



BÁO CÁO THỰC HÀNH

Bài thực hành số 01

Môn học: Công Nghệ DevOps và Ứng Dụng

Lớp: NT548.P11

THÀNH VIÊN THỰC HIỆN (Nhóm 18):

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Điểm tự đánh giá

9

ĐÁNH GIÁ KHÁC:

Tổng thời gian thực hiện	3 tuần
Phân chia công việc	Cùng nhau thực hiện cả Terraform và CloudFormation
Ý kiến (nếu có) + Khó khăn + Đề xuất, kiến nghị	

Phần bên dưới của báo cáo này là báo cáo chi tiết của nhóm thực hiện

Báo cáo

A.	BÁO CÁO CHI TIẾT	2
1.	Terraform	2
2.	CloudFormation.....	5

Github Repos: <https://github.com/1esuoK/NT548-LAB>

A. BÁO CÁO CHI TIẾT

1. Terraform

Your VPCs (2) Info							
<div>Q Search</div>							
	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table
<input type="checkbox"/>	gr18-main	vpc-0d84798c5fd43bcd8	Available	10.0.0.0/16	-	dopt-04af917c042fa6c4c	rtb-0bc5233471da2dfce

Hình 1. VPC

Subnets (8) Info							
<div>Q Find resources by attribute or tag</div>							
	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID
<input type="checkbox"/>	-	subnet-0f105bf8a012fdb33	Available	vpc-0b750328e7516b338	172.31.0.0/20	-	-
<input type="checkbox"/>	-	subnet-09d9e9ae5988d6fd7	Available	vpc-0b750328e7516b338	172.31.48.0/20	-	-
<input type="checkbox"/>	gr18-public-subnet	subnet-0ccda3f1fc4e12d5b	Available	vpc-0d84798c5fd43bcd8 gr18...	10.0.32.0/19	-	-
<input type="checkbox"/>	-	subnet-0136bfb37e49f559d	Available	vpc-0b750328e7516b338	172.31.64.0/20	-	-
<input type="checkbox"/>	-	subnet-0ce7f0aaf778391b4	Available	vpc-0b750328e7516b338	172.31.80.0/20	-	-
<input type="checkbox"/>	-	subnet-0f10c72ea151a78f6	Available	vpc-0b750328e7516b338	172.31.32.0/20	-	-
<input type="checkbox"/>	gr18-private-subnet	subnet-0fb7e814dc4eaacef6	Available	vpc-0d84798c5fd43bcd8 gr18...	10.0.0.0/19	-	-
<input type="checkbox"/>	-	subnet-0fef824094471558e	Available	vpc-0b750328e7516b338	172.31.16.0/20	-	-

Hình 2. Subnets

Route tables (4) Info							
<div>Q Find resources by attribute or tag</div>							
	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
<input type="checkbox"/>	gr18-public	rtb-07c2eb2e9f0a3831d	subnet-07d748d6fc1f12...	-	No	vpc-06e52896880db786c gr1...	471112498708
<input type="checkbox"/>	-	rtb-02e669844d5146ec5	-	-	Yes	vpc-0b750328e7516b338	471112498708
<input type="checkbox"/>	-	rtb-01134388244836fd7	-	-	Yes	vpc-06e52896880db786c gr1...	471112498708
<input type="checkbox"/>	gr18-private	rtb-07bb91a1b9d49b63f	subnet-026653bf62bc09...	-	No	vpc-06e52896880db786c gr1...	471112498708

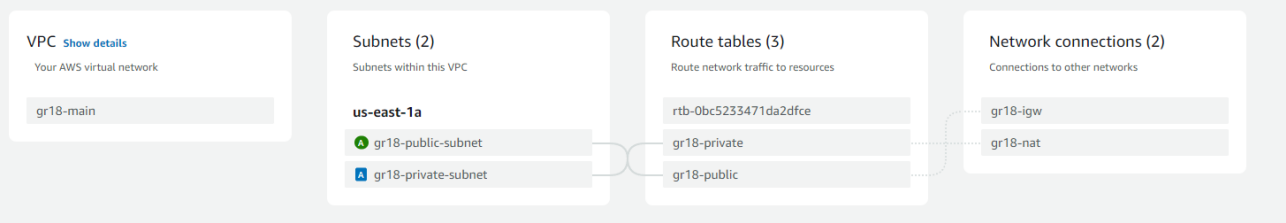
Hình 3. RouteTables

Internet gateways (2) Info				
<div>Q Search</div>				
	Name	Internet gateway ID	State	VPC ID
<input type="checkbox"/>	-	igw-00975ff09175f883c	Attached	vpc-0b750328e7516b338
<input type="checkbox"/>	gr18-igw	igw-09bcc52e5134be482	Attached	vpc-0d84798c5fd43bcd8 gr18-main

