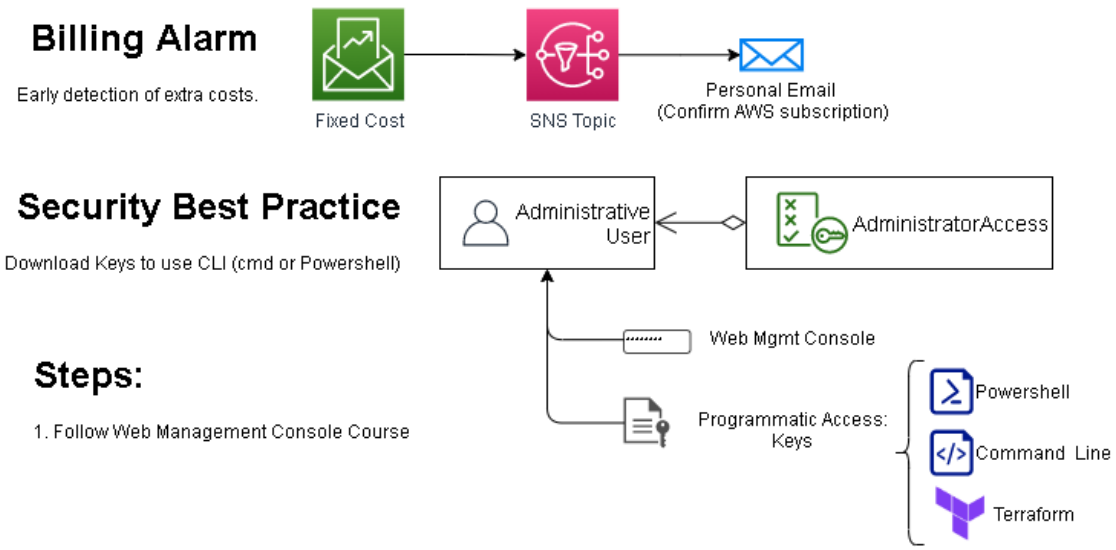
Contents

Purpose

General Idea of this lab is to have the management of your account using CLI or Web Console; in additional to control expenses using Billing Alarm, and fulfil the best practice to have an IAM user instead of having a root account to make programmatic changes.

General Diagram



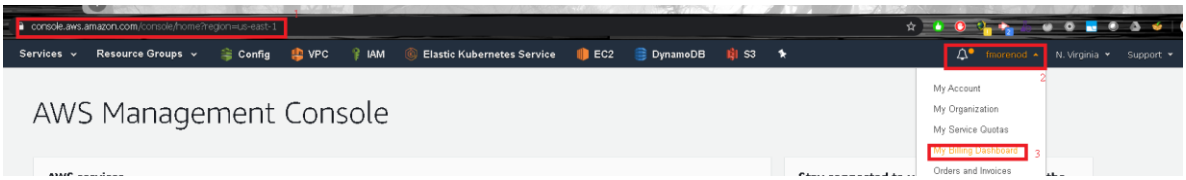
Prerequisites

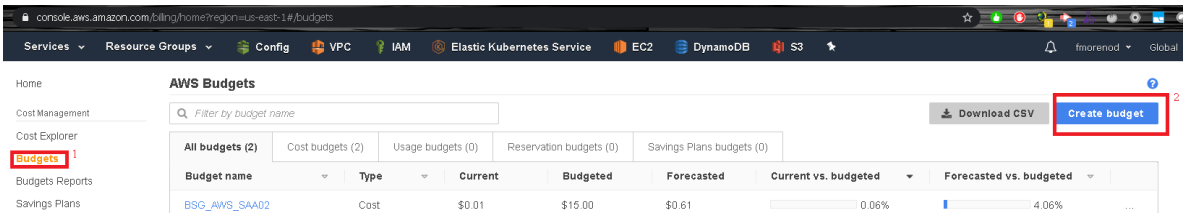
Create a AWS Free Tier Account following https://aws.amazon.com/free/free-tier/ or to get a free one if your student or educator using https://aws.amazon.com/education/awseducate/

Lab 1 using Web Management Console

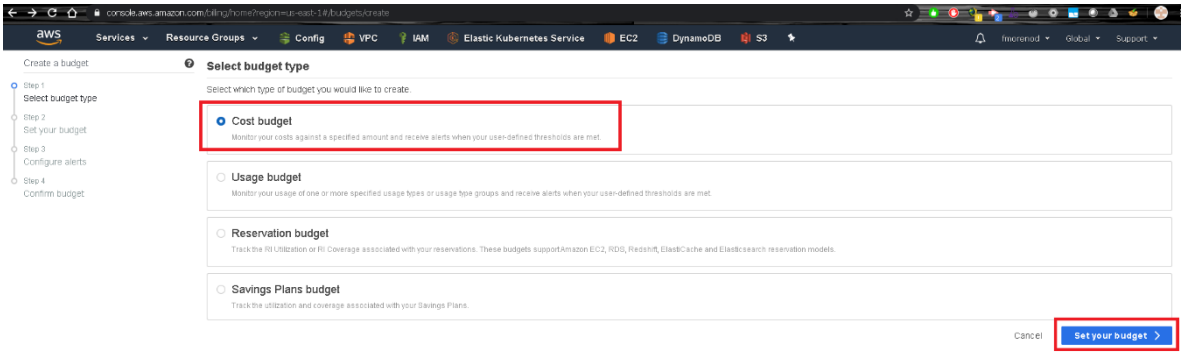
Stablish Billing Alarm

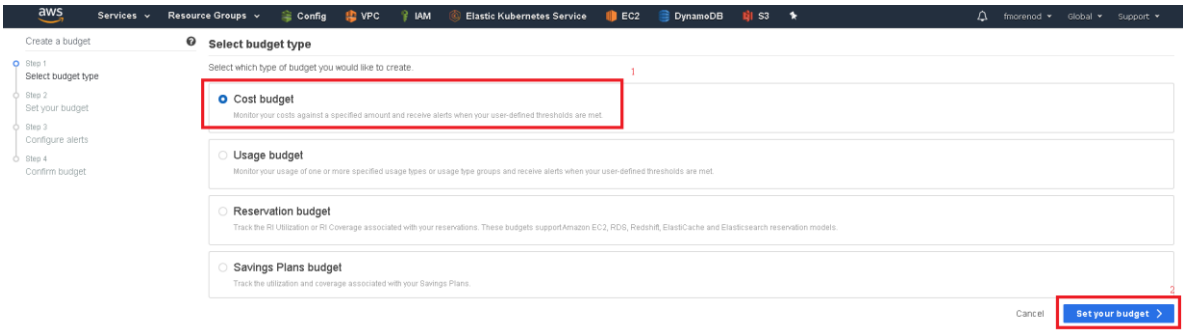
Make an alarm to have the control de of your expenses of your AWS account. It's your responsibility stablish a value of money that you can spend on this course.

