

# AWS

Saltstack, Ansible, Terraform

# When you login you should see this

The screenshot shows the AWS Management Console home page. At the top, there's a navigation bar with links for Services, Resource Groups, and a user profile for mverhulst. Below the navigation is a search bar and a filter button labeled "Group A-Z". The main content area is organized into several columns:

- Compute:** EC2, Lightsail, Lambda, Batch, Elastic Beanstalk, Serverless Application Repository, AWS Outposts, EC2 Image Builder.
- Blockchain:** Amazon Managed Blockchain.
- Analytics:** Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, QuickSight.
- Business Applications:** Alexa for Business, Amazon Chime, WorkMail, Amazon Honeycode.
- Storage:** S3, EFS, FSx, S3 Glacier, Storage Gateway, AWS Backup.
- Quantum Technologies:** Amazon Braket.
- Management & Governance:** AWS Organizations, CloudWatch, AWS Auto Scaling, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Systems Manager, AWS AppConfig, Trusted Advisor, Control Tower, AWS License Manager, AWS Well-Architected Tool, Personal Health Dashboard, AWS Chatbot.
- Security, Identity, & Compliance:** IAM, Resource Access Manager, Cognito, Secrets Manager, GuardDuty, Inspector, Amazon Macie, AWS Single Sign-On, Certificate Manager, Key Management Service, CloudHSM, Directory Service, WAF & Shield, AWS Firewall Manager.
- Internet Of Things:** IoT Core, FreeRTOS, IoT 1-Click, IoT Analytics, IoT Device Defender, IoT Device Management, IoT Events, IoT Greengrass, IoT SiteWise, IoT Things Graph.
- Game Development:** Amazon GameLift.
- Other Services:** End User Computing (WorkSpaces, AppStream 2.0, WorkDocs, WorkLink), MongoDB compatibility (MongoDB support helps you enforce least privilege access and build multi-tenant applications).

On the right side, there are several promotional cards:

- A card for "AWS resources on-the-go" encouraging users to download the AWS Mobile App.
- A card for "Performance in Amazon EC2" stating "6g instances provide the best native workloads in Amazon EC2."
- A card for "AWS Lambda" showing a timeline of recent Lambda milestones.
- A card for "AWS Lambda" highlighting its benefits: "Serverless, pay-as-you-go, and reliable."
- A card for "AWS Lambda" mentioning "AWS Lambda supports over 200 languages and frameworks."
- A card for "AWS Lambda" stating "AWS Lambda supports over 200 languages and frameworks."

# Make sure to select “N. California” in this dropdown selector

The screenshot shows the AWS Management Console home page. At the top right, there is a dropdown menu labeled "N. California". A large green arrow points from the top right towards this dropdown menu. The console interface includes a search bar, a sidebar with service categories like Compute, Storage, and Blockchain, and a main content area displaying various AWS services.

**AWS Management Console**

**Sidebar:**

- All services
- Compute
  - EC2
  - Lightsail
  - Lambda
  - Batch
  - Elastic Beanstalk
  - Serverless Application Repository
  - AWS Outposts
  - EC2 Image Builder
- Containers
  - Elastic Container Registry
  - Elastic Container Service
  - Elastic Kubernetes Service
- Storage
  - S3
  - EFS
  - FSx
  - S3 Glacier
  - Storage Gateway
- Developer Tools
  - CodeStar
  - CodeCommit
  - CodeArtifact
  - CodeBuild
  - CodeDeploy
  - CodePipeline
  - Cloud9
  - X-Ray
- Customer Enablement
  - AWS IQ
  - Support
  - Managed Services
- Robotics
  - AWS RoboMaker
- Blockchain
  - Amazon Managed Blockchain
- Analytics
  - Athena
  - EMR

**Main Content Area:**

- Machine Learning
  - Amazon SageMaker
  - Amazon Augmented AI
  - Amazon CodeGuru
  - Amazon Comprehend
  - Amazon Forecast
  - Amazon Fraud Detector
  - Amazon Kendra
  - Amazon Lex
  - Amazon Personalize
  - Amazon Polly
  - Amazon Rekognition
  - Amazon Textract
  - Amazon Transcribe
  - Amazon Translate
  - AWS DeepComposer
  - AWS DeepLens
  - AWS DeepRacer
- Mobile
  - AWS Amplify
  - Mobile Hub
  - AWS AppSync
  - Device Farm
- AR & VR
  - Amazon Kendra
  - Amazon Sumerian
- Application Integration
  - Step Functions
  - Amazon AppFlow
  - Amazon EventBridge
  - Amazon MQ
  - Simple Notification Service
  - Simple Queue Service
  - SWF
- Customer Engagement
  - Amazon Connect
  - Pinpoint

