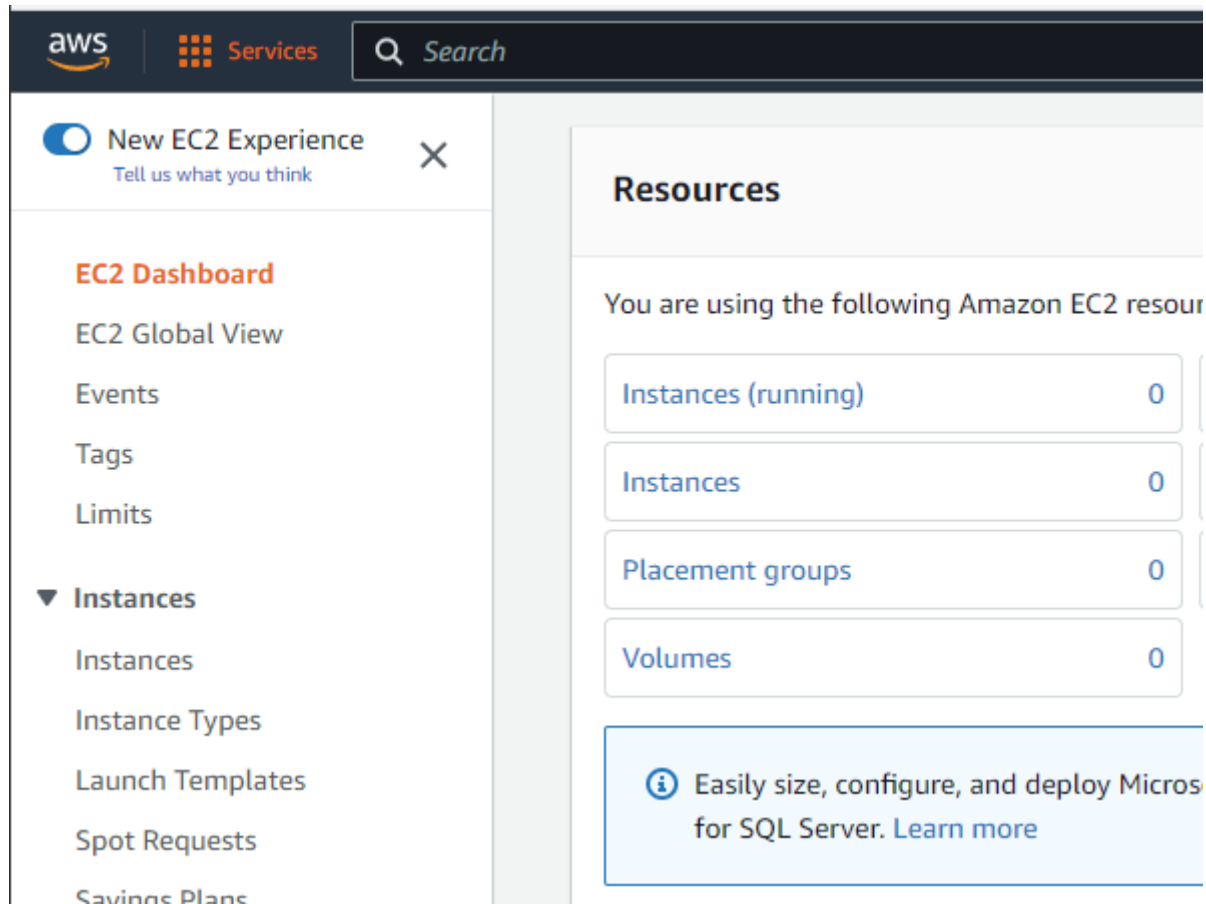


# How to set up an AWS instance

Creating an AWS instance requires access to an AWS account as a root user or as an IAM user with appropriate permissions.

IO-AVSTATS can be run on EC2 instances by default. The EC2 instances are managed on the EC2 Dashboard.



## 1. Instance creation

On the EC2 dashboard, select **Instances** and then **Launch instance**.