Hình 4. Internet Gateway

NAT gateways (1) Info								
<div>Q Find resources by attribute or tag</div>								
	Name	NAT gateway ID	Connectivity...	State	State message	Primary public I...	Primary private I...	Primary network...
<input type="radio"/>	gr18-nat	nat-054f7b4e99cbfe8b4	Public	Available	-	52.71.91.138	10.0.39.172	eni-0444b157132fb...

Hình 5. Nat Gateway



Hình 6. VPC Overview

Security Groups (4) Info							Actions	Export security groups to CSV	Create security group
Find resources by attribute or tag									
	Name	Security group ID	Security group name	VPC ID	Description	Owner			
	-	sg-0b124faf283e13da0	default	vpc-0b750328e7516b338	default VPC security group	471112498708			
	-	sg-0b30103887ea463f9	private-sg	vpc-0d84798c5fd43bcd8	Private security group	471112498708			
	-	sg-007ccc22d1e5a5fa9	public-sg	vpc-0d84798c5fd43bcd8	Public security group	471112498708			
	-	sg-073f75dc57bc65aaf	default	vpc-0d84798c5fd43bcd8	default VPC security group	471112498708			

Hình 7. EC2 Instances

Security Groups (4) Info							Actions	Export security groups to CSV	Create security group
Find resources by attribute or tag									
	Name	Security group ID	Security group name	VPC ID	Description	Owner			
	-	sg-0b124faf283e13da0	default	vpc-0b750328e7516b338	default VPC security group	471112498708			
	-	sg-0b30103887ea463f9	private-sg	vpc-0d84798c5fd43bcd8	Private security group	471112498708			
	-	sg-007ccc22d1e5a5fa9	public-sg	vpc-0d84798c5fd43bcd8	Public security group	471112498708			
	-	sg-073f75dc57bc65aaf	default	vpc-0d84798c5fd43bcd8	default VPC security group	471112498708			

Hình 8. Security Groups

Inbound rules (1)										Manage tags	Edit inbound rules
Search											
	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description			
	-	sg-0868d1f5ce15f0474	IPv4	SSH	TCP	22	1.54.132.156/32	-			

Hình 9. Public Security Group Inbound rules

Inbound rules (1)										Manage tags	Edit inbound rules
Search											
	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description			
	-	sg-0d243772595aea2...	-	SSH	TCP	22	sg-03c54e48d52cac23...	-			

Hình 10. Private Security Group Inbound rules

```
kousei ssh -i "tf_key.pem" ec2-user@98.81.227.194
The authenticity of host '98.81.227.194 (98.81.227.194)' can't be established.
ED25519 key fingerprint is SHA256:w+KKXm48eLwPBWDMTB6sxEIImdbH80P+0k20jqdm0Eho.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '98.81.227.194' (ED25519) to the list of known hosts

#_
~\_ #####_ Amazon Linux 2023
~~ \_#####\
~~ \###|
~~ \#/ _--_ https://aws.amazon.com/linux/amazon-linux-2023
~~ V~' '->
~~~
~~~. _ _ _ /
~~~ _/ _/
~~~ _/m/'
[ec2-user@ip-10-0-62-80 ~]$ vim tf_key.pem
```

Hình 11. SSH vào Public Instance

Hình 12. SSH vào Private Instance từ Public Instance

Hình 13. Outputs

2. CloudFormation

Parameters

Parameters are defined in your template and allow you to input custom values when you create or update a stack.

