

# SISTEMAS OPERACIONAIS

## Implantação de infraestrutura SO Linux em nuvem

Nesta aula revistaremos alguns assuntos e aprenderemos outros novos.

- 1.3 Sistemas de Arquivos
- 2. Estrutura básica de um Sistema Operacional
  - 2.1 Arquitetura computacional e sua operacionalidade
  - 2.2 Execuções, chamadas ao sistema, Interrupções e exceções
  - 2.3 Níveis de privilégios
- 3. Apresentação das arquiteturas de Sistemas Operacionais
  - 3.1 Sistemas monolíticos
  - 3.2 Sistemas micronúcleo
  - 3.3 Sistemas em camadas
  - 3.4 Máquinas Virtuais
  - 3.5 Sistemas de Contêineres
- 4. Gerenciamento de processos e tarefas
  - 4.1 Sistemas monotarefa, multitarefa e compartilhamento de tarefas
  - 4.2 Tarefas e contextos
  - 4.3 Ciclo de vida processos – gestão e hierarquia
  - 4.4 Threads: conceitos, modelos e programação

Para relembrar os sistemas de arquivos existentes em Linux, vamos implementar uma infraestrutura virtualizada, usando o solution provider AWS.

A Bandtec é parceira da AWS Academic. Sua formação recomenda os seguintes materiais:

### AWS Academy Cloud Foundations (Fundamentos de nuvem da AWS Academy)

O curso é introdutório e oferece uma visão geral detalhada dos seguintes tópicos: conceitos da nuvem, principais serviços da AWS, segurança, arquitetura, definição de preço e suporte. Ele possui 20 horas de conteúdo de curso e prepara os alunos para conseguir a certificação AWS Certified Cloud Practitioner.

### AWS Academy Cloud Architecting (Arquitetura de nuvem da AWS Academy)

O curso de nível intermediário cobre os fundamentos na construção da infraestrutura de TI na AWS e ajuda os estudantes a desenvolverem habilidades que eles precisam para obter a certificação AWS Certified Solutions Architect – Associate. Esse curso tem aproximadamente 40 horas de conteúdo entregue por meio de palestras, laboratórios práticos e trabalho em projetos.

### AWS Academy Cloud Operations (Operações de nuvem da AWS Academy)

Esse curso de nível intermediário preparará os alunos para buscar DevOps sob demanda, suporte e papéis de operações nas nuvens no nível de entrada. Ele também os irá ajudar a se preparar para exame AWS Certified SysOps Administrator – Associate. Por meio de estudos de casos, demonstrações e atividades de laboratório, os alunos aprenderão como resolver problemas em cenários diversos e automatizar a implantação de redes e sistemas na AWS. Esse curso tem aproximadamente 40 horas de conteúdo fornecido por meio de palestras e laboratórios práticos.

## SISTEMAS OPERACIONAIS

O cadastro deve ser feito por vocês. Tenham atenção a escolha da Faculdade durante o processo. Vocês devem ter recebido um email.

Entre no site:

<https://aws.amazon.com/pt/education/awseducate/>



Escolha a Opção Student:



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

# SISTEMAS OPERACIONAIS

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**State (where your school is located)**

**First Name**

**Last Name**

**Department**

**Email**  
Please provide a valid, current email issued by your institution. Example: your\_name@your\_school.edu

**Title**  
Please specify your official title at the institution (eg Assistant Professor)

**Course Level**

Passo a passo depois da inscrição:

Aws educate

<https://aws.amazon.com/pt/education/awseducate/>



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senha:

Su@Senh@#123

# SISTEMAS OPERACIONAIS

## LABORATÓRIO EC2 AWS – via AWS console

### Objetivo deste laboratório:

Este laboratório provê uma visão geral do lançamento, redimensionamento, gerenciamento e monitoramento da Instância Amazon EC2

### O que é EC2?

EC2 é a Amazon Elastic Compute Cloud. Que é um serviço web que fornece redimensionamento da capacidade computacional em nuvem. Ele é projetado para fazer computação em nuvem web escalável e fácil para desenvolvedores.

A EC2 é uma simples interface de serviço web que permite você obter e configurar capacidade com o mínimo de dificuldade. Ele fornece à você um completo controle de seus recursos computacionais e deixa você rodar na Amazon's ambiente de computação comprovada. É real. A Amazon EC2 reduz o tempo requerido para obter e inicializar uma nova instância de servidor em minutos, permitindo a você rapidamente escalar capacidade, ambos aumentando ou diminuindo, conforme os requisitos da sua carga computacional.

Amazon EC2 é uma escolha econômica que permite você pagar somente pela capacidade que você usa atualmente. Amazon EC2 fornece para os desenvolvedores ferramentas para construir aplicações resilientes as falhas e isolar elas mesmas para cenários de falhas.

### Tópicos cobertos para suas habilidades neste laboratório:

- Iniciar um servidor web com proteção habilitada final.
- Monitorar sua Instância EC2
- Modificar um grupo de segurança que seu web server está usando para fornecer acesso HTTP.
- Redimensionar conforme demanda sua instância EC2 AWS
- explorar o limites da EC2
- Teste final de proteção
- Finalizar sua Instância EC2.

### Como faremos?

- 1) No início da página tem um botão de

A green rectangular button with the text "Start Lab" in white.

Ao clicar neste botão, iniciará o processo de provisionamento do seu recurso de laboratório.

Uma estimativa de tempo para provisionar seu recurso de laboratório será mostrada. Você deve aguardar seu recurso de laboratório estar provisionado antes de continuar.

Se for solicitado um token, use o que lhe foi distribuído (ou os créditos que você comprou)

- 2) Abra seu lab clicando em [Open Console](#)

# SISTEMAS OPERACIONAIS

Este logará você automaticamente dentro da AWS Management Console.

Neste caso não escolha a Região, a menos que seja instruído

Atenção:

Erro de login as credenciais da federada. Aguarde, sua credencial de login federada está sendo criada. Por favor, tente novamente depois de 30 segundos.

Se você recebeu esta mensagem:

- Feche o browser lab para retornar a sua janela inicial.
- Espere poucos segundos
- Clic em **Open Console** novamente.

Agora você poderá habilitar o acesso a AWS Management Console.

Se ocorrer erro inicie novamente.

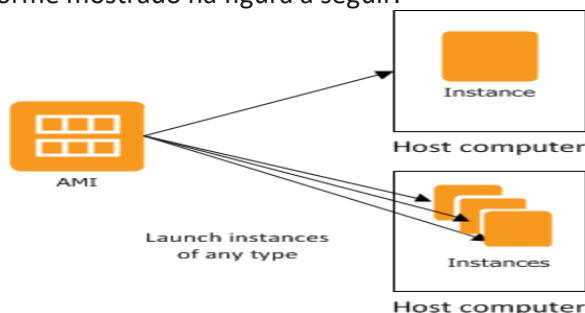
## TAREFA 1:

- A) Nesta tarefa, você iniciará a instância AWS EC2 com “ termination protection”, ou seja, finalização protegida. A finalização protegida previne você de finalizar a instância EC2 acidentalmente. Você poderá fazer um deploy em sua instância com o User Data script que iniciará seu deploy em um simples web server.
- B) Em AWS Management Console no menu **SERVICES**, click em EC2.
- C) Click em **Launch Instance**

### Parada do conhecimento

Qual a diferença entre uma **instância** e um **AMI**?

Uma **Imagem de máquina da Amazon (AMI)** é um modelo que contém uma configuração de software (por exemplo, sistema operacional, servidor de aplicativo e aplicativos). A partir de uma AMI, execute uma **instância**, que é uma cópia da AMI que roda como servidor virtual na nuvem. Você pode executar várias instâncias de uma AMI, conforme mostrado na figura a seguir.



Suas instâncias continuarão sendo executadas até que você as interrompa ou encerre, ou até que elas falhem. Se uma instância falhar, você pode executar uma nova instância a partir da AMI.