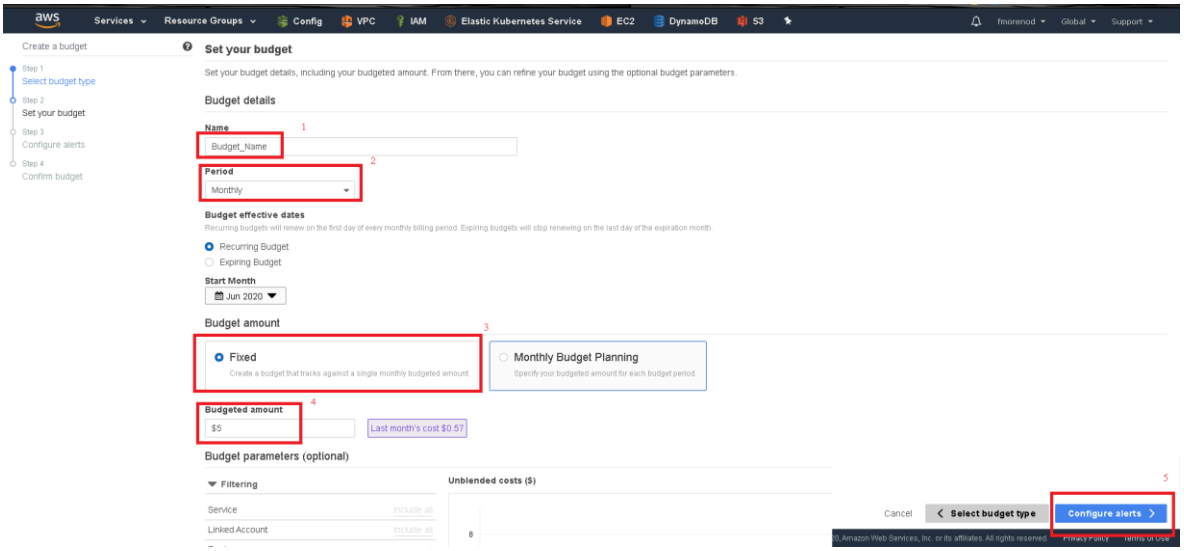




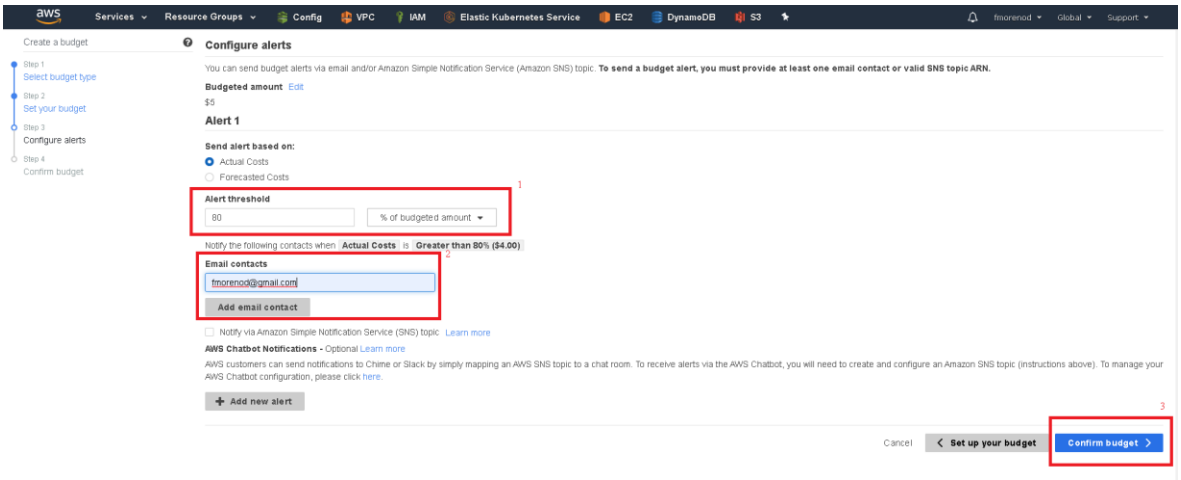
In this case, I configure a monthly stipend, however you can stablish another fixed expense.

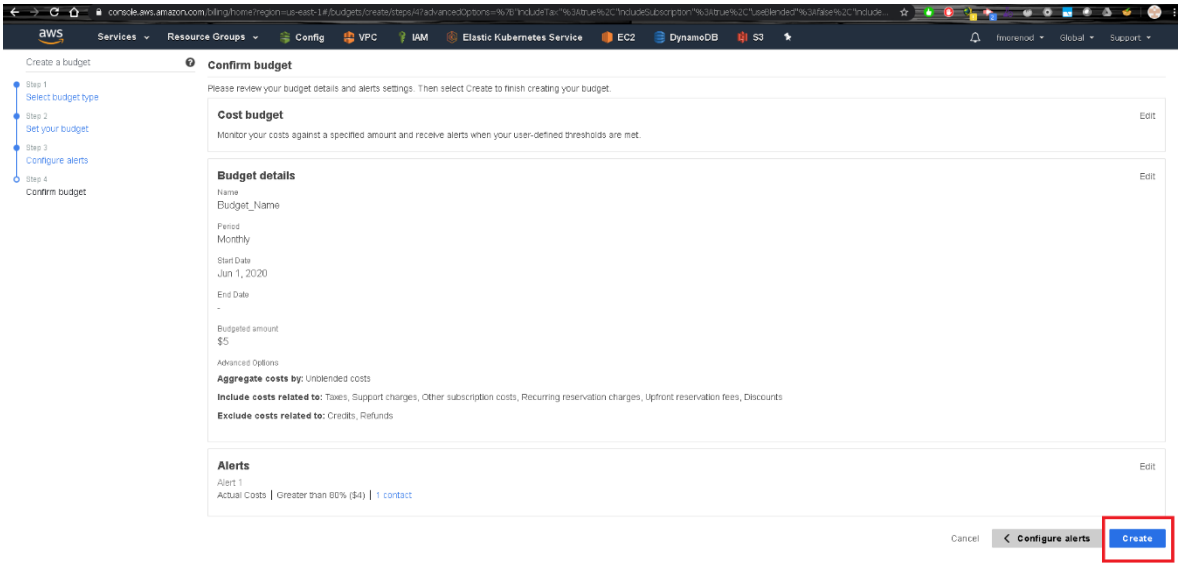


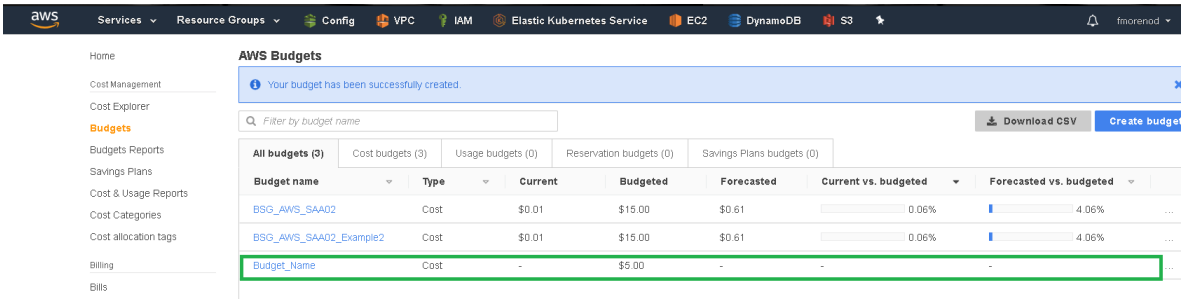




You will receive an email with the confirmation of the subscription of this topic/budget.

