Deploying an End to End solution with a Windows virtual Machine on AWS

Understand the scenario

In this project, you will deploy an End-to-End Solution in AWS. First, you will create a Virtual Private Cloud (VPC) environment for the EC2 instances. Next, you will create an Amazon S3 bucket that will hold the static web content for the website, and then you will create a custom EC2 launch template that includes the web server engine and an initial homepage for the website. Finally, you will deploy a web server based on the custom launch template, and then you will verify that the website is publicly available from the new EC2 instance..

Build a VPC environment

- Verify that you are in the **US East 2 (Ohio)** region.
- Create a new VPC by using the values in the following table. For any property that is not specified, use the default value.

Setting	Value
Name tag	Web VPC 34115490
IPv4 CIDR block	10.0.0.0/16
IPv6 CIDR block	**No IPv6 CIDR block**
Tenancy	**Default**

- You can use the **Copy to clipboard** feature to copy the associated text, and then you can paste the text into the browser.
- Create two public subnets for **Web VPC 34115490** by using the values in the following tables. For any property that is not specified, use the default value.

Web Subnet 1

Property	Value
Subnet name	Web Subnet 1
Availability Zone	**us-east-2a**
IPv4 CIDR block	10.0.1.0/24

Web Subnet 2

Property	Value
Subnet name	Web Subnet 2
Availability Zone	**us-east-2b**
IPv4 CIDR block	10.0.2.0/24

- Configure both subnets to automatically assign public IPv4 addresses.
- Create an internet gateway named Internet Gateway 34115490, and then attach it to **Web VPC 34115490**.
- Associate **Web Subnet 1** and **Web Subnet 2** to the route table for the **Web-VPC 34115490** VPC, and then change the name of the route table to Web RT 34115490.
- Add a route to the **Web RT 34115490** route table by using 0.0.0.0/0 as the destination **Internet Gateway 34115490** as the target.

Create an S3 storage solution

- Download the AWS_TE.pdf and expert-logo.jpg files, and then save the files on your local computer.
- Create a new S3 bucket named myrcbfiles-34115490, enable versioning for the bucket, and then enable server-side encryption by using the **Amazon S3 key (SSE-S3)** encryption key.
- Create two folders named images and docs in the **webfiles-34115490** bucket.
- Upload **expert-logo.jpg** to the **images** folder, and then upload **AWS_TE.pdf** to the **docs** folder.
- Enable public access for the **webfiles-34115490** bucket, and then make the two folders public.
- Create a lifecycle rule named docs policy that will transition **current versions** of all objects in the docs/ folder to the **Intelligent-Tiering** storage class after 90 days and will delete **previous versions** after 30 days.
- Create a security group named Web34115490-sg that uses the **Web VPC** and the description Allow RDP and HTTP, and then add inbound rules that allow **RDP** from **My IP** and **HTTP** from **Anywhere**.
- Create an EC2 key pair named 34115490KeyPair by using the **pem** format.
- Launch an EC2 instance by using the values in the following table. For any property that is not specified, use the default value.

Property	Value
Name	Web-starter-34115490
AMI	**Microsoft Windows Server 2019 Base**
Instance type	**t2.micro**
Key pair	**34115490KeyPair**
Network VPC	**Web VPC 34115490**
Subnet	**Web Subnet 1 | us-east-2a**
Security group	**Web34115490-sg**
User data	*insert user data script*

- User data script:

```
PowerShell  Install-WindowsFeature -name Web-Server -IncludeManagementTools
```

- Connect to the **Web-starter-34115490** instance from the AWS Management Console by using the **RDP client**, generate a password, and then sign in as **Administrator** using the password that you copied.
- You may need to wait up to four minutes before you can generate the password you will need for the RDP connection.
- In the RDP session, create a file named index.html in c:\inetpub\wwwroot, and then add the following content:

```
<html lang="en">
<head>
<meta charset="utf-8" />
<title>Hello World!</title>
<link rel="stylesheet" href="hw.css">
</head>
<body>
<div class="mainBox">
<img src="https://webfiles-34115490.s3.us-east-2.amazonaws.com/images/expert-logo.jpg" alt="LODS Expert Challenge Logo">
<div class="textBox">
<h1>Hello World!</h1>
More information about AWS Certification and Training can be found here:
<a href="https://webfiles-34115490.s3.us-east-2.amazonaws.com/docs/AWS_TE.pdf">AWS Certification and Training Overview</a>
</div>
</div>
</body>
</html>
```

- Create a file named hw.css in **c:\inetpub\wwwroot**, and then add the following content:

```
body {
background-color: #36a;
}
.mainBox {
width: 100%;
display: flex;
flex-direction: column;
align-items: center;
}
.textBox {
width: 30%;
text-align: center;
}
h1 {
color: #fff;
}
img {
width: 50%;
border: 1px solid #fff;
}
```

- Create a new AMI named IIS-Starter-34115490 by using the **Web-starter-34115490** EC2 instance.
- Create a launch template by using the values in the following table. For any property that is not specified, use the default value.

Property	Value
Launch template name	IIS-template-34115490
Template version description	Custom IIS web server
AMI	IIS-Starter-34115490
Key pair	**34115490KeyPair**
Security group	**Web34115490-sg**

- Launch a new EC2 instance by using the **IIS-Starter-34115490** launch template and the values in the following table. For any property that is not specified, use the default value.

Property	Value
Instance type	**t2.micro**
Subnet	**Web Subnet 2**
Tag Key	Name
Tag Value	Web-Final-34115490

- Record the public IP address of the **Web-Final-34115490** instance in the following **Public IP Address** text box:

Public IP Address

Verify that you can connect to **Public IP Address**