

Tutorial para criação e uso de Instâncias EC2 no Laboratório AWS Educate da Disciplina de Engenharia de Software

Este tutorial se divide em três etapas:

- I. Acesso inicial ao classroom da disciplina no AWS Educate
- II. Criação de instâncias no Laboratório AWS Educate.
- III. Conexão com a instância do EC2

I. Acesso inicial ao Classroom da disciplina no AWS Educate

1. Aceitar o convite enviado por email

Your AWS Educate Application Caixa de entrada x

AWS Educate Support <support@awseducate.com>
para eu ▾

 inglês ▾ > português ▾ [Traduzir mensagem](#)

Hi -

Your educator has invited you to join AWS Educate and access a "Classroom" for your course work. A "Classroom"

Classrooms are managed by a third-party content and service provider, Vocareum ("Third-Party Content Provider"), Educate Terms and Conditions.

If you accept the Classroom invitation, the Third-Party Content Provider may allow your educator to view your Classi and your access activity.

Click [here](#) to complete the AWS Educate application process, accept your Classroom invitation and receive access

If you do not wish to proceed, ignore this email.

Thank you,

AWS Educate

← Responder

➡ Encaminhar

2. Clicar no convite e preencher o registro

Step 2/3: Tell us about yourself

University of Sao Paulo

Country

Start typing the name of your school and select from the list. If you don't see your school, enter the full name, example: Harvard University

First Name

Last Name

grafana.pcs.lot@gmail.com

Graduation Month

Graduation Year

Please provide a valid, current email issued by your institution. Example: your_name@your_school.edu

Birth Month

Birth Year

Promo Code (optional)

Frequently Asked Questions

Please click the box below to help assure that a person and not an automated program is submitting this application. If a set of letters is displayed enter them on the line. If you have any difficulty with the letters, you can click the reload icon to get a new set of letters, or click the headphones to hear audio of what to enter.

Não sou um robô

reCAPTCHA

Privacy Policy - Terms

Please note that any personal information you provide will be treated in accordance with the [AWS Educate Terms and Conditions](#) and [AWS Privacy Notice](#)

NEXT

3. Aceitar os termos do serviço

awseducate

Apply to join AWS Educate

Terms & Conditions

version of this Agreement will control if there is any conflict.

10.0. CONTRACTING ENTITY
Notwithstanding anything to the contrary in these Terms:

10.1 **India Customers.** If you are located in India, your contracting party will be Amazon Internet Services Private Limited ("AISPL"), and this Agreement is an agreement between you and AISPL, located at Ground Floor, EROS Plaza, Eros Corporate Centre, Nehru place, New Delhi, India - 110019. If you are located in India, all references to "AWS," "we," or "us" in this Agreement shall be deemed as referring to AISPL. Additionally, if you are located in India, this Agreement shall be deemed to differ from the above provisions as follows:

(a) The Amazon.com Privacy Notice defined in Section 4.1 shall be deemed to refer to the Amazon.in Privacy Notice located at: <http://www.amazon.in/gp/help/customer/display.html/?nodeId=200534380>; and

(b) Under Section 9.5, any notice by you to AISPL under this Agreement must be made by registered or certified mail to Amazon Internet Services Private Limited, Ground Floor, Eros Corporate Towers, Nehru Place, New Delhi - 110 019, India (not to Amazon Web Services, Inc).

You must scroll through the entire Terms and Conditions before accepting or declining.

I Agree

I Decline

SUBMIT

Please note that any personal information you provide will be treated in accordance with the [AWS Educate Terms and Conditions](#) and [AWS Privacy Notice](#)

1

4. Ir para o link enviado por email



5. Abrir o email

Email Verification – AWS Educate Application Caixa de entrada x

AWS Educate Support <support@awseducate.com>
para eu ▾

🌐 inglês ▾ > português ▾ [Traduzir mensagem](#)

Hello Grafana,

Thank you for submitting your AWS Educate application!

In order for your AWS Educate application to be processed, we need to verify your email address. Please use t

