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TRAINING WILL  
GIVE YOU BETTER  
GROWTH





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## Amazon EC2

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

### Features of Amazon EC2

Amazon EC2 provides the following features:

- Virtual computing environments, known as *instances*
- Preconfigured templates for your instances, known as *Amazon Machine Images (AMIs)*, that package the bits you need for your server (including the operating system and additional software)
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as *instance types*
- Secure login information for your instances using *key pairs* (AWS stores the public key, and you store the private key in a secure place)
- Storage volumes for temporary data that's deleted when you stop or terminate your instance, known as *instance store volumes*
- Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as *Amazon EBS volumes*
- Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as *regions* and *Availability Zones*
- A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using *security groups*
- Static IPv4 addresses for dynamic cloud computing, known as *Elastic IP addresses*
- Metadata, known as *tags*, that you can create and assign to your Amazon EC2 resources
- Virtual networks you can create that are logically isolated from the rest of the AWS cloud, and that you can optionally connect to your own network, known as *virtual private clouds* (VPCs)

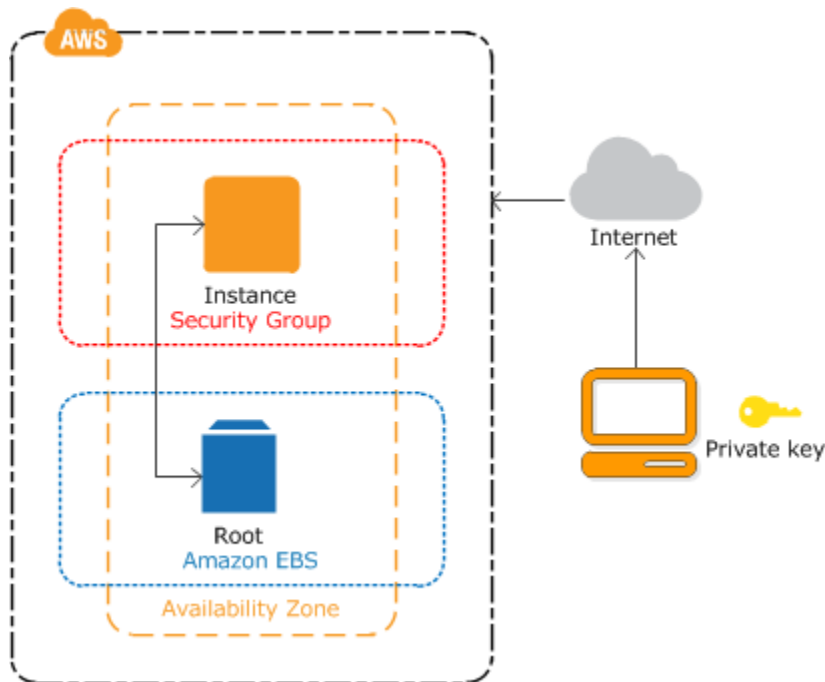
### Getting Started with Amazon EC2 Windows Instances

Let's get started with Amazon Elastic Compute Cloud (Amazon EC2) by launching, connecting to, and using a Windows instance. An *instance* is a virtual server in the AWS cloud. With Amazon EC2, you can set up and configure the operating system and applications that run on your instance.

### Overview

The instance is an Amazon EBS-backed instance (meaning that the root volume is an EBS volume). You can either specify the Availability Zone in which your instance runs, or let

Amazon EC2 select an Availability Zone for you. When you launch your instance, you secure it by specifying a key pair and security group. When you connect to your instance, you must specify the private key of the key pair that you specified when launching your instance.



## Tasks

To complete this tutorial, perform the following tasks:

1. Launch an Instance
2. Connect to Your Instance
3. Clean Up Your Instance

## To launch an instance

1. Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.

## History

EC2

Billing

RDS

Find a service by name or feature (for example, EC2, S3 or VM, storage).