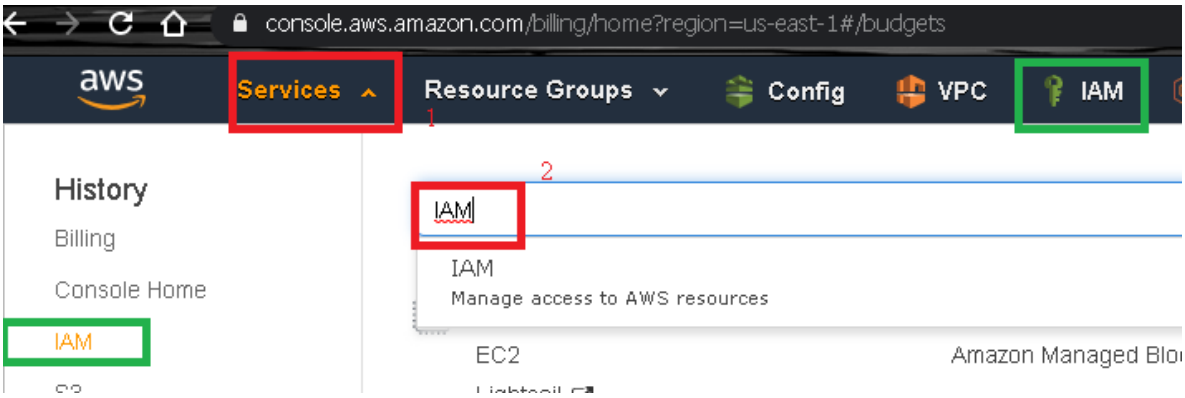


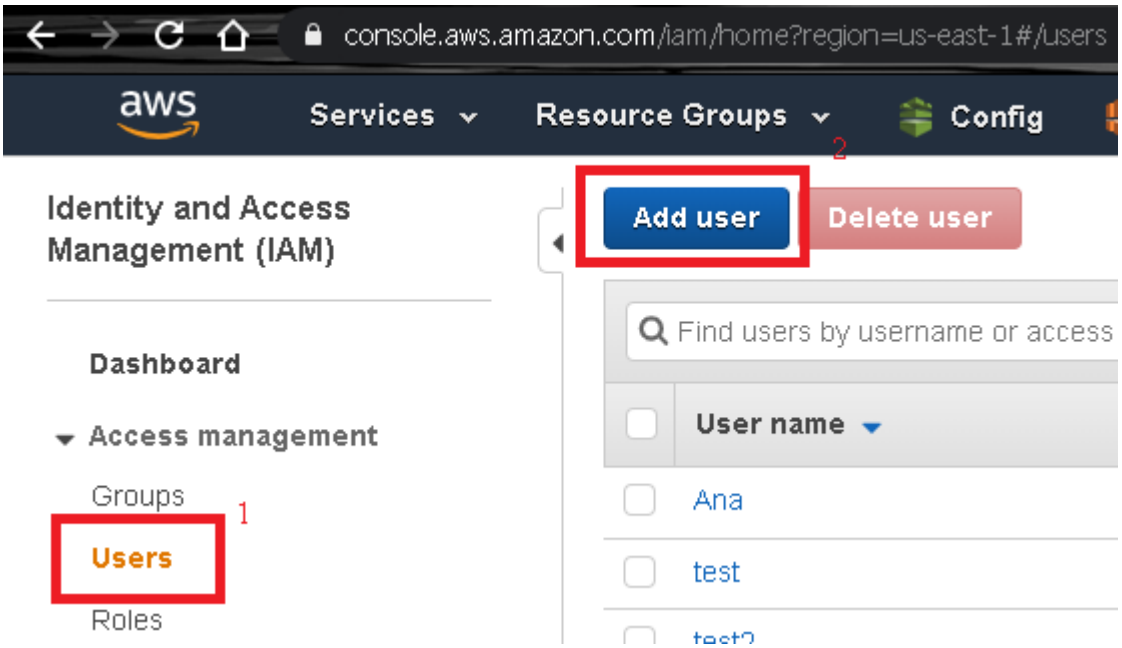


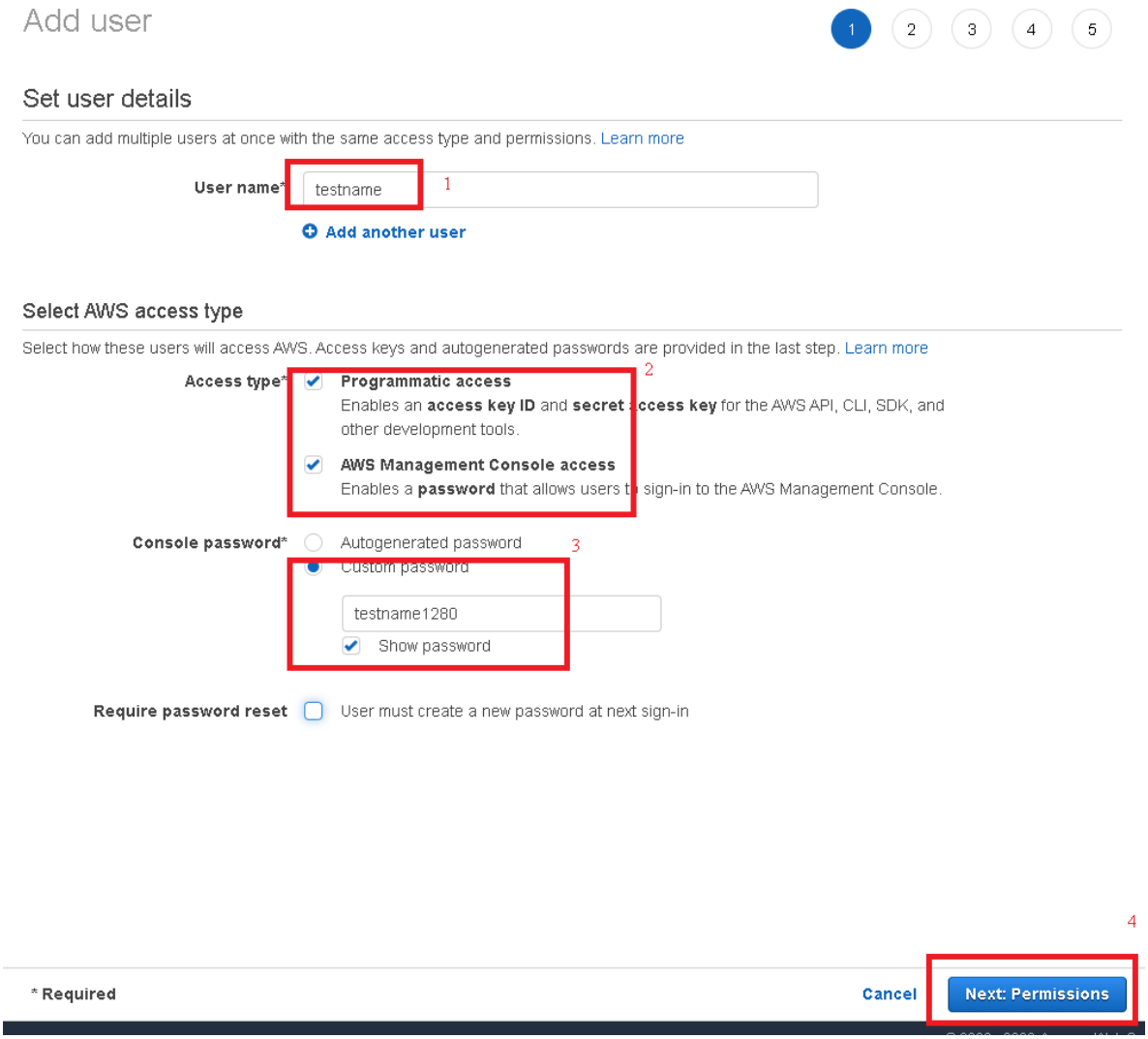


Create administrative user

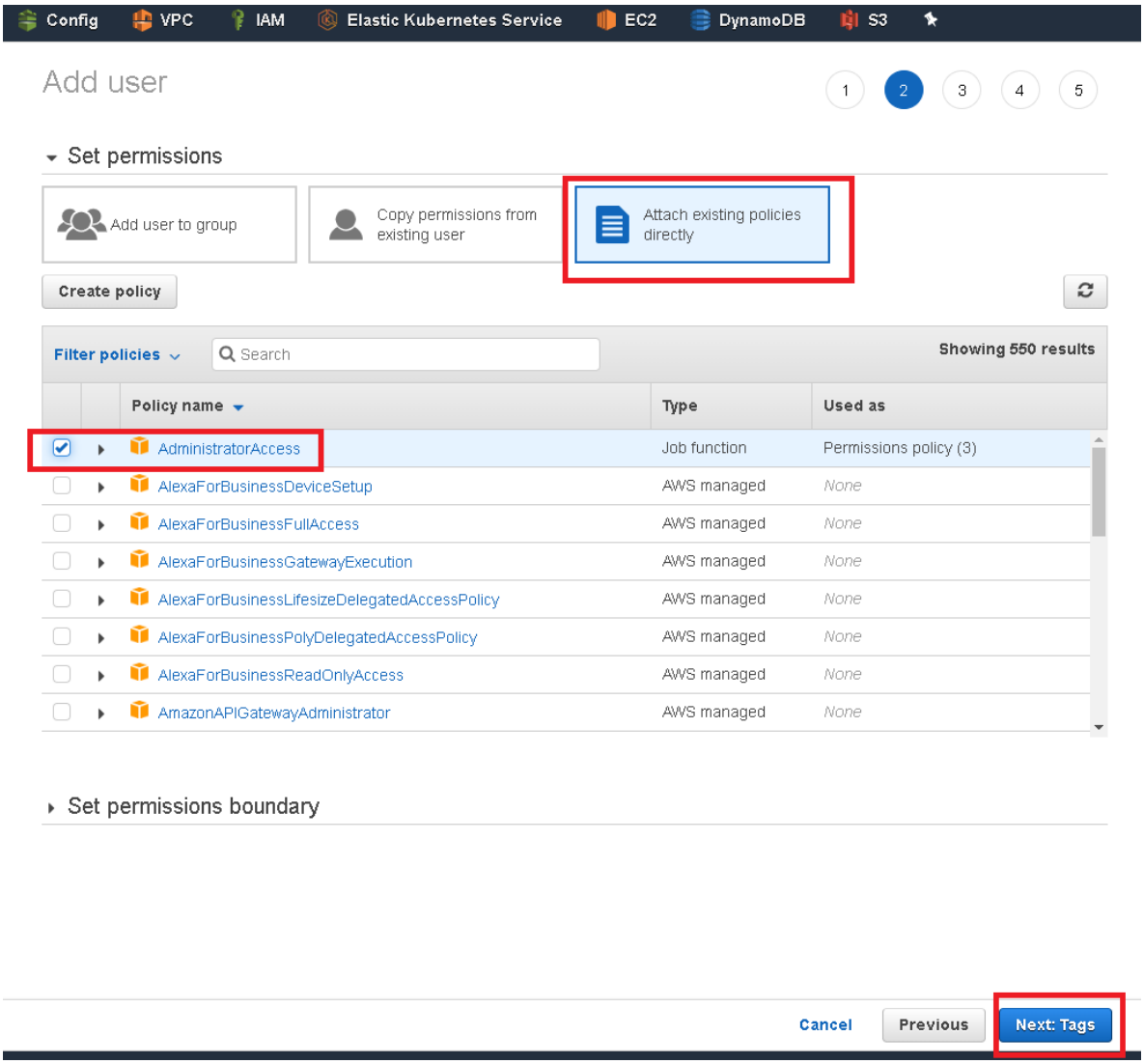
You will have to create a user to manage the following laboratories. In that case you have to use a programmatically access.

