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.

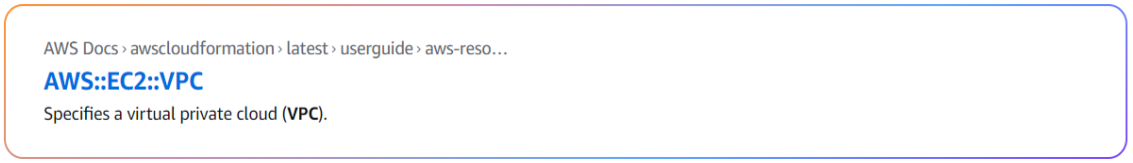
WHAT WE HAVE IN THE ACTIVITY:

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

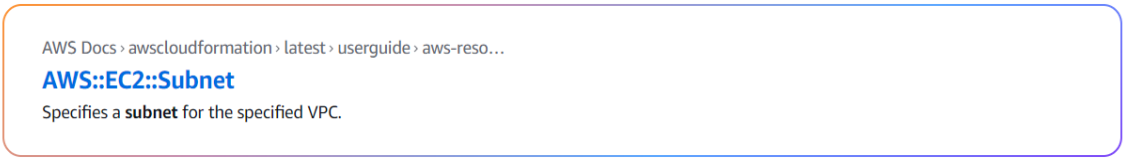
1. Find the template files in our GitHub repository under the same name as the heading for easy access and edits. Find and Save the attached template locally, open it in VS Code for edits.
2. Go to AWS EC2 console. Search for EC2::VPC and copy the CidrBlock and a name tag.



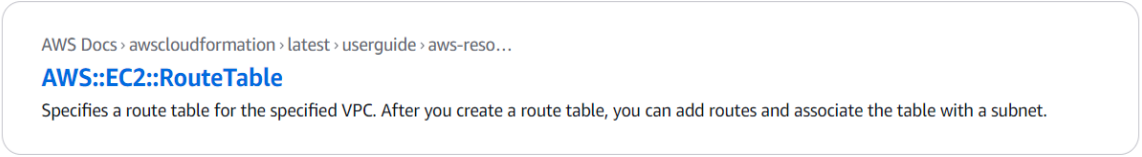
YAML

```
Type: AWS::EC2::VPC
Properties:
```

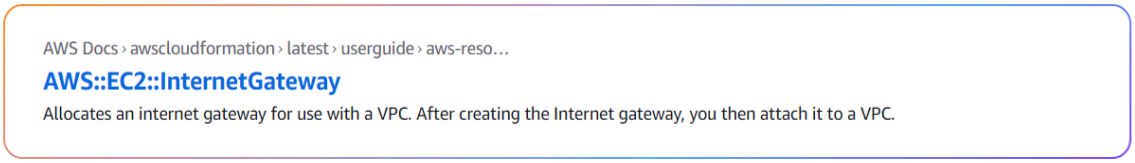
3. Then, Search for EC2::Subnet. Add a subnet with CidrBlock, MapPublicIpOnLaunch, and VPC reference.



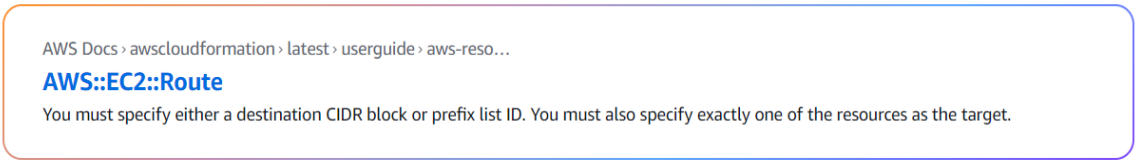
4. Create a route table linked to the VPC.



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.



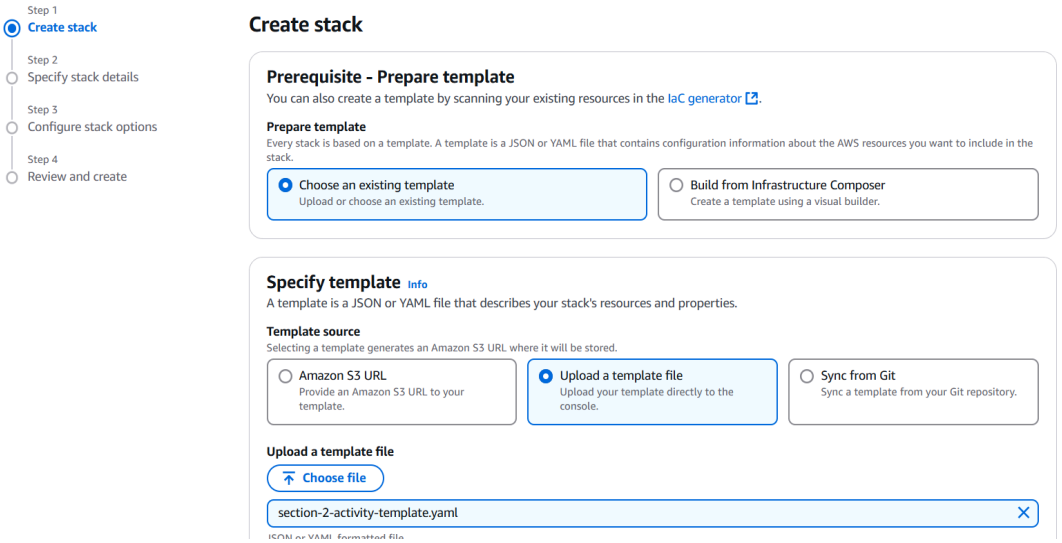
6. Define an EC2 instance with InstanceType, ImageId, and VPC subnet. Allow ICMP (ping) traffic by defining a security group with ingress rules. Associate the security group with the EC2 instance.



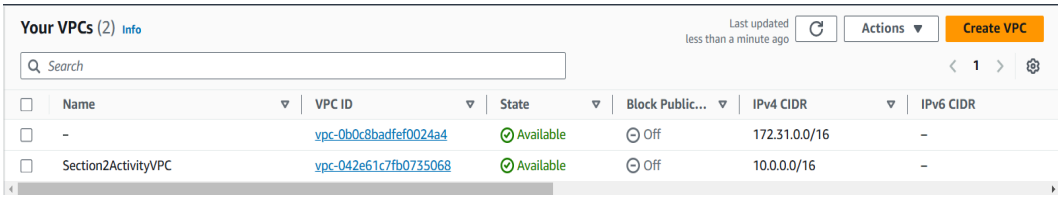
YAML

```yaml
Type: AWS::EC2::SubnetRouteTableAssociation
Properties:
  RouteTableId: String
  SubnetId: String
```

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



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



9. Delete the CloudFormation stack to avoid charges.