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Lab Brief

Course: DevOps - Infrastructure Automation on AWS

CloudFormation | AWS CLI

(Create web server instance in an AZ, Create Target Group, Create Load balancer)

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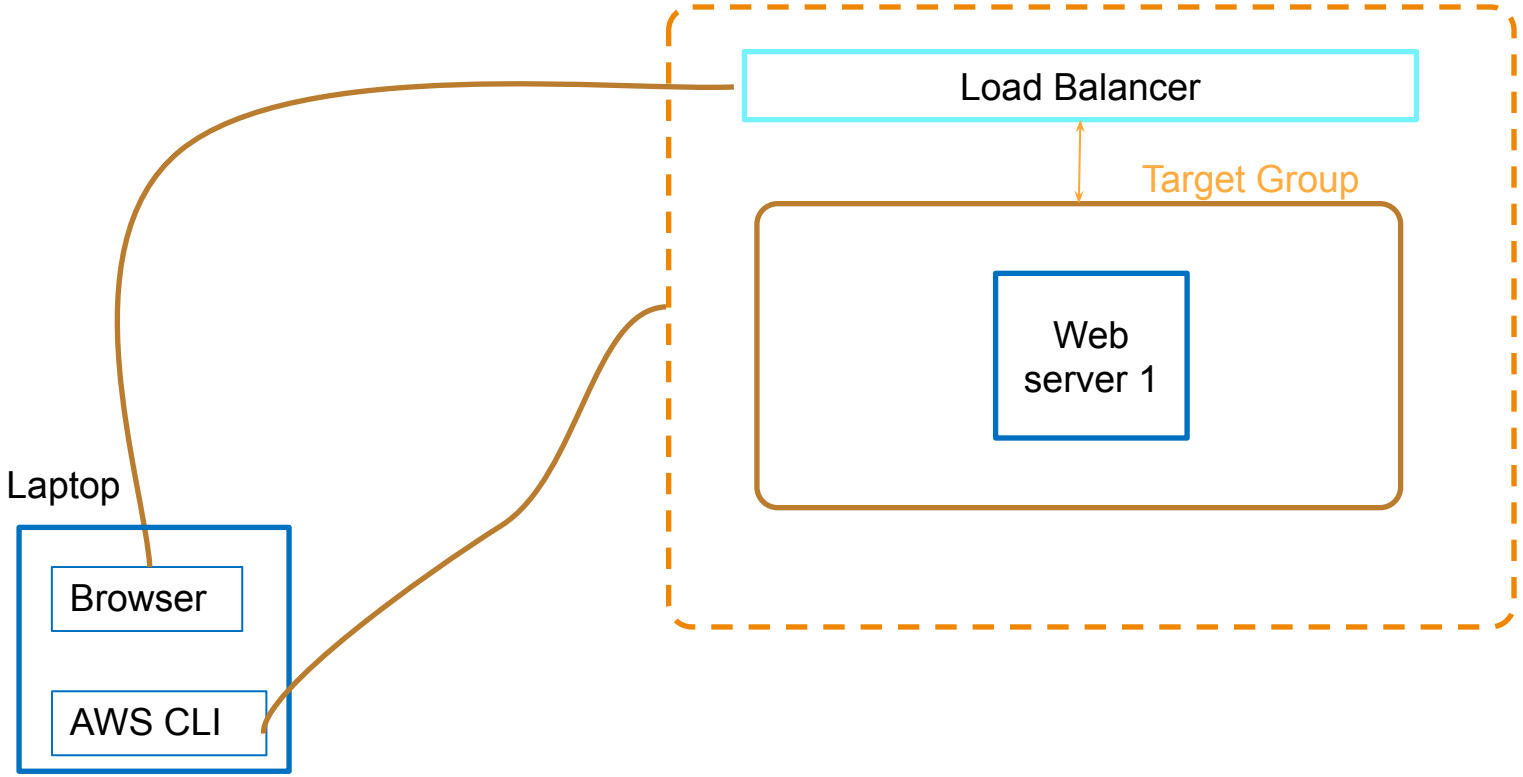
Learning Outcomes

1. Defining CloudFormation template to manage AWS resources

2. Use AWS CLI to manage CloudFormation stack

Final Goal



How to do it ?

1. Create CloudFormation template to create following resources and output
    - Required parameters
    - Web Server Security Group
    - Web Server
        i. AMI - Ubuntu Server 18.04 LTS
        ii. Type - t2.micro
        iii. Install apache web server using user data
    - Target group referring created web server
    - Application Load balancer
    - Listener referring load balancer and target group
    - Output load balancer URL
2. Using AWS CLI create CloudFormation stack and delete stack

AWS CLI Commands Reference

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1. Create CloudFormation Stack using developed template
    - aws cloudformation create-stack --stack-name <stack-name> --template-body file://<path>
2. Describe stack to get output details
    - aws cloudformation describe-stacks --stack-name <stack-name>
3. Delete Stack
    - aws cloudformation delete-stack --stack-name <stack-name>
4. Helpful link to write a JSON

    https://www.digitalocean.com/community/tutorials/an-introduction-to-json#working-with-complex-types-in-json

https://aws.amazon.com/blogs/mt/the-virtues-of-yaml-cloudformation-and-using-cloudformation-designer-to-convert-json-to-yaml/

Please use the links to learn writing a template but the template should be as per the lab requirements. If there are things not asked in the lab and the copy paste of template is done, marks will be deducted.

Grading Scheme

Task	Grade
How to do it ? - 1	60
How to do it ? - 2	30
TOTAL	**90**

Resource Clean-Up

1. Cloud is always **pay per use model** and all resources/services that we consume are chargeable. Cleaning up when you've completed your lab or project is always necessary. This is true whether you're doing a lab or implementing a project at your workplace.

2. **After completing with the lab, make sure to delete each resource created in the reverse chronological order.**

What is expected in your Solution Doc?

1. Your solution document must be in PDF format.
2. Your solution document MUST contain screenshots of all the main steps that you implemented from “How to do it?” section. Each of these screenshots should display expected details.
3. Make sure your AWS user id is visible in all of the screenshots.
4. CloudFormation template content
5. CloudFormation Stack web console screenshots (Stack Info, Resources, Outputs)
6. AWS CLI Commands output screenshots

How to submit your solution?

1. Navigate to the relevant course in Olympus. You can also access the submission link through “Ongoing Activities” section on your dashboard.

2. Create your lab solution document based on the guidelines in the previous slide.

3. Name your solution document appropriately in the format of:
   <BATCH>_<FIRSTNAME>_<LASTNAME>_Lab_DevOps_CloudFormation;
   - e.g. PGPCCJUL18_VIJAY_DWIVEDI_ Lab_DevOps_CloudFormation.pdf
   - e.g. pgpccjul18_vijay_dwivedi_ Lab_DevOps_CloudFormation.pdf

4. Upload your solution document and hit submit.

5. Try to submit your solution at least 2 hours before the deadline to avoid any last minute anomalies.

***Note**: If you wish to make modifications to your submitted solution, you can resubmit your solution document “within the submission window” and mark your comments accordingly.*