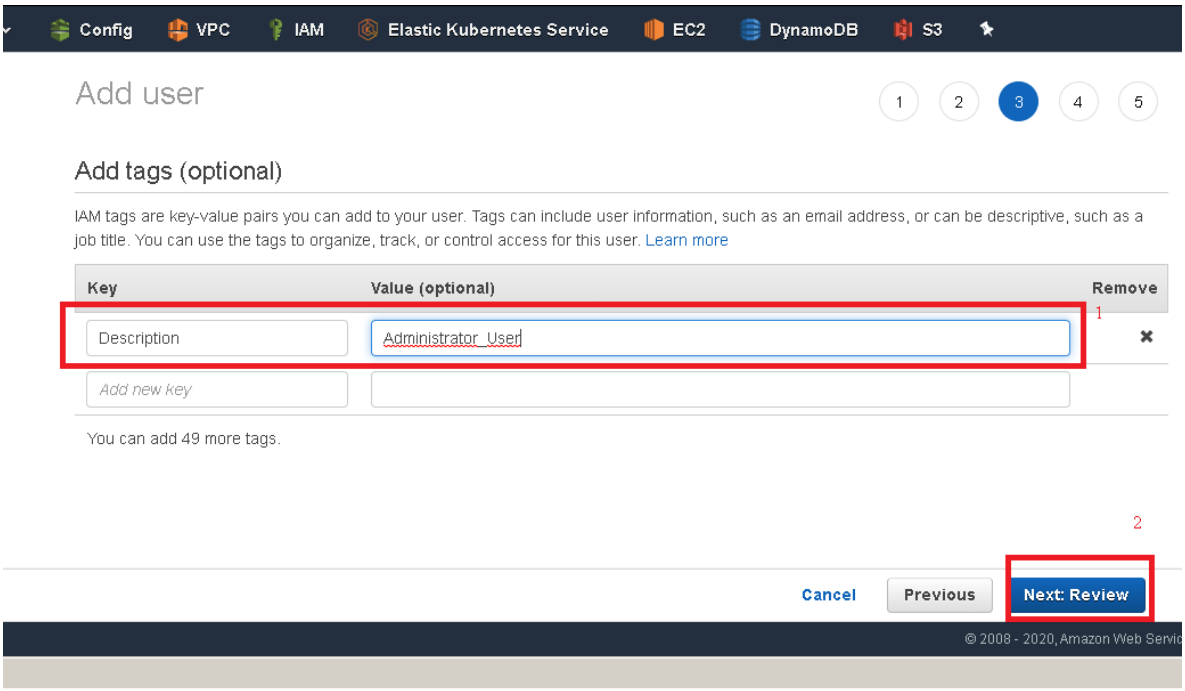

console.aws.amazon.com/billing/home?region=us-east-1#/budgets
aws
Services
Resource Groups
Config
VPC
IAM
1
History
Billing
Console Home
IAM
2
IAM
IAM
Manage access to AWS resources
EC2
Amazon Managed Blo

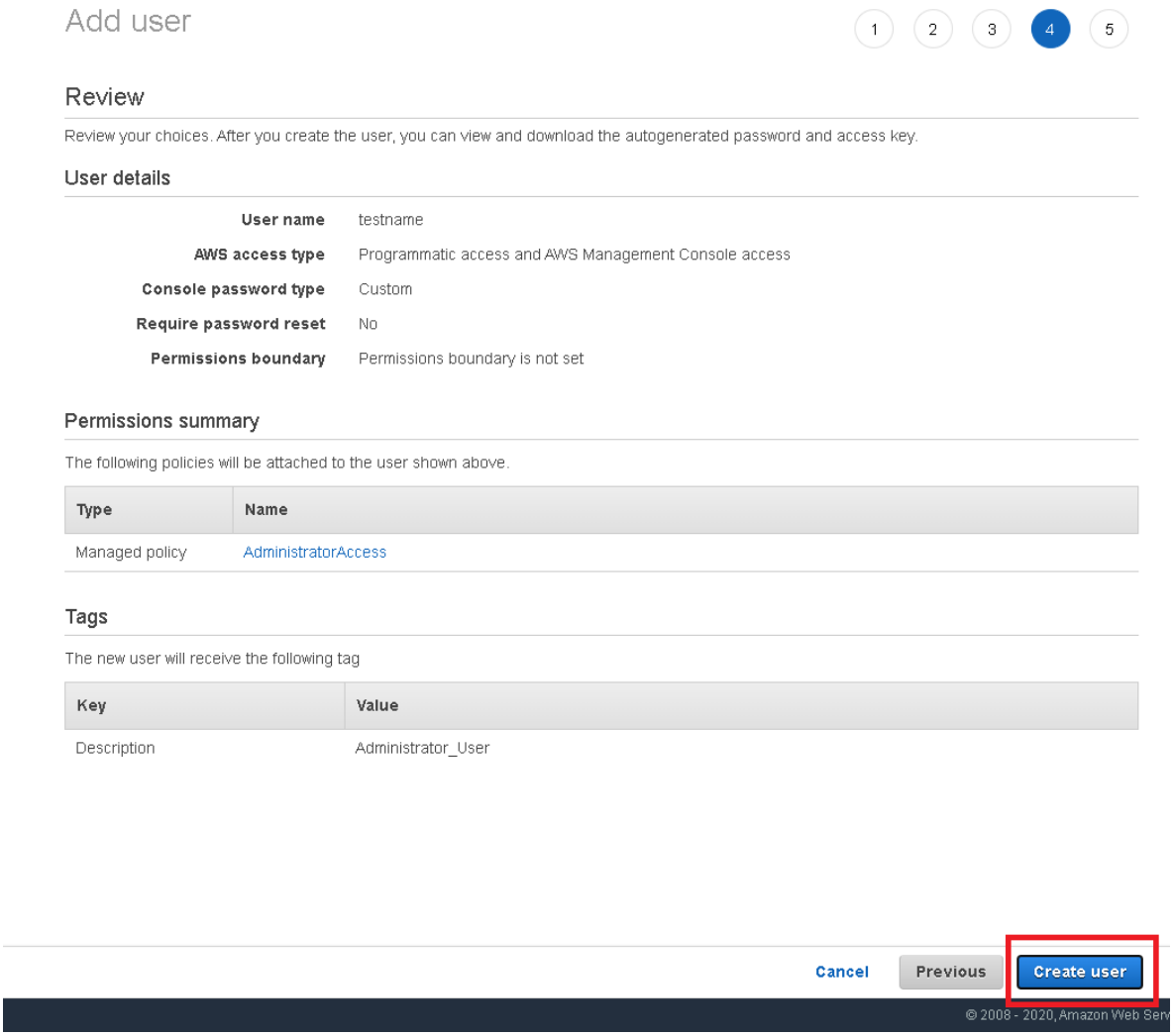

console.aws.amazon.com/iam/home?region=us-east-1#/users
aws
Services
Resource Groups
Config
2
Identity and Access Management (IAM)
Add user
Delete user
Find users by username or access
Dashboard
Access management
Groups
Users
1
Roles
User name
Ana
test



