

How to install Linux GNOME GUI Desktop in a virtual machine AWS EC2 with Ubuntu image

<https://posintech.com/give-your-linux-desktop-a-clean-look/>

<https://www.youtube.com/watch?v=afpdn636NE0>

1. Create a Virtual Machine (with Ubuntu image) EC2 in AWS.

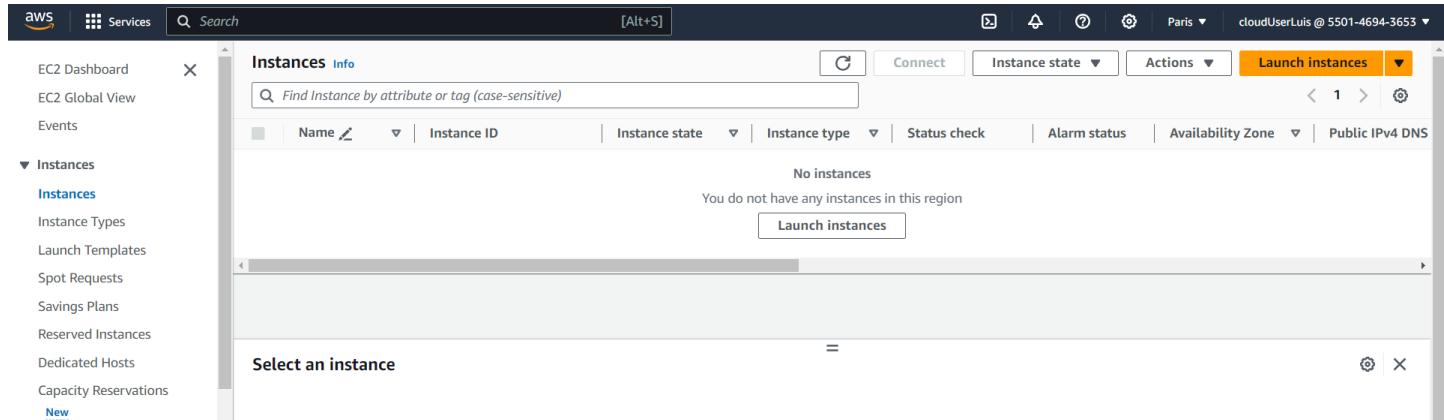
We login in AWS

The screenshot shows the AWS Console home page. On the left, there's a sidebar with a list of recently visited services: EC2, RDS, Systems Manager, IAM, DynamoDB, EMR, and S3. To the right, there's a section titled "Applications (0)" which is currently empty, with a button to "Create application".

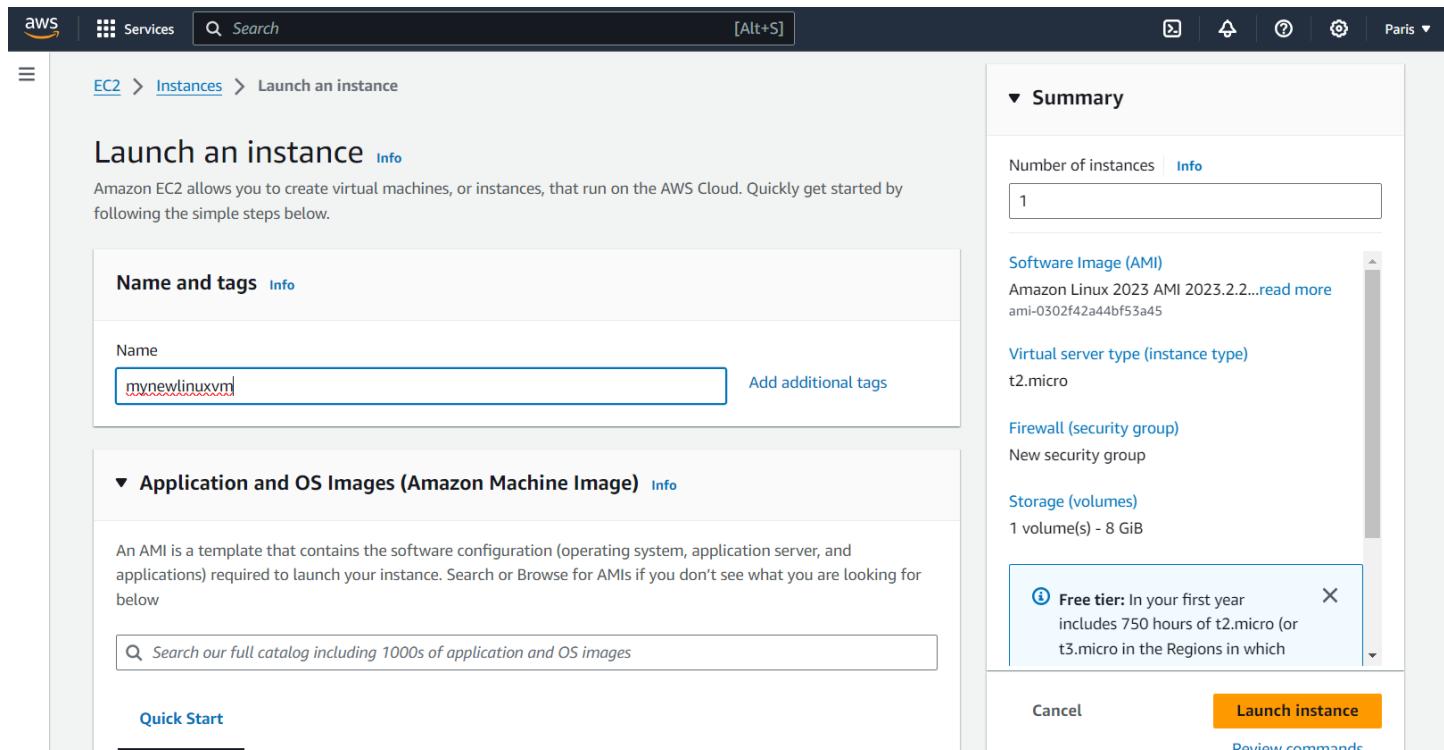
We navigate to EC2 virtual machines

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with sections for EC2 Global View, Events, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), and Images (with sub-options like AMIs and AMI Catalog). The main area displays EC2 resources in the Europe (Paris) Region, including 0 Instances (running), 0 Auto Scaling Groups, 0 Dedicated Hosts, 0 Elastic IPs, 0 Instances, 1 Key pairs, 0 Load balancers, 0 Placement groups, 11 Security groups, 0 Snapshots, and 0 Volumes. Below this, there's a "Launch instance" button and a "Service health" section showing the AWS Health Dashboard and the current Region as Europe (Paris). On the right, there are sections for "Account attributes" (Default VPC, Settings, Explore AWS), and a "Explore AWS" section with a call to action to save up to 90% on EC2 with Spot Instances.

We press the "Launch Instance" button



We set the new VM name



We select the VM image

The screenshot shows the AWS Lambda console with the function configuration page. The top navigation bar includes the AWS logo, 'Services' dropdown, a search bar, and a keyboard shortcut '[Alt+S]'. The main content area has a title 'Application and OS Images (Amazon Machine Image) [Info](#)'. A descriptive text states: '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.' Below this is a search bar with placeholder text 'Search our full catalog including 1000s of application and OS images'. A 'Quick Start' section features logos for Amazon Linux, Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. To the right is a 'Browse more AMIs' button with the subtext 'Including AMIs from AWS, Marketplace and the Community'. A specific AMI listing for 'Ubuntu Server 22.04 LTS (HVM), SSD Volume Type' is shown, including its AMI ID (ami-00983e8a26e4c9bd9), architecture (64-bit (x86)), and a 'Verified provider' badge. The description notes it's Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2023-09-19.