<https://www.awseducate.com/ConfirmEmail?ref=eede1b259c006a96d0e11ff96d41016d>

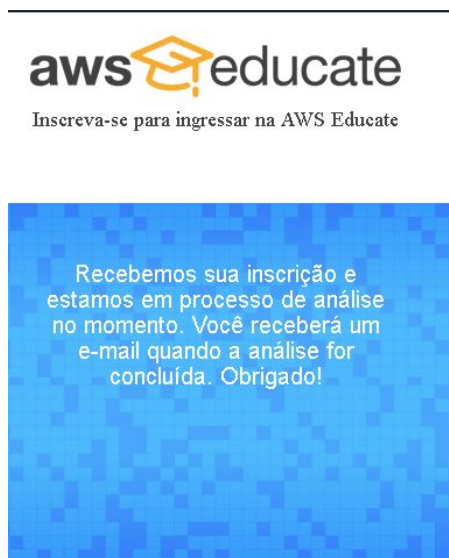
Thank you,

The AWS Educate Team

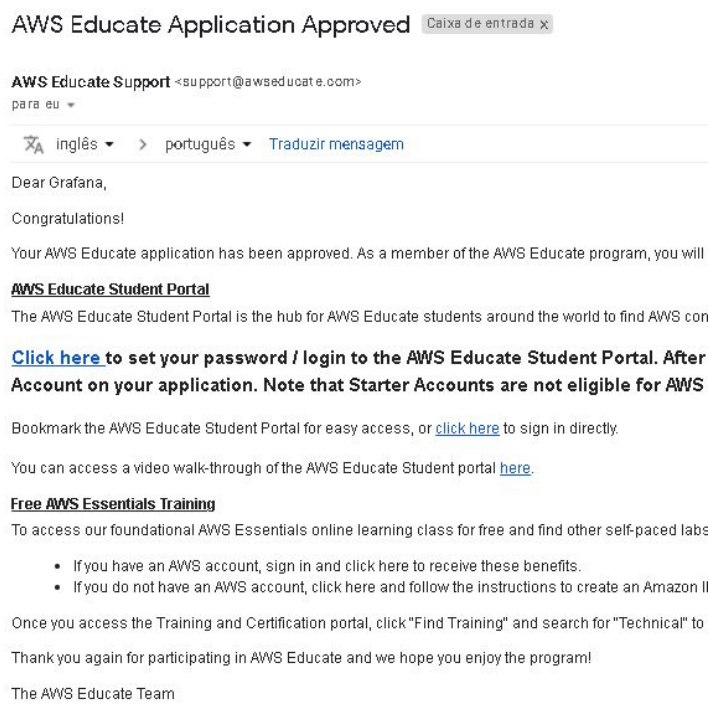
↩ Responder

➡ Encaminhar

6. Clicar no link de confirmação e esperar



7. Após uns 15 minutos, deve chegar um email e será necessário clicar no email para ir ao Portal



8. Para criar uma senha e poder logar

aws educate

Welcome to the AWS Educate Community

Definir sua senha

Sua credencial de login grafana

Nova senha

Verificar nova senha

Definir senha

A senha inserida aqui será usada para acessar a comunidade da AWS Educate. É sempre mais seguro não usar a mesma senha utilizada em outros sites.

Verifique se sua senha atende aos seguintes requisitos:

- i. A senha deve ter pelo menos 8 caracteres
- ii. A senha deve conter pelo menos uma letra minúscula
- iii. A senha deve conter pelo menos um número
- iv. A senha não pode ser igual a ou conter seu nome de usuário
- v. A senha deve conter pelo menos um dos seguintes caracteres: ! # \$ % - _ = + < >

9. Na tela inicial, na parte superior direita, clicar em My Classrooms e clicar no botão “Continue” do pop up que aparecer depois



10. Depois, clicar em Go to Classroom

Course Name ↑↓	Description	Educator ↑↓	Course End Date ↑↓	Credit Allocated Per Student ↑↓	Status
Laboratório de Engenharia de Software I (2019)	Aplicação dos conceitos de engenharia de software e de banco de dados, através do desenvolvimento controlado de um sistema de software, desde a análise de requisitos até a aceitação do software, projeto do banco dados, aplicação de técnicas de verificação e validação e geração dos documentos relevantes.	Michelet Chávez	06/26/2019	\$50	Accepted

Go to classroom


11. Na seguinte tela, aceitar os termos do contrato no fim da página.

Please read the terms and conditions shown below and click on the "I agree" button at the bottom of this page to continue.

Terms and Conditions

Welcome to the Vocareum, Inc. ("Vocareum") website located at www.vocareum.com (the "Site"). Please read these Terms of Service (the "Terms") and our Privacy Policy (<http://www.vocareum.com/privacy-policy/>) carefully because they govern your use of our Site and our web-based education and learning platform. To make these Terms easier to read, the Site and our platform are collectively called the "Services."

12. Finalmente, aparecerá o ambiente para acessar os recursos da infra-estrutura.



Vocareum Home My Classes Help grafana

Welcome to AWS Educate Classroom Account

Use your AWS Educate Classroom Account to access to a wide variety of AWS Services and start building! Click on the AWS Console button to sign in and get started.

