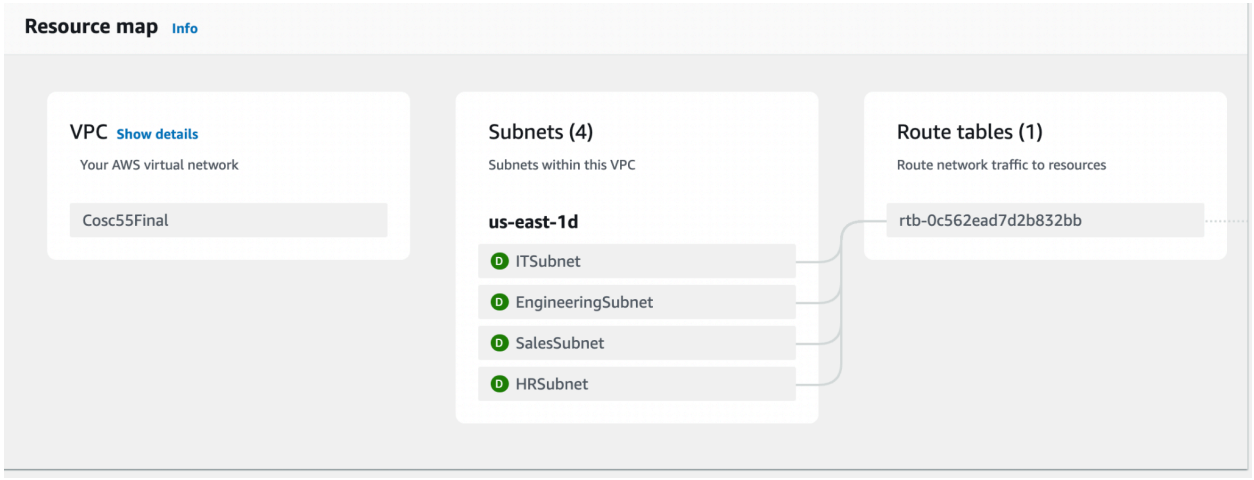
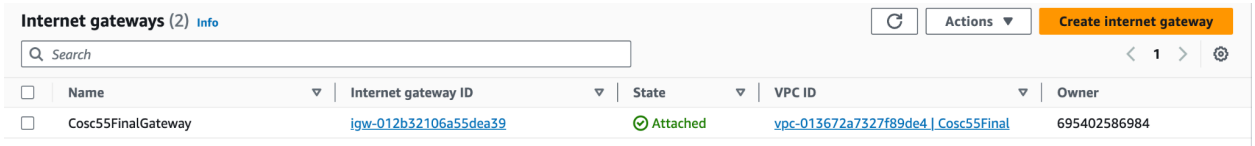
Task 1: Deploy a functional Cloud environment for your example organization

1. **Create the VPC:**
    - **IPv4 CIDR Block:** 10.0.0.0/16
    - **Tenancy:** Default
    - **VPC:** Cosc55Final

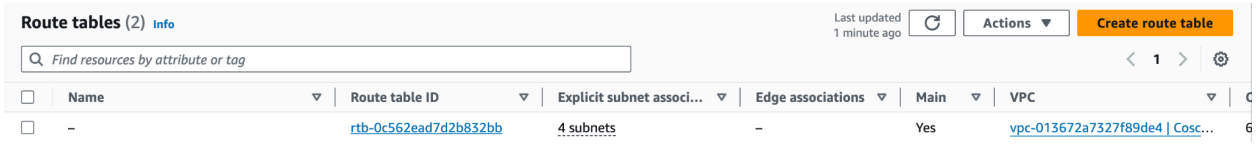


1. **Creating Subnets:**
    - **Engineering Subnet:**
        - **Subnet Name:** EngineeringSubnet
        - **Availability Zone:** Choose an available zone.
        - **CIDR Block:** 10.0.1.0/24
    - **Same for other departments:**
        - **Sales Subnet:** 10.0.2.0/24
        - **IT Subnet:** 10.0.3.0/24
        - **HR Subnet:** 10.0.4.0/24
2. **Attach Internet Gateway:**
    - **Go to "Internet Gateways"** in the VPC Dashboard.
    - **Attach the Internet Gateway** to VPC.



