 

**Placement Empowerment Program**

***Cloud Computing and DevOps Centre***

**Set Up a Virtual Machine in the Cloud**

Create a free tier Aws account .Launch a virtual machine and ssh into it

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**Introduction**

Cloud computing allows you to run applications and services on virtual machines (VMs) hosted by major cloud providers like Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). These platforms offer a variety of services, including the ability to create virtual machines (VMs), which can be used for development, testing, or hosting services without needing to invest in physical hardware.

**Objective**

The goal of this guide is to:

* Understand the basics of cloud computing and virtual machines.
* Set up a free-tier account with AWS, Azure, or GCP.
* Launch a basic Linux virtual machine (VM).
* Connect to your VM using SSH for remote access.

**Prerequisites**

Before starting, make sure you have the following:

1. An email address to sign up for cloud services.
2. A basic understanding of SSH and Linux commands (we’ll guide you through the basics).
3. A reliable internet connection.

**Step-by-Step Guide**

**1. Sign Up for a Free-Tier Cloud Account**

Each cloud provider offers a free-tier option that gives you access to basic cloud services, including virtual machines. Here’s how you can sign up for each:

**Amazon Web Services (AWS)**

1. Visit the [AWS Free Tier page](https://aws.amazon.com/free/).
2. Click on **Create an AWS Account** and follow the sign-up instructions.
3. AWS will ask for a credit card for identity verification (you will not be charged for services within the free tier limits).
4. Once your account is set up, you can access the AWS Management Console.

**2. Launch a Basic Linux Virtual Machine**

**For AWS EC2**

1. Log in to the [AWS Management Console](https://aws.amazon.com/console/).
2. Go to **EC2** from the **Services** menu.
3. Click **Launch Instance** to create a new VM.
4. Choose an **Amazon Machine Image (AMI)**, like **Amazon Linux 2** or **Ubuntu**.
5. Select a **t2.micro** instance type (this is eligible for the free tier).
6. Configure your instance (you can leave most settings as default for simplicity).
7. Set up a **Security Group** to allow SSH access (port 22).
8. Launch the instance and create a **key pair** (download the key file for SSH access).
9. Once the instance is running, note the **public IP address** of the instance.

**3. Connect to the Virtual Machine via SSH**

Once your VM is running, you can connect to it via SSH from your local machine. The connection command will be similar for all three platforms, but the process may differ slightly.

**For AWS EC2:**

1. In your terminal, navigate to the directory where your SSH key (.pem file) is located.
2. Run the following command, replacing <key.pem> with your SSH key file and <IP> with your EC2 instance’s public IP address:

bash

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chmod 400 <key.pem> # Set correct permissions for the key file

ssh -i <key.pem> ec2-user@<IP>

**Conclusion**

Setting up a virtual machine in the cloud is an essential skill for modern developers and system administrators. By following this guide, you've learned how to create a free-tier cloud account on AWS, Azure, or GCP, launch a basic Linux virtual machine, and connect to it using SSH. This opens up endless possibilities for deploying applications, hosting services, or experimenting with cloud technologies.