## Compute

EC2

Lightsail

ECR

ECS

EKS

Lambda

Batch

Elastic Beanstalk



## Blockchain

Amazon Managed Blockchain



## Satellite

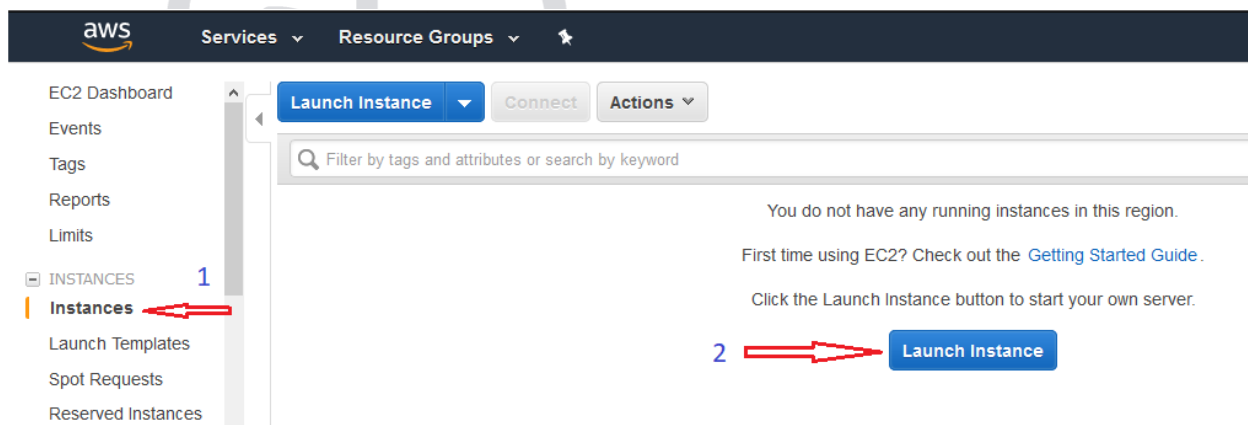
Ground Station



## Management &amp; Governance

CloudWatch

2. From the console dashboard, choose **Launch Instance**.



3. The **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations, called *Amazon Machine Images (AMIs)*, that serve as templates for your instance. Select the AMI for Windows Server 2016 Base or later. Notice that these AMIs are marked "Free tier eligible."



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

### Step 1: Choose an Amazon Machine Image (AMI)

[Cancel and Exit](#)

Amazon RDS  
Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy Amazon Aurora, MariaDB, MySQL, Oracle, PostgreSQL, and SQL Server databases on AWS. [Aurora is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases.](#) [Learn more about RDS](#)  
[Launch a database using RDS](#)

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-0653e888ec96eab9b (64-bit x86) / ami-0b5f1bbae8cd790f (64-bit Arm)  
Ubuntu Server 16.04 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  
[Select](#)  
☒ 64-bit (x86)  
☐ 64-bit (Arm)

Microsoft Windows Server 2016 Base - ami-0170ffc1abff2ebdc  
Microsoft Windows 2016 Datacenter edition. [English]  
Root device type: ebs Virtualization type: hvm  
[Select](#)  
64-bit (x86)

Deep Learning AMI (Ubuntu) Version 20.0 - ami-0c9ae74667b049f59  
With latest deep learning frameworks pre-installed: MXNet, TensorFlow, PyTorch, Keras, Chainer, Caffe2, Theano & CNTK, configured with NVIDIA CUDA, cuDNN, NCCL & Intel MKL-DNN. For a fully managed experience, check: <https://aws.amazon.com/sagemaker>  
[Select](#)  
64-bit (x86)

4. On the **Choose an Instance Type** page, you can select the hardware configuration of your instance. Select the `t2.micro` type, which is selected by default. Notice that this instance type is eligible for the free tier.

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

### 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:   [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

## 5. In configure Instance Details

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**  [Launch into Auto Scaling Group](#)

**Purchasing option** ☐ Request Spot instances

**Network**  [Create new VPC](#)

**Subnet**  [Create new subnet](#)  
4091 IP Addresses available

**Auto-assign Public IP**

**Placement group** ☐ Add instance to placement group.

**Capacity Reservation**  [Create new Capacity Reservation](#)

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

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.

Elastic Graphics ⓘ ☐ Add Graphics Acceleration  
Additional charges apply.

T2/T3 Unlimited ⓘ ☐ Enable  
Additional charges may apply

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

## 6. In Add Storage

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-0ece74261752f6d43	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

## 7. In Add Tags, Specify the name for Instance

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

### 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 (127 characters maximum)	Value (255 characters maximum)
This resource currently has no tags	
Choose the Add tag button or <a href="#">click to add a Name tag</a> .	
Make sure your <a href="#">IAM policy</a> includes permissions to create tags.	

