

Activity 2

The process involves setting up and validating AWS infrastructure using CloudFormation. Locate the template from the GitHub repository, edit it in VS Code, and save it. Use the AWS EC2 Console to copy the VPC CIDR block and name tag. Add a subnet with required properties, create a route table linked to the VPC, and define an Internet gateway for public access. Configure an EC2 instance with a security group allowing ICMP traffic. Upload the template to CloudFormation, create the stack, and ping the instance's public IP to confirm connectivity. Finally, delete the stack to avoid unnecessary charges. The goal is to automate the creation of a functional AWS environment.

WHAT WE HAVE IN THE ACTIVITY:

1. **VPC:**
 - CIDR: 10.0.0.0/16.
 - Name: Section2ActivityVPC.
2. **Subnet:**
 - CIDR: 10.0.0.0/24.
 - Public IPs enabled on launch.
3. **Route Table:**
 - Manages routing for the subnet.
4. **Internet Gateway:**
 - Enables internet connectivity.
5. **EC2 Instance:**
 - Type: t2.micro.
 - AMI: ami-04bd4a6a67aa8e86e.
 - Placed in the public subnet.
6. **Security Group:**
 - Allows ICMP (ping) traffic from anywhere (0.0.0.0/0).
7. **Associations:**
 - Subnet associated with the route table.
 - Internet Gateway attached to the VPC.
 - Default route configured for internet traffic (0.0.0.0/0).

This setup is ideal for testing internet connectivity or deploying lightweight applications.

Activity

1. Find the template files in our GitHub repository under the same name as the heading for easy access and edits. Find and Save the attached template locally, open it in VS Code for edits.
2. Go to [AWS EC2 console](#). Search for EC2::VPC and copy the CidrBlock and a name tag.

AWS Docs > awscloudformation > latest > userguide > aws-reso...
AWS::EC2::VPC
Specifies a virtual private cloud (VPC).

YAML

Type: **AWS::EC2::VPC**
Properties:



3. Then, Search for EC2::Subnet. Add a subnet with CidrBlock, MapPublicIpOnLaunch, and VPC reference.

AWS Docs > awscloudformation > latest > userguide > aws-reso...
AWS::EC2::Subnet
Specifies a **subnet** for the specified VPC.

4. Create a route table linked to the VPC.

AWS Docs > awscloudformation > latest > userguide > aws-reso...
AWS::EC2::RouteTable
Specifies a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

5. Define and attach an Internet gateway to the VPC. Add an Internet route in the route table for public access. Link the subnet to the route table.

AWS Docs > awscloudformation > latest > userguide > aws-reso...
AWS::EC2::InternetGateway
Allocates an internet gateway for use with a VPC. After creating the Internet gateway, you then attach it to a VPC.

6. Define an EC2 instance with InstanceType, ImageId, and VPC subnet. Allow ICMP (ping) traffic by defining a security group with ingress rules. Associate the security group with the EC2 instance.

AWS Docs > awscloudformation > latest > userguide > aws-reso...
AWS::EC2::Route
You must specify either a destination CIDR block or prefix list ID. You must also specify exactly one of the resources as the target.

YAML

Type: `AWS::EC2::SubnetRouteTableAssociation`

Properties:

- `RouteTableId`: `String`
- `SubnetId`: `String`

7. Upload the template to CloudFormation and create the stack.

Step 1

☒ Create stack

Step 2

☐ Specify stack details

Step 3

☐ Configure stack options

Step 4

☐ Review and create

Create stack

Prerequisite - Prepare template

You can also create a template by scanning your existing resources in the [IaC generator](#).

Prepare template
Every stack is based on a template. A template is a JSON or YAML file that contains configuration information about the AWS resources you want to include in the stack.

☒ Choose an existing template
Upload or choose an existing template.

☐ Build from Infrastructure Composer
Create a template using a visual builder.

Specify template

[Info](#)
A template is a JSON or YAML file that describes your stack's resources and properties.

Template source
Selecting a template generates an Amazon S3 URL where it will be stored.

☐ Amazon S3 URL
Provide an Amazon S3 URL to your template.

☒ Upload a template file
Upload your template directly to the console.

☐ Sync from Git
Sync a template from your Git repository.

Upload a template file

section-2-activity-template.yaml

8. Ping the instance using its public IP to confirm connectivity.

Your VPCs (2) [Info](#)

Last updated less than a minute ago

< 1 >

<input type="checkbox"/>	Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	-	vpc-0b0c8badfef0024a4	Available	Off	172.31.0.0/16	-
<input type="checkbox"/>	Section2ActivityVPC	vpc-042e61c7fb0735068	Available	Off	10.0.0.0/16	-

9. Delete the CloudFormation stack to avoid charges.