**Stay connected to go:**

- Download the AWS mobile app

**Explore AWS:**

**Get Up to 40% Better Price Performance:**

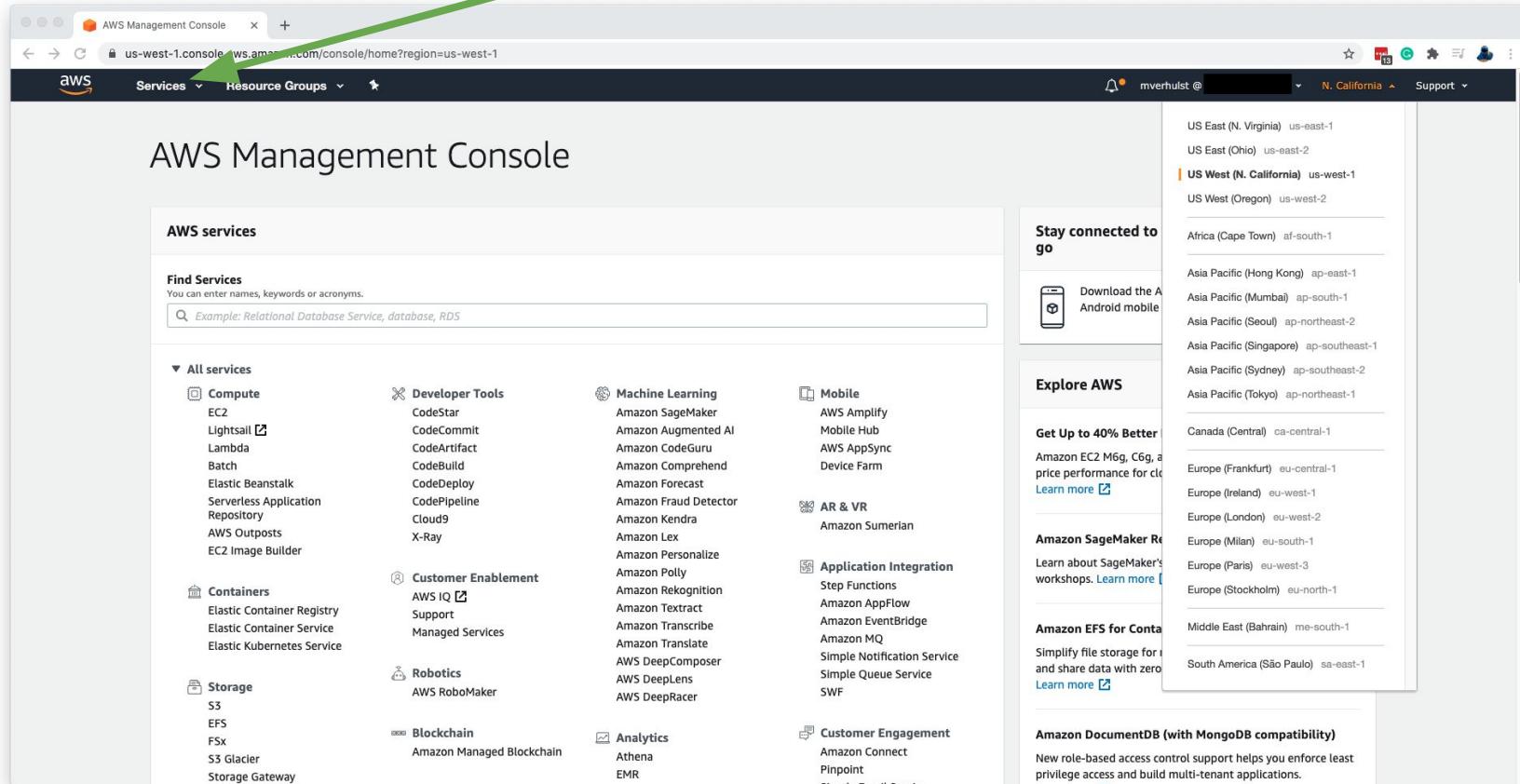
**Amazon SageMaker Workshops:**

**Amazon EFS for Container Storage:**

**Amazon DocumentDB (with MongoDB compatibility):**

US East (N. Virginia) us-east-1  
US East (Ohio) us-east-2  
**US West (N. California) us-west-1**  
US West (Oregon) us-west-2  
Africa (Cape Town) af-south-1  
Asia Pacific (Hong Kong) ap-east-1  
Asia Pacific (Mumbai) ap-south-1  
Asia Pacific (Seoul) ap-northeast-2  
Asia Pacific (Singapore) ap-southeast-1  
Asia Pacific (Sydney) ap-southeast-2  
Asia Pacific (Tokyo) ap-northeast-1  
Canada (Central) ca-central-1  
Europe (Frankfurt) eu-central-1  
Europe (Ireland) eu-west-1  
Europe (London) eu-west-2  
Europe (Milan) eu-south-1  
Europe (Paris) eu-west-3  
Europe (Stockholm) eu-north-1  
Middle East (Bahrain) me-south-1  
South America (São Paulo) sa-east-1

# Next click on the “services” button



The screenshot shows the AWS Management Console homepage. At the top, there's a navigation bar with the AWS logo, a search bar containing "us-west-1.console.aws.amazon.com/console/home?region=us-west-1", and user information for "mverhulst @ N. California". Below the navigation bar is the main title "AWS Management Console". The left side features a sidebar titled "AWS services" with sections for "Find Services" (a search bar), "All services" (with categories like Compute, Containers, Storage, Developer Tools, Customer Enablement, Robotics, Blockchain, Analytics, Machine Learning, Mobile, AR & VR, Application Integration, Customer Engagement), and "Explore AWS" (a section about EC2 M6g, SageMaker workshops, EFS, and DocumentDB). The right side has a sidebar titled "Stay connected to go" (with links for the Android mobile app) and "Get Up to 40% Better" (with a link to learn more about EC2 M6g). The bottom right corner contains a section for "Amazon DocumentDB (with MongoDB compatibility)".

A green arrow points from the text above to the "Services" button in the top navigation bar.