We select the VM type

The screenshot shows the AWS Lambda console with the instance type selection step. The top navigation bar includes the AWS logo, 'Services' dropdown, a search bar, and a keyboard shortcut '[Alt+S]'. The main content area has a title 'Instance type [Info](#) | Get advice'. It shows the selected instance type as 't3.2xlarge' with details: Family: t3, 8 vCPU, 32 GiB Memory, Current generation: true. It also lists On-Demand base pricing for various operating systems. A note at the bottom says 'Additional costs apply for AMIs with pre-installed software'. To the right is a 'Summary' section showing 'Number of instances' set to 1 and 'Virtual server type (instance type)' set to 't3.2xlarge'.

We generate a Key Pair for accessing with SSH to the VM

The screenshot shows the AWS Lambda console with the key pair creation step. The top navigation bar includes the AWS logo, 'Services' dropdown, a search bar, and a keyboard shortcut '[Alt+S]'. The main content area has a title 'Key pair (login) [Info](#)'. It provides instructions: '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.' It asks for a 'Key pair name - required' and offers a 'Select' dropdown and a 'Create new key pair' button. To the right is a 'Summary' section showing 'Number of instances' set to 1 and 'Virtual server type (instance type)' set to 't3.2xlarge'.

Create key pair



Key pair name

Key pairs allow you to connect to your instance securely.

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

RSA

RSA encrypted private and public key pair

ED25519

ED25519 encrypted private and public key pair

Private key file format

.pem

For use with OpenSSH

.ppk

For use with PuTTY

⚠ When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more](#)

Cancel

Create key pair

We place the key pair private file *.pem in the user ssh path "C:/Users/luisc/.ssh/"

.ssh			
This PC > Windows (C:) > Users > luisc > .ssh			
New New folder Copy Move Delete Sort View More			
Name	Date modified	Type	
known_hosts	10/12/2023 14:28	File	
known_hosts.old	10/12/2023 14:28	OLD File	
mynewkeypairforlinuxvn.pem	10/12/2023 18:20	PEM File	

We edit the Network Setting and we add a new inbound rule to access into the VM from Remote Desktop Protocol RDP in port 3389

Inbound Security Group Rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

Type | [Info](#) Protocol | [Info](#) Port range | [Info](#)

ssh	TCP	22
-----	-----	----

Source type | [Info](#) Source | [Info](#) Description - optional | [Info](#)

Anywhere	Add CIDR, prefix list or security	e.g. SSH for admin desktop
0.0.0.0/0 X		

▼ Security group rule 2 (TCP, 3389, 0.0.0.0/0)

Type | [Info](#) Protocol | [Info](#) Port range | [Info](#)

rdp	TCP	3389
-----	-----	------

Source type | [Info](#) Source | [Info](#) Description - optional | [Info](#)

Anywhere	Add CIDR, prefix list or security	e.g. SSH for admin desktop
0.0.0.0/0 X		

⚠️ 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. [X](#)

[Add security group rule](#)

We configure the storage to 30 Gb

The screenshot shows the AWS EBS Volume configuration page. At the top, there's a navigation bar with the AWS logo, 'Services' (selected), a search bar, and a 'Simple' button. Below the navigation is a section titled 'Storage (volumes)' with an 'Info' link and a 'Simple' link. A 'Hide details' link is also present. The main section is titled 'EBS Volumes' with a 'Volume 1 (AMI Root) (Custom)' entry. This entry has several configuration fields:

- Storage type:** Info | EBS
- Device name - required:** Info | /dev/xvda
- Snapshot:** Info | snap-06cc447f22b001123
- Size (GiB):** Info | 30
- Volume type:** Info | gp3
- IOPS:** Info | 3000
- Delete on termination:** Info | Yes
- Encrypted:** Info | Not encrypted
- KMS key:** Info | Select (disabled)

A note below the volume settings states: "Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage" with a close button (X). At the bottom left is a 'Add new volume' button.

We click on Advanced details to request a **Spot Instance**

We set the Spot options

Purchasing option [Info](#)

Request Spot Instances [Discard](#)

Spot Instance Options [Info](#)

Specify Spot Instance Options such as Maximum Price, Request type, expiration date and interruption behavior

Maximum price [Info](#)

No maximum price
Request Spot Instances at the Spot price, capped at the On-Demand price

Set your maximum price (per instance/hour)
\$ 0.17

Request type [Info](#)

Persistent

Valid to [Info](#)

No request expiry date
The default value is no expiry date

Set your request expiry date

Interruption behavior [Info](#)

Stop

Finally we launch the instance

Metadata response hop limit [Info](#)

2

Allow tags in metadata [Info](#)

Select

User data - *optional* [Info](#)

Upload a file with your user data or enter it in the field.

Choose file

User data has already been base64 encoded

Number of instances [Info](#)

1

Virtual server type (instance type)

t3.xlarge

Firewall (security group)

New security group

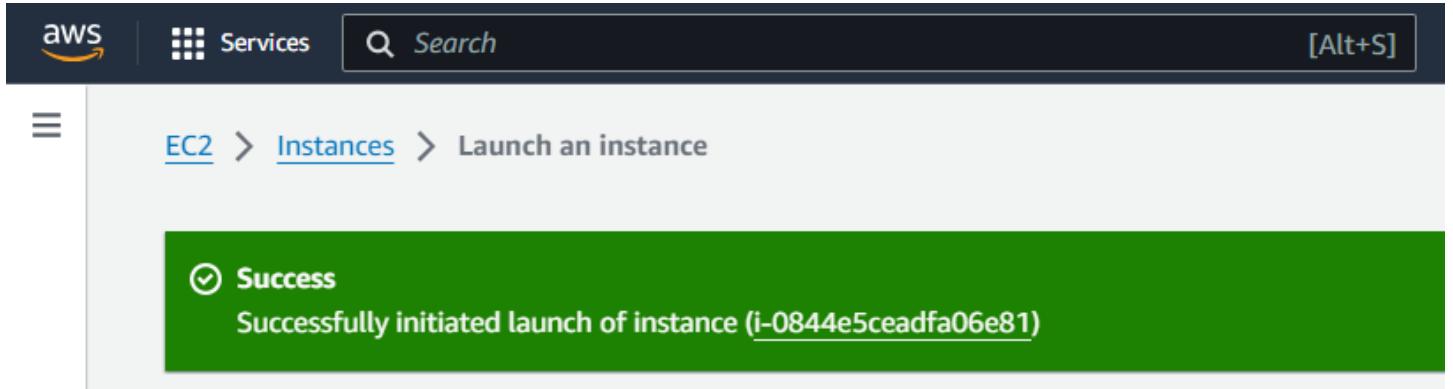
Storage (volumes)

1 volume(s) - 30 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance [Review commands](#)

We navigate to the instance clicking on the VN Id



A screenshot of the AWS EC2 'Instances' page. The left sidebar shows 'Instances' selected. The main table lists one instance: 'mynewlinuxvm' (Instance ID: i-0844e5ceadfa06e81), which is 'Running' (Status check: 2/2 checks passed), t2.2xlarge, eu-west-3a, and has a public IPv4 DNS of ec2-13-39-163-28.eu-w...

We select the instance and we connect to it

A screenshot of the AWS EC2 'Instances' page. The left sidebar shows 'Instances' selected. The main table lists one instance: 'mynewlinuxvm' (Instance ID: i-0844e5ceadfa06e81), which is 'Running' (Status check: 2/2 checks passed), t2.2xlarge, eu-west-3a, and has a public IPv4 DNS of ec2-13-39-163-28.eu-w... The 'Connect' button is highlighted.