## SISTEMAS OPERACIONAIS

Já a **instância**, é um servidor virtual na nuvem. A configuração na execução é uma cópia da AMI que você especificou ao executar a instância. Você pode executar diferentes tipos de instâncias a partir de uma única AMI. O *tipo de instância* determina essencialmente o hardware do computador host usado para sua instância. Cada tipo de instância oferece recursos diferentes de computação e memória. Selecione um tipo de instância de acordo com a quantidade de capacidade de memória e computação necessária para o aplicativo ou software que você pretende executar na instância.

Especificações do Hardware para cada tipo de instância do Amazon EC2:

O Amazon EC2 oferece uma ampla seleção de tipos de instâncias otimizadas para atender a diferentes casos de uso. A seguir alguns modelos e exemplos, preste atenção em como uma thread de CPU está associada a uma instância de vCPU. Para saber mais detalhes acesse: [https://docs.aws.amazon.com/pt\\_br/AWSEC2/latest/UserGuide/ec2-instances-and-amis.html](https://docs.aws.amazon.com/pt_br/AWSEC2/latest/UserGuide/ec2-instances-and-amis.html)

As instâncias A1 do Amazon EC2 oferecem economia substancial e são ideais para cargas de trabalho com escalabilidade horizontal baseadas em Arm com suporte do amplo ecossistema do Arm. As instâncias A1 são as primeiras instâncias do EC2 baseadas em processadores AWS Graviton, que oferecem núcleos Arm Neoverse de 64 bits e silício personalizado projetado pela AWS.

**Recursos:**

- Processador AWS Graviton Custom personalizado com núcleos Arm Neoverse de 64 bits
- Suporte a redes avançadas com até 10 Gbps de largura de banda de rede

Figura 1 – Nomes de instâncias oferecidas pelo AWS

Instância	vCPU*	Créditos de CPU/hora	Mem (GiB)	Armazenamento	Performance de rede
t2.nano	1	3	0,5	Somente EBS	Baixa
t2.micro	1	6	1	Somente EBS	Baixa a moderada
t2.small	1	12	2	Somente EBS	Baixa a moderada
t2.medium	2	24	4	Somente EBS	Baixa a moderada
t2.large	2	36	8	Somente EBS	Baixa a moderada
t2.xlarge	4	54	16	Somente EBS	Moderada
t2.2xlarge	8	81	32	Somente EBS	Moderada

Figura 2 – configurações dos tipos de instâncias AWS

Cada vCPU é um thread de um núcleo Intel Xeon ou de um núcleo AMD EPYC, exceto para instâncias M6g, A1, T2 e m3.medium.

Cada vCPU em instâncias M6g é um núcleo do processador AWS Graviton2.

Cada vCPU em instâncias A1 é um núcleo de um processador AWS Graviton.

Figura 3 – Cada vCPU é uma thread do core processador

Após executar a instância, ela se parecerá como um host tradicional e você poderá interagir com ela assim como com qualquer computador. Você tem controle total de suas instâncias. Você pode usar o **sudo** para executar os comandos que exigem privilégios raiz.

Atenção:

A conta da AWS tem limite quanto ao número de instâncias que você pode ter em execução. Além disso uma conta básica tem armazenamento local, os dados serão persistidos enquanto a máquina estiver funcionando. Para armazenamento sem um servidor de dados, há soluções sem gratuidade que são instâncias com EBS – Elastic Block Store.

# SISTEMAS OPERACIONAIS


Então vamos iniciar o nosso laboratório. Clic em Start

← Introduction to Amazon EC2

Start Lab
01:00:00

## Introduction to Amazon EC2

1 hour 1 Credit ★★★★★ Rate Lab



aws training and certification


**Pede o cartão de crédito de 1 USD**

Vamos por outro caminho. Criar uma class room pelo Educate how educator

<https://www.awseducate.com/educator/s/classroomsandcredits>

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Content
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MARISE MIRANDA

Content Saved: 0
Courses Taken: 0

Preferred Language:  
Portuguese

### Request a centralized AWS Credit to use for your class

Educators at member institutions can request a centralized AWS credit code to support setting up shared resources for homework, labs, and projects. The free AWS usage credits available under this program is limited to \$50 per participating student. A centralized AWS credit can be entered into a single AWS account, and access can be provided to those shared AWS resources using Amazon Identity and Access Management (see <http://aws.amazon.com/iam> for more details).

This approach can be useful for classes where you want to centrally manage an AWS credit for your class, rather than asking each student to replicate the AWS resources needed for the course and manage those AWS resources independently.

If you would like to request the centralized AWS credit option, please complete the request form below **at least one month in advance of your course start date.**

Criei o curso para a Turma A



## SISTEMAS OPERACIONAIS

\* Course Name

Provisionamento de Instância Linux

\* Course Number

SO1 ADS A

Course Description

Provisionar uma instância Linux na nuvem para o projeto integrado

\* Course Info Link

<http://moodle.bandtec.com.br/course/view.php?id=3966#section-9>

\* Course Start Date

2020-04-15



\* Course End Date

2020-07-10



\* Credits Needed By Date

2020-07-10



\* Credit Amount Per Student

50.00

\* Estimated Enrollment

60

☒ Would you be interested in contributing some or all of your course content?

Cancel

Submit Course Credit Request

Como ficou no Moodle para a Turma A

### ✚ Instância Linux ✎

✚  Instância linux AWS ✎

Criar uma conta em AWS como student. Não inserir cartão de crédito

Endereço: <http://moodle.bandtec.com.br/course/view.php?id=3966#section-9>


Clique o link <https://aws.amazon.com/pt/education/awseducate/> para abrir o recurso



# SISTEMAS OPERACIONAIS

Voltando ao portal do instrutor AWS

Selecionei os dois abaixo:




### AWS Cloud Basics

Services enabled: EC2, S3, RDS, Cloud9, CloudFormation, Tag

Use the AWS Cloud Basics to introduce students to fundamentals of AWS and to cloud computing concepts. Student can get their first Linux instance up in the cloud with EC2, store and access file to create a static web site using S3, create and operate their first database using RDS, and learn about security and access control with IAM.


[Read more](#)



### Big Data

Services enabled: EC2, Athena, DynamoDB, EMR, Glue, RDS, S3, Cloud9, CloudFormation, Tag

Teach big data applications such as clickstream analytics, fraud detection, recommendation engines, event-driven ETL, and internet-of-things processing with the Big Data template. Easily provision EMR clusters for Hadoop, Spark, and other big data learning. Learn SQL vs NOSQL using RDS and DynamoDB.




### Machine Learning and AI

Services enabled: Machine Learning, Rekognition, Lex, Polly, Comprehend, Translate, Transcribe, SageMaker, Deeplens, IOT Core, IOT GreenGrass, Cloud9, CloudFormation, Tag

Build a chatbot, access voice services with Lex and Polly, use image Rekognition, or use sophisticated machine learning models tools like MXNet and Tensor flow to create general predictions with the Machine Learning template. Use deeplens

[Read more](#)



### Building Scalable Websites

Services enabled: EC2, S3, RDS, ELB, Cloud9, CloudFormation, Tag

Introduce students to building and hosting scalable, elastic websites on AWS. Use EC2 for compute, S3 to store site content, and ELB to dynamically scale based on demand.

Step 1: Download the template.  
[Download Email Address Upload Template](#)

Step 2: [Update the template.](#)

Step 3: Select a file to upload by clicking 'Choose File'.

Email\_BANDT...RMA\_A.xlsx

Esta é a visão do professor:

# SISTEMAS OPERACIONAIS

awseducate

Content Classrooms & Credits Professional Development AWS Account Profile

MARISE MIRANDA

Content Saved: 0 Courses Taken: 0

Preferred Language: Portuguese

## My Classrooms

Check on the status of your Classroom requests or go to your Classroom. Click on a Classroom name to view the details you provided in your request.