- What regions can I use with a Classroom Account?
- Are Service Linked Roles supported?
- I can't start any resources. What happened?
- Can I create users within my Classroom Account for others to access?
- Can I create my own IAM policy within Starter Account or Classroom?
- How can I use IAM roles within AWS services?
- Are there any restrictions on AWS services in my Classroom Account?

Your Classroom Account Status

- Active**
full access ()
- \$50**
remaining credits (estimated)
- 2:60**
session time

[Account Details](#) [AWS Console](#)

Your Journey to a Cloud Career with AWS EDUCATE

CREATE YOUR PROFILE and SIGN UP FOR A JOB ROLE

VIEW PERSONALIZED RECOMMENDATIONS FOR A JOB ROLE

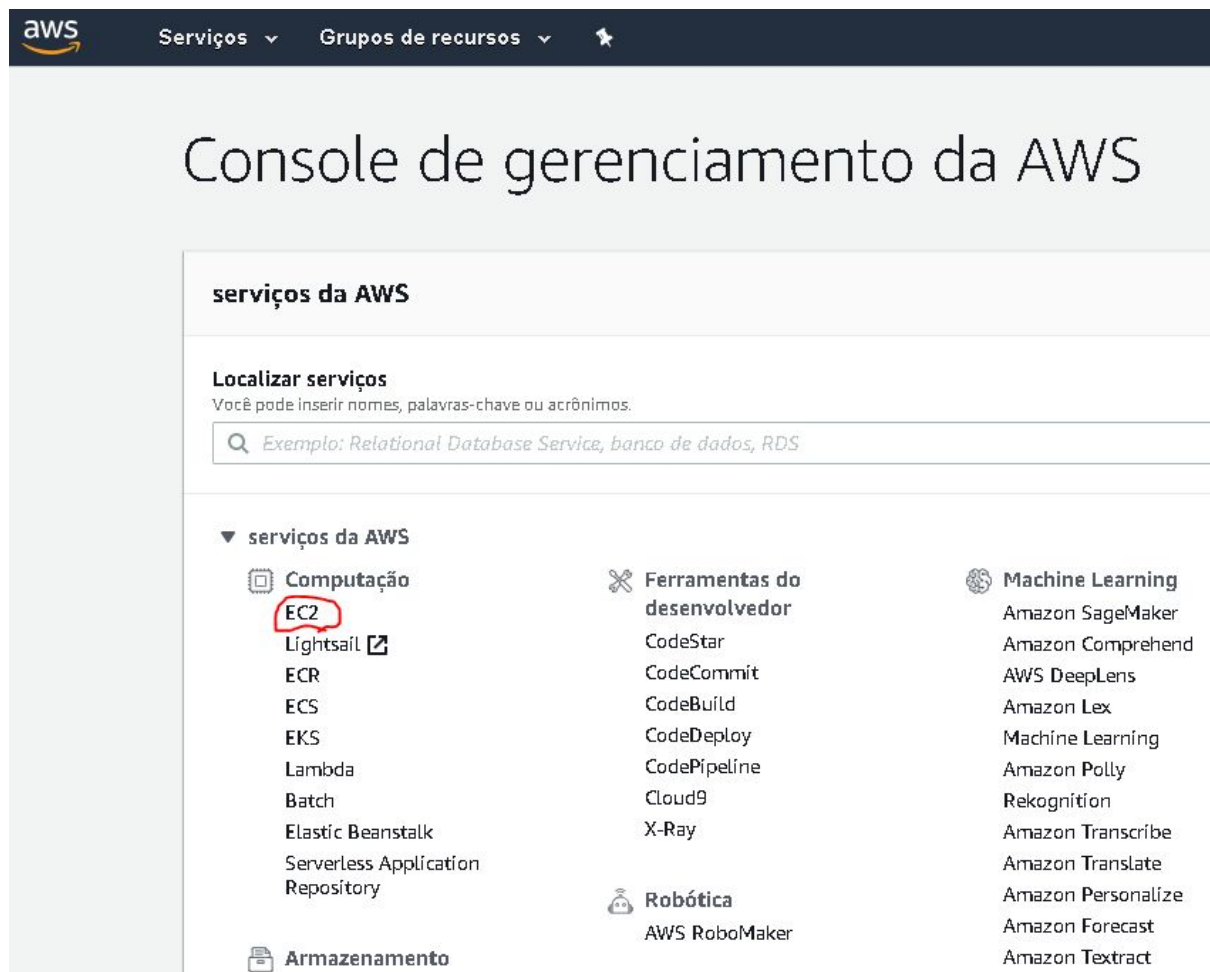
EARN CLOUD SKILLS

TEST YOUR KNOWLEDGE

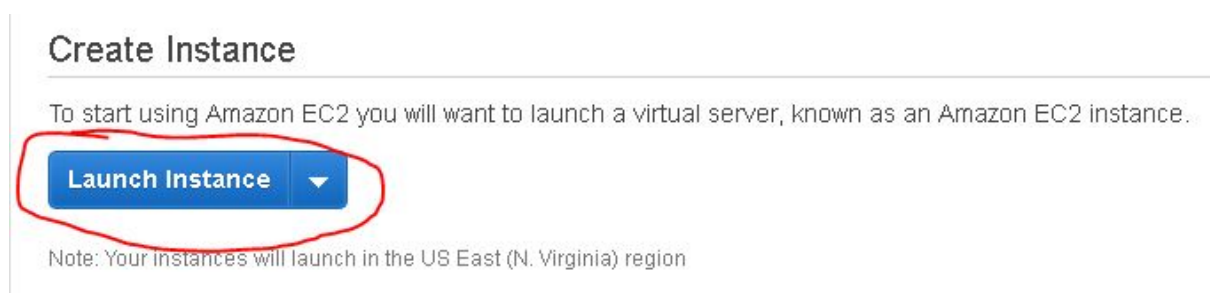
EARN CREDITS

II. Criação de instâncias no Laboratório AWS Educate


1. Uma vez na Classroom, clicar em AWS Console e aparecerá o console de gerenciamento da AWS. Expandir “serviços da aws” e clicar em EC2



2. Na tela de gerenciamento de recursos EC2, clicar em “Launch Instance”



3. Na tela seguinte, escolher o tipo de sistema operacional da instância e clicar em select. Neste exemplo vou escolher Ubuntu 18.04.

**Ubuntu Server 18.04 LTS (HVM), SSD Volume Type** - ami-024a64a8685d05041 (64-bit x86) / ami-01ac7d9c1179d7b74 (64-bit Arm)
Free tier eligible
Ubuntu Server 18.04 LTS (HVM),EBS General Purpose (SSD) Volume Type.
Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select
☒ 64-bit (x86)
☐ 64-bit (Arm)

4. Depois, escolher uma instância com 1 vCpus e 2GB de RAM (t2.small) e clicar em “Next: Configure Instance Details”

Step 2: Choose an Instance Type

Filter by: All instance types Current generation [Show/Hide Columns](#)

Currently selected: t2.small (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 2 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	a1.medium	1	2	EBS only	Yes	Up to 10 Gigabit
<input type="checkbox"/>	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit
<input type="checkbox"/>	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit

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

5. Na seguinte tela, deixar tudo como está e clicar em “Next” para adicionar armazenamento.

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-6a019b10 (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

Capacity Reservation ⓘ Open [Create new Capacity Reservation](#)

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

6. Para este exemplo, 8GB deve ser suficiente. Clicar em Next