The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, 'Services', a search bar, and a keyboard shortcut '[Alt+S]'. The left sidebar contains the 'New EC2 Experience' toggle and a list of navigation links: 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances' (expanded), 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'Capacity Reservations', 'Images', 'AMIs', and 'AMI Catalog'. The 'Instances' link is highlighted in yellow. The main content area is titled 'Resources' and displays a summary of EC2 resources in the US East (N. Virginia) Region, showing zero instances running. Below this, a blue notification banner promotes Microsoft SQL Server Always Available. The 'Launch instance' button is highlighted with a yellow circle. To its right is a 'Migrate a server' button with an external link icon. A note at the bottom states: 'Note: Your instances will launch in the US East (N. Virginia) Region'.

## 1.1 Name and tags

- **IO-AVSTATS**

The screenshot shows the 'Name and tags' section of the AWS console. The 'Name' field is populated with 'IO-AVSTATS'. The 'Add additional tags' link is visible.

## 1.2 Application and OS Images

- **Ubuntu Server 22.04 LTS (HVM), SSD Volume Type**

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Q Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

S

Q

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type

Free tier eligible

ami-0a6b2839d44d781b2 (64-bit (x86)) / ami-023eb859c61ba0b72 (64-bit (Arm))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Description

Canonical, Ubuntu, 20.04 LTS, amd64 focal image build on 2022-12-01

Architecture

AMI ID

64-bit (x86)

ami-0a6b2839d44d781b2

Verified provider

1.3 Instance type

- t3a.medium

▼ Instance type Info

Instance type

t3a.medium

Family: t3a    2 vCPU    4 GiB Memory

On-Demand Linux pricing: 0.0376 USD per Hour

On-Demand Windows pricing: 0.056 USD per Hour

Compare instance types

1.4 Key pair (login)

- Either choose an existing one or create a new one.


3 / 14

▼ **Key pair (login)** [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

io-avstats ▼

 [Create new key pair](#)

## 1.5 Network settings

▼ **Network settings** [Info](#)

[Edit](#)

Network [Info](#)

vpc-09bf5672d1aaada90

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

**Firewall (security groups)** [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called '**launch-wizard-3**' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

My IP

188.63.0.166/32 ▼

☐ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☐ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

## 1.6 Configure Storage

- 1x 30 GiB

▼ **Configure storage** [Info](#)

Advanced

1x  GiB  ▼ Root volume (Not encrypted)

❗ Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

×

Add new volume

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

0 x File systems [Edit](#)

## 1.7 Launch instance

▼ **Summary**

Number of instances [Info](#)

Software Image (AMI)

Canonical, Ubuntu, 20.04 LTS, ...[read more](#)  
ami-0a6b2839d44d781b2

Virtual server type (instance type)

t3a.medium

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 30 GiB

Cancel

Launch instance

## 2. Open port numbers

Each Streamlit application must be assigned its own port number so that they can run simultaneously. Currently, the following Streamlit applications are supported:

<b>Application</b>
ae1982 - Aviation Events since since 1982
pd1982 - Profiling Data since 1982
slara - Association Rule Analysis

2.1 Determine the security

To determine the security group assigned to the intance: on the EC2 dashboard, select **Instances** and then **Security**.

Security groups

sg-0fa74d4a1e82c9209 (launch-wizard-3)

Inbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups
-	sgr-0bfc74d840907e092	22	TCP	188.63.0.166/32	launch-wizard-3

Outbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
-	sgr-02cc5d0992fc3b4af	All	All	0.0.0.0/0	launch-wizard-3

2.2 Choose the security group

To choose the security group assigned to the instance: on the EC2 dashboard, select **Security Groups** and **Security**.

Successfully deleted 2 security groups

Details

Security Groups (2)

Info

Filter security groups

	Name	Security group ID	Security group name	VPC ID
<input type="checkbox"/>	-	sg-006e769a07275891f	default	vpc-09bf5672d1aada90
<input type="checkbox"/>	-	sg-0fa74d4a1e82c9209	launch-wizard-3	vpc-09bf5672d1aada90

2.3 Open the port numbers

For each streamline application port number press **Add rule** and enter the data.