### Classrooms where I am an Educator

Course Name	Request Date	Course Number	Start Date	Credit Allocated Per Student	# Invited Students	# Students Joined	Status
Provisionamento de Instância Linux	04/05/2020	SO1 ADSA	04/06/2020				Under Review

## Provisionamento de Instância Linux


[BACK TO MY CLASSROOMS](#)
[BACK TO CLASSROOMS & CREDITS](#)

### My Classroom Details

#### Course Name

Provisionamento de Instância Linux [Edit](#)

#### Course Template(s) Selected

AWS Cloud Basics  
Building Scalable Websites

#### Course Number

SO1 ADSA [Edit](#)

#### Course Description

Provisionar uma Instância Linux na nuvem para projeto integrado - individual

#### Course Info Link

<http://moodle.bandtec.com.br/course/view.php?id=3966#section-9>

#### Willing to Share

Yes

#### Classroom Status

Under Review

#### Classroom Dates

04/06/2020 - 06/12/2020 **68 days left!**

#### Requested Date

04/05/2020

#### AWS Promotional Credit Requested Per Student

\$50 US

#### AWS Promotional Credit Allocated Per Student

#### Email Addresses Uploaded

53

#### Actual / Estimated Enrollment

0 / 53

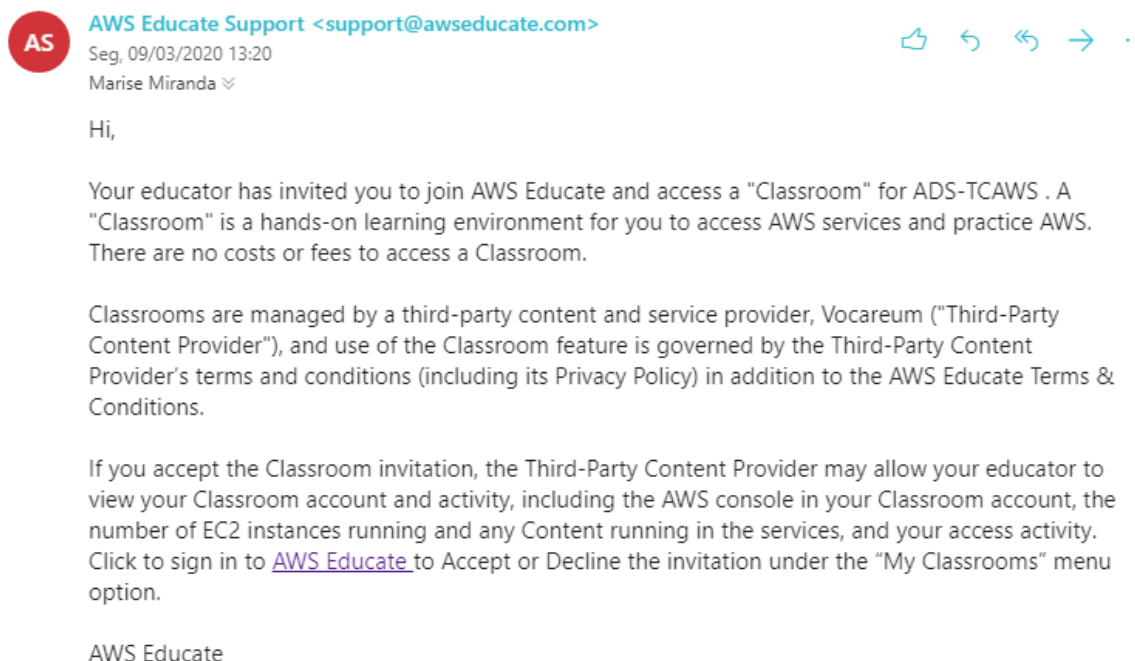
**Veja exemplo de visão do estudante:**

### Classrooms where I am a Student

Course Name ↑↓	Description	Educator ↑↓	Course End Date ↑↓	Credit Allocated Per Student ↑↓	Status
ADS-TCAWS	Ambiente de Teste.	Vivian Silva	06/29/2020	\$50	<div>Accept Invitation</div> <div>Decline</div>

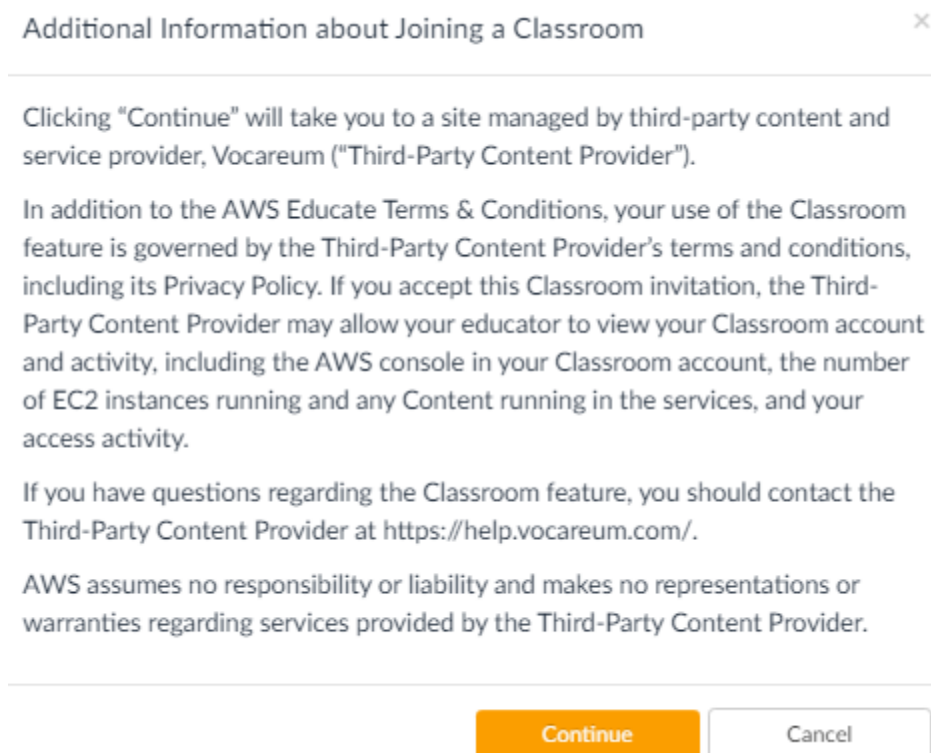
# SISTEMAS OPERACIONAIS

Como o email vem para os alunos



Vou aceitar o invite como estudante:


Aparece uma mensagem:



# SISTEMAS OPERACIONAIS

Está rodando:

## Classrooms where I am a Student

Course Name ⓘ	Description	Educator ⓘ	Course End Date ⓘ	Credit Allocated Per Student ⓘ	Status
ADS-TCAWS	Ambiente de Teste.	Vivian Silva	06/29/2020	\$50	

## Classrooms where I am a Student

Course Name ⓘ	Description	Educator ⓘ	Course End Date ⓘ	Credit Allocated Per Student ⓘ	Status
ADS-TCAWS	Ambiente de Teste.	Vivian Silva	06/29/2020	\$50	Accepted <a href="#">Go to classroom</a> ⓘ

### Confirm

Clicking "Continue" will take you to a site managed by third-party content and service provider, Vocareum ("Third-Party Content Provider").

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My Classes

Help

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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](http://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."

Using the functionality of our Services, teachers can create, customize and administer educational courses and invite students to participate in a class taught and supervised by the teacher using the online tools provided by Vocareum. Subject to your compliance with these Terms, Vocareum will make the Services available to you solely for the purpose of your internal, non-commercial use.

#### 1. Agreement to Terms

By using our Services, you agree to be bound by these Terms. If you don't agree to these Terms, do not use the Services. If you are accessing and using the Services on behalf of an educational institution (such as your employer or the educational institution in which you are enrolled) or other legal entity, you represent and warrant that you have the authority to bind that educational institution or other legal entity to these Terms. In that case, "you" and "your" will refer to that educational institution or other legal entity.

#### 2. Changes to Terms or Services

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Vc vai aceitar os termos e condições com respeito as politicas de uso e privacidade.