We navigate to the SSH tab

EC2 > Instances > i-0844e5ceadfa06e81 > Connect to instance

Connect to instance Info

Connect to your instance i-0844e5ceadfa06e81 (mynewlinuxvm) using any of these options

EC2 Instance Connect **Session Manager** **SSH client** **EC2 serial console**

Instance ID
i-0844e5ceadfa06e81 (mynewlinuxvm)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is mynewkeypairforlinuxvn.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
chmod 400 mynewkeypairforlinuxvn.pem
4. Connect to your instance using its Public DNS:
ec2-13-39-163-28.eu-west-3.compute.amazonaws.com

Command copied

ssh -i "mynewkeypairforlinuxvn.pem" ubuntu@ec2-13-39-163-28.eu-west-3.compute.amazonaws.com

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

We copy the SSH launch connection string

Command copied

ssh -i "mynewkeypairforlinuxvn.pem" ubuntu@ec2-13-39-163-28.eu-west-3.compute.amazonaws.com

We open the command prompt and we paste the connection string taking into account we have to update the actual .pem file path

ssh -i "C:/Users/luisc/.ssh/mynewkeypairforlinuxvn.pem" ubuntu@ec2-13-39-163-28.eu-west-3.compute.amazonaws.com

```
Command Prompt
x + v
C:\>ssh -i "C:/Users/luisc/.ssh/mynewkeypairforlinuxvn.pem" ubuntu@ec2-13-39-163-28.eu-west-3.compute.amazonaws.com
```

```
ubuntu@ip-172-31-14-254: ~  x  +  v
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1012-aws x86_64)

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

 System information as of Sun Dec 10 18:01:40 UTC 2023

 System load: 0.00439453125 Processes: 159
 Usage of /: 5.4% of 28.89GB Users logged in: 0
 Memory usage: 0% IPv4 address for eth0: 172.31.14.254
 Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Sun Dec 10 18:00:05 2023 from 81.33.224.176
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-14-254:~$ |
```

2. Then run these commands in the Linux VM in order to setup the XRD and GENOME GUI Desktop

For Ubuntu server VM run these commands

```
sudo apt-get update

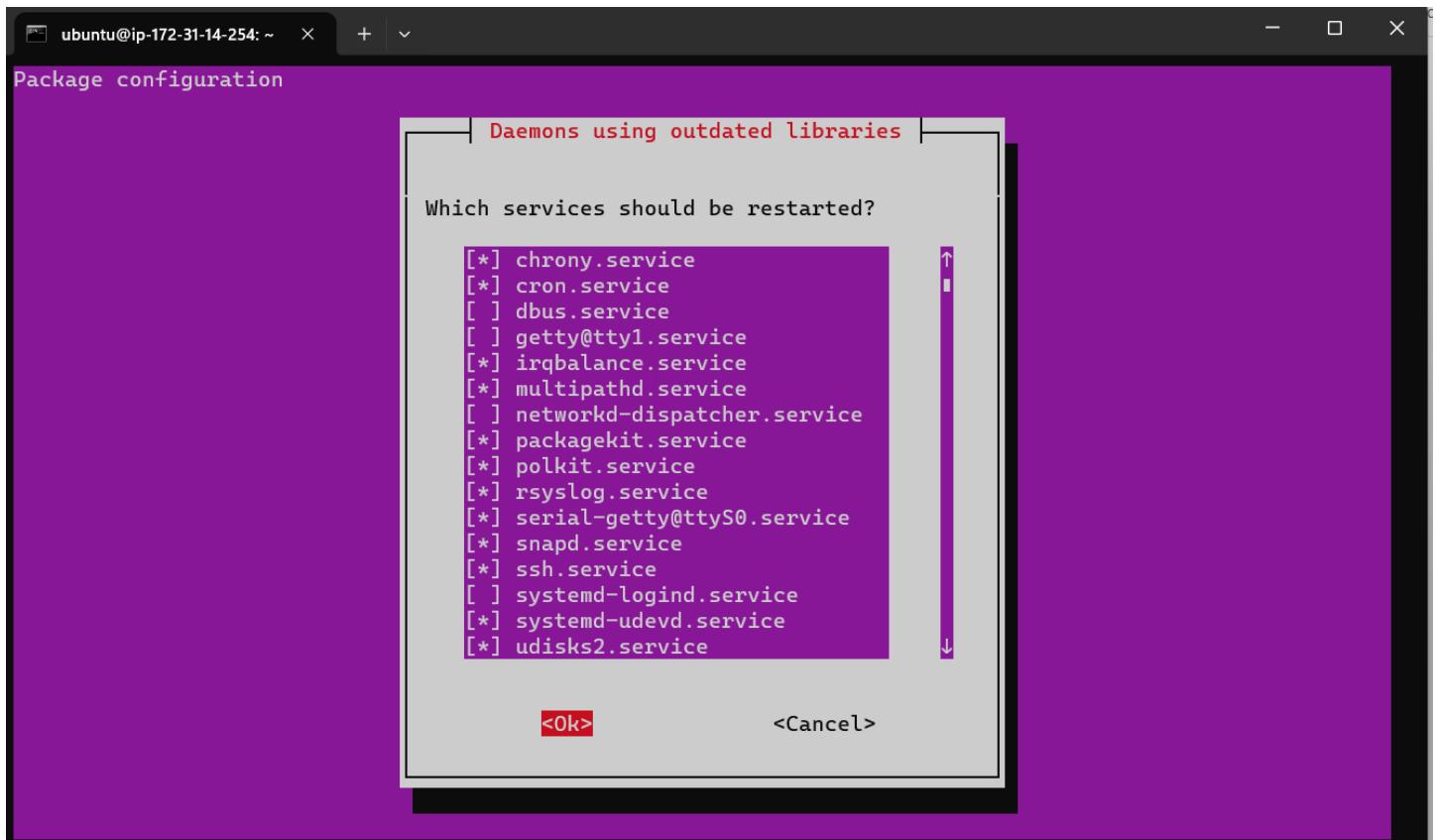
sudo apt install xrdp

sudo systemctl enable xrdp

sudo add-apt-repository ppa:gnome3-team/gnome3

sudo apt-get install gnome-shell ubuntu-gnome-desktop
```

We select with the **tab** button the **ok** button and press it with the **Enter** key



Then set the VM password

```
sudo passwd ubuntu
```

We set the user ubuntu password for example "Luiscoco123456"

```
ubuntu@ip-172-31-14-254:~$ sudo passwd ubuntu
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
passwd: password updated successfully
ubuntu@ip-172-31-14-254:~$ exit
logout
Connection to ec2-13-39-163-28.eu-west-3.compute.amazonaws.com closed.
```