Inbound rules

Info

Security group rule ID	Type	Info	Protocol	Info	Port range	Info	Source	Info
sgr-0ba4cdc04aa01e64c	Custom TCP		TCP		8502		Custom	
sgr-0bfc74d840907e092	SSH		TCP		22		Custom	
sgr-0599405b342ab4fa3	Custom TCP		TCP		8501		Custom	

Add rule

2.4 Finsh with Save rules

Cancel

Preview changes

Save rules

3. Upload installation script

On Windows, the WinSCP program can be used to upload data from the local system to the AWS Cloud. The script to be uploaded is called run\_cloud\_setup\_instance.sh.

Login

New Site

IO Aero

ubuntu\_io\_avstats@54.205.51.170

NNEdProePortal@KxnAWS

production

staging

Session

File protocol:

SFTP

Host name:

54.205.51.170

Port number:

22

User name:

ubuntu

Password:

Edit

Advanced...

Tools

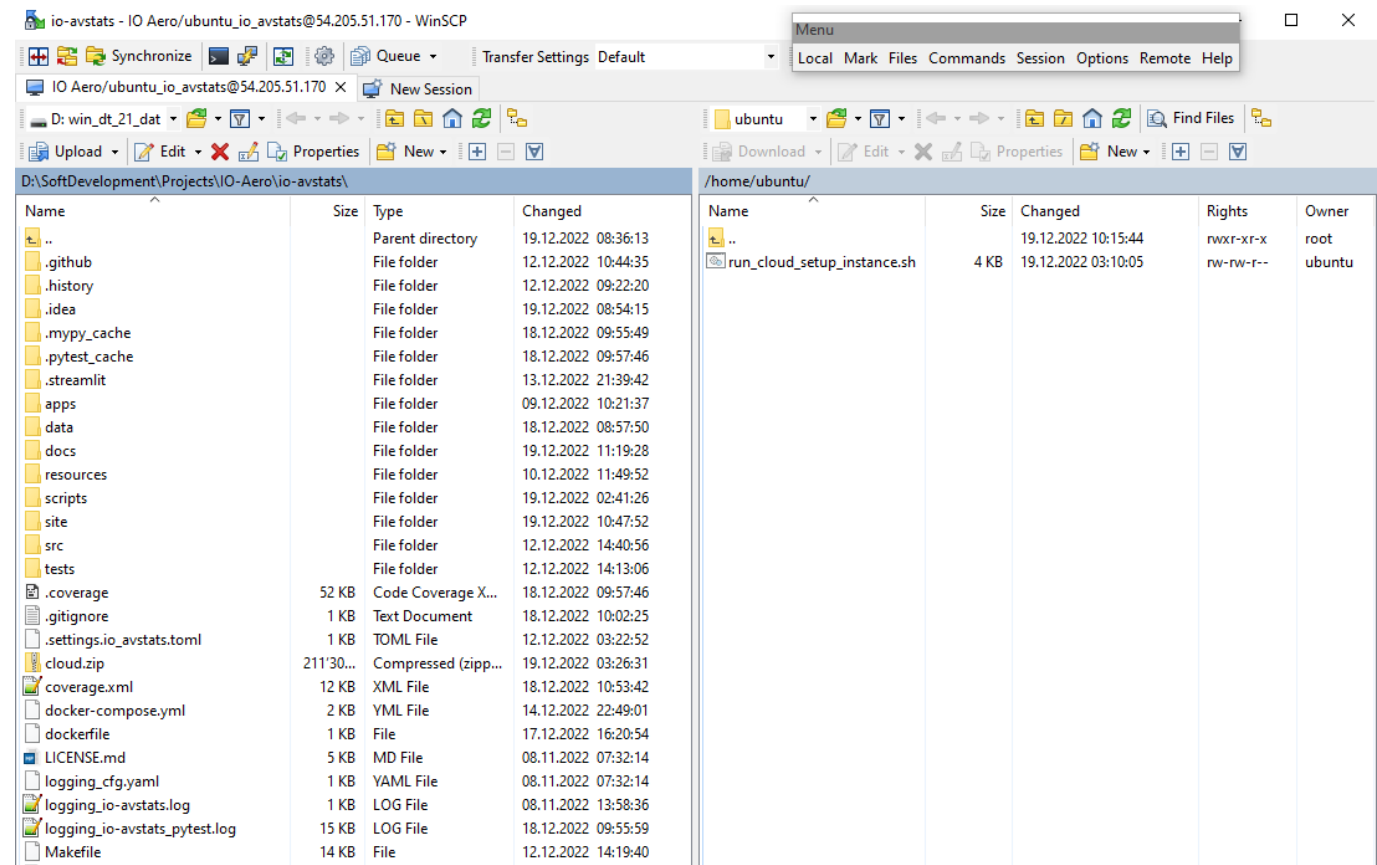
Manage

Login

Close

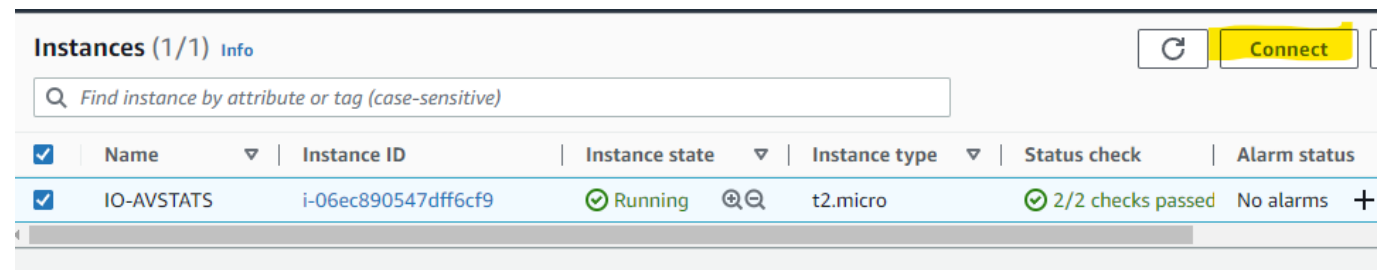
Help

☒ Show Login dialog on startup and when the last session is closed



## 4. Run installation script

### 4.1 Load terminal window





aws

Services

Search

[Alt+S]

EC2 > Instances > i-06ec890547dff6cf9 > Connect to instance

Connect to instance

Info

Connect to your instance i-06ec890547dff6cf9 (IO-AVSTATS) using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Instance ID

i-06ec890547dff6cf9 (IO-AVSTATS)

