



# ACA Module 10 Lab

## Automating Infrastructure Deployment with AWS CloudFormation

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COS 20019- Cloud Computing Architecture

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So this all my step to finish ACA Module 9 Lab with explanation with all the screenshotted is included a requirement of the project

### Task 1: Deploying a networking layer

#### Create stack consist 4 steps (including download the newwork file)

##### Step 1: Specify template

**Template source:** Upload a template file

Upload a template file: Click Choose file then select the lab-network.yaml file that you downloaded.

##### Step 2: Create Stack

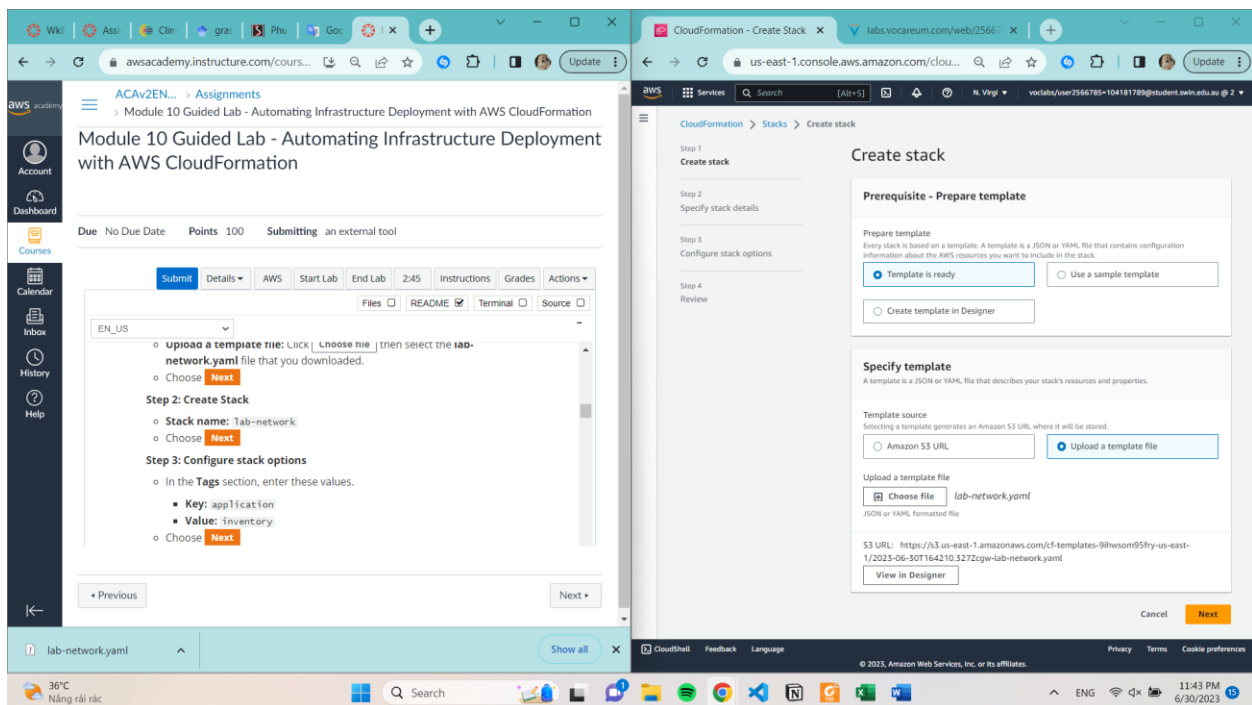
**Stack name:** lab-network

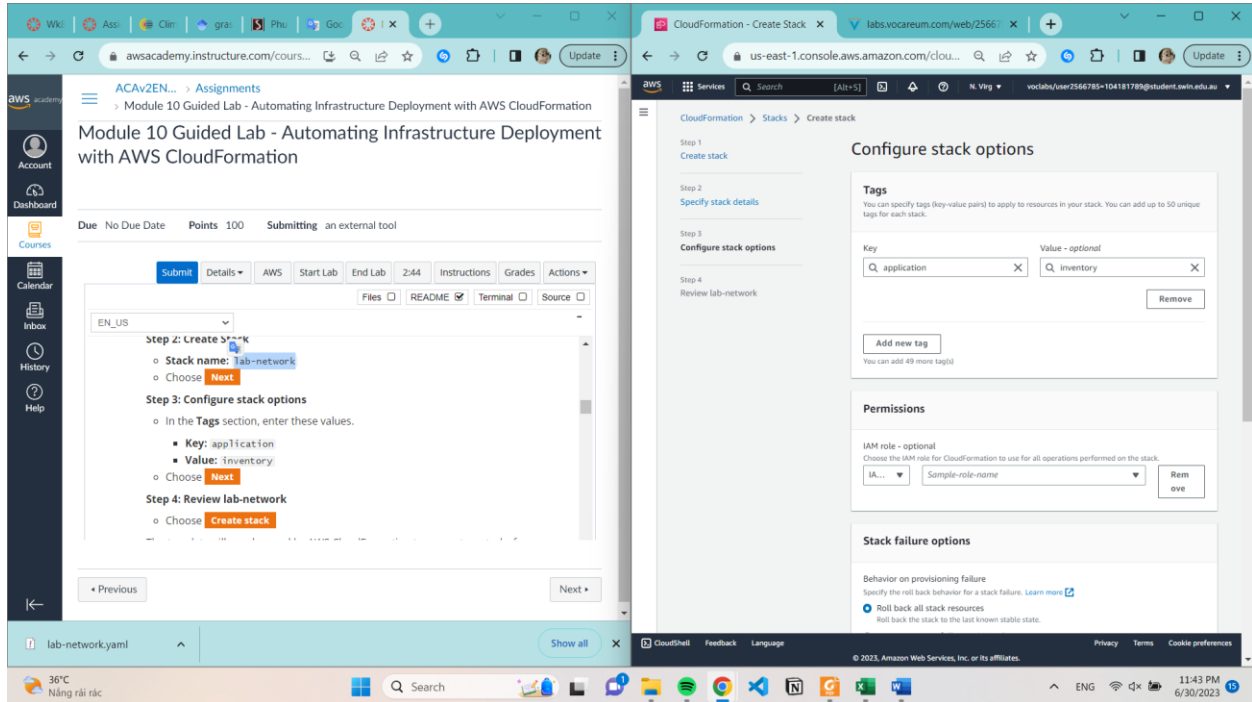
##### Step 3: Configure stack options

In the **Tags** section, enter these values.

**Key:** application

**Value:** inventory





## Task 2: Deploying an application layer

We did the same task like Task 1 but with different file

The image displays two screenshots of the AWS CloudFormation console, illustrating the process of creating a new stack.

**Left Screenshot: Specify stack details**

- Stack name:** lab-application
- Parameters:**
  - AmazonLinuxAMIID:** /aws/service/ami-amazon-linux-latest/amzn2-ami-hvm-x86\_64-gp2
  - NetworkStackName:** lab-network

**Right Screenshot: Configure stack options**

- Tags:**
  - Key:** application
  - Value:** inventory
- Permissions:**
  - IAM role:** Sample-role-name
- Stack failure options:**
  - Behavior on provisioning failure:** Roll back all stack resources