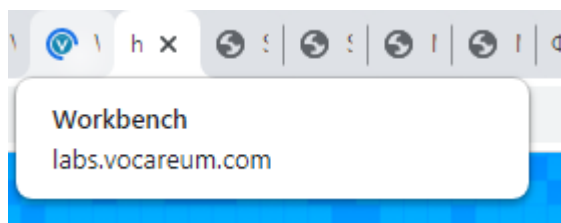
## Contact Information

If you have any questions about these Terms or the Services, please contact Vocareum at [info@vocareum.com](mailto:info@vocareum.com)

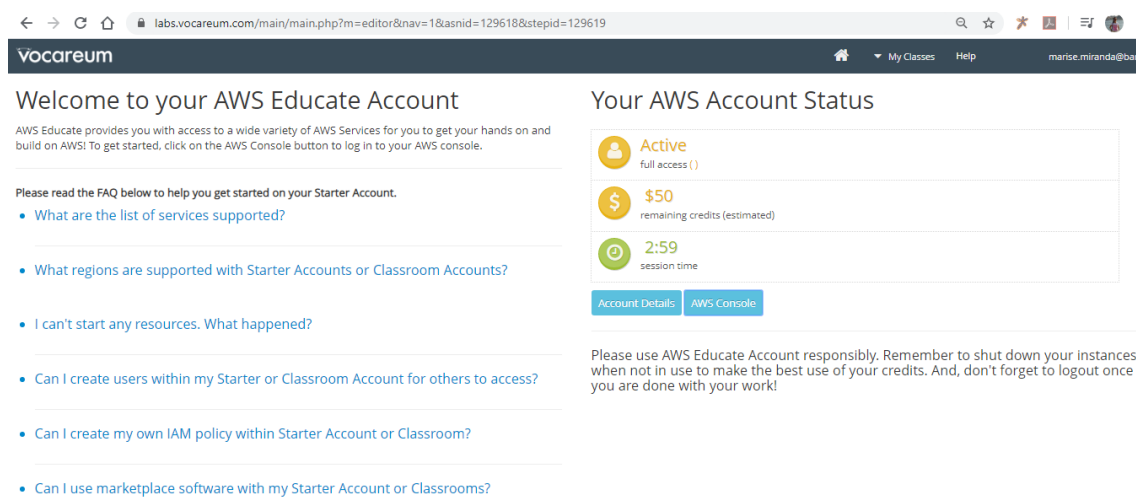
[I Agree](#)

Clique em I Agree

Espere



Vc só vê uma página em branco



## Credentials

### AWS Access

Session started at: 2020-04-05T17:05:03-0700  
Session to end at: 2020-04-05T20:05:03-0700  
Remaining session time: 2h55m55s

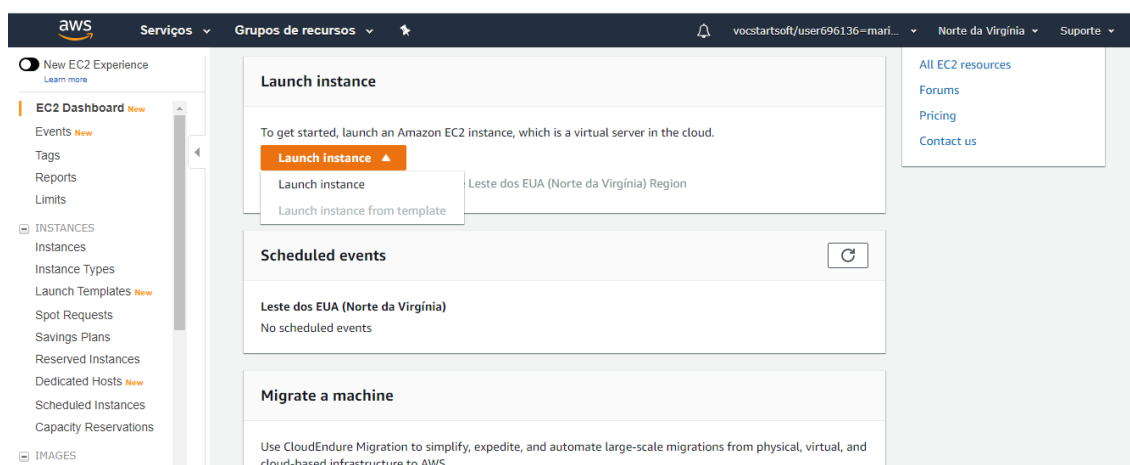
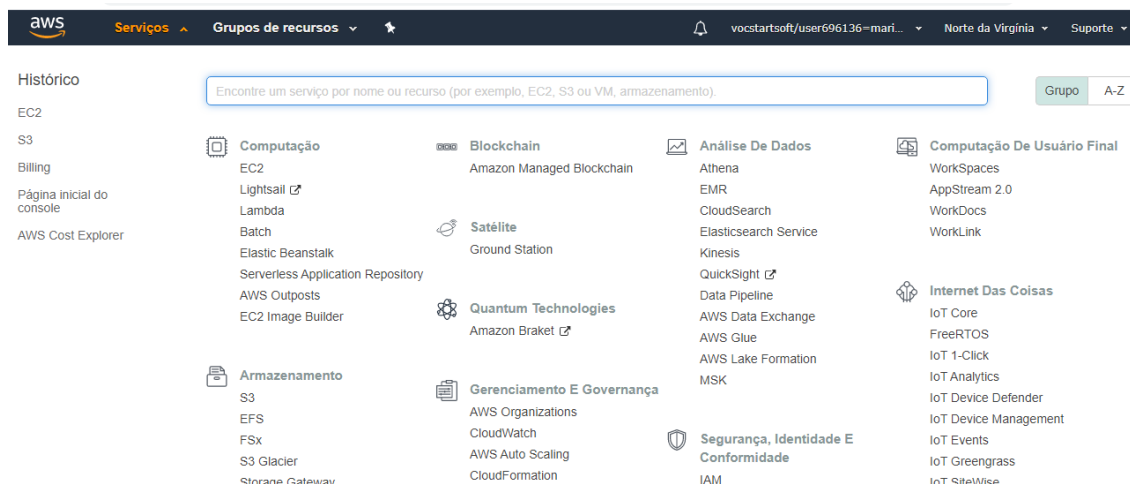
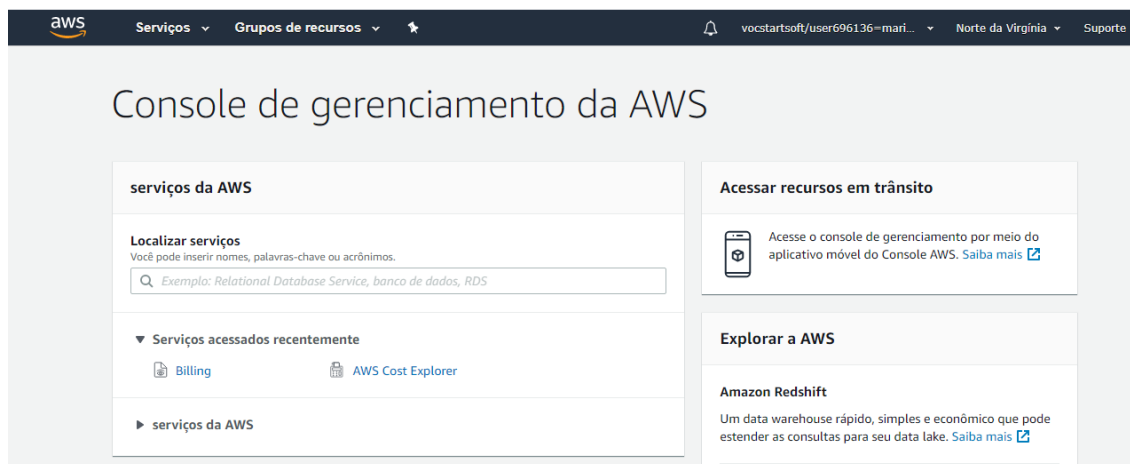
Term: 94 days 06:52:27

AWS CLI:

[Show](#)

# SISTEMAS OPERACIONAIS

Visão da console aluno:



# SISTEMAS OPERACIONAIS

**aws** Serviços Grupos de recursos

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](#)

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** 1 to 18 of 18 AMIs

**My AMIs**

**AWS Marketplace**

**Community AMIs**

☒ Free tier only

**Amazon Linux** **Free tier eligible** **Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-0fc61db8544a617ed (64-bit x86) / ami-0f90a34c9df977efb (64-bit Arm) **Select**

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.