EnableDnsHostnames

Enable DNS Hostnames for VPC

true

EnableDnsSupport

Enable DNS for VPC

true

KeyName

Name of EC2 KeyPair SSH Connection

cfnkey

LatestAmild

AMI for EC2

/aws/service/ami-amazon-linux-latest/amzn2-ami-hvm-x86_64-gp2

NatGatewaySubnetCidr

NAT Gateway CIDR block of NAT Gateway

10.0.1.0/24

PrivateSubnetCidr

Private Subnet CIDR block

10.0.2.0/24

PublicSubnetCidr

Public Subnet CIDR block

10.0.1.0/24

VpcCidr

VPC CIDR block

10.0.0.0/16

Hình 14. Define Parameters cho Stack

2024-10-14 09:24:52 UTC+0700	MyVPC	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:56 UTC+0700	AttachGateway	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:57 UTC+0700	MyInternetGateway	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:56 UTC+0700	PublicSG	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:57 UTC+0700	DefaultSecurityGroup	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:58 UTC+0700	PublicSubnet	✔ CREATE_COMPLETE	-	-
2024-10-14 09:24:57 UTC+0700	PrivateSubnet	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:00 UTC+0700	PrivateSG	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:05 UTC+0700	PrivateRouteTable	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:10 UTC+0700	PublicRouteTable	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:07 UTC+0700	PrivateSubnetRouteTableAssoci ation	✔ CREATE_COMPLETE	-	-

2024-10-14 09:25:11 UTC+0700	PublicRoute	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:14 UTC+0700	PrivateInstance	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:14 UTC+0700	NatEIP	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:12 UTC+0700	PublicSubnetRouteTableAssociation	✔ CREATE_COMPLETE	-	-
2024-10-14 09:26:44 UTC+0700	NatGateway	✔ CREATE_COMPLETE	-	-
2024-10-14 09:25:52 UTC+0700	PublicInstance	✔ CREATE_COMPLETE	-	-
2024-10-14 09:26:47 UTC+0700	cfn-stack	✔ CREATE_COMPLETE	-	-
2024-10-14 09:26:46 UTC+0700	PrivateRoute	✔ CREATE_COMPLETE	-	-

Hình 15. Stack CREATE_COMPLETE Status

Your VPCs (2) Info										Last updated less than a minute ago	Actions	Create VPC
Q Search												
<input type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table	Maint				
<input type="checkbox"/>	MyVPC	vpc-0b9e9539c737e9cc9	✔ Available	10.0.0.0/16	-	dopt-0e4268ff24716487a	rtb-0ae2fa526e5f05bed	acl-				

Hình 16. MyVPC

<input type="checkbox"/>	PrivateSubnet	subnet-05ab7f07dad061a37	✔ Available	vpc-0b9e9539c737e9cc9 MyVPC	10.0.2.0/24	-	-
<input type="checkbox"/>	PublicSubnet	subnet-04f265fbb79327c06	✔ Available	vpc-0b9e9539c737e9cc9 MyVPC	10.0.1.0/24	-	-

Hình 17. Subnets

Route tables (4) Info									Last updated less than a minute ago	Actions	Create route table
Q Find resources by attribute or tag											
<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID				
<input type="checkbox"/>	PrivateRouteTable	rtb-0a0198112686f78ce	subnet-06ab7f07dad061...	-	No	vpc-0b9e9539c737e9cc9 MyVPC	467478987146				
<input type="checkbox"/>	PublicRouteTable	rtb-0bb0b2d4c9b5055f0	subnet-04f265fbb79327...	-	No	vpc-0b9e9539c737e9cc9 MyVPC	467478987146				

