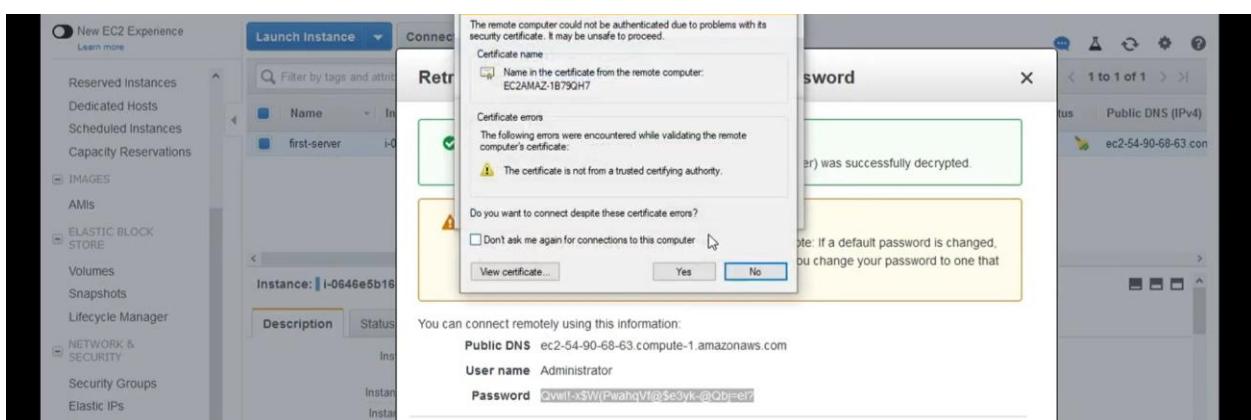
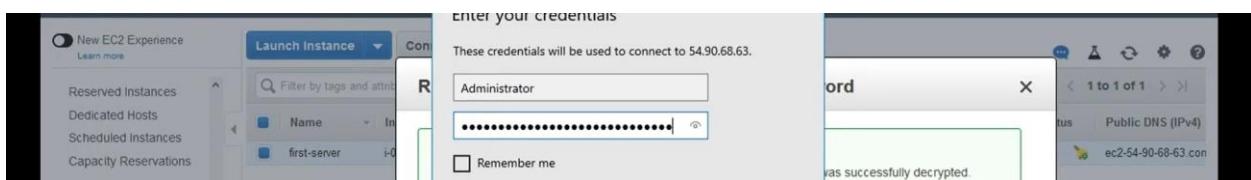
Key Name windows-server

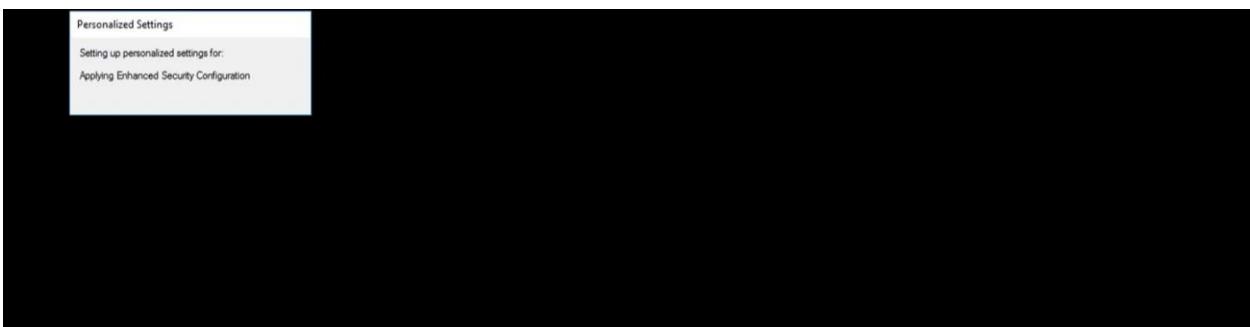
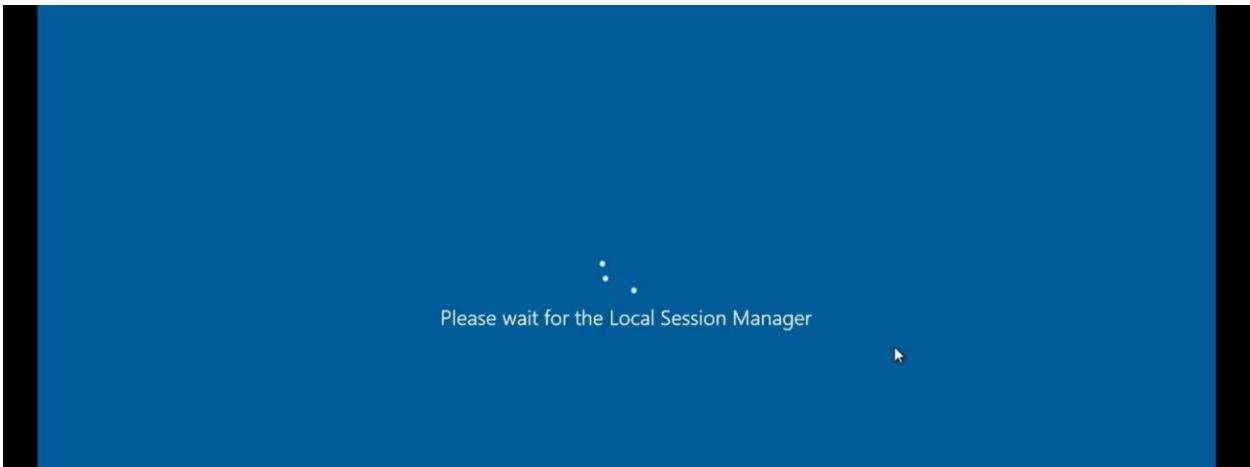
In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