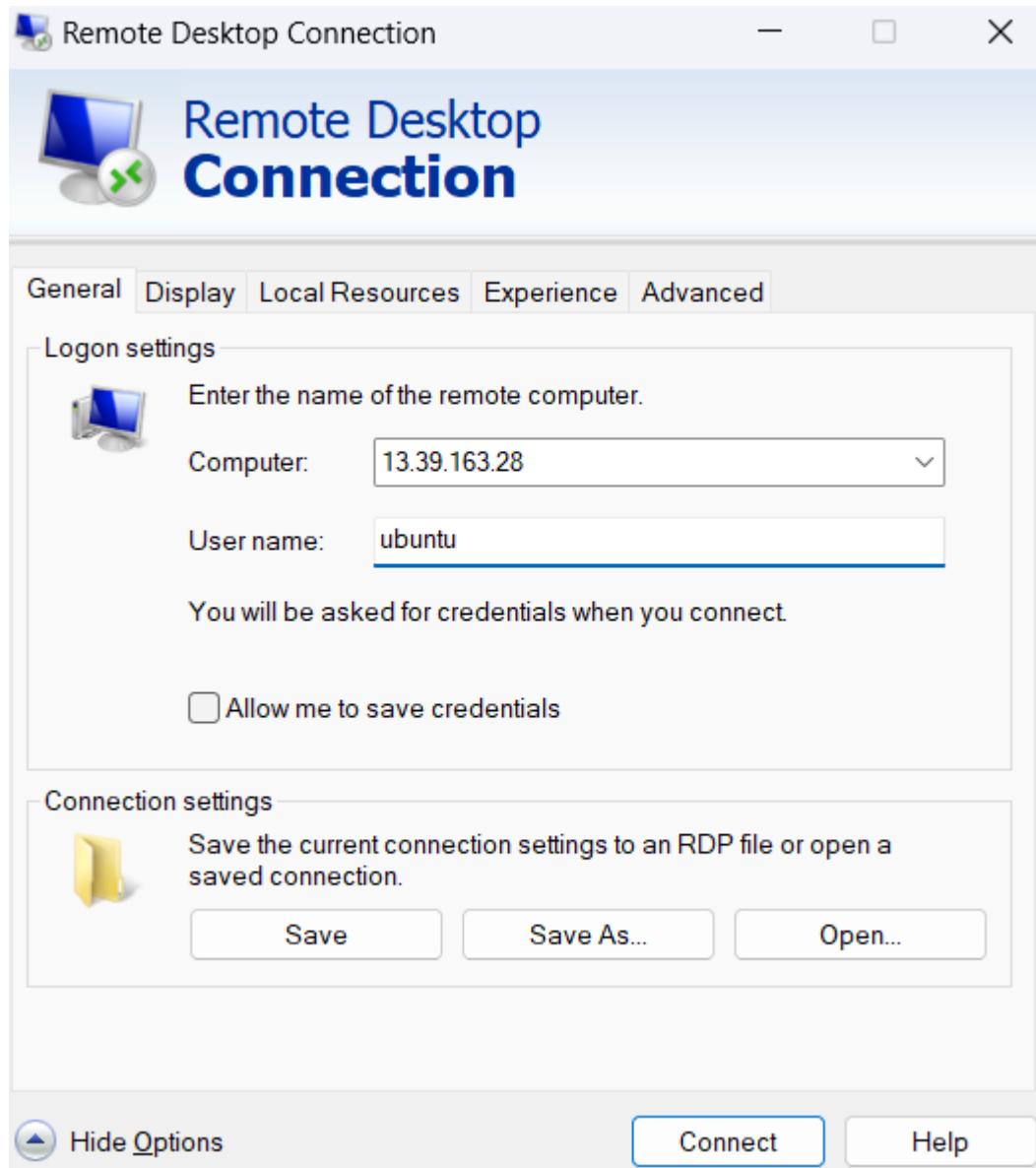
3. Connect the VM via "Remote Desktop Connection"

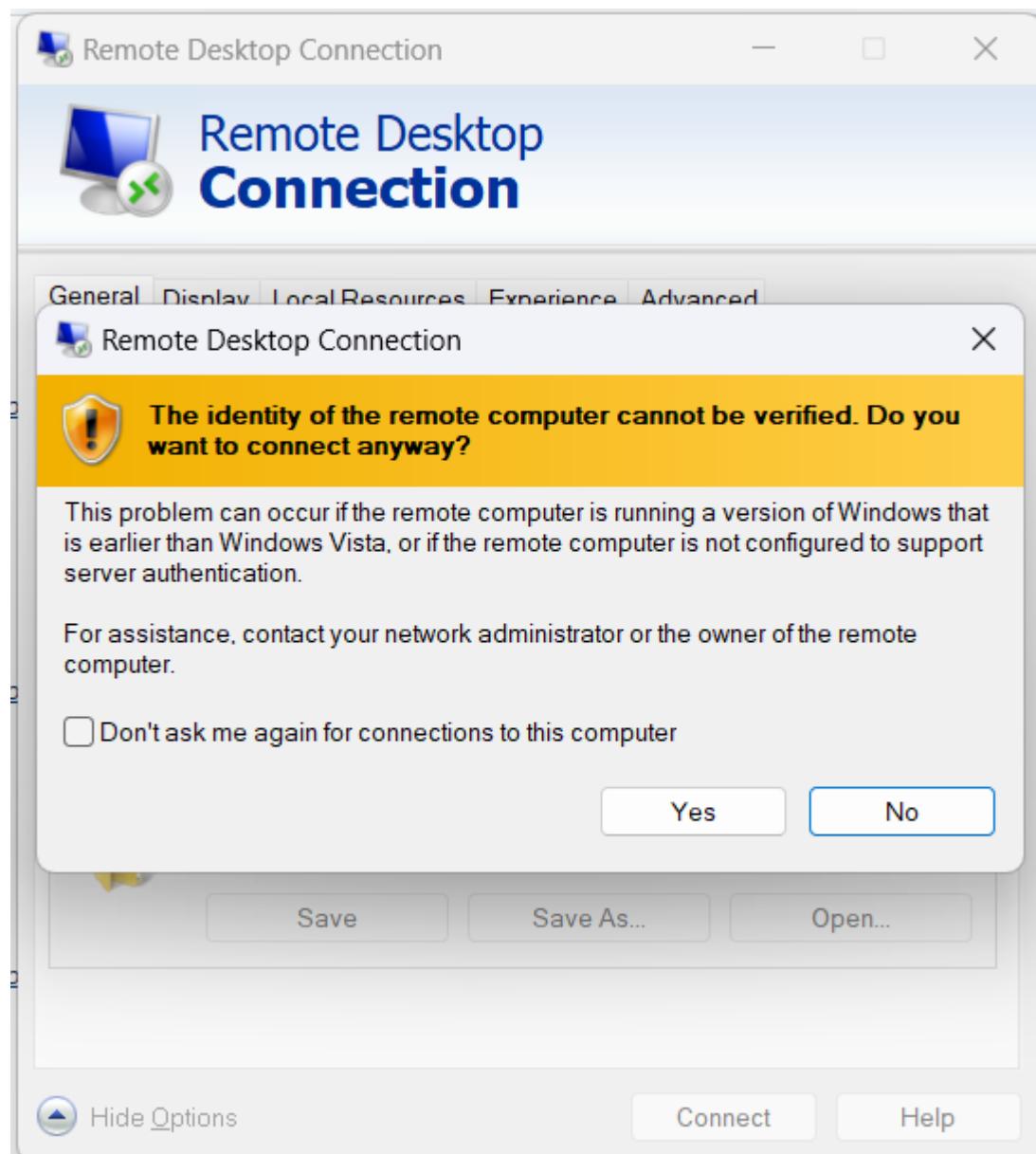
Set the VM Public IP address: 13.39.163.28