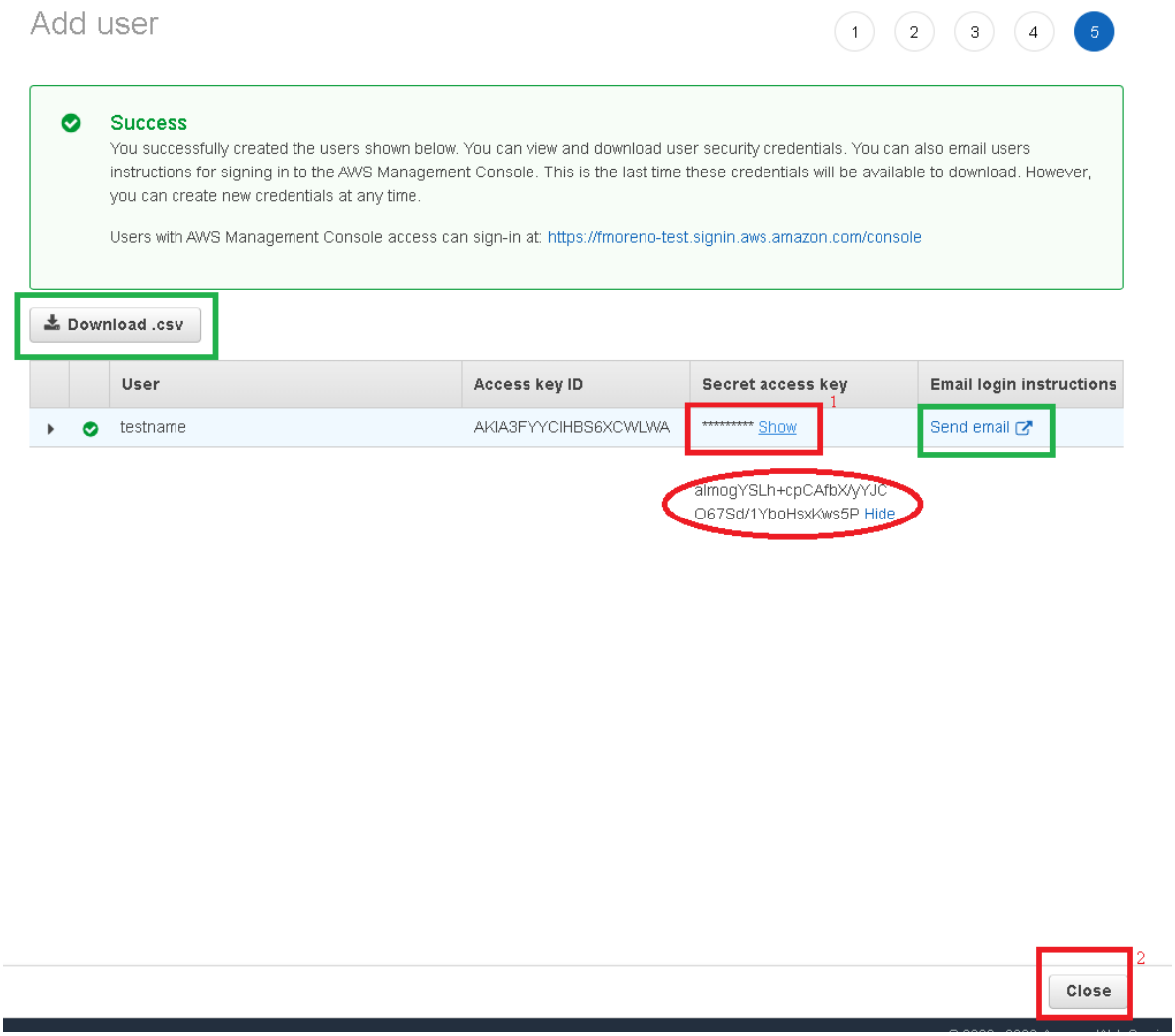
It's better to have a full administrator Access.


Config
VPC
IAM
Elastic Kubernetes Service
EC2
DynamoDB
S3
Add user
1
2
3
4
5
Set permissions
Add user to group
Copy permissions from existing user
Attach existing policies directly
Create policy
Filter policies
Search
Showing 550 results
Policy name
Type
Used as
AdministratorAccess
Job function
Permissions policy (3)
AlexaForBusinessDeviceSetup
AWS managed
None
AlexaForBusinessFullAccess
AWS managed
None
AlexaForBusinessGatewayExecution
AWS managed
None
AlexaForBusinessLifesizeDelegatedAccessPolicy
AWS managed
None
AlexaForBusinessPolyDelegatedAccessPolicy
AWS managed
None
AlexaForBusinessReadOnlyAccess
AWS managed
None
AmazonAPIGatewayAdministrator
AWS managed
None
Set permissions boundary
Cancel
Previous
Next: Tags


Config
VPC
IAM
Elastic Kubernetes Service
EC2
DynamoDB
S3
Add user
1
2
3
4
5
Add tags (optional)
IAM tags are key-value pairs you can add to your user. Tags can include user information, such as an email address, or can be descriptive, such as a job title. You can use the tags to organize, track, or control access for this user. Learn more
Key
Value (optional)
Remove
Description
Administrator_User
Add new key
You can add 49 more tags.
1
2
Cancel
Previous
Next: Review
© 2008 - 2020, Amazon Web Servic

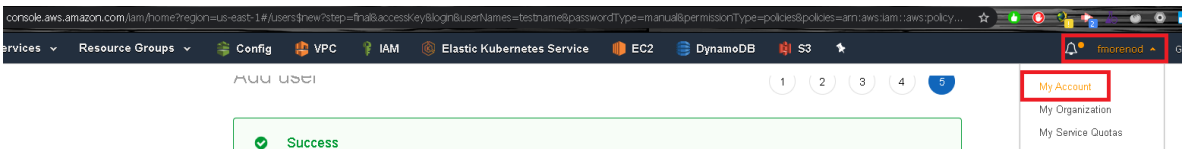


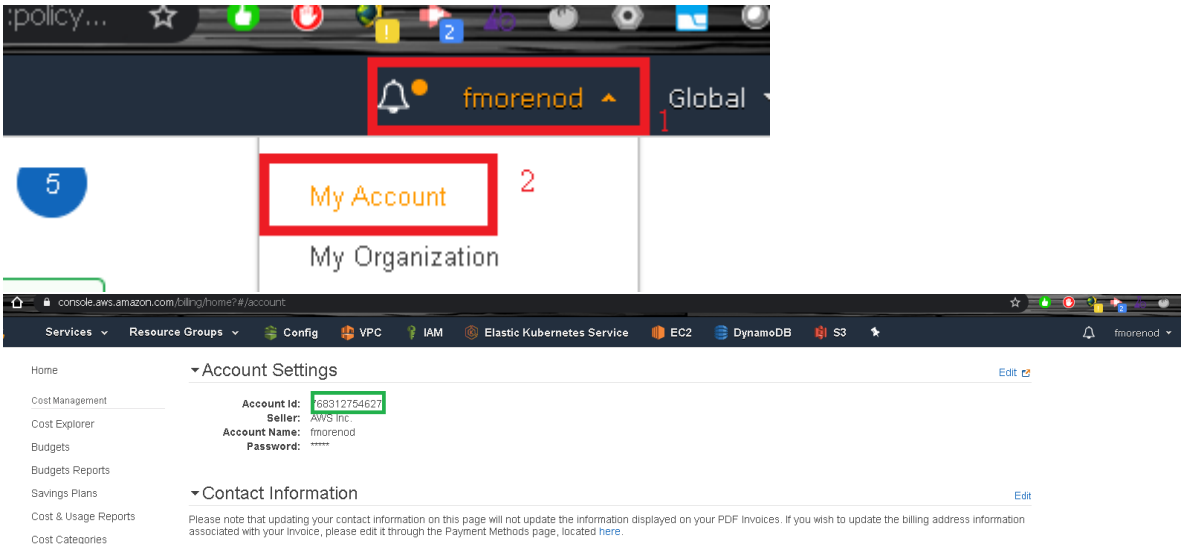
Please store those credentials, because you have to configure using “aws configure” or on environment variables.



