

EC2 Linux Lab

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This lab exercise builds core skills for creating VPCs and EC2 instances.

1 VPC creation

1.1 VPC design

1. Draw out a diagram for a VPC named LAB_VPC using the 10.0.0.0/16 CIDR block with one subnet using the 10.0.1.0/24 CIDR block named LAB_1_SN and an internet gateway named LAB_IGW.
2. Write down (in words) the two rules that should govern the network routing.

1.2 VPC creation using console

1. Use the web console to create this VPC in AWS. Use the PowerShell script `check_lab_vpc.ps1` to check your work.
2. Delete the VPC.

1.3 VPC creation using CLI

1. Use the AWS CLI (in PowerShell or Bash) to manually create the VPC using copy/paste of the IDs.
2. Use the PowerShell script `check_lab_vpc.ps1` to check your work.

2 EC2 setup

Assuming your LAB_VPC is setup already:

1. Create a security group named LAB_SG that allows SSH traffic inbound, and permits all traffic outbound.
2. Upload your private key to AWS (if not already there).
3. Create an EC2 instance using Amazon Linux with the `t2.nano` type:
 - (a) Look up the AMI ID automatically.
 - (b) Attach your security group and key pair to it.
 - (c) The default instance storage is fine.
4. When the instance has started running, look at the screenshot and confirm its sitting at the login screen.

5. Use the ssh command in PowerShell / bash to connect to it. Use ec2-user and your private key as credentials. You will be at a standard bash prompt.
6. Apply system updates as suggested in the prompt.

2.1 EC2 termination

Terminate your EC2 instance using the AWS CLI.

3 Automated setup

1. Write a script in PowerShell (or Bash) to:
 - exit immediately if a VPC named/tagged LAB_VPC already exists.
 - setup a VPC named/tagged LAB_VPC using the CIDR block given.
 - create one subnet named/tagged LAB_1_SN using the CIDR block given.
 - create an internet gateway and attach it to the VPC.
 - route all traffic to addresses outside of the VPC through the internet gateway
2. Write a script in Powershell (or Bash) to remove the LAB_VPC you built automatically. You will have to remove dependent components first. Suggested steps:
 - (a) Get the VPC id corresponding to the LAB_VPC by parsing the JSON from the describe-vpcs command.
 - (b) Get the internet gateway ID and delete it.
 - (c) Get the subnet ids within this VPC (there will only be one here). Make sure to filter only the relevant subnets - you may have multiple VPCs later!