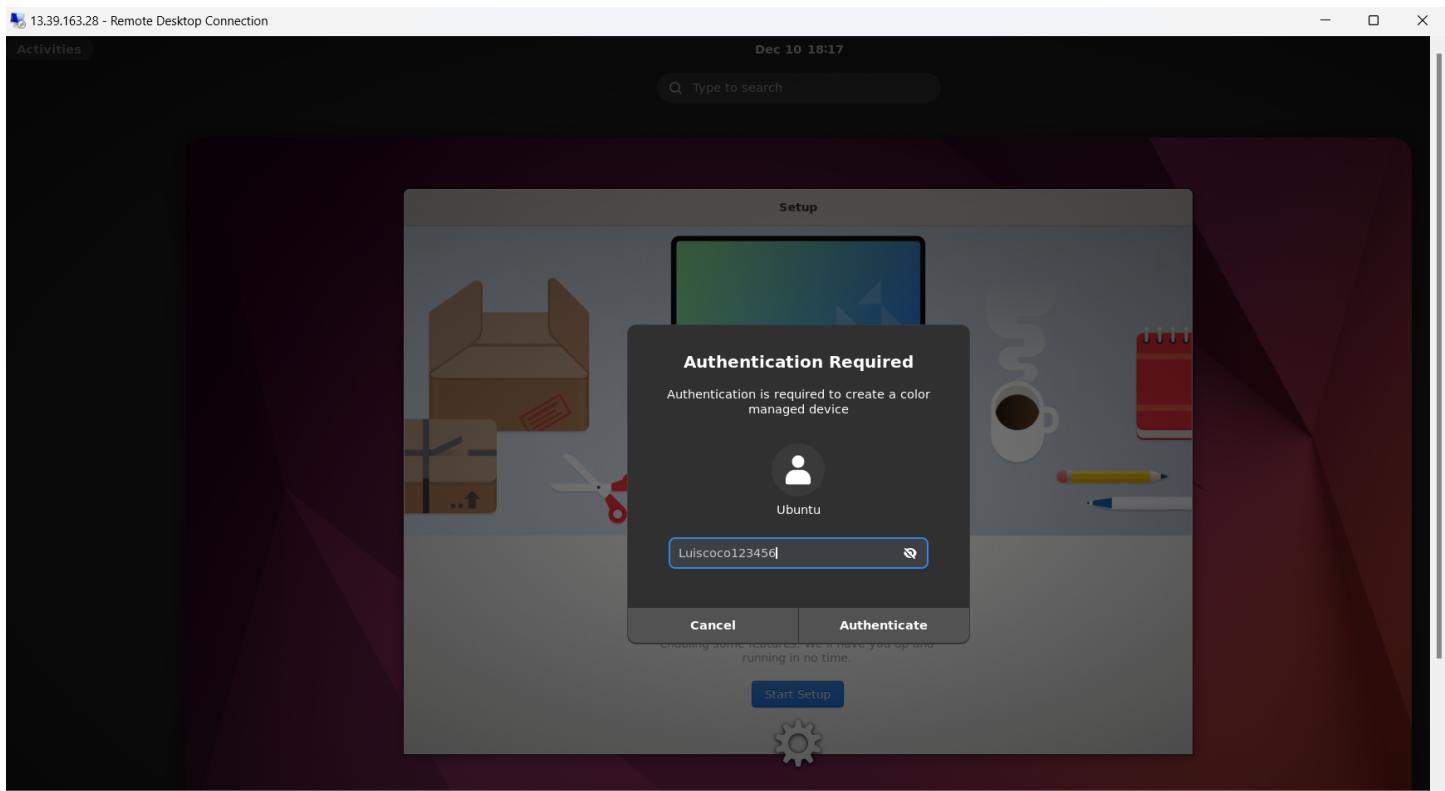
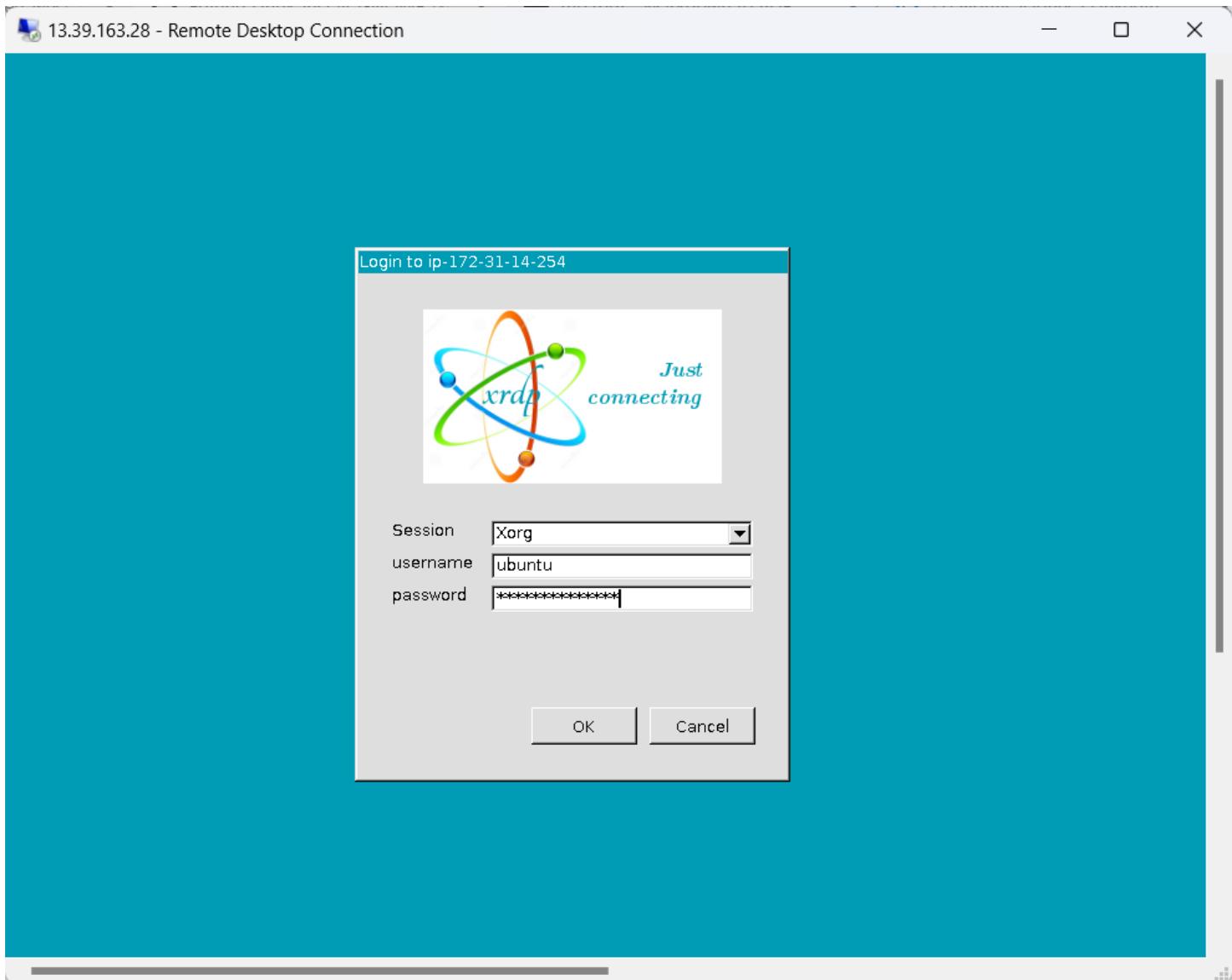
The screenshot shows the AWS Management Console with the EC2 service selected. In the left sidebar, under the "Instances" section, the instance "i-0844e5ceadfa06e81 (mynewlinuxvm)" is listed. The main pane displays the "Instance summary" for this instance. It shows the Public IPv4 address as 13.39.163.28, which is highlighted with a red box. Other details shown include the Instance ID (i-0844e5ceadfa06e81), Instance state (Running), and Private IPv4 addresses (172.31.14.254).