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

**Amazon Linux** **Free tier eligible** **Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type** - ami-09a5b0b7edf08843d **Select**

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

64-bit (x86)

## Escolhe o Ubuntu

**Ubuntu Server 18.04 LTS (HVM), SSD Volume Type** - ami-07ebfd5b3428b6f4d (64-bit x86) / ami-0400a1104d5b9caa1 (64-bit Arm) **Select**

**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

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

Análise as informações da instância:

Versão do sistema operacional:

Tipo de processador:

Tipo de imagem:

Volume:

Clique em select

## 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 types Current generation 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 (GB)	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 <b>Free tier eligible</b>	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

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

Análise cada parte da instância

Vamos utilizar:



# SISTEMAS OPERACIONAIS

## 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 types** **Current generation** [Show/Hide Columns](#)

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

General purpose instances provide a balance of compute, memory, and network resources, and are a good choice for many applications. They are recommended for small and medium databases, data processing tasks that require additional memory, caching fleets, and for running backend servers for SAP, Microsoft SharePoint, and other enterprise applications.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	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 Free tier eligible	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

## Step 2: Choose an Instance Type

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Filter by: **All instance types** **Current generation** [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 (GB)	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 Free tier eligible	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

Micro instances are eligible for the AWS free usage tier. For the first 12 months following your AWS sign-up date, you get up to 750 hours of micro instances each month. When your free usage tier expires or if your usage exceeds the free tier restrictions, you pay standard, pay-as-you-go service rates. [Learn more](#) about free usage tier eligibility and restrictions.

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

## Step 2: Choose an Instance Type

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

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

The number of virtual CPUs for the instance.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	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 Free tier eligible	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

## Step 2: Choose an Instance Type

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

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

The local instance store volumes that are available to the instance. The data in an instance store is not permanent - it persists only during the lifetime of the instance.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	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 Free tier eligible	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

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

# SISTEMAS OPERACIONAIS

**aws** Serviços Grupos de recursos vocstartsoft/user696136~mar... Norte da Virgínia Suporte

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: All instance types Current generation

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

Indicates whether the instance type supports EBS optimization. An EBS-optimized instance provides additional, dedicated throughput for Amazon EBS I/O. This provides improved performance for your Amazon EBS volumes and enables instances to use provisioned IOPs fully.

	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

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Filter by: All instance types Current generation Show/Hide Columns

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

Indicates the performance level of the rate of data transfer.

	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

Cancel Previous **Review and Launch** Next: Configure Instance Details

## Step 2: Choose an Instance Type

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Filter by: All instance types Current generation Show/Hide Columns

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

Indicates whether the instance type supports IPv6 Addresses

	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

Cancel Previous **Review and Launch** Next: Configure Instance Details

Observe:

# SISTEMAS OPERACIONAIS

aws Serviços Grupos de recursos

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

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Filter by: All instance types Current generation 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	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	EBS only	-	Low to Moderate	Yes

Columns

- ☐ ECUs
- ☒ vCPUs
- ☐ Physical Processor
- ☐ Clock Speed
- ☒ Memory (GiB)
- ☒ Instance Storage (GB)
- ☒ EBS-Optimized Available
- ☒ Network Performance
- ☒ IPv6 Support
- ☐ Processor Architecture
- ☐ AES-NI
- ☐ AVX
- ☐ Turbo

Cancel Previous **Review and Launch** Next: 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

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Filter by: All instance types Current generation

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

	Family	Type	ECUs	vCPUs	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	Variable	1	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	Variable	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	Variable	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	Variable	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	Variable	2	EBS only	-	Low to Moderate	Yes

The number of EC2 compute units for the instance, to help you compare CPU capacity between different instance types. One EC2 compute unit provides the equivalent CPU capacity of a 1.0-1.2 GHz 2007 Opteron or 2007 Xeon processor.

☒ vCPUs

☐ Physical Processor

☐ Clock Speed

☒ Memory (GiB)

☒ Instance Storage (GB)

☒ EBS-Optimized Available

☒ Network Performance

☒ IPv6 Support

☐ Processor Architecture

☐ AES-NI

☐ AVX

☐ Turbo

## Step 2: Choose an Instance Type

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Filter by: All instance types Current generation 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	Physical Processor	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	Intel Xeon Family	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	Intel Xeon Family	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	Intel Xeon Family	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	Intel Broadwell E5-2686v4	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	Intel Broadwell E5-2686v4	8	EBS only	-	Low to Moderate	Yes

# SISTEMAS OPERACIONAIS

## Step 2: Choose an Instance Type

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Filter by: **All instance types** **Current generation** [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	Clock Speed	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	2.4 GHz	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	2.5 GHz	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2.5 GHz	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	2.3 GHz	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	2.3 GHz	8	EBS only	-	Low to Moderate	Yes

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

**Auto-assign Public IP**

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

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

**IAM role**  [Create new IAM role](#)

**Shutdown behavior**

**aws** **Serviços** **Grupos de recursos** **vocstartsoft/user696136=mari...** **Norte da Virgínia** **Suporte**

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

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**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](#)

**IAM role**  [Create new IAM role](#)

# SISTEMAS OPERACIONAIS

Serviços

Grupos de recursos

★

vocstartsoft/user696136=mar...

Norte da Virginia

Suporte

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

Shutdown behavior

Terminate

Stop - Hibernate behavior

☐ Enable hibernation as an additional stop behavior

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 Inference

☐ Add an Elastic Inference accelerator  
Additional charges apply.

T2/T3 Unlimited

☐ Enable  
Additional charges may apply

File systems

Add file system

Create new file system

Network interfaces

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses	IPv6 IPs
eth0	New network interface	subnet-3c957f5a	Auto-assign	Add IP	Add IP

## 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-0e078112eedec9db	8	Magnetic (standard)	N/A	N/A	<input type="checkbox"/>	Not Encrypt
EBS	/dev/sdb	snap-02231e603ec9b	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input type="checkbox"/>	Not Encrypt

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

Serviços

Grupos de recursos

★

vocstartsoft/user696136=mar...

Norte da Virginia

Suporte

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 (128 characters maximum)	Value (256 characters maximum)	Instances	Volumes
WebserverSO	WebserverSO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add another tag (Up to 50 tags maximum)

# SISTEMAS OPERACIONAIS

aws

Serviços

Grupos de recursos

vocstartsoft/user696136=marl...

Norte da Virginia

Suporte

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 198.0.0.0/32	SSH

[Add Rule](#)

## Boot from General Purpose (SSD)

General Purpose (SSD) volumes provide the ability to burst to 3000 IOPS per volume, independent of volume size, to meet the performance needs of most applications and also deliver a consistent baseline of 3 IOPS/GiB.

- ☒ Make General Purpose (SSD) the default boot volume for all instance launches from the console going forward (recommended).
- ☐ Make General Purpose (SSD) the boot volume for this instance.
- ☐ Continue with Magnetic as the boot volume for this instance.

Free tier eligible customers can get up to 30GB of General Purpose (SSD) storage.

[Next](#)

### 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.

AMI Details

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-07ebf5b3428b6f4d

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: sbs Virtualization type: hvm

Edit AMI

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

Edit instance type

Security Groups

Security group name

launch-wizard-1

Description

launch-wizard-1 created 2020-04-05T22:19:05.534-03:00

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	198.0.0.0/32	SSH

Edit security groups

# SISTEMAS OPERACIONAIS

## Step 7: Review Instance Launch

### ▼ Instance Details

[Edit instance details](#)

Purchasing option		On demand		
Number of instances	1			
Network	vpc-9d7472d0			
Subnet	subnet-3c957f6a			
EB S-optimized	No			
Monitoring	No			
Termination protection	Yes			
Shutdown behavior	Terminate			
Stop - Hibernate behavior	Disabled			
Capacity Reservation	none			
IAM role	EMR_EC2_DefaultRole			
Tenancy	default			
T2/T3 Unlimited	Disabled			
Host ID				
Host resource group name				
Affinity	Off			
Kernel ID	Use default			
RAM disk ID	Use default			
Metadata accessible	Enabled			
Metadata version	V1 and V2 (token optional)			
Metadata token response hop limit	1			
User data				
Assign Public IP	No			
Assign IPv6 IP	Use subnet setting (Enable)			
Network interfaces				
Device	Network Interface	Subnet	Primary IP	Secondary IP Addresses
eth0	New network interface	subnet-3c957f6a	Auto-assign	

### ▼ Storage

[Edit storage](#)

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	8795-0a078112eedec9db	8	gp2	100 / 3000	N/A	No	Not Encrypted
ebs	/dev/sdb	8795-02231ea03ec9d517g	8	gp2	100 / 3000	N/A	No	Not Encrypted

[Previous](#) [Next](#)

## 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

No key pairs found



### No key pairs found

You don't have any key pairs. Please create a new key pair by selecting the **Create a new key pair** option above to continue.

