Swinburne University of Technology

*COS20019 Cloud Computing Architecture*

*­­­*­­­­

Module 10 Guided Lab - Automating Infrastructure Deployment with AWS CloudFormation

*Saturday 28th October, 2023*

**Task 1: Deploying a networking layer**

In the **AWS Management Console**, from the **Services** menu, choose **CloudFormation**.

Choose **Create stack** and configure these settings.

**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.
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 2: Create Stack**

* **Stack name:** lab-network
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 3: Configure stack options**

* In the **Tags** section, enter these values.
  + **Key:** application
  + **Value:** inventory
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 4: Review lab-network**

* Choose **Create stack**

Choose the **Stack info** tab.

Wait for the **Status** to change to CREATE\_COMPLETE.

Choose the **Resources** tab.

A screenshot of a computer

Description automatically generated

Choose the **Events** tab and scroll through the events log.

A screenshot of a search box

Description automatically generated

Choose the **Outputs** tab.

A screenshot of a computer

Description automatically generated

Choose the **Template** tab.

A screenshot of a computer

Description automatically generated

**Task 2: Deploying an application layer**

In the left navigation pane, choose **Stacks**.

Select **Create stack > With new resources (standard)**, and then configure these settings.

**Step 1: Specify template**

* **Template source:** **Upload a template file**
* **Upload a template file:** Click **Choose file** then select the **lab-application.yaml** file that you downloaded.
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 2: Create Stack**

* **Stack name:** lab-application
* **NetworkStackName:** lab-network
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 3: Configure stack options**

* In the **Tags** section, enter these values.
  + **Key:** application
  + **Value:** inventory
* Choose **Next**

A screenshot of a computer

Description automatically generated

**Step 4: Review lab-application**

* Choose **Create stack**

In the **Stack info** tab, wait for the **Status** to change to CREATE\_COMPLETE.

Choose the **Outputs** tab.

A screenshot of a computer

Description automatically generated

Copy the **URL** that is displayed, open a new web browser tab, paste the URL, and press ENTER.

A screenshot of a computer

Description automatically generated

**Task 3: Updating a Stack**

In the **AWS Management Console**, from the **Services** menu, choose **EC2**.

In the left navigation pane, choose **Security Groups**.

Select the check box for  **lab-application-WebServerSecurityGroup...**.

Choose the **Inbound rules** tab.

A screenshot of a computer

Description automatically generated

From the **Services** menu, choose **CloudFormation**.

In the **Stacks** list of the **AWS CloudFormation console**, select **lab-application**.

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.

A screenshot of a computer

Description automatically generated

Choose **Next** in each of the next *three* screens to advance to the **Review lab-application** page.

Choose **Update stack**

In the **Stack info** tab, wait for the **Status** to change to UPDATE\_COMPLETE.

Screens screenshot of a computer

Description automatically generated

Return to the **Amazon EC2 console** and from the left navigation pane, choose **Security Groups**.

In the **Security Groups** list, select **lab-application-WebServerSecurityGroup**.

The **Inbound rules** tab should display an additional rule that allows *SSH* traffic over *TCP port 22*.

A screenshot of a security group

Description automatically generated

**Task 4: Exploring templates with AWS CloudFormation Designer**

From the **Services** menu, choose **CloudFormation**.

In the left navigation pane, choose **Designer**.

Choose the **File**  menu, select **Open > Local file**, and select the **lab-application2.yaml** template that you downloaded previously.

A screenshot of a computer

Description automatically generated

Experiment with the features of the Designer.

**Task 5: Deleting the stack**

Return to the main **AWS CloudFormation console** by choosing the Close link at the top of the Designer page (choose **Leave page** if prompted).

In the list of stacks, choose the **lab-application** link.

Choose **Delete**

Choose **Delete stack**

A screenshot of a computer

Description automatically generated

Wait for the stack to be deleted. It will disappear from the stacks list.

A screenshot of a computer

Description automatically generated

From the **Services** menu, choose **EC2**.

In the left navigation pane, choose **Snapshots**.

You should see a snapshot with a **Started** time in the last few minutes.

A screenshot of a computer

Description automatically generated

Submit the lab.

ENDLAB.