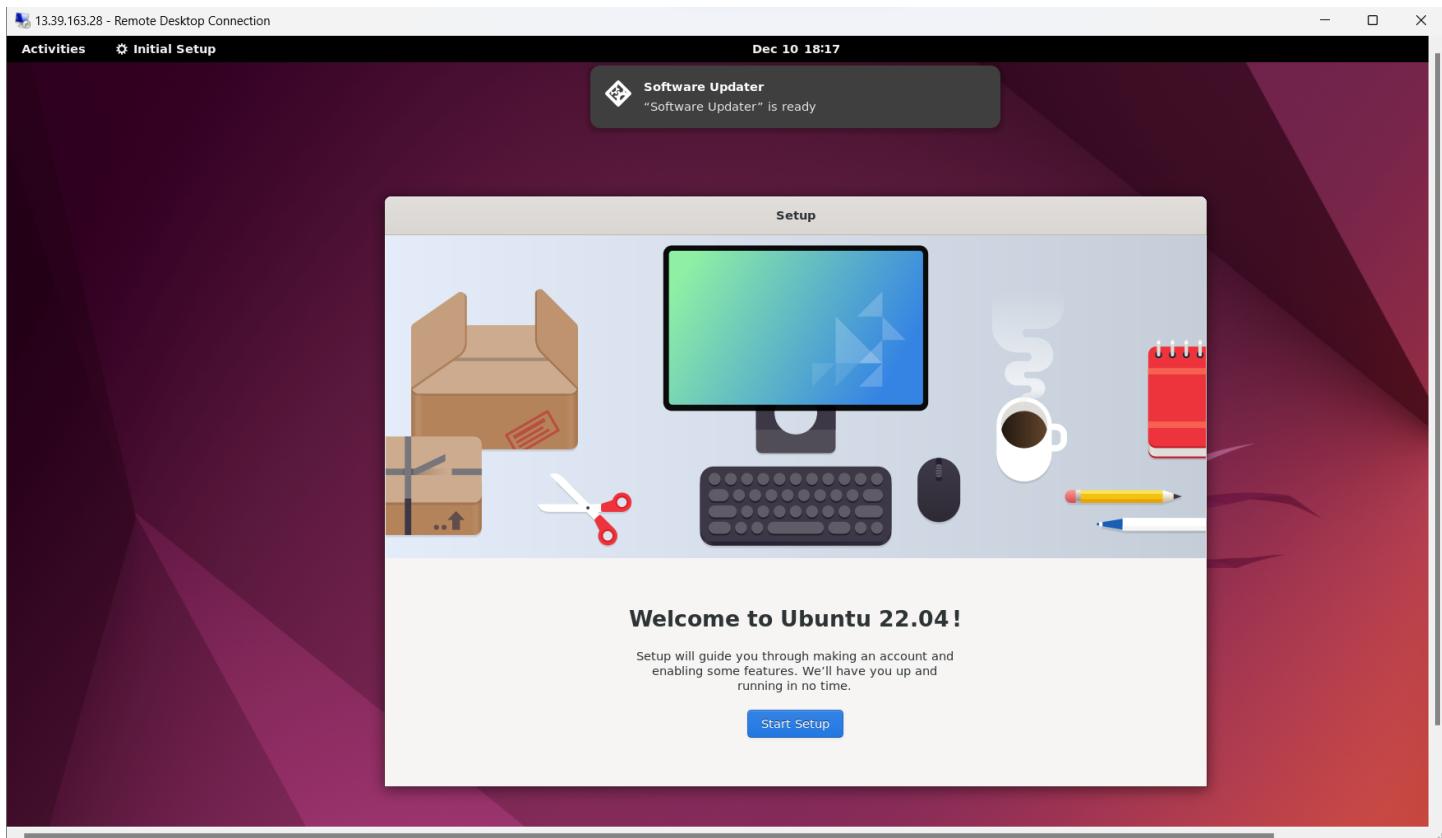
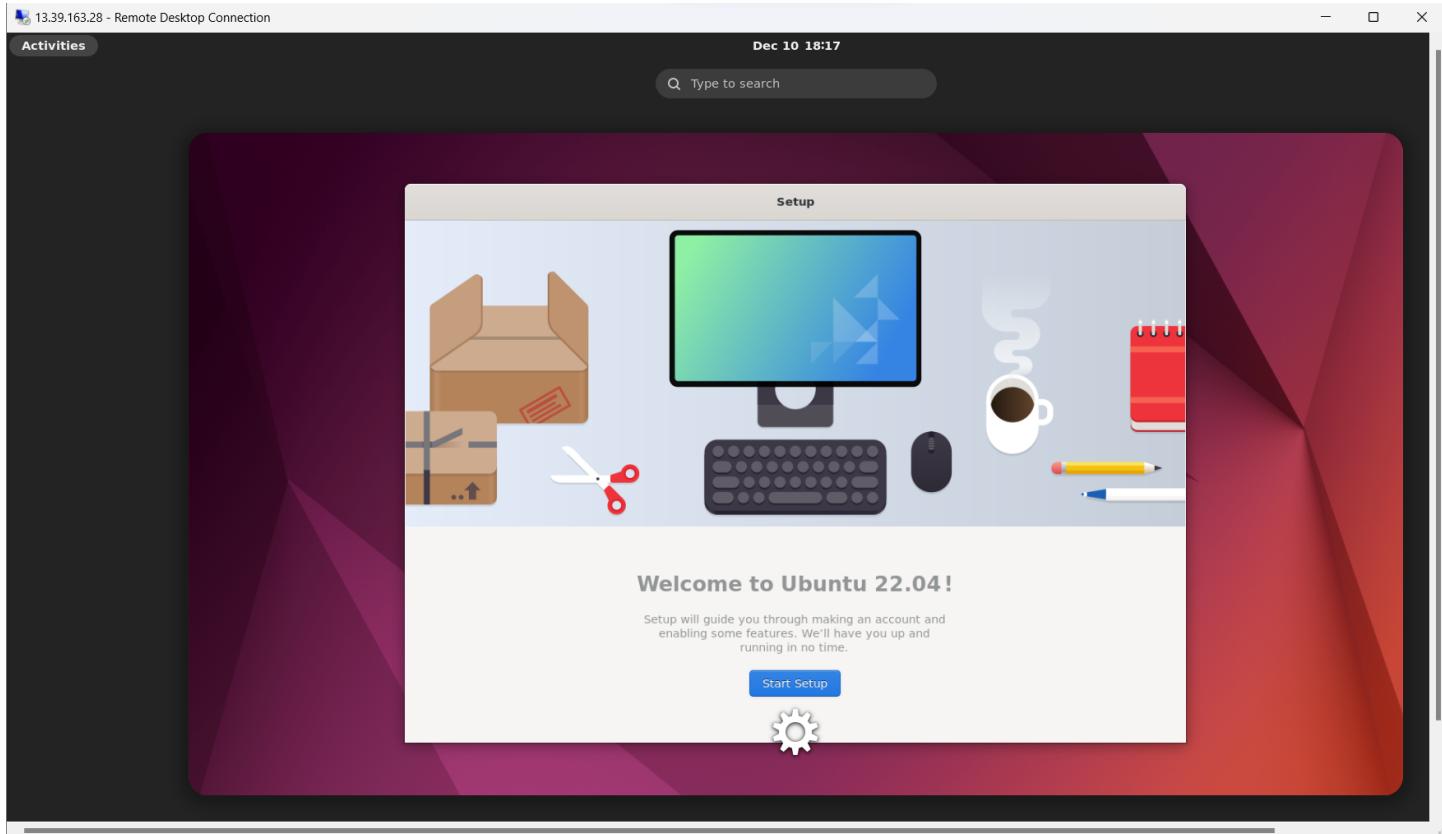
Set the VM username