**Add Tag** (Up to 50 tags maximum)

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

### 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	Value	Instances	Volumes
Name	Windows-Instance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

- Under **Security Groups**, you'll see that the wizard created and selected a security group for you. You can use this security group, or alternatively you can select the security group that you created when getting set up using the following steps:
  - On the **Configure Security Group** page, ensure that **Select an existing security group/Create a new security group**.
  - For windows Instance Give Type as RDP
  - Select **Review and Launch**.

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](#)

- Choose **Review and Launch** to let the wizard complete the other configuration settings for you.
- On the **Review Instance Launch** page, choose **Launch**.




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

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](#)

 **Microsoft Windows Server 2016 Base - ami-0170ffc1abff2ebdc**  
 Microsoft Windows 2016 Datacenter edition. [English]  
 Free tier eligible 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

[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

#### Security Groups

[Edit security groups](#)

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

11. When prompted for a key pair, select **Choose an existing key pair**, then select the key pair that you created when getting set up.

Alternatively, you can create a new key pair. Select **Create a new key pair**, enter a name for the key pair, and then choose **Download Key Pair**. This is the only chance for you to save the private key file, so be sure to download it. Save the private key file in a safe place. You'll need to provide the name of your key pair when you launch an instance and the corresponding private key each time you connect to the instance.

### Warning

Don't select the **Proceed without a key pair** option. If you launch your instance without a key pair, then you can't connect to it.

When you are ready, select the acknowledgement check box, and then choose **Launch Instances**.

## 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](#).

12. A confirmation page lets you know that your instance is launching. Choose **View Instances** to close the confirmation page and return to the console.

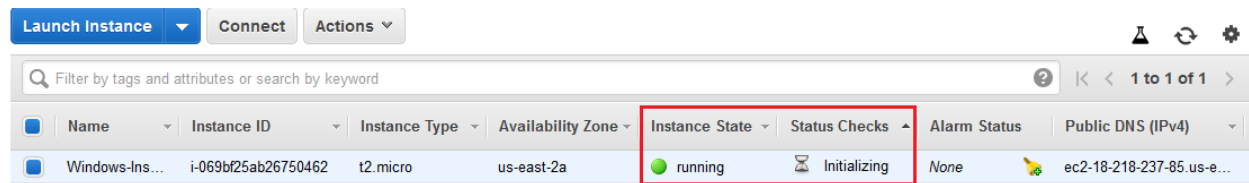
## Launch Status



**Your instances are now launching**

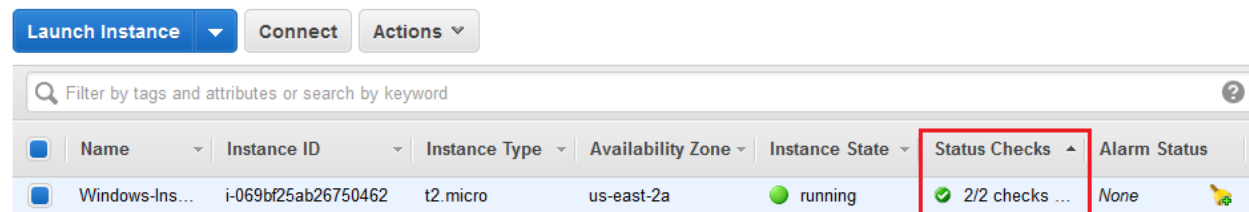
The following instance launches have been initiated: [i-069bf25ab26750462](#) [View launch log](#)

13. On the **Instances** screen, you can view the status of the launch. It takes a short time for an instance to launch. When you launch an instance, its initial state is `pending`. After the instance starts, its state changes to `running` and it receives a public DNS name. (If the **Public DNS (IPv4)** column is hidden, choose **Show/Hide Columns** (the gear-shaped icon) in the top right corner of the page and then select **Public DNS (IPv4)**.)



	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
<input type="checkbox"/>	Windows-Ins...	i-069bf25ab26750462	t2.micro	us-east-2a	running	Initializing	None	ec2-18-218-237-85.us-e...