[Cancel](#)
[Launch Instances](#)



# SISTEMAS OPERACIONAIS

## 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](#).

Proceed without a key pair

☒ I acknowledge that I will not be able to connect to this instance unless I already know the password built into this AMI.

Cancel

Launch Instances

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-01e12b8c8b141d413	t2.micro	us-east-1a	running	Initializing	None	

Below are your CloudWatch metrics for the selected resources (a maximum of 10). Click on a graph to see an expanded view. All times shown are in UTC. [View all CloudWatch metrics](#)

**CPU Utilization (Percent)**

1  
0.75  
0.5  
0.25  
0

4/6 4/6

01:00 01:30

**Disk Reads (Bytes)**

1  
0.75  
0.5  
0.25  
0

4/6 4/6

01:00 01:30

**Disk Read Operations (Operations)**

1  
0.75  
0.5  
0.25  
0

4/6 4/6

01:00 01:30

**Disk Writes (Bytes)**

1  
0.75  
0.5

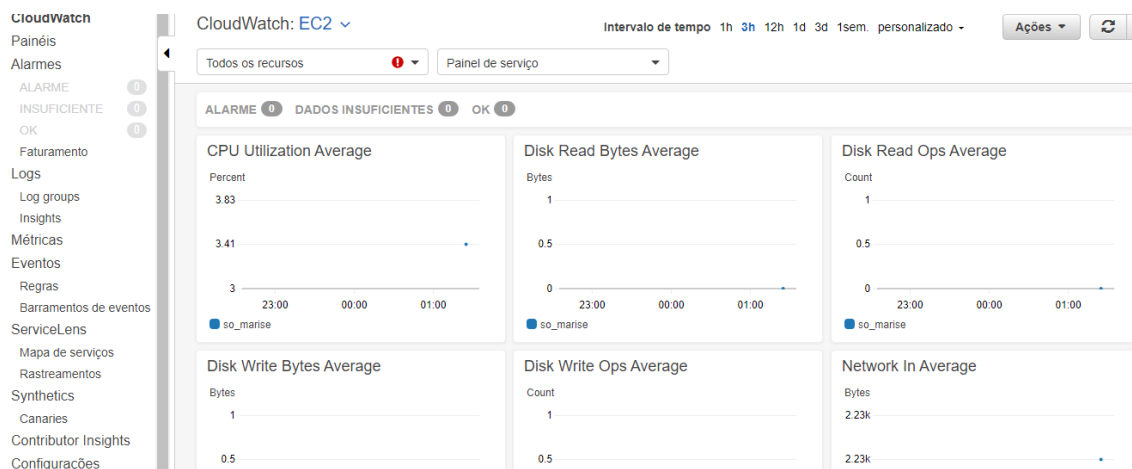
**Disk Write Operations (Operations)**

1  
0.75  
0.5

**Network In (Bytes)**

1  
0.75  
0.5

# SISTEMAS OPERACIONAIS



## Stop Instances

Are you sure you want to stop these instances?

- i-01e12b8c8b141d413 (so\_marise)



Note that when your instances are stopped:

- Any data on the ephemeral storage of your instances will be lost.

Cancel

Yes, Stop

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
so_marise	i-01e12b8c8b141d413	t2.micro	us-east-1a	stopping		None	

aws Serviços Grupos de recursos

vocstartsoft/user696136=mari... Norte da Virgínia Suporte

New EC2 Experience

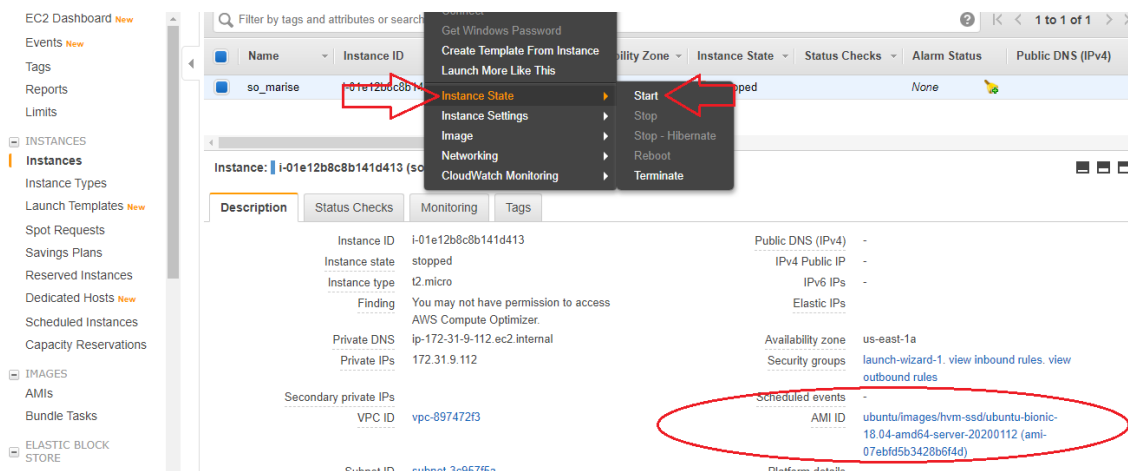
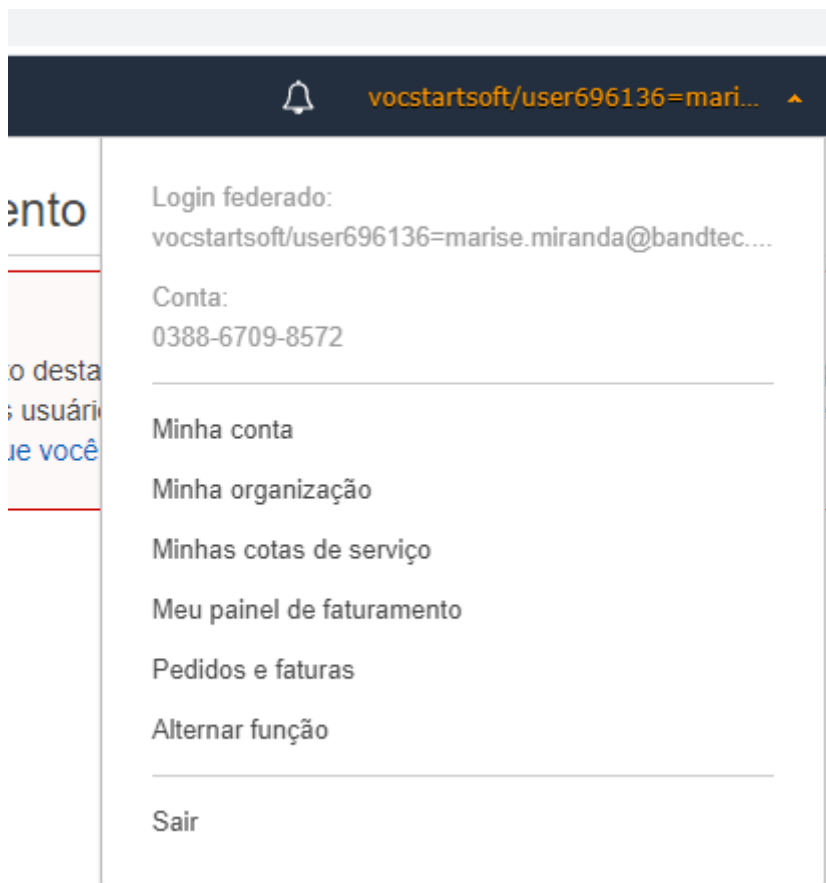
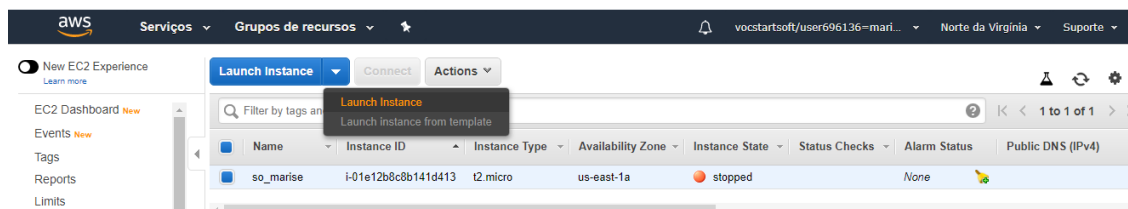
Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
so_marise	i-01e12b8c8b141d413	t2.micro	us-east-1a	stopped		None	

Instance: i-01e12b8c8b141d413 (so\_marise) Private IP: 172.31.9.112

# SISTEMAS OPERACIONAIS



# SISTEMAS OPERACIONAIS

## Start Instances



Are you sure you want to start these instances?