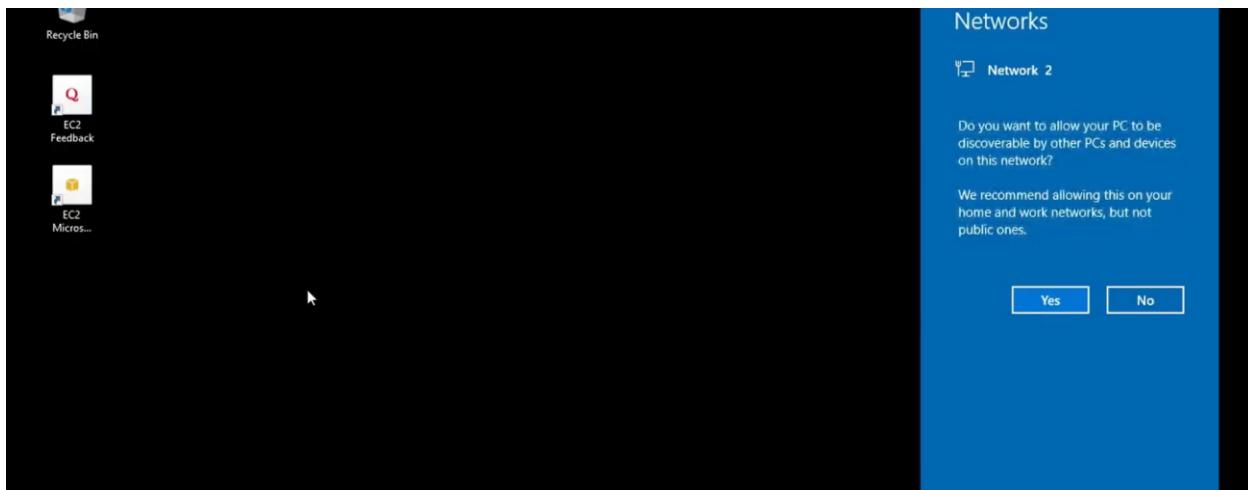
Key Pair Path windows-server.pem

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

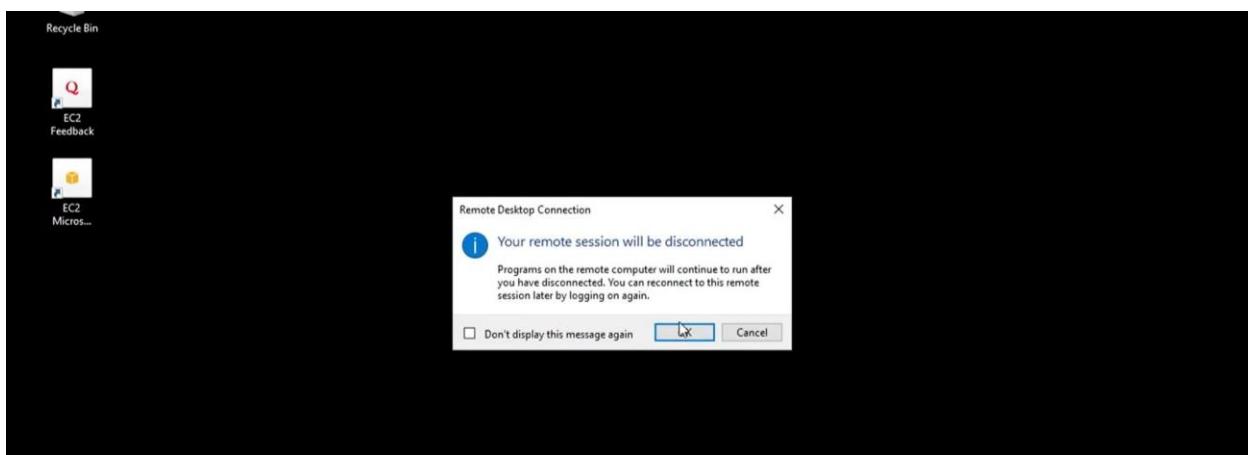
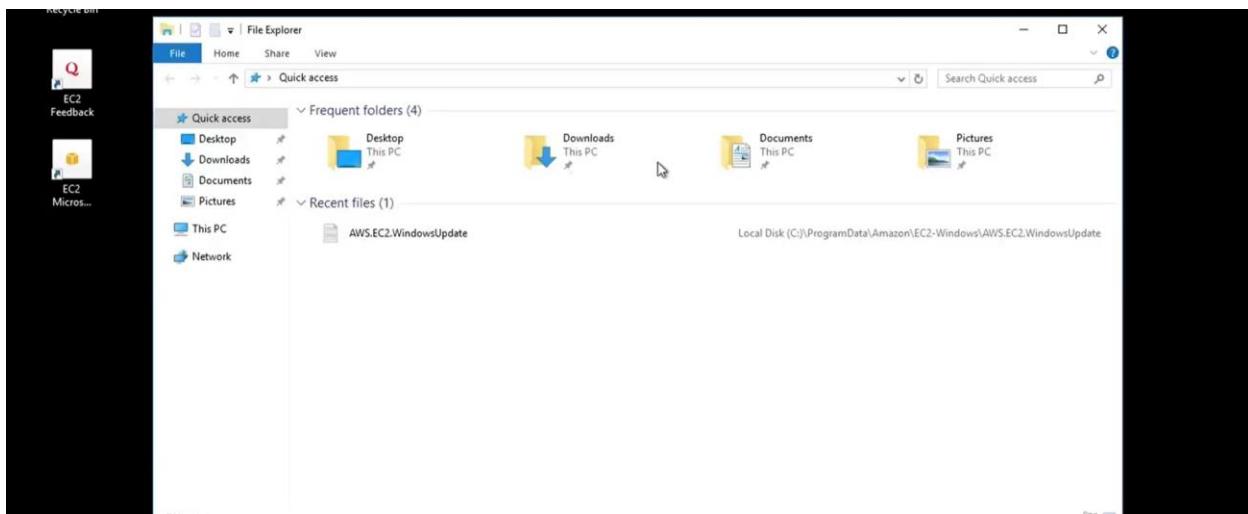
```
-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEakHMnkWZujm1172Fh0kNMW1qt2GhTTwPIMJqVgqfbzp+hp
uHNRf652JzHuI4YrcQgMy1H/a5KEvHPi0UUhNujEL60KgQSxQzTcQm8rmIC
djh7DCtObigJMMQcbxjp04bxILzGrmg8Ds/KYltbLBVPagIRQrhU/V6pF/mv
hfJz82z73V8x+1g2MdyhMnk4Fm6YspwgZ0JHKMquMpcxFc3byRqdQ87Gbhb
ujKG2q1C1M4WjIttoUJlo9opnxZjepJhL5SECeefdgHAMWvoze1JKX4o2WxDzOF
```