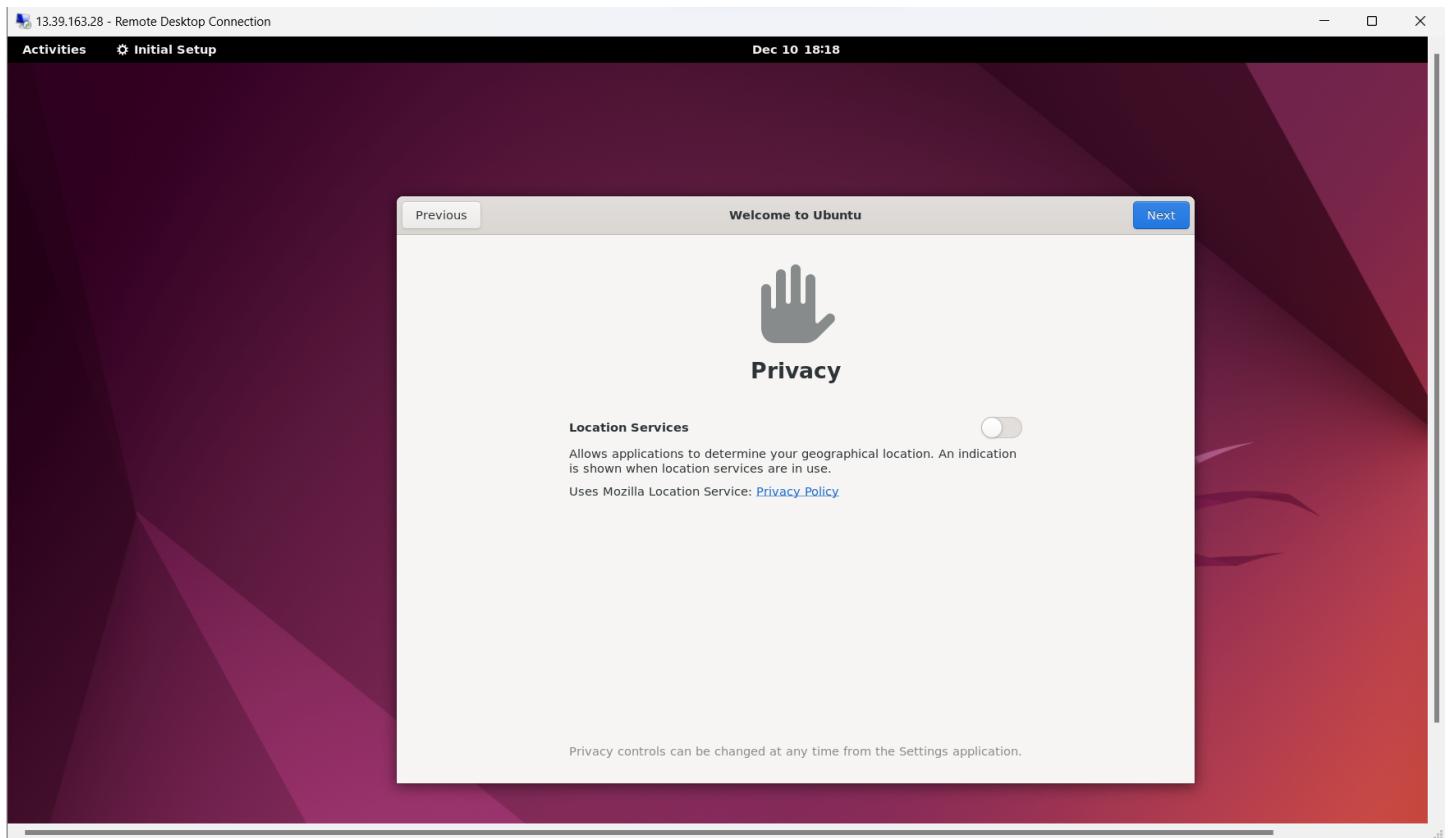
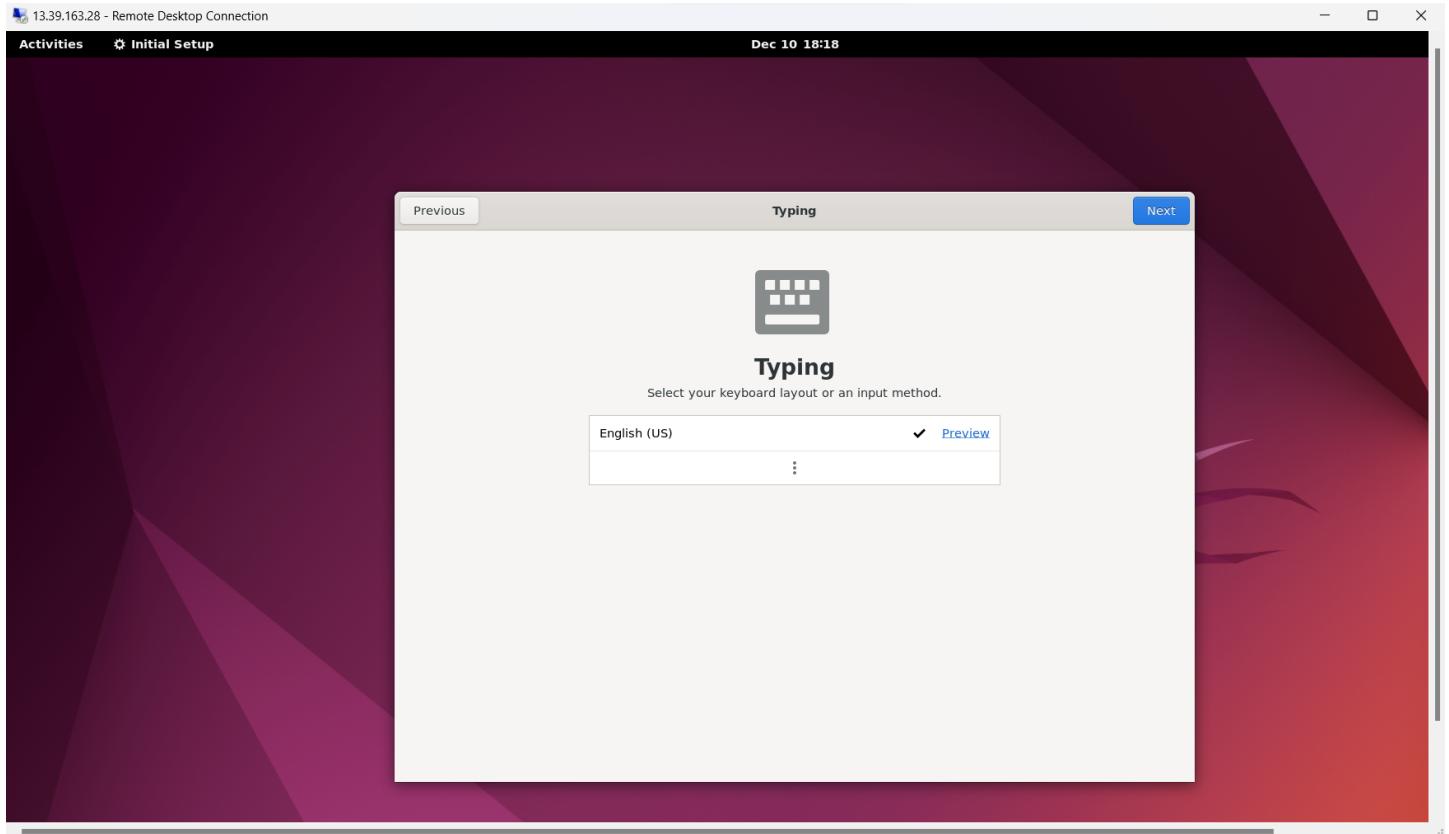
Press the connect button