# Now you should see this page

AWS Management Console x +

us-west-1.console.aws.amazon.com/console/home?region=us-west-1

Services ▾ Resource Groups ▾

History Console Home

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

Group A-Z

**Compute**

- EC2
- Lightsail
- Lambda
- Batch
- Elastic Beanstalk
- Serverless Application Repository
- AWS Outposts
- EC2 Image Builder

**Storage**

- S3
- EFS
- FSx
- S3 Glacier
- Storage Gateway
- AWS Backup

**Database**

- RDS
- DynamoDB
- ElastiCache
- Neptune
- Amazon Redshift
- Amazon QLDB
- Amazon DocumentDB
- Amazon Keyspaces

**Blockchain**

- Amazon Managed Blockchain

**Analytics**

- Athena
- EMR
- CloudSearch
- Elasticsearch Service
- Kinesis
- QuickSight
- Data Pipeline
- AWS Data Exchange
- AWS Glue
- AWS Lake Formation
- MSK

**Quantum Technologies**

- Amazon Braket

**Management & Governance**

- AWS Organizations
- CloudWatch
- AWS Auto Scaling
- CloudFormation
- CloudTrail
- Config
- OpsWorks
- Service Catalog
- Systems Manager
- AWS AppConfig
- Trusted Advisor
- Control Tower
- AWS License Manager
- AWS Well-Architected Tool
- Personal Health Dashboard
- AWS Chatbot

**Security, Identity, & Compliance**

- IAM
- Resource Access Manager
- Cognito
- Secrets Manager
- GuardDuty
- Inspector
- Amazon Macie
- AWS Single Sign-On
- Certificate Manager
- Key Management Service
- CloudHSM
- Directory Service
- WAF & Shield
- AWS Firewall Manager

**Business Applications**

- Alexa for Business
- Amazon Chime
- WorkMail
- Amazon Honeycode

**End User Computing**

- WorkSpaces
- AppStream 2.0
- WorkDocs
- WorkLink

**Internet Of Things**

- IoT Core
- FreeRTOS
- IoT 1-Click
- IoT Analytics
- IoT Device Defender
- IoT Device Management
- IoT Events
- IoT Greengrass
- IoT SiteWise
- IoT Things Graph

**Game Development**

- Amazon GameLift

**MongoDB compatibility**

- Support helps you enforce least privilege access and build multi-tenant applications.

Storage Gateway EMR Simple Email Service N. California Support

# Next click on the “EC2” service

The screenshot shows the AWS Management Console Services page. A green arrow points to the 'EC2' icon under the 'Compute' section. The page lists various AWS services in a grid:

Category	Service
Compute	EC2
	Lightsail
	Lambda
	Batch
	Elastic Beanstalk
	Serverless Application Repository
	AWS Outposts
	EC2 Image Builder
	Satellite
	Ground Station
Storage	Amazon Managed Blockchain
	Quantum Technologies
	Amazon Braket
	S3
	EFS
	FSx
	S3 Glacier
	Storage Gateway
	AWS Backup
	Database
CloudSearch	
Elasticsearch Service	
Kinesis	
QuickSight	
Data Pipeline	
AWS Data Exchange	
AWS Glue	
AWS Lake Formation	
MSK	
Management & Governance	WorkSpaces
	AppStream 2.0
	WorkDocs
	WorkLink
	AWS Organizations
	CloudWatch
	AWS Auto Scaling
	CloudFormation
	CloudTrail
	Config
Security, Identity, & Compliance	End User Computing
	IAM
	Resource Access Manager
	Cognito
	Secrets Manager
	GuardDuty
	Inspector
	Amazon Macie
	AWS Single Sign-On
	Certificate Manager
Internet Of Things	IoT Core
	FreeRTOS
	IoT 1-Click
	IoT Analytics
	IoT Device Defender
	IoT Device Management
	IoT Events
	IoT Greengrass
	IoT SiteWise
	IoT Things Graph
Game Development	CloudHSM
	Directory Service
	Key Management Service
	WAF & Shield
	AWS Firewall Manager
	Amazon GameLift

On the right side, there are several promotional cards:

- Run AWS resources on-the-go**
- Performance in Amazon EC2**
- Reliable storage services**
- Secure databases**
- MongoDB compatibility**

# Next you should see something like this - you will see different numbers and defaults

The screenshot shows the AWS EC2 Management Dashboard for the US West (N. California) Region. The left sidebar includes links for New EC2 Experience, EC2 Dashboard, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations), Images (AMIs), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups), and Key Pairs.

The main content area features a "Welcome to the new EC2 console" message. It displays the following resource counts:

Category	Count
Running instances	4
Elastic IPs	2
Dedicated Hosts	0
Snapshots	1
Volumes	4
Load balancers	0
Key pairs	8
Security groups	8
Placement groups	0

A callout box suggests using the AWS Launch Wizard for Microsoft SQL Server Always On availability groups.

The "Launch instance" section allows starting a new instance, noting it will launch in the US West (N. California) Region. A "Launch instance" button is present.

The "Service health" section shows "This service is operating normally" for the US West (N. California) region.

The "Zone status" section shows "Zone is operating normally" for us-west-1b (usw1-az3).

The right sidebar contains sections for Account attributes (Supported platforms: VPC, Default VPC), Additional information (Getting started guide, Documentation, All EC2 resources, Forums, Pricing, Contact us), and other links like EBS encryption and Zones.

At the bottom, there are links for Feedback, English (US), and footer text: © 2008-2020, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use.

# Next click on “running instances”

The screenshot shows the AWS EC2 Management console interface. A large green arrow points from the text "Next click on ‘running instances’" at the top left towards the "Running instances" section in the main content area.