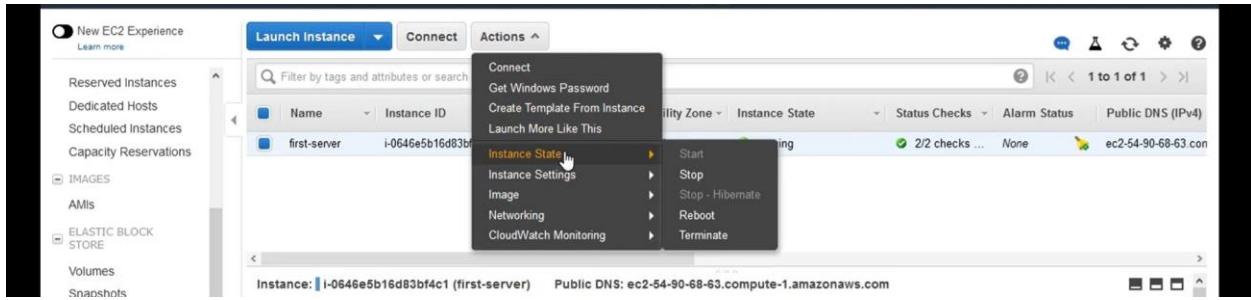




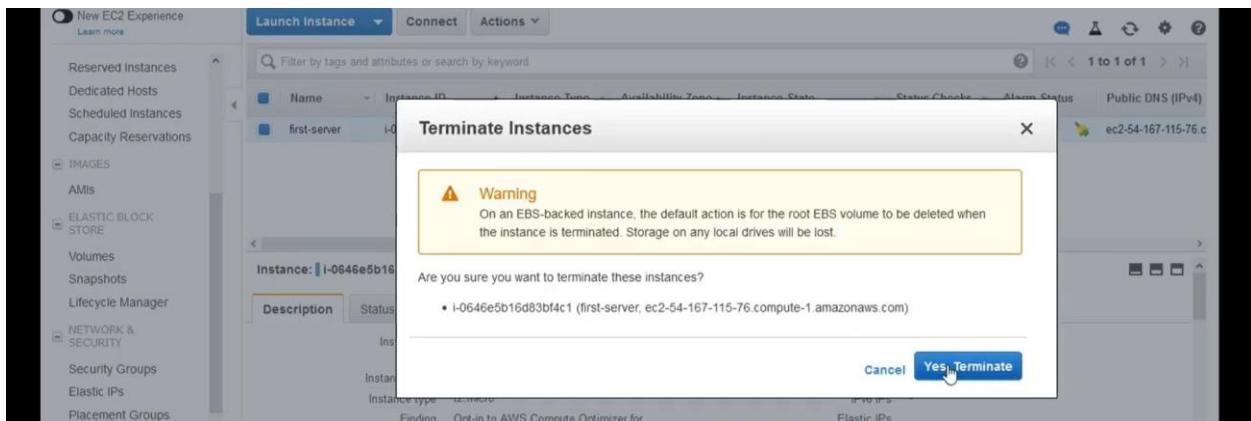
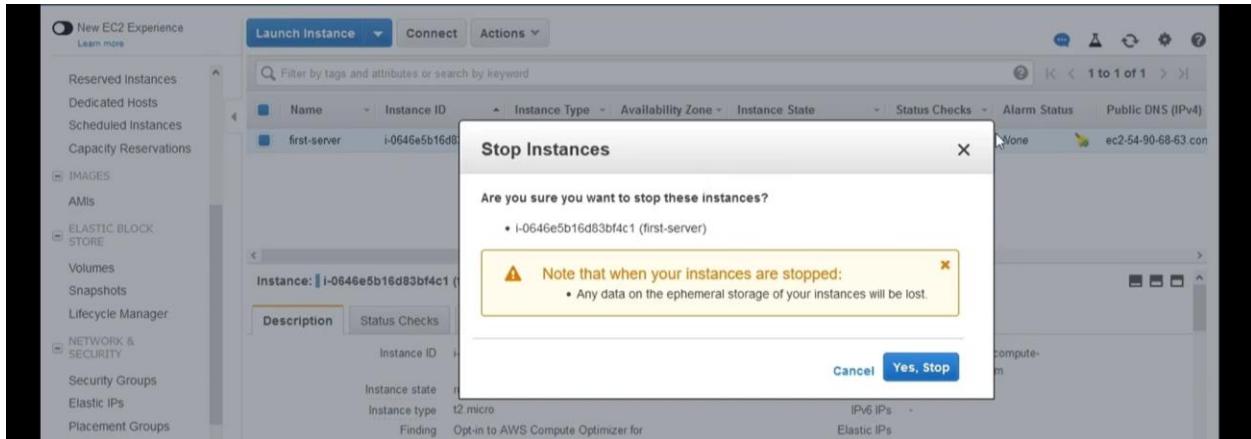
You are accessing the launched server.



- DONOT PAUSE OR STOP THE SERVER TERMINATE IT. Else you might be charged.



- If server is stopped its IP is changed when start again



The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with various navigation options like Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, AMIs, Volumes, Snapshots, Lifecycle Manager, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces. The main area has tabs for Launch Instance, Connect, and Actions. A search bar at the top says "Filter by tags and attributes or search by keyword". Below it is a table with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS (IPv4). One row is selected, showing "first-server" with Instance ID i-0646e5b16d83bf4c1, t2.micro instance type, us-east-1a availability zone, and "shutting-down" instance state. The Public DNS (IPv4) is listed as ec2-54-167-115-76.compute-1.amazonaws.com.

- Attached Volume will also be deleted when server is terminated.

The screenshot shows two pages. The top part is the AWS EBS Volumes page, which has a sidebar with EC2 Dashboard, Events, Tags, and Limits. It displays a message: "You do not have any EBS volumes in this region. Click the Create Volume button to create your first volume." A prominent blue "Create Volume" button is centered. The bottom part is the AWS EC2 Instances page, showing the same "first-server" instance from the previous screenshot, but now with the "terminated" status indicated by a red dot next to the instance name.