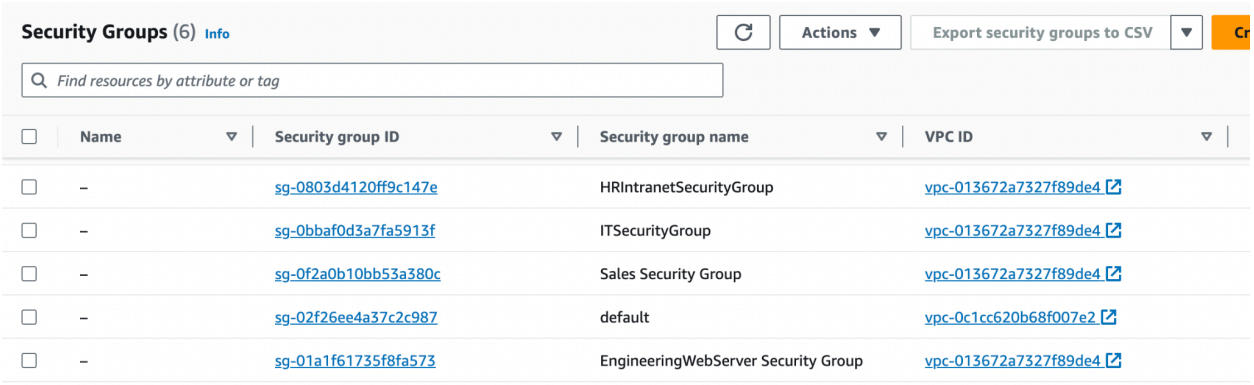
3. **Update Route Tables:**
    - **Add a Route:**

        - **Destination:** 0.0.0.0/0
        - **Target:** Select Cosc55Final
    - **Associate the Route Table** with all subnets.



1. **Launch the Engineering Server (Ubuntu Web Server):**
    - **Name:** EngineeringWebServer
    - **Type:** Ubuntu Server
    - **Instance Type:** t2.medium
    - **Configure Network:**
        - **VPC:** Cosc55Final
        - **Subnet:** EngineeringSubnet
    - **Create and Configure Security Group:**
        - **Allow HTTP (port 80)**
        - **Allow HTTPS (port 443)**
        - **Allow SSH (port 22)**
2. **Launch the Sales Server (Windows CRM Server):**
    - **Name:** SalesCRMServer
    - **AMI:** Microsoft Windows Server
    - **Instance Type:** t2.medium
    - **Subnet:** SalesSubnet
    - **Security Group:**
        - **Allow HTTPS (port 443)**
        - **Allow RDP (port 3389)**
3. **Launch the IT Server (RedHat File Server):**
    - **Repeat the steps above**, but:
        - **Name:** ITFileServer
        - **Type:** Red Hat
        - **Instance Type:** t2.micro
        - **Subnet:** ITSubnet
        - **Security Group:**
            - **Allow SSH (port 22)**
4. **Launch the HR Server (Ubuntu Intranet Server):**
    - **Repeat the steps above**, but:
        - **Name:** HRIntranetServer
        - **Type** Ubuntu Server
        - **Instance Type:** t2.micro

- **Subnet:** HRSubnet
- **Security Group:**
  - **Allow HTTP (port 80)**
  - **Allow HTTPS (port 443)**
  - **Allow SSH (port 22)**