The screenshot shows two browser windows. The left window is the AWS Academy lab interface for 'Module 10 Guided Lab - Automating Infrastructure Deployment with AWS CloudFormation'. It displays instructions for Step 4: Review lab-application, including steps to create a stack, monitor its progress, and copy the URL. The right window shows the AWS CloudFormation console with a banner that reads 'Introducing AWS CloudFormation' and a large text overlay: 'Congratulations, you have successfully launched the AWS CloudFormation sample.'

### Task 3: Updating a Stack

### Examine Security group

The screenshot shows two browser windows. The left window is the AWS Academy lab interface, displaying instructions for Step 21: In the AWS Management Console, from the Services menu, choose EC2. Step 22: In the left navigation pane, choose Security Groups. Step 23: Select the check box for lab-application-WebServerSecurityGroup.... Step 24: Choose the Inbound rules tab. Step 25: From the Services menu, choose CloudFormation. Step 26: Right-click the following link and download the updated template to your computer: lab-application2.yaml. The right window shows the AWS Management Console 'Security Groups' page. It lists three security groups: 'Web Server Security Group', 'lab-application-WebServerSecurityGroup', and 'lab-application-WebServerSecurityGroup'. The 'lab-application-WebServerSecurityGroup' is selected, and its inbound rules are shown, including a rule for HTTP traffic from any source.

## Update Cloudformation template

The first screenshot shows the AWS Academy lab instructions for updating the 'lab-application' stack. The instructions are as follows:

27. In the **Stacks** list of the **AWS CloudFormation** console, select **lab-application**.
28. Choose **Update** and configure these settings.
  - Select **Replace current template**
  - **Template source:** **Upload a template file**
  - **Upload a template file:** Click **Choose file** then select the **lab-application2.yaml** file that you downloaded.
29. Choose **Next** in each of the next three screens to advance to the **Review lab-application** page.