- i-01e12b8c8b141d413 (so\_marise)

Cancel

Yes, Start

New EC2 Experience

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
so_marise	i-01e12b8c8b141d413	t2.micro	us-east-1a	pending	Initializing	None	

Instance: i-01e12b8c8b141d413 (so\_marise) Private IP: 172.31.9.112

Description Status Checks Monitoring Tags

aws Serviços Grupos de recursos

vocstartsoft/user696136=mar... Norte da Virgínia Suporte

New EC2 Experience

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
so_marise	i-01e12b8c8b141d413	t2.micro	us-east-1a	running	Initializing	None	

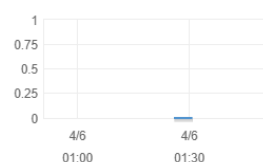
Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
so_marise	i-01e12b8c8b141d413	t2.micro	us-east-1a	running	2/2 checks ...	None	

Below are your CloudWatch metrics for the selected resources (a maximum of 10). Click on a graph to see an expanded view. All times shown are in UTC. [View all CloudWatch metrics](#)

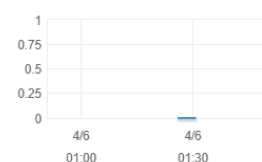
CPU Utilization (Percent)



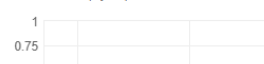
Disk Reads (Bytes)



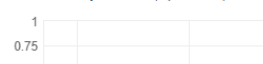
Disk Read Operations (Operations)



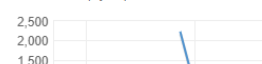
Disk Writes (Bytes)



Disk Write Operations (Operations)

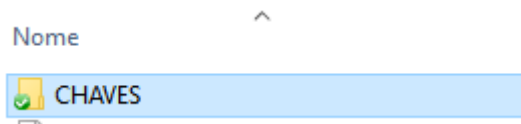


Network In (Bytes)

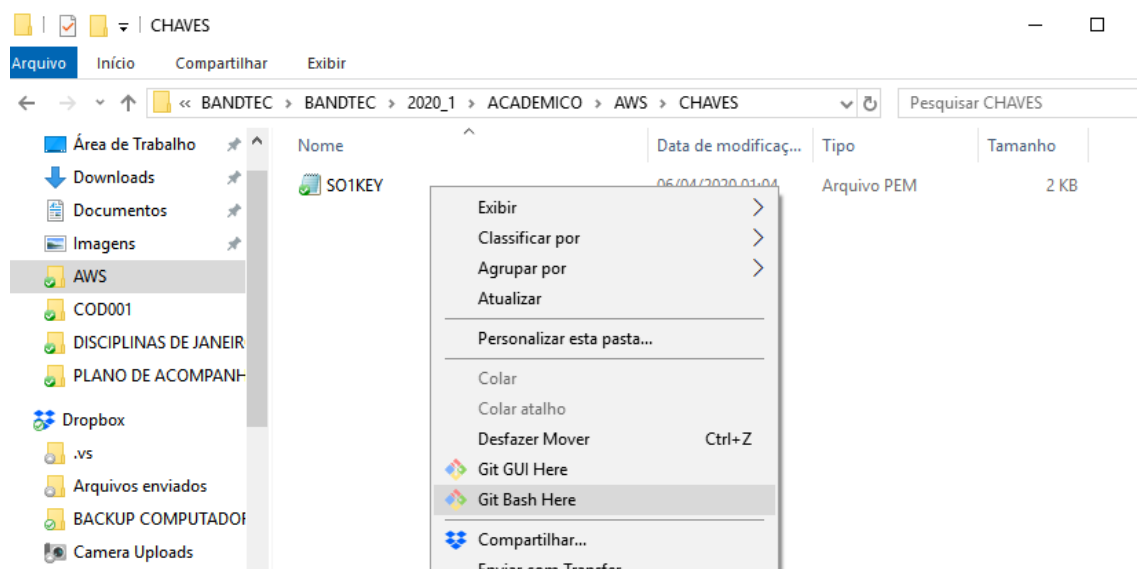


# SISTEMAS OPERACIONAIS

Chaves



Abrir com git bash na pasta da chave



# SISTEMAS OPERACIONAIS

## Connect to your instance



### Connection method

- ☒ A standalone SSH client ⓘ
- ☐ Session Manager ⓘ
- ☐ EC2 Instance Connect (browser-based SSH connection) ⓘ

### To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (SO1KEY.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 SO1KEY.pem
```

4. Connect to your instance using its Public DNS:

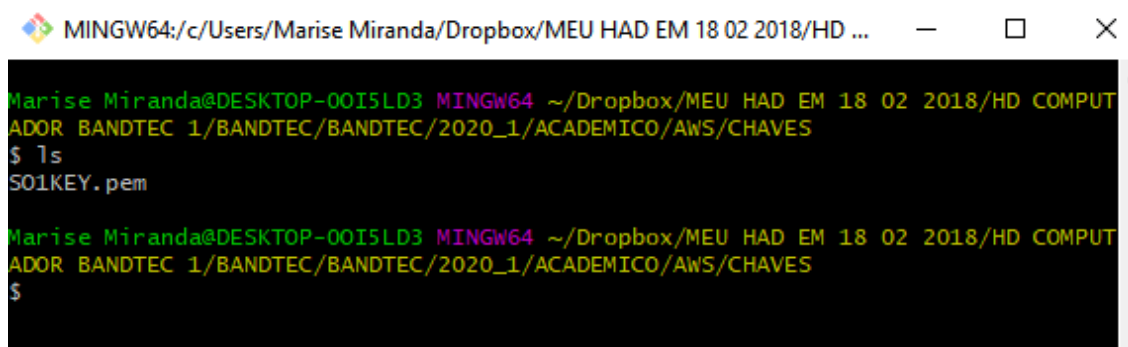
```
ec2-34-238-85-90.compute-1.amazonaws.com
```

### Example:

```
ssh -i "SO1KEY.pem" ubuntu@ec2-34-238-85-90.compute-1.amazonaws.com
```

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.

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



```

MINGW64:/c/Users/Marise Miranda/Dropbox/MEU HAD EM 18 02 2018/HD ...
Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES
$ ls
SO1KEY.pem
Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES
$
  
```

# SISTEMAS OPERACIONAIS

```
ubuntu@ip-172-31-80-87: ~  
Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT  
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES  
$ ls  
S01KEY.pem  
Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT  
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES  
$ ssh -i "S01KEY.pem" ubuntu@ec2-34-238-85-90.compute-1.amazonaws.com  
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.15.0-1057-aws x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
System information as of Mon Apr  6 04:59:59 UTC 2020  
  
System load:  0.0          Processes:            89  
Usage of /:   13.0% of 9.63GB Users logged in:        0  
Memory usage: 17%         IP address for eth0: 172.31.80.87  
Swap usage:   0%  
  
7 packages can be updated.  
7 updates are security updates.  
  