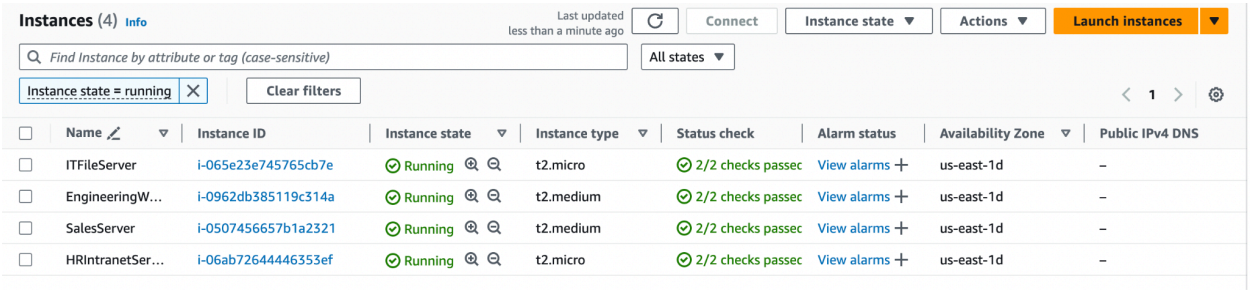


Security Groups (6) Info

Actions ▼ | Export security groups to CSV ▼ | Cr

Find resources by attribute or tag

Name	Security group ID	Security group name	VPC ID
–	sg-0803d4120ff9c147e	HRIntranetSecurityGroup	vpc-013672a7327f89de4
–	sg-0bbaf0d3a7fa5913f	ITSecurityGroup	vpc-013672a7327f89de4
–	sg-0f2a0b10bb53a380c	Sales Security Group	vpc-013672a7327f89de4
–	sg-02f26ee4a37c2c987	default	vpc-0c1cc620b68f007e2
–	sg-01a1f61735f8fa573	EngineeringWebServer Security Group	vpc-013672a7327f89de4



Instances (4) Info

Last updated less than a minute ago | Connect | Instance state ▼ | Actions ▼ | Launch instances ▼

Find Instance by attribute or tag (case-sensitive) | All states ▼

Instance state = running | Clear filters | 1

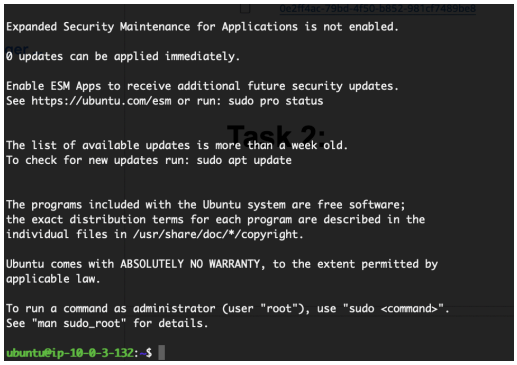
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
ITFileServer	i-065e23e745765cb7e	Running	t2.micro	2/2 checks passec	View alarms +	us-east-1d	–
EngineeringW…	i-0962db385119c314a	Running	t2.medium	2/2 checks passec	View alarms +	us-east-1d	–
SalesServer	i-0507456657b1a2321	Running	t2.medium	2/2 checks passec	View alarms +	us-east-1d	–
HRIntranetSer…	i-06ab72644446353ef	Running	t2.micro	2/2 checks passec	View alarms +	us-east-1d	–

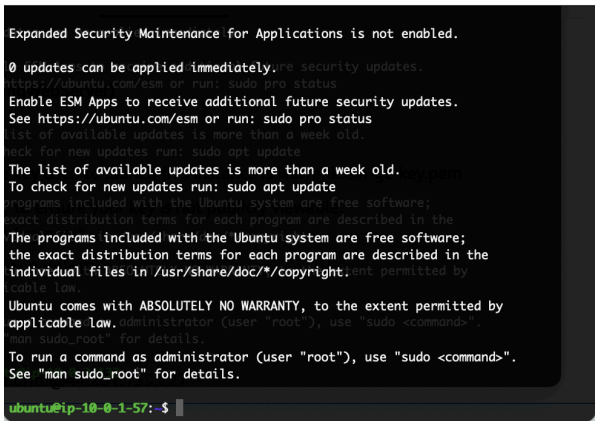
5. **Set up AWS Certificate Manager for HTTPS**

