



GITLAB, BASIC AWS CLOUD USING PYTHON

FOUNDATIONAL – GETTING SET UP

Things to have done before

- 1) Gitlab account set up
- 2) Create AWS Free Tier account

Aims of this section

- Establish a new git repository
- Establish a new AWS EC2 instance
- Establish a new virtual environment within our EC2 instance
- Set up our SSH key so that our AWS EC2 environment can talk to git, Cloned a git repository into our EC2 instance





1. CREATE GITLAB REPOSITORY

1. Short meaningful name and description

2. Good practice to add a README

3. Always relevant .gitignore - files that will be ignored when checking in an out of gitlab.

4. Create Repository!

Owner * jesschou2018 / **Repository name *** aws_python_basic_1 ✓

Great repository names are short and memorable. Need inspiration? How about [urban-barnacle?](#)

Description (optional)
basic python application on aws

☐ **Public**
Anyone on the internet can see this repository. You choose who can commit.

☒ **Private**
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

☒ **Add a README file**
This is where you can write a long description for your project. [Learn more.](#)

☒ **Add .gitignore**
Choose which files not to track from a list of templates. [Learn more.](#)
.gitignore template: **Python**

☐ **Choose a license**
A license tells others what they can and can't do with your code. [Learn more.](#)

This will set **main** as the default branch. Change the default name in your [settings](#).

Create repository

2. START AWS CLOUD 9

1. Search for Cloud9 in the search bar

2. Open the Cloud 9 Service From here

Learn more about what Cloud9 is here



The screenshot shows the AWS Management Console search results for 'Cloud9'. The search bar at the top contains 'Cloud9'. Below the search bar, the results are categorized into 'Services (1)', 'Features (1)', 'Knowledge Articles (30)', and 'Marketplace (5)'. The 'Services' section is highlighted, showing the 'Cloud9' service with the description 'A Cloud IDE for Writing, Running, and Debugging Code'. The 'Features' section is also visible, showing 'Account environments' as a Cloud9 feature. The 'Documentation' section is at the bottom, with a link to 'What is AWS Cloud9? - AWS Cloud9 User Guide'. A red circular icon with a white question mark is overlaid on the 'Learn more about what Cloud9 is here' text, pointing towards the 'Documentation' section.

aws Cloud9

Search results for 'Cloud9'

Services (1)

Cloud9
A Cloud IDE for Writing, Running, and Debugging Code

Features (1)

Account environments
Cloud9 feature

Knowledge Articles (30)

Marketplace (5)

Documentation
See all 71,028 results in Documentation

What is AWS Cloud9? - AWS Cloud9
User Guide

3. CREATE NEW CLOUD 9 ENVIRONMENT

AWS Cloud9 > Your environments

Your environments (1)

Open IDE 

View details

Edit

Delete

Create environment

1. Select here (other boxes will only appear if you have created environments before)

2. Follow the prompts to
i) Name and describe your environment

ii) configure settings – currently using the default settings which align with the free tier setting

iii) Review and Create Environment. Once you select the final create, it will take a few minutes

Name environment

Environment name and description

Name

The name needs to be unique per user. You can update it at any time in your environment settings.

aws_python_basic_1

Limit: 60 characters

Description - Optional

This will appear on your environment's card in your dashboard. You can update it at any time in your environment settings.

Write a short description for your environment

Welcome to your development environment

AWS Cloud9 allows you to write, run, and debug your code with just a browser. You can tour the IDE, write code for AWS Lambda and Amazon API Gateway, share your IDE with others in real time, and much more.

Getting started

We are creating your AWS Cloud9 environment. This can take a few minutes.

4. CLOUD 9 BASICS

The image shows the AWS Cloud9 IDE interface. At the top is a menu bar with options: AWS Cloud9, File, Edit, Find, View, Go, Run, Tools, Window, Support, Preview, Run (with a play button), and a user profile icon labeled 'R' with a 'Share' button. Below the menu is a search bar labeled 'Go to Anything (⌘ P)'. On the left is a sidebar with 'Environment' and 'Source Control' tabs. The 'Environment' tab shows a file explorer with a folder named 'aws_python_basic_1' and a file icon. A callout box labeled 'File explorer here' points to this area. The main workspace has a dark theme and displays a 'Welcome' message: 'AWS Cloud9 Welcome to your development environment'. A callout box labeled 'Edit files here' points to the main workspace area. At the bottom is a terminal window with a bash prompt. A callout box labeled 'Bash command line' points to the terminal, which contains the text 'For more on Bash see' followed by a red circle containing a white question mark. The terminal also shows the prompt 'ec2-user: ~/en'.

AWS Cloud9 File Edit Find View Go Run Tools Window Support Preview **Run** **R** Share

Go to Anything (⌘ P)

Environment

aws_python_basic_1 - /home/ec2-user/environment

File explorer here

Welcome x AWS Toolkit - Qu x +

Develo

Edit files here

AWS Cloud9

Welcome to your development environment

AWS Cloud9 allows you to write, run, and debug your code with just a browser. You

bash - "ip-1" x

ec2-user: ~/en

Bash command line
For more on Bash see ?

5. GENERATE SSH KEYS

1. Need our Cloud9 Environment and GitLab to be able to send information back and forth to each other.

We need to set up an SSH connection between the two.

2. To generate an SSH Key ,
use the following command in bash (use defaults)

```
ssh-keygen -t rsa
```

```
ec2-user:~/environment $ ssh-keygen -t rsa  
Generating public/private rsa key pair.
```

Then, print out SSH key –
`cat /home/ec2-user/.ssh/id_rsa.pub`

```
ec2-user:~/environment $ cat /home/ec2-user/.ssh/id_rsa.pub
```

Copy the text output (not shown here) to your clipboard

What is SSH?
Basic overview

from techterms.com
[More detailed \(from
Oreilly.com\)](https://oreilly.com) :



6. SET UP VIRTUAL ENVIRONMENT IN CLOUD 9

1. Continuing in your AWS Cloud 9 Environment, run the following commands in your bash screen

i) change into the directory that is now there as a result of cloning the git repository

```
cd aws_python_basic_1
```

ii) create the virtual environment

```
python3 -m venv ~/.aws_python_basic_1
```

iii) activate the virtual environment (otherwise you will have created it but won't actually be using it)

```
source ~/.aws_python_basic_1/bin/activate
```

iv) Finally, add some git configs – this helps you avoid a warning later on

```
git config --global user.name "Jess Chou"
```

```
git config --global user.email email@email.com
```

```
ec2-user:~/environment $ cd aws_python_basic_1
ec2-user:~/environment/aws_python_basic_1 (main) $ python3 -m venv ~/.aws_python_basic_1
```

```
ec2-user:~/environment/aws_python_basic_1 (main) $ source ~/.aws_python_basic_1/bin/activate
(.aws_python_basic_1) ec2-user:~/environment/aws_python_basic_1 (main) $ git config --global user.email [REDACTED]
(.aws_python_basic_1) ec2-user:~/environment/aws_python_basic_1 (main) $ git config --global user.name "Jess Chou"
(.aws_python_basic_1) ec2-user:~/environment/aws_python_basic_1 (main) $
```



More
on virtual
environments

7. NOW WE HAVE

Established a new git repository

Established a new AWS EC2 instance

Established a new virtual environment within our EC2 instance

Set up our SSH key so that our AWS EC2 environment can talk to git, Cloned a git repository into our EC2 instance

Updated our EC2 environment with some key configs for when we push to git