**EC2 Dashboard**

**Resources**

You are using the following Amazon EC2 resources in the US West (N. California) Region:

Running instances	4	Elastic IPs	2	Dedicated Hosts	0
Snapshots	1	Volumes	4	Load balancers	0
Key pairs	8	Security groups	8	Placement groups	0

**Launch instance**

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

**Service health**

Region: US West (N. California) Status: This service is operating normally

**Zone status**

Zone: us-west-1b (usw1-az3)	Status: <span style="color: green;">Zone is operating normally</span>
Zone: us-west-1a (usw1-az1)	Status: <span style="color: red;">Zone is experiencing issues</span>

**Additional information**

- Getting started guide
- Documentation
- All EC2 resources
- Forums
- Pricing
- Contact us

Feedback English (US)

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Next you should see something like this - you will see different numbers and defaults

The screenshot shows the AWS EC2 Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays a table of running instances:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Micha...	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	[REDACTED]	-	aws2
helga-box	[REDACTED]	t2.micro	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	[REDACTED]	-	helga
rambo-Micha...	[REDACTED]	t2.large	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	[REDACTED]	-	aws2
tl_irc	[REDACTED]	t2.micro	us-west-1b	running	2/2 checks ...	None	ec2-[REDACTED]	[REDACTED]	-	tl-irc

Below the table, a message says "Select an instance above". The bottom of the screen includes a footer with links for Feedback, English (US), Privacy Policy, and Terms of Use.

# Next click on the “launch instances” button

The screenshot shows the AWS EC2 Instances Management console. On the left, there's a navigation sidebar with various options like EC2 Dashboard, Instances, Images, Elastic Block Store, Network & Security, and more. The main area displays a table of existing EC2 instances. A green arrow points from the top-left towards the 'Launch Instance' button in the top navigation bar.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Micha...	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	aws2
helga-box	[REDACTED]	t2.micro	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	helga
rambo-Micha...	[REDACTED]	t2.large	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	aws2
tl_irc	[REDACTED]	t2.micro	us-west-1b	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	tl-irc

Select an instance above

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# You should see this

Launch instance wizard | EC2 | + us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

Services Resource Groups

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

Step 1: Choose an Amazon Machine Image (AMI)

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

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

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Free tier only ⓘ

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-01311df3780ebd33e

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

Select 64-bit (x86)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-09a3e40793c7092f5

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.

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

Select 64-bit (x86)

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-066df92ac6f03efca

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

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

Select 64-bit (x86)

SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type - ami-042171ce7bca65e89

SUSE Linux Enterprise Server 15 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

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

Select 64-bit (x86)

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0d705db840ec5f0c5

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Select

Cancel and Exit

Search by Systems Manager parameter

1 to 40 of 40 AMIs

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Type “ubuntu” in the search box and then select the result on top, then click select

Launch instance wizard | EC2 | +

us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

Services Resource Groups

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

Step 1: Choose an Amazon Machine Image (AMI)

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

Quick Start (8)

My AMIs (0)

AWS Marketplace (463)

Community AMIs (34378)

Free tier only ⓘ

Search by Systems Manager parameter

1 to 8 of 8 AMIs

<b>Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0d705db840ec5f0c5</b>	Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical ( <a href="http://www.ubuntu.com/cloud/services">http://www.ubuntu.com/cloud/services</a> ). Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	<input type="button" value="Select"/>	64-bit (x86)
<b>Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-0c1e832407373333f</b>	Ubuntu Server 16.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical ( <a href="http://www.ubuntu.com/cloud/services">http://www.ubuntu.com/cloud/services</a> ). Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	<input type="button" value="Select"/>	64-bit (x86)
<b>Deep Learning AMI (Ubuntu 18.04) Version 30.0 - ami-0cc472544ce594a19</b>	MXNet-1.6.0, TensorFlow-2.2.0, 2.1.0 & 1.15.2, PyTorch-1.4.0 & 1.5.0, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA support. For fully managed experience, check: <a href="https://aws.amazon.com/sagemaker">https://aws.amazon.com/sagemaker</a> Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	<input type="button" value="Select"/>	64-bit (x86)
<b>Deep Learning AMI (Ubuntu 16.04) Version 30.0 - ami-05f19eb61e412ac25</b>	MXNet-1.6.0, TensorFlow-2.2.0, 2.1.0 & 1.15.2, PyTorch-1.4.0 & 1.5.0, EI, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA. For fully managed experience, check: <a href="https://aws.amazon.com/sagemaker">https://aws.amazon.com/sagemaker</a> Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	<input type="button" value="Select"/>	64-bit (x86)
<b>Deep Learning Base AMI (Ubuntu 18.04) Version 25.0 - ami-08b88b2e19aacab0</b>	Root device type: ebs Virtualization type: hvm ENA Enabled: Yes	<input type="button" value="Select"/>	

Feedback English (US)

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# Select “t2.medium” then click next

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.

Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	Pv6 Support
General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
General purpose	<b>t2.medium</b>	2	4	EBS only	-	Low to Moderate	Yes
General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
General purpose	t3a.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
General purpose	t3a.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes

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

# Do nothing here then click next

The screenshot shows the AWS Launch Instance Wizard Step 3: Configure Instance Details. The page title is "Step 3: Configure Instance Details". The sub-instruction says "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." The configuration fields include:

- Number of Instances:** 1 (disabled)
- Purchasing option:** Request Spot instances (unchecked)
- Network:** [REDACTED] (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 (unchecked)
- Capacity Reservation:** Open | Create new Capacity Reservation
- IAM role:** None | Create new IAM role
- Shutdown behavior:** Stop
- Stop - Hibernate behavior:** Enable hibernation as an additional stop behavior (unchecked)
- Enable termination protection:** Protect against accidental termination (unchecked)
- Monitoring:** Enable CloudWatch detailed monitoring (Additional charges apply)
- Tenancy:** Shared - Run a shared hardware instance | Additional charges may apply when launching Dedicated instances.
- T2/T3 Unlimited:** Enable (Additional charges may apply)

At the bottom, there are navigation buttons: Cancel, Previous, Review and Launch (highlighted in blue), and Next: Add Storage.