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 ⓘ	Encryption ⓘ
Root	/dev/sda1	snap-0a12f6d1ed6c1d55e	8	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. Na tela seguinte, clicar em Next para configurar os grupos de segurança.

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

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
(127 characters maximum)	(255 characters maximum)		

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)

Cancel

Previous

Review and Launch

Next: Configure Security Group

8. O grupo de segurança é basicamente o firewall da sua instância.

Aqui vocês devem habilitar as portas que serão abertas e os ips de acesso para sua instância. Neste exemplo, estarão abertas as portas 22,80, 443, 5000 e 5432. Vocês podem abrir mais portas se quiserem. Os valores de “Security Group Name” e “Description” não foram alterados. O valor 0.0.0.0/0 significa que qualquer IP pode acessar a porta. Clicar em 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	
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
HTTP	TCP	80	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
HTTPS	TCP	443	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
PostgreSQL	TCP	5432	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
Custom TCP	TCP	5000	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕

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.

9. Na tela seguinte aparecerá um resumo da sua instância. Clicar em Launch.

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.



Your instance configuration is not eligible for the free usage tier

To launch an instance that's eligible for the free usage tier, check your AMI selection, instance type, configuration options, or storage devices. Learn more about [free usage tier](#) eligibility and usage restrictions.

[Don't show me this again](#)

▼ AMI Details

[Edit AMI](#)



Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-04b9e92b5572fa0d1

Free tier eligible

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root Device Type: ebs Virtualization type: hvm

▼ Instance Type

[Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.small	Variable	1	2	EBS only	-	Low to Moderate

▼ Security Groups

[Edit security groups](#)

[Cancel](#)

[Previous](#)

[Launch](#)

Na seguinte tela aparecerá um pop up para criar uma chave para poder acessar seu recurso via SSH. Selecionar: Create a new Pair e identifique o arquivo com um nome (no exemplo: labaws). Clicar em “Download Key Pair” e guardar num lugar seguro.