Copy the text for Access key ID and Secret Access key, the same as the CSV file.

Get Account Number




:policy...
fmorenod
Global
1
5
My Account
2
My Organization

console.aws.amazon.com/billing/home?#/account
Services
Resource Groups
Config
VPC
IAM
Elastic Kubernetes Service
EC2
DynamoDB
S3
fmorenod
Home
Cost Management
Cost Explorer
Budgets
Budgets Reports
Savings Plans
Cost & Usage Reports
Cost Categories
Account Settings
Edit
Account Id: 68312754627
Seller: AWS Inc.
Account Name: fmorenod
Password: *****
Contact Information
Edit
Please note that updating your contact information on this page will not update the information displayed on your PDF invoices. If you wish to update the billing address information associated with your invoice, please edit it through the Payment Methods page, located here.

Lab 1 using Command Line (Windows)

Follow the same steps of Web Management Console for:

Stablish Billing Alarm

Create Administrative User

Get AWS Account ID

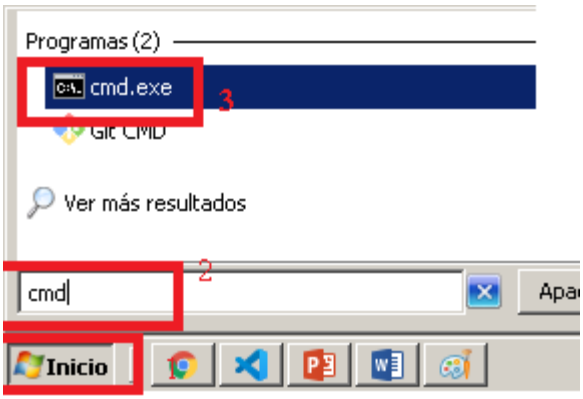
Prerequisites

Download an AWS CLI for according OS, following
https://docs.aws.amazon.com/cli/latest/userguide/install-cliv2.html

Jq is a tool to parse JSON text, so you can download to make readable output information. You can install using instructions on https://stedolan.github.io/jq/download/

Identify current user

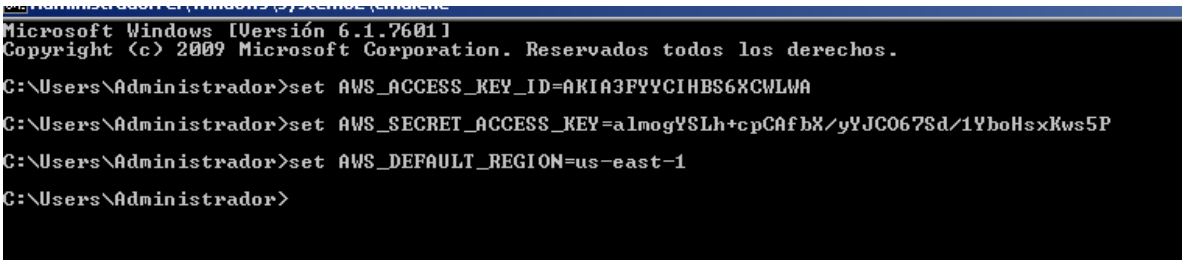
Open a console



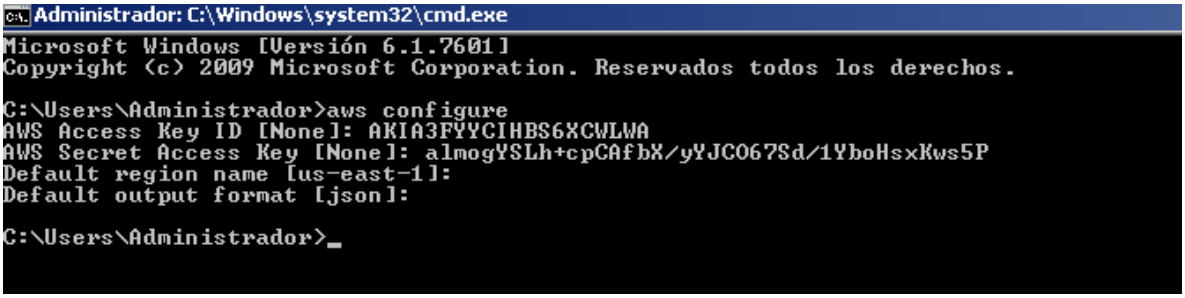
Configure the variables of Access key ID and Secret Access key that you create on Create Administrative User.

In addition you have you configure the default region.

```
set AWS_ACCESS_KEY_ID=AKIA3FYYCIHBS6XCWLWA
set AWS_SECRET_ACCESS_KEY=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
set AWS_DEFAULT_REGION=us-east-1
```



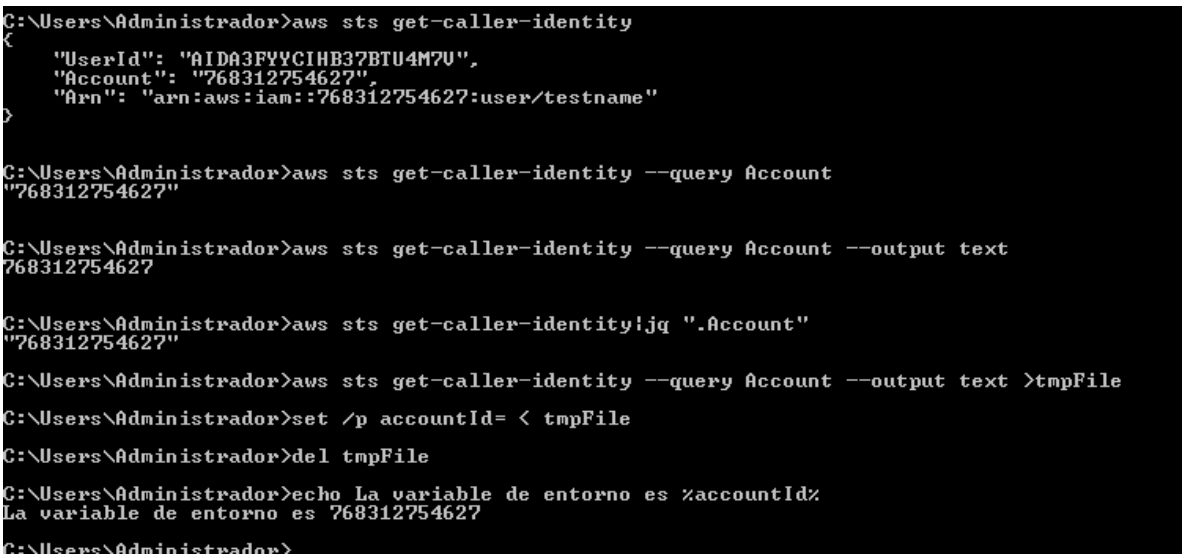
You have to make the same activity everytime that you like to send commands or you can configure the CLI to identify AWS User automatically using “aws configure” and insert the same data.