# Upgrade this setting from 8 to 32 then click next

The screenshot shows the AWS Launch Instance Wizard at Step 4: Add Storage. The URL is [us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard](https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard). The page displays storage settings for a new instance:

Volume Type	Device	Snapshot	Size (GB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-047a5d224a46c4b97	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

An **Add New Volume** button is available below the table. A note states: "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." At the bottom, there are buttons for Cancel, Previous, **Review and Launch**, and Next: Add Tags.

# Do nothing here then click next

The screenshot shows the AWS Launch Instance Wizard Step 5: Add Tags page. The browser title bar reads "Launch instance wizard | EC2" and the URL is "us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard". The AWS navigation bar includes "Services", "Resource Groups", and "Support". The top navigation bar for the wizard shows steps 1 through 7: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags (which is selected), 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 (i)      Volumes (i)

*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

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# Switch toggle to “select existing” then notice page change



Launch instance wizard | EC2 | + us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

AWS Services Resource Groups Step 6: Configure Security Group

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: launch-wizard-4

Description: launch-wizard-4 created [REDACTED]

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

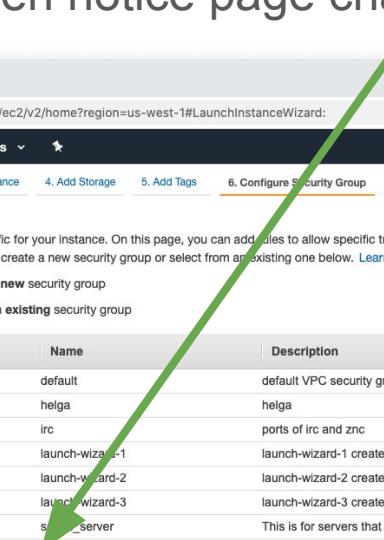
Add Rule

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

Cancel Previous Review and Launch

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# Select “salted\_server” then notice page change



Launch instance wizard | EC2 | + us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

AWS Services Resource Groups

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

### Step 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 ID	Name	Description	Actions
[Redacted]	default	default VPC security group	<a href="#">Copy to new</a>
[Redacted]	helga	helga	<a href="#">Copy to new</a>
[Redacted]	irc	ports of irc and znc	<a href="#">Copy to new</a>
[Redacted]	launch-wizard-1	launch-wizard-1 created 2017-08-15T18:50:36.226-05:00	<a href="#">Copy to new</a>
[Redacted]	launch-wizard-2	launch-wizard-2 created 2017-08-15T22:54:07.484-05:00	<a href="#">Copy to new</a>
[Redacted]	launch-wizard-3	launch-wizard-3 created 2018-03-08T13:18:50.426-06:00	<a href="#">Copy to new</a>
[Redacted]	salt_server	This is for servers that use salt	<a href="#">Copy to new</a>
[Redacted]	test	test test	<a href="#">Copy to new</a>

Select a security group above to view its inbound rules.

Cancel Previous **Review and Launch**

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# Confirm you see these port numbers then click review and launch

Launch instance wizard | EC2 | + us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard:

AWS Services Resource Groups

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

Step 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 ID	Name	Description	Actions
[REDACTED]	default	default VPC security group	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	helga	helga	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	irc	ports of irc and znc	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	launch-wizard-1	launch-wizard-1 created 2017-08-15T18:50:36.226-05:00	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	launch-wizard-2	launch-wizard-2 created 2017-08-15T22:54:07.484-05:00	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	launch-wizard-3	launch-wizard-3 created 2018-03-08T13:18:50.426-06:00	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	salted_server	This is for servers that use salt	<a href="#">Copy to new</a> <a href="#">Copy to new</a>
[REDACTED]	test	test test	<a href="#">Copy to new</a> <a href="#">Copy to new</a>

Custom TCP Rule	TCP	8080	0.0.0.0/0
Custom TCP Rule	TCP	8080	::/0
SSH	TCP	22	0.0.0.0/0
SSH	TCP	22	::/0
Custom TCP Rule	TCP	4506	0.0.0.0/0
Custom TCP Rule	TCP	4506	::/0
Custom TCP Rule	TCP	4505	0.0.0.0/0
Custom TCP Rule	TCP	4505	::/0

Cancel Previous Review and Launch

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# Do nothing here then click launch

The screenshot shows the AWS Launch Instance Wizard at Step 7: Review Instance Launch. The browser title bar reads "Launch instance wizard | EC2" and the URL is "us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard". The top navigation bar includes "Services", "Resource Groups", and tabs for the wizard steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, 7. Review (which is underlined). The user's name "mverhulst @" is visible in the top right.

**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-0d705db840ec5f0c5  
Free tier eligible

**Instance Type**

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.medium	Variable	2	4	EBS only	-	Low to Moderate

**Security Groups**

Security Group ID	Name	Description
sg-a5dab1c0	salted_server	This is for servers that use salt

Buttons at the bottom: Cancel, Previous, **Launch**.