14. It can take a few minutes for the instance to be ready so that you can connect to it. Check that your instance has passed its status checks; you can view this information in the **Status Checks** column



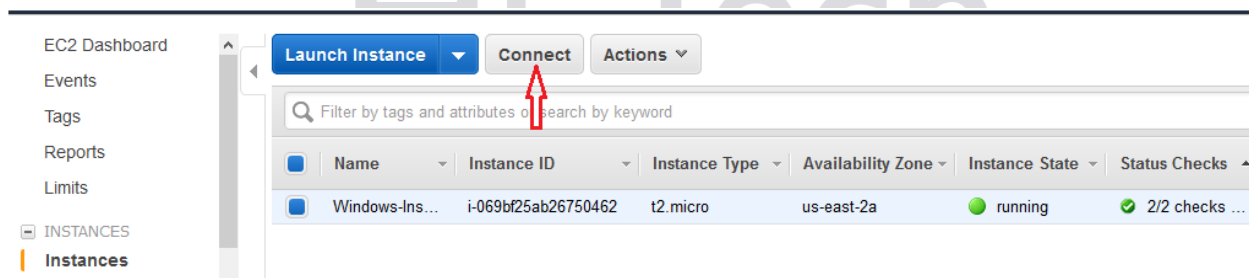
	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
<input type="checkbox"/>	Windows-Ins...	i-069bf25ab26750462	t2.micro	us-east-2a	running	2/2 checks ...	None

## Connect to Your Instance

To connect to a Windows instance, you must retrieve the initial administrator password and then specify this password when you connect to your instance using Remote Desktop.

### To connect to your Windows instance using an RDP client

1. In the Amazon EC2 console, select the instance, and then choose **Connect**.



	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks
<input type="checkbox"/>	Windows-Ins...	i-069bf25ab26750462	t2.micro	us-east-2a	running	2/2 checks ...

2. In the **Connect To Your Instance** dialog box, choose **Get Password** (it will take a few minutes after the instance is launched before the password is available).

## Connect To Your Instance



You can connect to your Windows instance using a remote desktop client of your choice, and 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** ec2-18-218-237-85.us-east-2.compute.amazonaws.com

**User name** Administrator

**Password** [Get Password](#)



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](#).

[Close](#)

3. Choose **Browse** and navigate to the private key file you created when you launched the instance. Select the file and choose **Open** to copy the entire contents of the file into the **Contents** field.

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## Connect To Your Instance > Get Password



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

**Key Name** Windows.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**  Windows.pem

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

4. Choose **Decrypt Password**. The console displays the default administrator password for the instance in the **Connect To Your Instance** dialog box, replacing the link to **Get Password** shown previously with the actual password.

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## Connect To Your Instance > Get Password



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

**Key Name** Windows.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**  Windows.pem

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

```
-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAfDOqA5yrKXR6bd38ezUuSrp9jCaAxXvVYivLzBWEjrL/qS+tPwssxdpa81h
k6F0hz9/5WI+gZXAeflZKHL3LXbrF/47jUT2qW/FLnWVAKXeA95Wsk+gOO+m0PegidKyE9uuaN0w
BzeDVicZ+4BVjVWb8luWVIZi3inWVdtU4mTSaY3kjOKVYHgIyVR2t+ili5DoVoZKovvUNY5+k+g
OBj4D+s9tzLFKMKeAh/ONGHL5UC/MIREIspQr9Djk/0Y9LZ8h/AShZXzq5UNZOS+YedNhC0iFnl7
IMqL96+P4eQSPGuBD/SbmVZPQWksAv3xJ
```



**Decrypt Password**

**Back**

**Close**

## Connect To Your Instance



You can connect to your Windows instance using a remote desktop client of your choice, and 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** ec2-18-218-237-85.us-east-2.compute.amazonaws.com

**User name** Administrator

**Password** sztfHiy4\$jf90lJe9EysvnQiT&nJb8\$6

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](#).