Last login: Mon Apr  6 04:17:57 2020 from 201.42.217.33  
ubuntu@ip-172-31-80-87:~$
```

A primeira vez que conecta vai perguntar se a chave está correta

Y

E prossegue até a conexão

Como já me conectei então não pede a chave, tb já atualizei os pacotes.

Para quem está se conectando pela primeira vez:

Execute:

**sudo apt-get update**

**sudo apt-get upgrade**

**sudo su root**



# SISTEMAS OPERACIONAIS

```
root@ip-172-31-80-87: /home/ubuntu

Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES
$ ls
S01KEY.pem

Marise Miranda@DESKTOP-00I5LD3 MINGW64 ~/Dropbox/MEU HAD EM 18 02 2018/HD COMPUT
ADOR BANDTEC 1/BANDTEC/BANDTEC/2020_1/ACADEMICO/AWS/CHAVES
$ ssh -i "S01KEY.pem" ubuntu@ec2-34-238-85-90.compute-1.amazonaws.com
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

System information as of Mon Apr  6 04:59:59 UTC 2020

System load:  0.0               Processes:            89
Usage of /:   13.0% of 9.63GB   Users logged in:     0
Memory usage: 17%              IP address for eth0: 172.31.80.87
Swap usage:   0%

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

Last login: Mon Apr  6 04:17:57 2020 from 201.42.217.33
ubuntu@ip-172-31-80-87:~$ sudo su root
root@ip-172-31-80-87:/home/ubuntu#
```

**cd**

para sair do usuário ubuntu em /home

**passwd root**

insira a senha de root

**urubu100**

confirme a senha

**urubu100**

Agora vamos criar uma forma de entrar no Ec2 via autenticação

Em root digite

**vi /etc/ssh/sshd\_config**

vc vai entrar no modo bash

desça com as setas para cima e para baixo

vá até a linha abaixo de:

**#ListenAddress ::**

## SISTEMAS OPERACIONAIS

```
root@ip-172-31-80-87: ~
# $OpenBSD: sshd_config,v 1.101 2017/03/14 07:19:07 djm Exp $
# This is the sshd server system-wide configuration file. See
# sshd_config(5) for more information.
# This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin
# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.
#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key
# Ciphers and keying
#RekeyLimit default none
# Logging
#SyslogFacility AUTH
#LogLevel INFO
# Authentication:
#LoginGraceTime 2m
#PermitRootLogin prohibit-password
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
```

Aperte a tecla **i** de insert ao final da tela

```
# Authentication:
#LoginGraceTime 2m
#PermitRootLogin prohibit-password
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10
-- INSERT --
```

Digite  
**PermitRootLogin yes**

## SISTEMAS OPERACIONAIS

```
# This is the sshd server system-wide configuration file. See
# sshd_config(5) for more information.

# This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented. Uncommented options override the
# default value.

#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::
PermitRootLogin yes
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

# Ciphers and keying
#RekeyLimit default none

# Logging
#SyslogFacility AUTH
#LogLevel INFO

# Authentication:
```

Dê enter e digite abaixo:

**PasswordAuthetication yes**

```
#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::
PermitRootLogin yes
PasswordAuthetication yes
#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key
```

Para salvar aperte a sequência de teclas a seguir:

**Esc +shift + z z**

Ou

**Caps lock z z**

Para sair

**Dê o comando**

**vi /etc/ssh/sshd\_config**

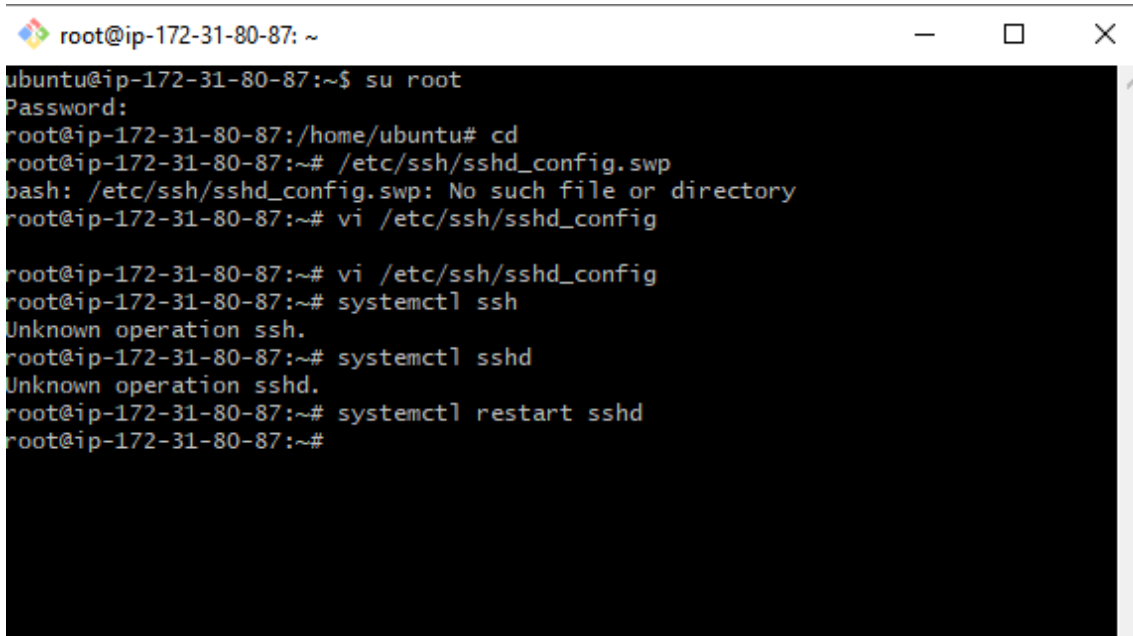
# SISTEMAS OPERACIONAIS

e verifica se os comandos inseridos foram salvos

**Capslock z z**

Dê o comando:

**systemctl restart sshd**



```
root@ip-172-31-80-87: ~  
ubuntu@ip-172-31-80-87:~$ su root  
Password:  
root@ip-172-31-80-87:/home/ubuntu# cd  
root@ip-172-31-80-87:~# /etc/ssh/sshd_config.swp  
bash: /etc/ssh/sshd_config.swp: No such file or directory  
root@ip-172-31-80-87:~# vi /etc/ssh/sshd_config  
  
root@ip-172-31-80-87:~# vi /etc/ssh/sshd_config  
root@ip-172-31-80-87:~# systemctl ssh  
Unknown operation ssh.  
root@ip-172-31-80-87:~# systemctl sshd  
Unknown operation sshd.  
root@ip-172-31-80-87:~# systemctl restart sshd  
root@ip-172-31-80-87:~#
```

**Feche o terminal**

## PROTOCOLO SSH

È um protocolo de comunicação seguro (SSH – Secure Shell). Permite o envio de comandos e controle remoto de um host por meio de uma conexão criptografada.

SSH tem uma arquitetura cliente-server. Tem para todos sistemas operacionais.

Uma conexão telnet faz a mesma coisa, sem segurança.

Existem três pontos importantes:

- Autenticação: determina a identidade de forma confiável
- Criptografia: os dados são embaralhados e não são inteligíveis fora os usuários que possuem a chave.
- Integridade: os dados não são alterados

Cliente SSH → conexão SSH segura -> servidor SSH

**Projeto OpenSSH, versão gratuita**

Usando o ssh:

Instalação no cliente no Linux terminal

## SISTEMAS OPERACIONAIS

**su apt-get install openssh-client**

Instalação do servidor no Linux instânciado

**Su apt-get install openssh-server** (em geral nas instâncias AWS EC2 já está instalado para uso)

Conectar a partir do cliente:

**ssh -l usuário IP/nome\_host**

**ssh -l xxxx 192.168.1.129**

**sudo apt-get install openssh-server**

**sudo apt-get install openssh-client**

Agora na máquina cliente

**apt-get install openssh-client**

**Ip do servidor**

**ping 192.169.0.32**

**ssh -l ubuntu 192.168.1.129**

**pede a senha**

<https://labs.vocareum.com/main/main.php?m=editor&nav=1&asnid=129618&stepid=129619>