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](#).

Create a new key pair

Key pair name

labaws

[Download Key Pair](#)



You have to download the **private key file** (*.pem file) before you can continue. Store it in a **secure and accessible location**. You will not be able to download the file again after it's created.


[Cancel](#)

[Launch Instances](#)

10. Após clicar em “Download Key Pair”, será baixado o arquivo “labaws.pem” (não perca esse arquivo!) e a instância será criada. A seguinte tela deverá aparecer

Launch Status

 **Your instances are now launching**
The following instance launches have been initiated: [i-00b35b54d9c0730ee](#) [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.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

[Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)

[Create and attach additional EBS volumes](#) (Additional charges may apply)

[Manage security groups](#)

[View Instances](#)

Clicar em “View Instances” para acessar o portal de gerenciamento de instâncias do EC2.

III. Conexão com instâncias no EC2

1. Na [tela de gerenciamento de instâncias do EC2](#) deverá aparecer uma tela como esta:

The screenshot shows the AWS Management Console interface for an EC2 instance. At the top, there are buttons for 'Launch Instance', 'Connect', and 'Actions'. Below these is a search bar and a table of instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), and IPv4 Public IP. One instance is listed with ID i-00b35b54d9c0730ee, type t2.medium, in us-east-1b, running state, with 2/2 checks passed, no alarm, and public DNS ec2-18-206-227-253.compute-1.amazonaws.com and public IP 18.206.227.253. Below the table, the 'Description' tab is selected, showing details for the instance i-00b35b54d9c0730ee. The details include Instance ID, Instance state (running), Instance type (t2.medium), Elastic IPs, Availability zone (us-east-1b), Public DNS (IPv4) (ec2-18-206-227-253.compute-1.amazonaws.com), IPv4 Public IP (18.206.227.253), IPv6 IPs (-), Private DNS (ip-172-31-86-38.ec2.internal), and Private IPs (172.31.86.38).

Reparar no endereço e no IP público da sua instância. Com esses dados + a chave de acesso criada + um terminal com SSH é possível se conectar a sua instância para instalar as aplicações necessárias.

As instruções também são acessíveis se clicar no botão Connect na parte superior:

The screenshot shows the 'Connect To Your Instance' dialog box. It has a title bar with a close button. The main content area is divided into two sections. The first section, 'I would like to connect with', has two radio buttons: 'A standalone SSH client' (selected) and 'A Java SSH Client directly from my browser (Java required)'. The second section, 'To access your instance:', contains four numbered steps: 1. Open an SSH client. (find out how to [connect using PuTTY](#)); 2. Locate your private key file (labaws.pem). The wizard automatically detects the key you used to launch the instance.; 3. Your key must not be publicly viewable for SSH to work. Use this command if needed: `chmod 400 labaws.pem`; 4. Connect to your instance using its Public DNS: `ec2-18-206-227-253.compute-1.amazonaws.com`. Below these steps is an 'Example:' section with the command `ssh -i "labaws.pem" ubuntu@ec2-18-206-227-253.compute-1.amazonaws.com`. A note follows: 'Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.' At the bottom, there is a link to 'connection documentation' and a 'Close' button.

2. Num terminal com ssh, podemos fazer:

```
Prompt de Comando - ssh -i labaws.pem ubuntu@ec2-18-206-227-253.compute-1.amazonaws.com
C:\Users\adm\Downloads>chmod 400 labaws.pem

C:\Users\adm\Downloads>ssh -i labaws.pem ubuntu@ec2-18-206-227-253.compute-1.amazonaws.com
The authenticity of host 'ec2-18-206-227-253.compute-1.amazonaws.com (18.206.227.253)' can't be
established.
ECDSA key fingerprint is SHA256:uHjUNn/2aWpZpVnuYOM80hn70845CUNopBrVcRhFqKg.
Are you sure you want to continue connecting (yes/no)? yes
```

Se tudo der certo, aparecerá um prompt do usuário ubuntu na instância

```
ubuntu@ip-172-31-86-38: ~
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.15.0-1039-aws x86_64)Welcome to Ubuntu 18.04.2 LTS (
GNU/Linux 4.15.0-1039-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Wed Jun  5 13:01:28 UTC 2019

System load:  0.0           Processes:            95
Usage of /:   13.5% of 7.69GB Users logged in:      0
Memory usage: 4%           IP address for eth0: 172.31.86.38
Swap usage:   0%

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-86-38: $
```