Public IP address

54.205.51.170

User name

ubuntu

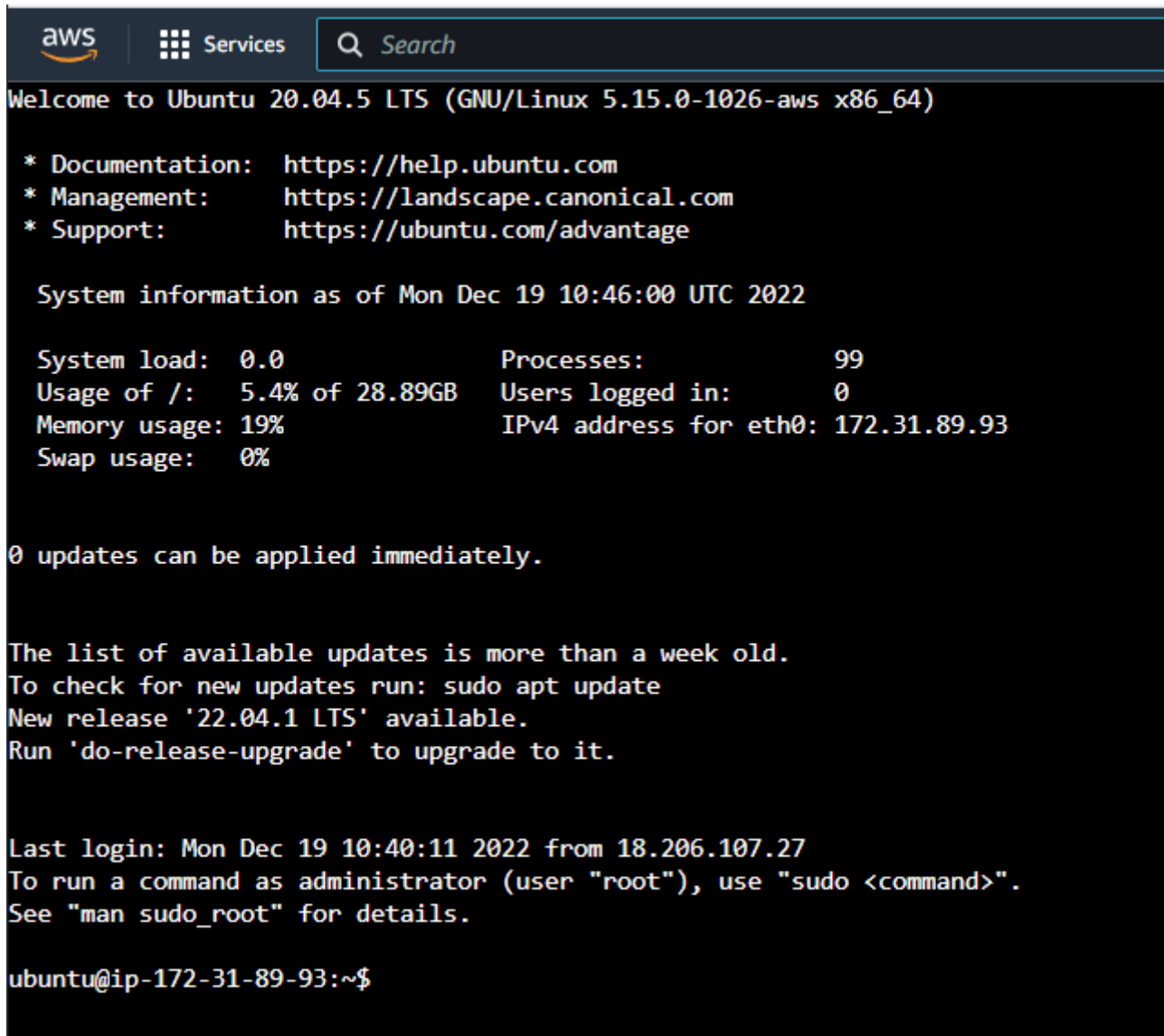
Connect using a custom user name, or use the default user name ubuntu for the AMI used to launch the instance.

Note:

In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel

Connect



```

aws | Services | Search
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1026-aws x86_64)

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

System information as of Mon Dec 19 10:46:00 UTC 2022

System load:  0.0               Processes:            99
Usage of /:   5.4% of 28.89GB   Users logged in:     0
Memory usage: 19%              IPv4 address for eth0: 172.31.89.93
Swap usage:   0%

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Mon Dec 19 10:40:11 2022 from 18.206.107.27
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-89-93:~$

```

## 4.2 run\_cloud\_setup\_instance

```
chmod +x run_cloud_setup_instance.sh
```

```
./run_cloud_setup_instance.sh
```

**Example protocol:**

```

ubuntu@ip-172-31-89-93:~$ chmod +x run_cloud_setup_instance.sh
ubuntu@ip-172-31-89-93:~$ ./run_cloud_setup_instance.sh
=====
Start ./run_cloud_setup_instance.sh
-----
DATE TIME : 19.12.2022 10:49:15
=====
Supplement necessary system software
-----
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114
kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease

```

```
[108 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 Packages
[8628 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe Translation-en
[5124 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f
Metadata [265 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse amd64
Packages [144 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse Translation-
en [104 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f
Metadata [9136 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64
Packages [2269 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main
Translation-en [395 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-
n-f Metadata [16.1 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted
amd64 Packages [1476 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted
Translation-en [208 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted
amd64 c-n-f Metadata [592 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64
Packages [1009 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe
Translation-en [234 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64
c-n-f Metadata [23.2 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse
amd64 Packages [24.5 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse
Translation-en [7380 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse
amd64 c-n-f Metadata [592 B]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main amd64
Packages [45.7 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main
Translation-en [16.3 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main amd64
c-n-f Metadata [1420 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/restricted
amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe
amd64 Packages [24.9 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe
Translation-en [16.3 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe
```

```
amd64 c-n-f Metadata [880 B]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/multiverse
amd64 c-n-f Metadata [116 B]
Get:31 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1895
kB]
Get:32 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [311
kB]
Get:33 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata
[11.5 kB]
Get:34 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages
[1385 kB]
Get:35 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en
[195 kB]
Get:36 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 c-n-f
Metadata [596 B]
Get:37 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages
[778 kB]
Get:38 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en
[150 kB]
Get:39 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f
Metadata [16.8 kB]
Get:40 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages
[22.2 kB]
Get:41 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-en
[5464 B]
Get:42 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f
Metadata [516 B]
Fetched 25.2 MB in 4s (5617 kB/s)
Reading package lists...
```