**Close**

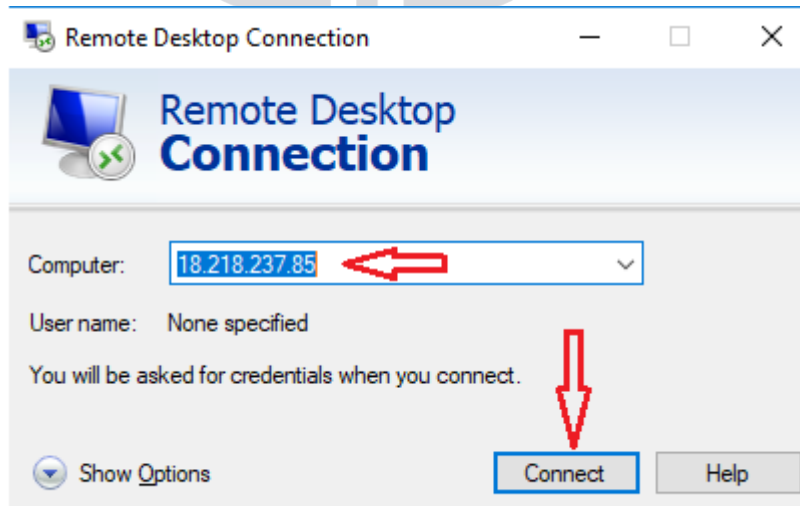
- Record the default administrator password, or copy it to the clipboard. You need this password to connect to the instance.

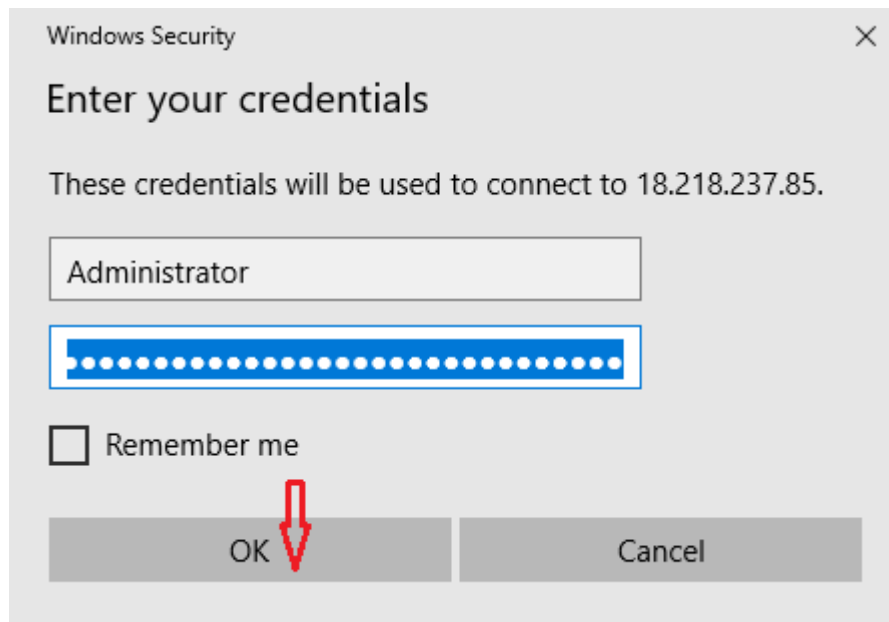
6. Choose **Download Remote Desktop File**. Your browser prompts you to either open or save the .rdp file. Either option is fine. When you have finished, you can choose **Close** to dismiss the **Connect To Your Instance** dialog box.
- If you opened the .rdp file, you'll see the **Remote Desktop Connection** dialog box.
  - If you saved the .rdp file, navigate to your downloads directory, and open the .rdp file to display the dialog box.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
Windows-Ins...	i-069bf25ab26750462	t2.micro	us-east-2a	running	2/2 checks ...	None	ec2-18-218-237-85.us-east-2.compute.amazonaws.com