In the **Change set preview** section at the bottom of the page, AWS CloudFormation displays the resources that will be updated:

Change set preview

Changes (1)

Next

The second screenshot shows the 'Update stack' wizard in the AWS console. The 'Prerequisite - Prepare template' step is selected, and the 'Replace current template' option is chosen. The 'Specify template' step is also shown, with the 'Upload a template file' option selected and the file 'lab-application2.yaml' chosen.

The third screenshot shows the 'lab-application' stack details in the AWS console. The 'Stacks (3)' list shows the 'lab-application' stack with a status of 'UPDATE\_COMPLETE'. The 'Stack actions' dropdown menu is open, showing options like 'Delete', 'Update', 'Stack actions', and 'Create stack'.

The fourth screenshot shows the 'Events' tab for the 'lab-application' stack. The 'Events (20)' list shows a series of events, including 'UPDATE\_COMPLETE' and 'CREATE\_COMPLETE'.

## Task 4: Exploring templates with AWS CloudFormation Designer

The screenshot displays the AWS CloudFormation Designer interface. On the left, a sidebar lists 'Resource types' including ACMPCA, APS, AccessAnalyzer, AmazonMQ, Amplify, AmplifyUIBuilder, APIGateway, APIGatewayV2, AppConfig, AppFlow, AppIntegrations, AppMesh, AppRunner, and AppStream. The main area shows a diagram of a 'lab-application2.yaml' template. The diagram includes a 'WebServer' resource (AWS::EC2::Instance) connected to a 'DiskVolume' resource (AWS::EBS::Volume). The 'WebServer' resource is also connected to a 'WebServer' resource (AWS::EC2::Instance). The 'DiskVolume' resource is connected to the 'WebServer' resource. The diagram is titled 'lab-application2.yaml'. Below the diagram, the YAML code for the template is displayed, showing the 'Parameters' section and the 'Resources' section. The 'Parameters' section includes 'NetworkSubnetName' and 'SecurityGroup'. The 'Resources' section includes 'WebServer' and 'DiskVolume'.

## Task 5: Deleting the stack

The screenshot displays the AWS CloudFormation console. The 'Stacks' tab is selected, showing a list of stacks. A 'Delete stack?' dialog box is open, asking for confirmation to delete the 'lab-application' stack. The dialog box includes the text: 'Delete stack lab-application permanently? This action cannot be undone. Deleting this stack will delete all stack resources. Resources will be deleted according to their DeletionPolicy. Learn more'. The 'Delete' button is highlighted in orange.



## Snapshots with Started time

The image is a screenshot of a dual-monitor setup. The left monitor displays the AWS Academy course page for 'Module 10 Guided Lab - Automating Infrastructure Deployment with AWS CloudFormation'. The right monitor displays the AWS Management Console 'Snapshots' page for the 'us-east-1' region, showing a list of snapshots and a detailed view of a specific snapshot.

**Left Monitor (AWS Academy):**

- Course: ACav2EN... > Assignments > Module 10 Guided Lab - Automating Infrastructure Deployment with AWS CloudFormation
- Due: No Due Date, Points: 100, Submitting: an external tool
- Instructions: 42. Wait for the stack to be deleted. It will disappear from the stacks list. The application stack \_\_ removed, but the network stack remained untouched. This scenario reinforces the idea that different teams (for example, the network team or the application team) could manage their own stacks. You will now verify that a snapshot of the EBS volume was created before the EBS volume was deleted.
- 43. From the **Services** menu, choose **EC2**.
- 44. In the left navigation pane, choose **Snapshots**. You should see a snapshot with a **Started** time in the last few minutes.

**Right Monitor (AWS Console):**

- Region: us-east-1
- Navigation pane: Snapshots (1/1)
- Snapshot list table:

Snapshot status	Started	Progress	Encryption	KMS key ID
Completed	2023/07/01 00:09 GMT+7	Available (100%)	Not encrypted	-

- Snapshot details for ID: snap-0738bd0d08564c444 (Web Data):

Details	Permissions	Storage tier	Tags
Snapshot ID: snap-0738bd0d08564c444 (Web Data)	Volume size: 100 GiB	Progress: Available (100%)	Snapshot status: Completed
Owner: 278162744500	Volume ID: vol-0be5608fb23c55e1a	Started: Sat Jul 01 2023 00:09:12 GMT+0700 (Indochina Time)	Product codes: -
Encryption: Not encrypted	KMS key ID: -	KMS key alias: -	KMS key ARN: -
Fast snapshot restore: -	Description: -		