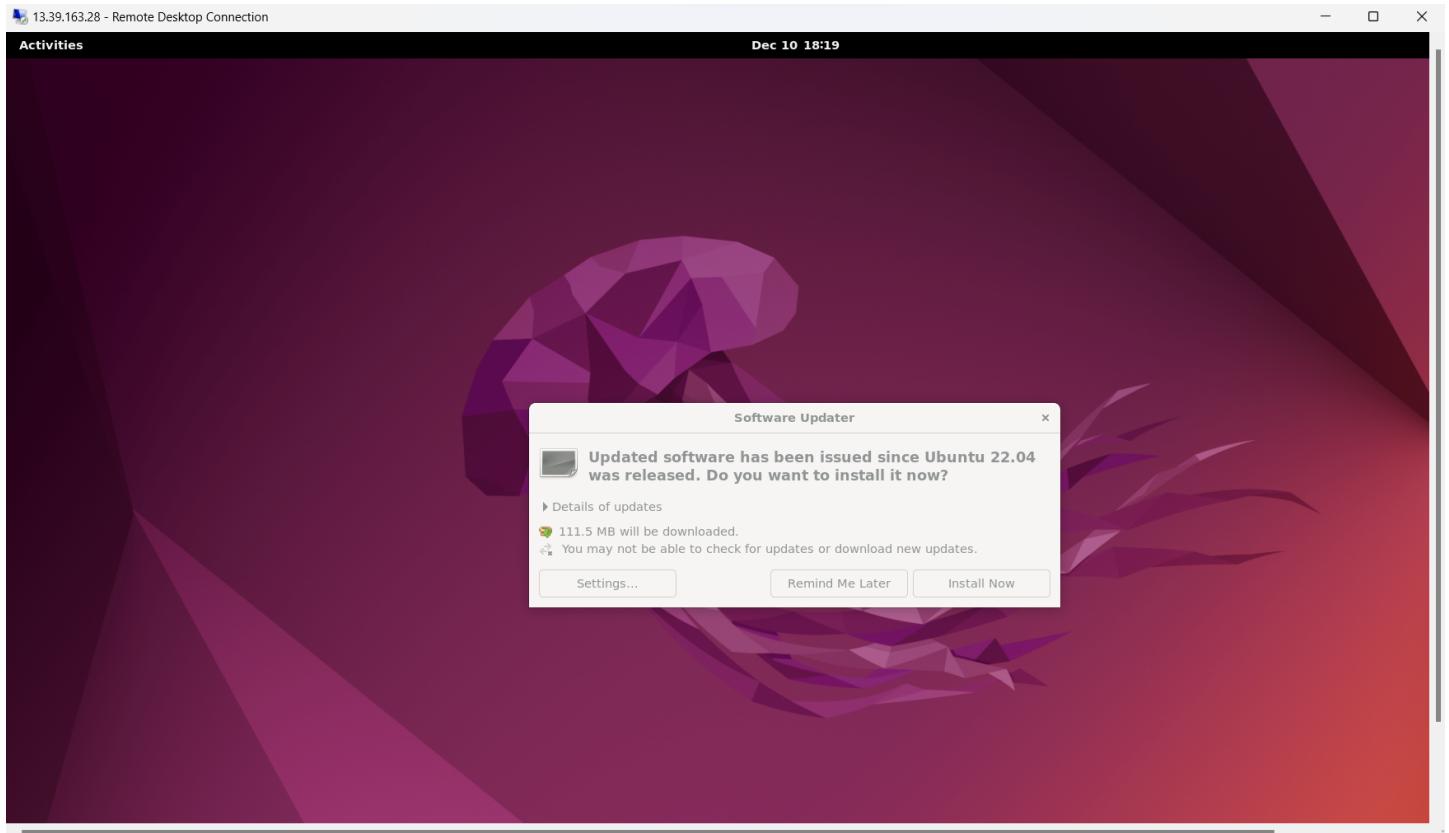
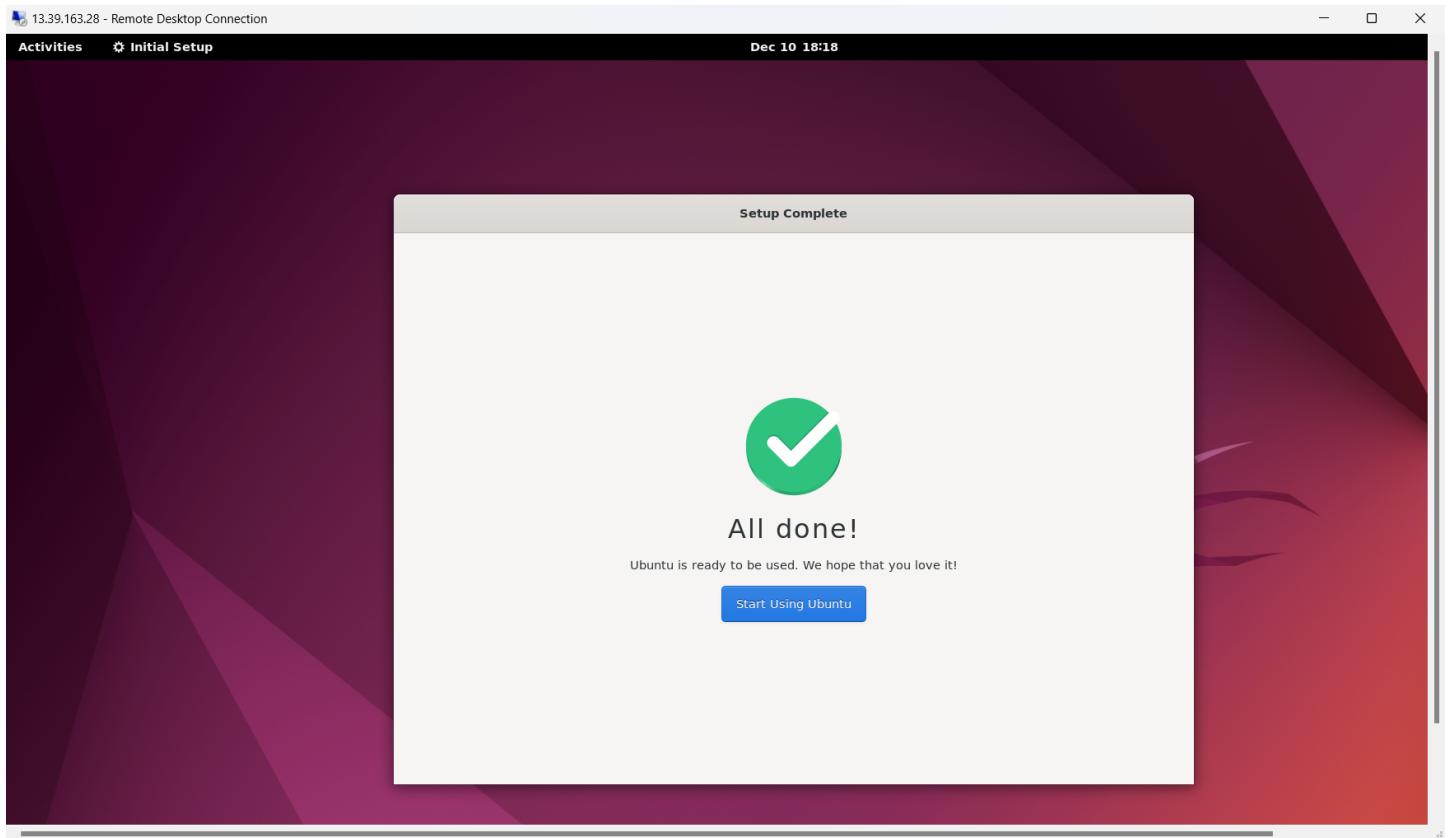












4. Inside GNOME GUI Desktop

Run these commands:

```
sudo apt install gnome-tweaks -y
```

```
sudo apt install gnome-shell-extensions
```

<https://www.youtube.com/watch?v=afpdn636NE0>