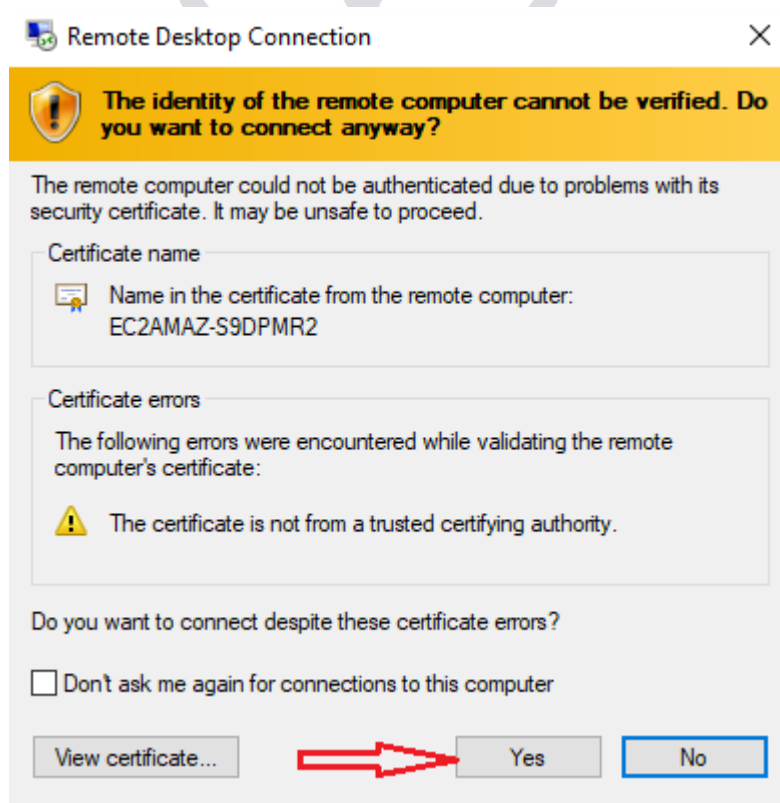
  

Instance: i-069bf25ab26750462 (Windows-Instance)		Public DNS: ec2-18-218-237-85.us-east-2.compute.amazonaws.com	
Description	Status Checks	Monitoring	Tags
Instance ID	i-069bf25ab26750462	Public DNS (IPv4)	ec2-18-218-237-85.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	18.218.237.85
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-1-207.us-east-2.compute.internal
Availability zone	us-east-2a	Private IPs	172.31.1.207





7. You may get a warning that the publisher of the remote connection is unknown. You can continue to connect to your instance.



- When prompted, log in to the instance, using the administrator account for the operating system and the password that you recorded or copied previously. If your **Remote Desktop Connection** already has an administrator account set up, you might have to choose the **Use another account** option and type the user name and password manually.

#### Note

Sometimes copying and pasting content can corrupt data. If you encounter a "Password Failed" error when you log in, try typing in the password manually.

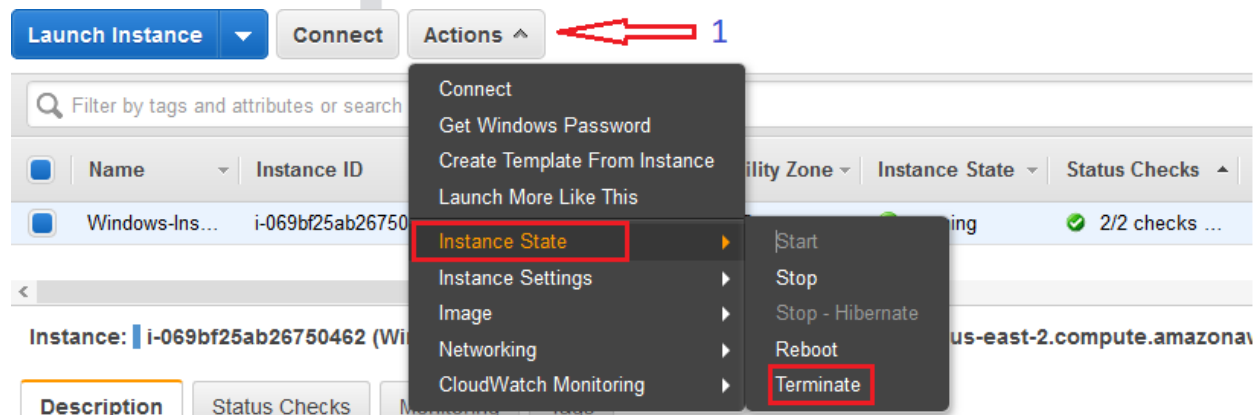
- If you receive an error while attempting to connect to your instance, see [Remote Desktop can't connect to the remote computer](#).