Get Account ID

Following the instructions

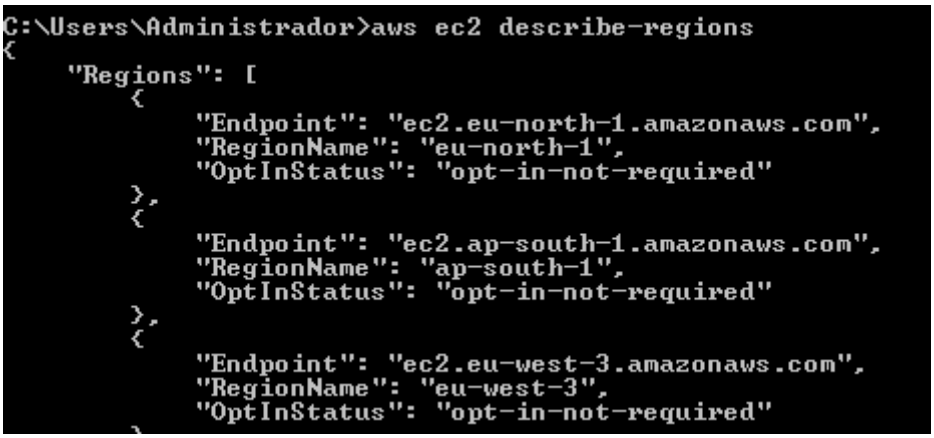
```
rem Obtenemos datos de la cuenta por medio de una obtencion de identidad STS
aws sts get-caller-identity
aws sts get-caller-identity --query Account
aws sts get-caller-identity --query Account --output text
rem Unicamente obtenemos un valor de esa cuenta, podriamos realizarlo usando
 jq si tenemos json
aws sts get-caller-identity|jq ".Account"
rem Obtener variable ejecutada en entorno
aws sts get-caller-identity --query Account --output text >tmpFile
set /p accountId= < tmpFile
del tmpFile
echo La variable de entorno es %accountId%
```



Describe regions

You can check available regions for your account using

```
aws ec2 describe-regions
```



Get Budget Information

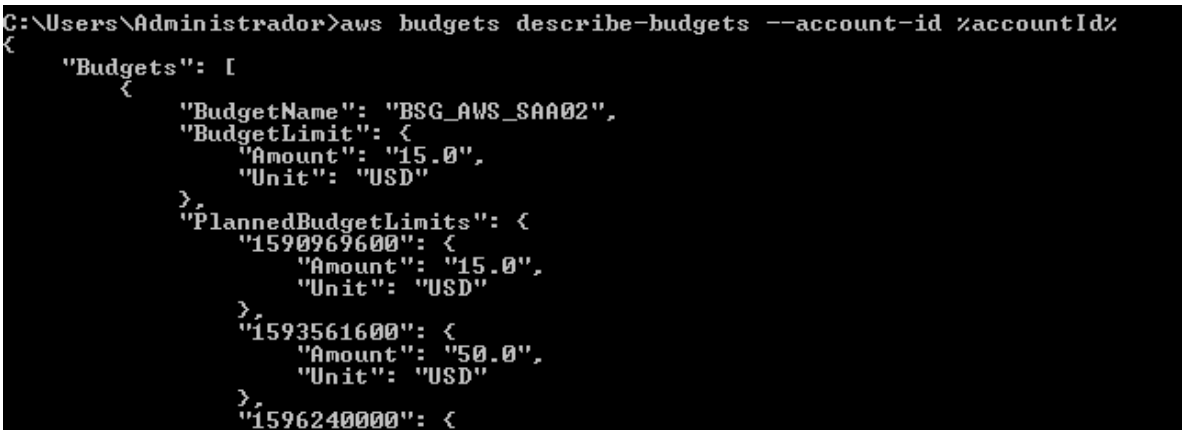
Running

```
aws budgets describe-budgets --account-id %accountId%
```

or

```
aws budgets describe-budgets --account-
id %accountId% |jq ".Budgets[0].BudgetName"
```

, you get detailed information of budget that you already created.



Lab 1 using Powershell (Windows)

Follow the same steps of Web Management Console for:

Stablish Billing Alarm

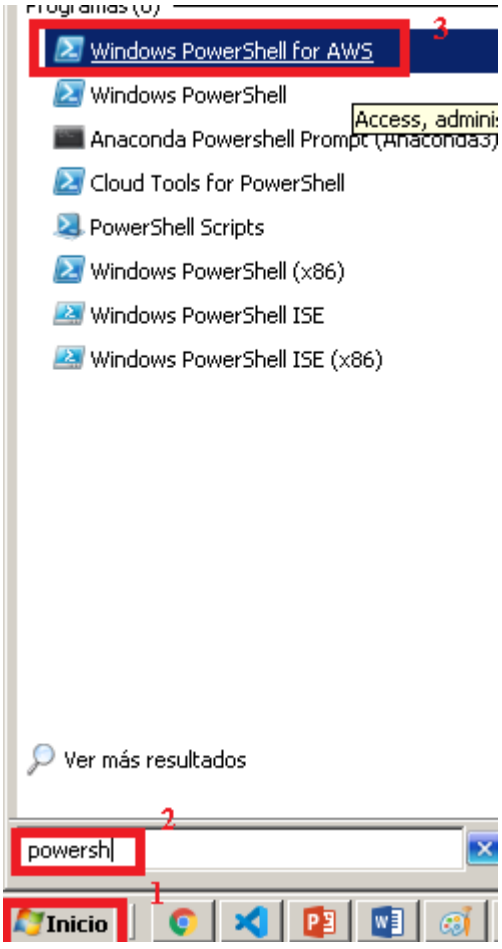
Create Administrative User.

Prerequisites

Download an AWS Powershell Tools for according OS, following
https://docs.aws.amazon.com/powershell/latest/userguide/pstools-getting-set-up.html

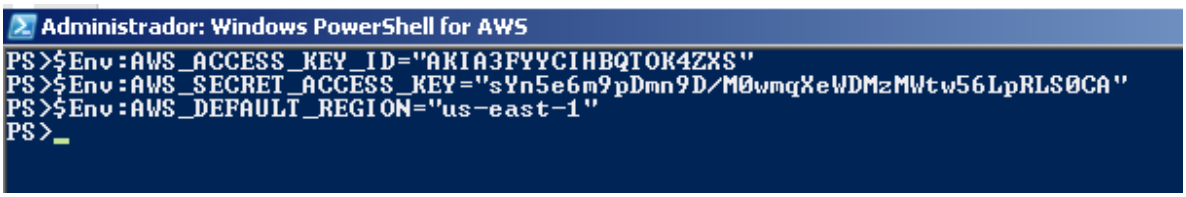
Identify current user

Open Powershell Tools for AWS



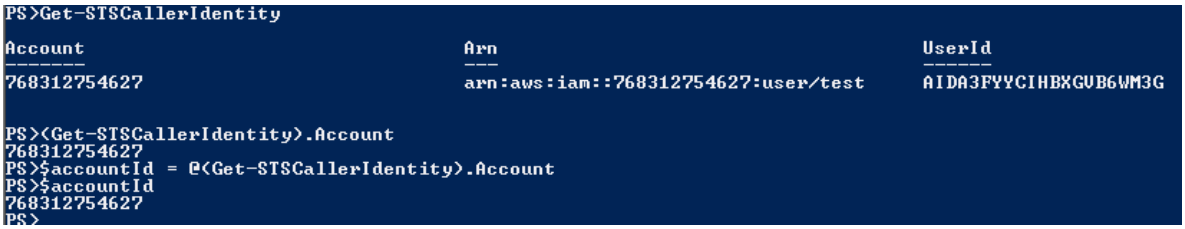
For default, Powershell request the user using the same configuration of “aws configure”, however we will create the environment variables to identify the current user.

```
<# Primero ingresar los datos de configuracion de la cuenta, obtenidos del a
rchivo csv del IAM #>
$Env:AWS_ACCESS_KEY_ID="AKIA3FYYCIHBQTOK4ZXS"
$Env:AWS_SECRET_ACCESS_KEY="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"
$Env:AWS_DEFAULT_REGION="us-east-1"
```



Get Account ID

```
<# Obtenemos datos de la cuenta por medio de una obtencion de identidad STS
#>
Get-STSCallerIdentity
<# Unicamente obtenemos un valor de esa cuenta, podriamos realizarlo usando
jq si tenemos json #>
(Get-STSCallerIdentity).Account
$accountId = @(Get-STSCallerIdentity).Account
$accountId
```



Describe regions

```
<# Vamos a traer el listado de regiones que estan disponibles para esa cuent
a #>
Get-EC2Region
```

```
PS>Get-EC2Region

Endpoint                                                RegionName
--------                                                ----------
ec2.eu-north-1.amazonaws.com                            eu-north-1
ec2.ap-south-1.amazonaws.com                            ap-south-1
ec2.eu-west-3.amazonaws.com                             eu-west-3
ec2.eu-west-2.amazonaws.com                             eu-west-2
ec2.eu-west-1.amazonaws.com                             eu-west-1
ec2.ap-northeast-2.amazonaws.com                        ap-northeast-2
ec2.ap-northeast-1.amazonaws.com                        ap-northeast-1
ec2.sa-east-1.amazonaws.com                             sa-east-1
ec2.ca-central-1.amazonaws.com                          ca-central-1
ec2.ap-southeast-1.amazonaws.com                        ap-southeast-1
ec2.ap-southeast-2.amazonaws.com                        ap-southeast-2
ec2.eu-central-1.amazonaws.com                          eu-central-1
ec2.us-east-1.amazonaws.com                             us-east-1
ec2.us-east-2.amazonaws.com                             us-east-2
ec2.us-west-1.amazonaws.com                             us-west-1
ec2.us-west-2.amazonaws.com                             us-west-2
```