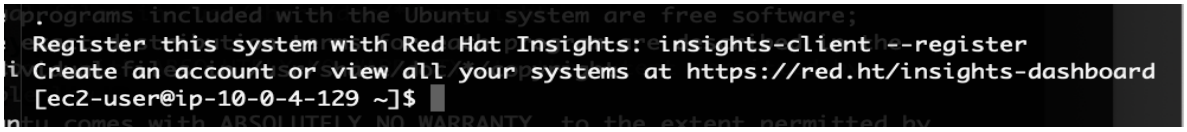
Certificate ID	Domain name	Type
0e2ff4ac-79bd-4f50-b852-981cf7489be8	warrenkleinowenakelcosc55.com	Amazon Issued

Task 2: Test the Functionality of your Test Environment

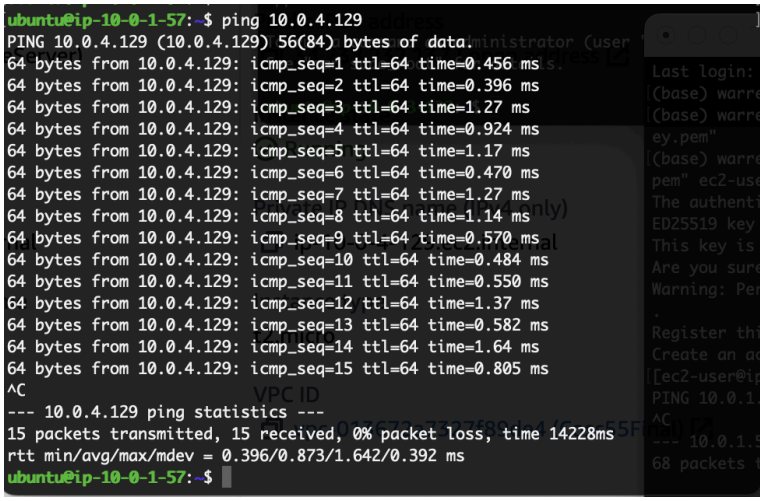
1. **Validating Proper Authorization (connecting to servers within VPC)**







2. **Validating Necessary Services are Running & Proper Network Access (ensure that networks can communicate)**


ubuntu@ip-10-0-1-57:~$ ping 10.0.4.129
PING 10.0.4.129 (10.0.4.129) 56(84) bytes of data.
64 bytes from 10.0.4.129: icmp_seq=1 ttl=64 time=0.456 ms
64 bytes from 10.0.4.129: icmp_seq=2 ttl=64 time=0.396 ms
64 bytes from 10.0.4.129: icmp_seq=3 ttl=64 time=1.27 ms
64 bytes from 10.0.4.129: icmp_seq=4 ttl=64 time=0.924 ms
64 bytes from 10.0.4.129: icmp_seq=5 ttl=64 time=1.17 ms
64 bytes from 10.0.4.129: icmp_seq=6 ttl=64 time=0.470 ms
64 bytes from 10.0.4.129: icmp_seq=7 ttl=64 time=1.27 ms
64 bytes from 10.0.4.129: icmp_seq=8 ttl=64 time=1.14 ms
64 bytes from 10.0.4.129: icmp_seq=9 ttl=64 time=0.570 ms
64 bytes from 10.0.4.129: icmp_seq=10 ttl=64 time=0.484 ms
64 bytes from 10.0.4.129: icmp_seq=11 ttl=64 time=0.550 ms
64 bytes from 10.0.4.129: icmp_seq=12 ttl=64 time=1.37 ms
64 bytes from 10.0.4.129: icmp_seq=13 ttl=64 time=0.582 ms
64 bytes from 10.0.4.129: icmp_seq=14 ttl=64 time=1.64 ms
64 bytes from 10.0.4.129: icmp_seq=15 ttl=64 time=0.805 ms
^C
--- 10.0.4.129 ping statistics ---
15 packets transmitted, 15 received, 0% packet loss, time 14228ms
rtt min/avg/max/mdev = 0.396/0.873/1.642/0.392 ms
ubuntu@ip-10-0-1-57:~$