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# Select "create" from the dropdown then notice page change

The screenshot shows the AWS Launch Instance Wizard at Step 7: Review Instance Launch. The main page displays configuration details for launching an instance:

- AMI Details:** Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0f8e0a1c. It is listed as "Free tier eligible".
- Instance Type:** t2.medium (Variable, 2 vCPUs, 4 GiB Memory).
- Security Groups:** sg-a5dab1c0 (salted\_server) is selected.

A modal dialog titled "Select an existing key pair or create a new key pair" is overlaid on the page. The dialog contains the following fields and options:

- A dropdown menu showing "Choose an existing key pair".
- A dropdown menu showing "Select a key pair" with "aws" selected.
- A checkbox for acknowledging access to the private key file: "I acknowledge that I have access to the selected private key file (aws.pem), and that without this file, I won't be able to log into my instance." (unchecked).
- Buttons at the bottom: "Cancel", "Launch Instances" (highlighted in blue), and "Edit security groups" (disabled).

The browser header shows the URL as us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard: and the user mverhulst @ N. California.

# Fill in your name then click download

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**

**Instance Type**

**Security Groups**

**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

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

This is for servers that use salt

Cancel Previous Launch

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# Notice you have a new file then click “launch instances”

The screenshot shows the AWS Launch Instance Wizard at Step 7: Review Instance Launch. The main page displays several configuration details:

- AMI Details:** Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-0f1e0a1a (Free tier eligible).

Instance Type	ECUs	vCPUs	Memory (GiB)
t2.medium	Variable	2	4
- Instance Type:** t2.medium
- Security Groups:** None selected.

A modal window titled "Select an existing key pair or create a new key pair" is open. It contains the following information:

- A note about key pairs: "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."
- A note about the selected key pair: "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](#).
- A dropdown menu: "Create a new key pair".
- A text input field: "Key pair name" with "mike\_lab" typed in.
- A "Download Key Pair" button.
- A message box: "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."
- Buttons: "Cancel" and "Launch Instances".

At the bottom left of the main interface, there is a file icon with the text "mike\_lab.pem" and a green arrow pointing towards it. The status bar at the bottom shows "Feedback" and "English (US)".

# It should show that it is doing stuff next click “view instances”

The screenshot shows a browser window for the AWS EC2 Launch Instance Wizard. The URL is [us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard](https://us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstanceWizard). The page title is "Launch instance wizard | EC2". The top navigation bar includes the AWS logo, "Services", "Resource Groups", and user information "mverhulst @ N. California Support".

**Launch Status**

Your instances are now launching  
The following instance launches have been initiated: i-0bd3a204a94ba2067 [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](#)

[Feedback](#) [English \(US\)](#)

mike\_lab.pem

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Show All X

# Your new VM should be “initializing”

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with various options like EC2 Dashboard, Instances, Images, Elastic Block Store, Network & Security, and more. The main area displays a table of running instances. One instance, located at the bottom of the list, has its status set to 'Initializing'. A large green arrow points from the top-left towards this specific instance.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Micha...	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	aws2
helga-box	[REDACTED]	t2.micro	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	helga
rambo-Micha...	[REDACTED]	t2.large	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	aws2
tl_irc	[REDACTED]	t2.micro	us-west-1b	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	tl-irc
	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2-[REDACTED]	-	-	mike_lab
				Initializing						

Select an instance above

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Next click in this empty region in the name column then notice page change

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with various options like EC2 Dashboard, Instances, Images, and Network & Security. The main area displays a table of instances. A green arrow points to the empty 'Name' column of the first row. The table includes columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), IPv4 Public IP, IPv6 IPs, and Key Name. Below the table, a detailed view for the instance 'i-0bd3a204a94ba2067' is shown, including its description, status checks, monitoring, and tags. The instance is currently running and has a public DNS of ec2-18-144-72-231.us-west-1.compute.amazonaws.com.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Micha...	i-0bd3a204a94ba2067	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2...	-	-	aws2
helga-box	i-0d1f11e033a1a111	t2.micro	us-west-1c	running	2/2 checks ...	None	ec2...	-	-	helga
rambo-Micha...	i-0d1f11e033a1a111	t2.large	us-west-1c	running	2/2 checks ...	None	ec2...	-	-	aws2
tl_irc	i-0d1f11e033a1a111	t2.micro	us-west-1b	running	2/2 checks ...	None	ec2...	-	-	tl-irc
	i-0d1f11e033a1a111	t2.medium	us-west-1c	running	2/2 checks ...	None	ec2...	-	-	mike_lab

Instance: i-0bd3a204a94ba2067    Public DNS: ec2-18-144-72-231.us-west-1.compute.amazonaws.com

Description	Status Checks	Monitoring	Tags
Instance ID: i-0bd3a204a94ba2067	Instance state: running	Instance type: t2.medium	Finding: Opt-in to AWS Compute Optimizer for recommendations. <a href="#">Learn more</a>
Private DNS: ip-172-31-30-24.us-west-1.compute.internal	Private IP: 172.31.30.24	Public DNS (IPv4): ec2-18-144-72-231.us-west-1.compute.amazonaws.com	IPv4 Public IP: 18.144.72.231
		Elastic IPs:	IPv6 IPs: -
		Availability zone: us-west-1c	Security groups: salted_server, view inbound rules, view outbound rules

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Fill in your name in the box and then click the little checkmark icon thing