Get Budget Information

```
<# Vamos a traer alguna informacion del budget que realizamos recientemente
#>
Get-BGTBudgetList -AccountId $accountId
```

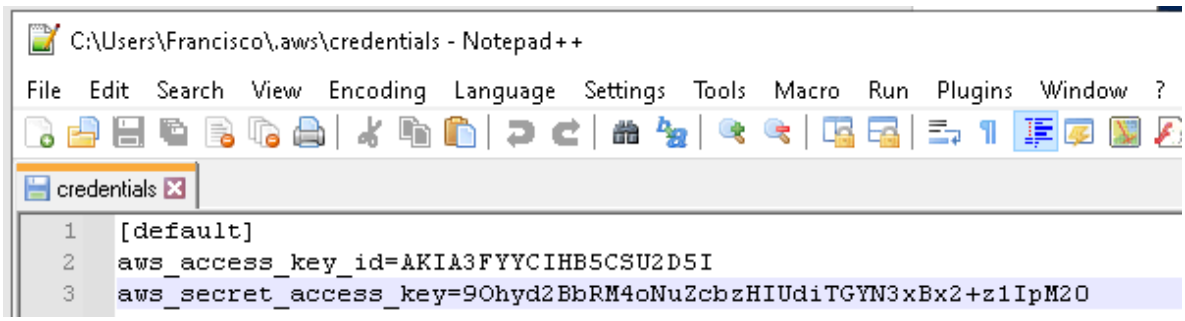
```
PS>Get-BGTBudgetList -AccountId $accountId


BudgetLimit          : Amazon.Budgets.Model.Spend
BudgetName           : BSG_AWS_SAA02
BudgetType           : COST
CalculatedSpend      : Amazon.Budgets.Model.CalculatedSpend
CostFilters          : {}
CostTypes            : Amazon.Budgets.Model.CostTypes
LastUpdatedTime      : 06/12/2020 6:50:40
PlannedBudgetLimits  : {[1590969600, Amazon.Budgets.Model.Spend], [1593561600, Amazon.Budgets.Model.Spend],
                       [1596240000, Amazon.Budgets.Model.Spend], [1598918400, Amazon.Budgets.Model.Spend]..
TimePeriod           : Amazon.Budgets.Model.TimePeriod
TimeUnit             : MONTHLY

BudgetLimit          : Amazon.Budgets.Model.Spend
BudgetName           : BSG_AWS_SAA02_Example2
```

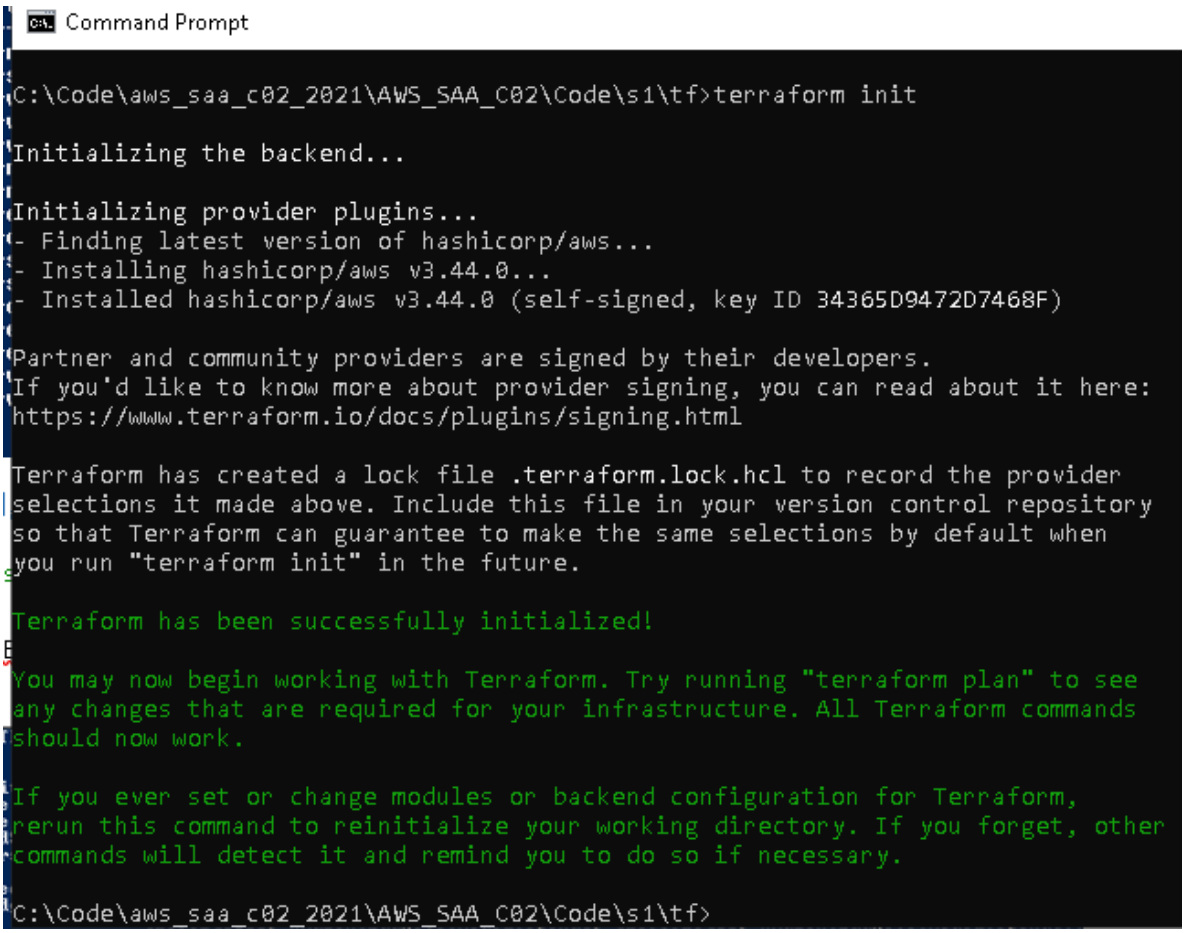
Lab 1 using Terraform (Windows)

You must download the GIT repository on a folder, then you have to configure $HOME/aws/credentials from the Access Key and Secret Access Key for instance for Identify current user (Command Line), similar to have this file:



Then, we have to execute on the same folder that TF files:

`terraform init`



`terraform plan`

```
C:\Code\aws_saa_c02_2021\AWS_SAA_C02\Code\s1\tf>terraform plan

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:

Terraform will perform the following actions:

Plan: 0 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + account_id  = "768312754627"
  + caller_arn  = "arn:aws:iam::768312754627:user/test"
  + caller_user = "AIDA3FYYCIHBRZG6UXFVM"

------------------------------------------------------------------------

Note: You didn't specify an "-out" parameter to save this plan, so Terraform
can't guarantee that exactly these actions will be performed if
"terraform apply" is subsequently run.
```

terraform apply

```
C:\Code\aws_saa_c02_2021\AWS_SAA_C02\Code\s1\tf>terraform apply

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:

Terraform will perform the following actions:

Plan: 0 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + account_id  = "768312754627"
  + caller_arn  = "arn:aws:iam::768312754627:user/test"
  + caller_user = "AIDA3FYYCIHBRZG6UXFVM"

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes      write yes


Apply complete! Resources: 0 added, 0 changed, 0 destroyed.

Outputs:

account_id = "768312754627"
caller_arn = "arn:aws:iam::768312754627:user/test"
caller_user = "AIDA3FYYCIHBRZG6UXFVM"
```

Evidence to send.

To have a review, the student must send some screenshots to instructor email:

1. Screenshot of confirmed subscription of Billing Alarm. You must create using Web Management Console on section Stablish Billing Alarm.
2. Detailed Budget Information.