### Clean Up Your Instance

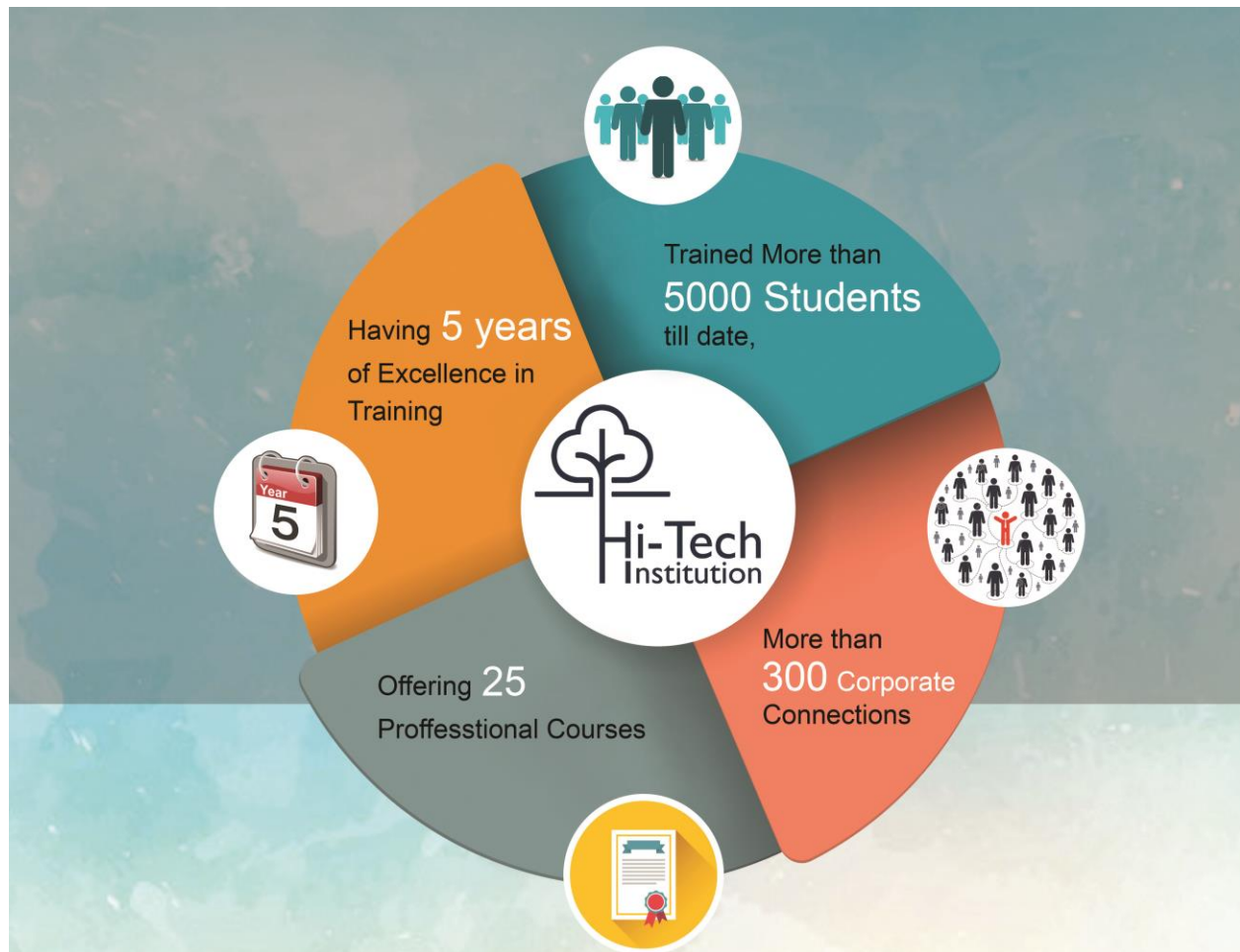
Terminating an instance effectively deletes it; you can't reconnect to an instance after you've terminated it.

#### To terminate your instance

- In the navigation pane, choose **Instances**. In the list of instances, select the instance.
- Choose **Actions, Instance State, Terminate**.
- Choose **Yes, Terminate** when prompted for confirmation.



Amazon EC2 shuts down and terminates your instance. After your instance is terminated, it remains visible on the console for a short while, and then the entry is deleted.



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KamarajNagar, Tambaram Sanatorium,  
Chennai – 600 047,  
Nearby Sanatorium Railway Station

#### VELACHERRY

No: 21, Officer Colony,  
100 feet road, VijayaNagar,  
Velacherry – 600 042,  
Nearby Sathya Home Appliances

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