The screenshot shows the AWS EC2 Management Console. On the left, the navigation sidebar is open, showing various services like EC2 Dashboard, Instances, Images, Elastic Block Store, Network & Security, and more. The main area displays a list of running instances. A green arrow points from the text above to a modal dialog box at the bottom-left of the screen. This dialog box has a title bar with '0/255' and a close button. It contains a single input field with a placeholder 'Name' and a dropdown menu. A small blue square checkbox is checked, and a checkmark icon is positioned next to it. Below the input field, there are 'X' and '✓' buttons.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Mic...	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	[REDACTED]	-	-	aws2
helga-box	[REDACTED]	t2.micro	us-west-1c	running	2/2 checks ...	None	[REDACTED]	-	-	helga
rambo-...	[REDACTED]	t2.large	us-west-1c	running	2/2 checks ...	None	[REDACTED]	-	-	aws2
tl_irc	[REDACTED]	t2.micro	us-west-1b	running	2/2 checks ...	None	[REDACTED]	-	-	tl_irc
	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	[REDACTED]	-	-	mike_lab

Below the table, a detailed view of instance i-0bd3a204a94ba2067 is shown. The instance is running, t2.medium type, in us-west-1c, with a public DNS of ec2-18-144-72-231.us-west-1.compute.amazonaws.com and a private IP of 172.31.30.24. It has no IPv6 IPs or security groups assigned.

Modal Dialog (Bottom Left):

0/255	X	✓
-------	---	---

Modal Dialog Input Field:

Name: [REDACTED]  
Value: [REDACTED]

Modal Dialog Buttons:

X ✓

Page Footer:

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# Confirm you VM now has a name tag then click the connect button

The screenshot shows the AWS EC2 Management Console interface. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays a table of instances with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), IPv4 Public IP, IPv6 IPs, and Key Name. Five instances are listed: rambo-Micha..., helga-box, rambo-Micha..., tl\_irc, and mike\_lab (selected). Below the table, a detailed view for the mike\_lab instance is shown, including its description (Instance ID: i-0bd3a204a94ba2067, Instance state: running, Instance type: t2.medium), status checks (2/2 checks passed), monitoring, and tags. The Public DNS (IPv4) is ec2-18-144-72-231.us-west-1.compute.amazonaws.com, and the IPv4 Public IP is 18.144.72.231. The instance is located in the us-west-1c availability zone and belongs to the salted\_server security group.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
rambo-Micha...	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	[REDACTED]	[REDACTED]	-	aws2
helga-box	[REDACTED]	t2.micro	us-west-1c	running	2/2 checks ...	None	[REDACTED]	[REDACTED]	-	helga
rambo-Micha...	[REDACTED]	t2.large	us-west-1c	running	2/2 checks ...	None	[REDACTED]	[REDACTED]	-	aws2
tl_irc	[REDACTED]	t2.micro	us-west-1b	running	2/2 checks ...	None	[REDACTED]	[REDACTED]	-	tl_irc
<b>mike_lab</b>	[REDACTED]	t2.medium	us-west-1c	running	2/2 checks ...	None	[REDACTED]	[REDACTED]	-	mike_lab

**Instance:** i-0bd3a204a94ba2067 (**mike\_lab**)    **Public DNS:** ec2-18-144-72-231.us-west-1.compute.amazonaws.com

Description	Status Checks	Monitoring	Tags
Instance ID: i-0bd3a204a94ba2067	Instance state: running	Instance type: t2.medium	
Finding: Opt-in to AWS Compute Optimizer for recommendations. <a href="#">Learn more</a>			
Private DNS: ip-172-31-30-24.us-west-1.compute.internal	Private IPs: 172.31.30.24	Public DNS (IPv4): ec2-18-144-72-231.us-west-1.compute.amazonaws.com	IPv4 Public IP: 18.144.72.231
Elastic IPs: -	IPv6 IPs: -	Elastic IPs: -	Availability zone: us-west-1c
Placement Groups: -	Security groups: salted_server, view inbound rules, view outbound rules		

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# Follow steps 1-4 listed here in your terminal window

The screenshot shows the AWS EC2 Management Console with the 'Instances' page open. A modal dialog box titled 'Connect to your instance' is displayed over the main content. The dialog provides instructions for connecting to the selected instance, 'mike\_lab'. It includes a section for 'Connection method' with three options: 'A standalone SSH client' (selected), 'Session Manager', and 'EC2 Instance Connect (browser-based SSH connection)'. Below this, there are steps for accessing the instance via SSH:

- Open an SSH client. (find out how to connect using PuTTY)
- Locate your private key file (mike\_lab.pem). The wizard automatically detects the key you used to launch the instance.
- Your key must not be publicly viewable for SSH to work. Use this command if needed:  
chmod 400 mike\_lab.pem
- Connect to your instance using its Public DNS:  
ec2-18-144-72-231.us-west-1.compute.amazonaws.com

The 'Example:' section shows the command to run in an SSH client:  
ssh -i "mike\_lab.pem" ubuntu@ec2-18-144-72-231.us-west-1.compute.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](#).

At the bottom right of the dialog is a 'Close' button.

Below the dialog, the main EC2 Instances page is visible, showing a list of instances including 'rambo-Micha...', 'helga-box', 'rambo-Micha...', 'tl\_irc', and 'mike\_lab'. The 'mike\_lab' instance is highlighted with a blue selection bar. The 'Description' tab of the instance details for 'mike\_lab' is selected, showing information like Instance ID (i-0bd3a204a94ba2067), Instance state (running), Instance type (t2.medium), and Private IP (172.31.30.24).