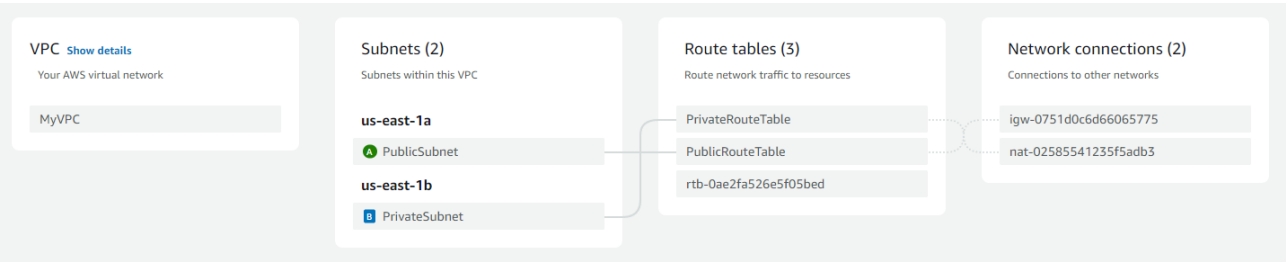
Hình 18. RouteTables

Internet gateways (2) Info						Actions	Create internet gateway
Q Search							
<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID	Owner		
<input type="checkbox"/>	-	igw-0751d0c6d66065775	✔ Attached	vpc-0b9e9539c737e9cc9 MyVPC	467478987146		

Hình 19. Internet Gateway

<input type="radio"/>	-	nat-02585541235f5adb3	Public	✔ Available	-	54.159.27.58	10.0.1.240	eni-06e55ffaeca528...	vpc-0b9e9539c737e
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Hình 20. Nat Gateway



Hình 21. VPC Overview



Instances (5) info

Last updated less than a minute ago

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4	Elastic IP
<input type="checkbox"/>	PublicEC2Insta...	i-0edad2562a73b73c3	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-44-204-96-49.com...	44.204.96.49	-
<input type="checkbox"/>	PrivateEC2Inst...	i-01f36485a1c0db8b0	Terminated	t2.micro	-	View alarms	us-east-1b	-	-	-
<input type="checkbox"/>	Gitlab-Runner	i-05cd28e31611ef3ed	Running	t2.medium	2/2 checks passed	View alarms	us-east-1b	ec2-98-83-104-241.co...	98.83.104.241	98.83.104.241
<input type="checkbox"/>	PrivateEC2Inst...	i-06e0ea28479066436	Running	t2.micro	2/2 checks passed	View alarms	us-east-1b	-	-	-
<input type="checkbox"/>	PublicEC2Insta...	i-06a5a45eb87993a8	Terminated	t2.micro	-	View alarms	us-east-1a	-	-	-

Hình 22. EC2 Instances

Security Groups (6) info

Export security groups to CSV

Create security group

Find resources by attribute or tag

<input type="checkbox"/>	Name	Security group ID	Security group name	VPC ID	Description	Owner
<input type="checkbox"/>	-	sg-0a6e89d5dfcb9cb4	launch-wizard-1	vpc-0952838cb5f810650	launch-wizard-1 created 2024-10-04T...	467478987146
<input type="checkbox"/>	PrivateSG	sg-0cd7c2e6601dde1a4	cfn-stack-PrivateSG-t2VzmVY5tUNh	vpc-0b9e9539c737eccc9	Allow access from Public EC2 instance ...	467478987146
<input type="checkbox"/>	PublicSG	sg-0398f38924d5d1763	cfn-stack-PublicSG-rzCvzPI50aPP	vpc-0b9e9539c737eccc9	Enable SSH and HTTP access via port ...	467478987146

Hình 23. Security Groups

Inbound rules (1)

Manage tags

Edit inbound rules

Search

<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
<input type="checkbox"/>	-	sg-0a6edd36d4524c94c	-	SSH	TCP	22	sg-0398f38924d5d17...	Allow SSH from Publi

Hình 24. Private SG Inbound rules

Inbound rules (1)

Manage tags

Edit inbound rules

Search

<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
<input type="checkbox"/>	-	sg-0c945da57347430...	IPv4	SSH	TCP	22	1.54.132.156/32	Allow SSH IPv4 IN

Hình 25. Public SG Inbound rules

```
C:\Users\PC\Desktop\LearningSpace\CloudFormation>ssh -i "cfnkey.pem" ec2-user@ec2-44-204-96-49.compute-1.amazonaws.com
#
#####
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
#
#####
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-10-0-1-103 ~]$
```

Hình 26. SSH vào Public Instance

```
[ec2-user@ip-10-0-1-103 ~]$ ssh -i "cfnkey.pem" ec2-user@10.0.2.36
#
#####
AL2 End of Life is 2025-06-30.
A newer version of Amazon Linux is available!
Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-10-0-2-36 ~]$
```

Hình 27. SSH vào Private Instance từ Public Instance