...

```
=====>
Version  Docker Compose:
```

```
Current version of Docker Compose: docker-compose version 1.25.0, build unknown
docker-py version: 4.1.0
CPython version: 3.8.10
OpenSSL version: OpenSSL 1.1.1f  31 Mar 2020
```

```
=====
=====>
Version  Docker Desktop:
```

```
Current version of Docker Desktop: Client: Docker Engine - Community
Version:           20.10.22
API version:       1.41
Go version:        go1.18.9
Git commit:        3a2c30b
Built:             Thu Dec 15 22:28:08 2022
```

```

OS/Arch:      linux/amd64
Context:      default
Experimental: true

```

Server: Docker Engine - Community

```

Engine:
  Version:      20.10.22
  API version:  1.41 (minimum version 1.12)
  Go version:   go1.18.9
  Git commit:   42c8b31
  Built:        Thu Dec 15 22:25:58 2022
  OS/Arch:      linux/amd64
  Experimental: false
containerd:
  Version:      1.6.13
  GitCommit:    78f51771157abb6c9ed224c22013cdf09962315d
runc:
  Version:      1.1.4
  GitCommit:    v1.1.4-0-g5fd4c4d
docker-init:
  Version:      0.19.0
  GitCommit:    de40ad0

```

=====

=====>

Version dos2unix:

Current version of dos2unix: dos2unix 7.4.0 (2017-10-10)  
 With Unicode UTF-16 support.  
 With native language support.  
 With support to preserve the user and group ownership of files.  
 LOCALEDIR: /usr/share/locale  
<http://waterlan.home.xs4all.nl/dos2unix.html>

=====

=====>

Version unzip:

Current version of unzip: UnZip 6.00 of 20 April 2009, by Debian. Original by Info-ZIP.

Latest sources and executables are at <ftp://ftp.info-zip.org/pub/infozip/> ;  
 see <ftp://ftp.info-zip.org/pub/infozip/UnZip.html> for other sites.

Compiled with gcc 9.4.0 for Unix (Linux ELF).

UnZip special compilation options:

ACORN\_FTYPE\_NFS

COPYRIGHT\_CLEAN (PKZIP 0.9x unreducing method not supported)

```
SET_DIR_ATTRIB
SYMLINKS (symbolic links supported, if RTL and file system permit)
TIMESTAMP
UNIXBACKUP
USE_EF_UT_TIME
USE_UNSHRINK (PKZIP/Zip 1.x unshrinking method supported)
USE_DEFLATE64 (PKZIP 4.x Deflate64(tm) supported)
UNICODE_SUPPORT [wide-chars, char coding: UTF-8] (handle UTF-8 paths)
LARGE_FILE_SUPPORT (large files over 2 GiB supported)
ZIP64_SUPPORT (archives using Zip64 for large files supported)
USE_BZIP2 (PKZIP 4.6+, using bzip2 lib version 1.0.8, 13-Jul-2019)
VMS_TEXT_CONV
WILD_STOP_AT_DIR
[decryption, version 2.11 of 05 Jan 2007]
```

UnZip and ZipInfo environment options:

```
UNZIP:  [none]
UNZIPOPT:  [none]
ZIPINFO:  [none]
ZIPINFOOPT:  [none]
```

```
=====
-----
DATE TIME : 19.12.2022 10:50:52
-----
End    ./run_cloud_setup_instance.sh
=====
```