# Switch to Terminal

Where we will run some commands

```
(base) Michaels-MacBook-Pro:lab mike$ ls  
mike_lab.pem  
(base) Michaels-MacBook-Pro:lab mike$ ⌋
```

```
[base] Michael-MacBook-Pro:lab mike$ ssh -i "mike_lab.pem" ubuntu@ec2-18-144-72-231.us-west-1.compute.amazonaws.com
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1023-aws x86_64)
```

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

```
System information as of Mon Jul 27 20:27:30 UTC 2020
```

```
System load: 0.06      Processes:          161
Usage of /: 3.5% of 30.96GB  Users logged in:   0
Memory usage: 4%           IP address for eth0: 172.31.30.24
Swap usage:  0%
```

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

```
Last login: Mon Jul 27 20:27:11 2020 from 173.174.32.102
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
ubuntu@ip-172-31-30-24:~$ 
```

In the ssh session to the VM run these commands in order (omit the order index)

Page 1/1

1. free -m
  - a. (if it looks good keep going)
2. ping 8.8.8.8
  - a. (if it looks good force kill with ctl-c)
3. sudo apt update
4. sudo apt -y upgrade
5. sudo apt -y install wget nano unzip
6. wget -O bootstrap-salt.sh <https://bootstrap.saltstack.com>
7. sudo bash bootstrap-salt.sh -M -x python3
8. sudo salt --version
9. wget [https://releases.hashicorp.com/terraform/0.11.11/terraform\\_0.11.11\\_linux\\_amd64.zip](https://releases.hashicorp.com/terraform/0.11.11/terraform_0.11.11_linux_amd64.zip)
10. unzip terraform\_0.11.11\_linux\_amd64.zip
11. sudo mv terraform /usr/local/bin/
12. terraform --version
13. sudo apt-add-repository ppa:ansible/ansible
14. sudo apt update
15. sudo apt -y install ansible
16. ansible --version

# Use terraform to spin up a new (2nd) ec2 vm

page 1/1

1. Copy all the files from  
[https://github.com/terminal-labs/presentation\\_saltstack\\_ansible\\_terraform/tree/master/terraform](https://github.com/terminal-labs/presentation_saltstack_ansible_terraform/tree/master/terraform) to your working dir on the 1st ec2 vm
2. Edit variables.txt to be named variables.tf
3. Edit to contents of variables.tf
  - a. Replace "YOUR\_ADMIN\_ACCESS\_KEY" with our acces token (leave the quotes)
  - b. Replace "YOUR\_ADMIN\_SECRET\_KEY" with our secret access token (leave the quotes)
4. Edit to contents of main.tf
  - a. Replace the 4 char string "name" on line #21 with your name
  - b. Replace the 4 char string "name" on line #25 with your name
  - c. Replace the 4 char string "name" on line #27 with your name
5. Run the cmd "ls" (confirm you tf files are in the right place)
6. Run the cmd "terraform init"
7. Run the cmd "terraform plan"
8. Run the cmd "terraform apply"
9. Check in the aws console that your new vm is being initialized

# Use ansible to move some files into the new ec2 vm

## page 1/1

1. Copy all the files from  
[https://github.com/terminal-labs/presentation\\_saltstack\\_ansible\\_terraform/tree/master/ansible](https://github.com/terminal-labs/presentation_saltstack_ansible_terraform/tree/master/ansible) to your working dir on the 1st ec2 vm
2. Copy all the files from  
[https://github.com/terminal-labs/presentation\\_saltstack\\_ansible\\_terraform/tree/master/www](https://github.com/terminal-labs/presentation_saltstack_ansible_terraform/tree/master/www) to your working dir on the 1st ec2 vm
3. Copy the contents of 'you name\_lab.pem' file into a file of the same name in your working dir on the 1st ec2 vm
4. Edit the file "/etc/ansible/hosts". Under the line "## blue.example.com" add in you 4 # public ip address for vm2 (don't have a #'s)
5. Run "chmod 400 name\_lab.pem"
6. Run "ssh-agent bash"
7. Run "ssh-add ~/.ssh/id\_rsa"
8. Run "ansible all -m ping"
9. Edit the file "ping.yml". Replace the 4 # public ip address on line #4 with the public ip address for vm2
10. Run "ansible-playbook ping.yml"
11. Edit the file "files.yml". Replace the 4 # public ip address on line #4 with the public ip address for vm2
12. Run "ansible-playbook files.yml"

# Use saltstack to move some more files into the new ec2 vm and run a file server

## page 1/1

1. Copy all the files from  
[https://github.com/terminal-labs/presentation\\_saltstack\\_ansible\\_terraform/tree/master/saltstack](https://github.com/terminal-labs/presentation_saltstack_ansible_terraform/tree/master/saltstack) to your working dir on the 1st ec2 vm
2. Open up a 2nd terminal window and ssh into your 2nd ec2 vm (call this t2 and the older terminal t1)
3. In t2, run:
  - a. sudo apt update
  - b. sudo apt -y upgrade
  - c. sudo apt -y install wget nano unzip
  - d. wget -O bootstrap-salt.sh <https://bootstrap.saltstack.com>
  - e. sudo bash bootstrap-salt.sh -x python3
4. In t2, edit “/etc/salt/minion”
  - a. Replace the line “#master: salt” with “master: [the ip of your master]”
5. In t2, run “sudo salt-minion start”
6. In t1, run “sudo salt-key -L”
7. In t1, run “sudo salt-key -A”
8. In t1, run “sudo salt-key -L” again
9. In t1, run “sudo salt “\*” test.ping”
10. In t1, copy all files from “srv/salt” to “/srv/salt” and copy “www” to “/srv/salt/www”
11. In t1, run “sudo salt “\*” state.highstate”