

Lab2. Cloud Load Balancer 구현하기

1. 목적

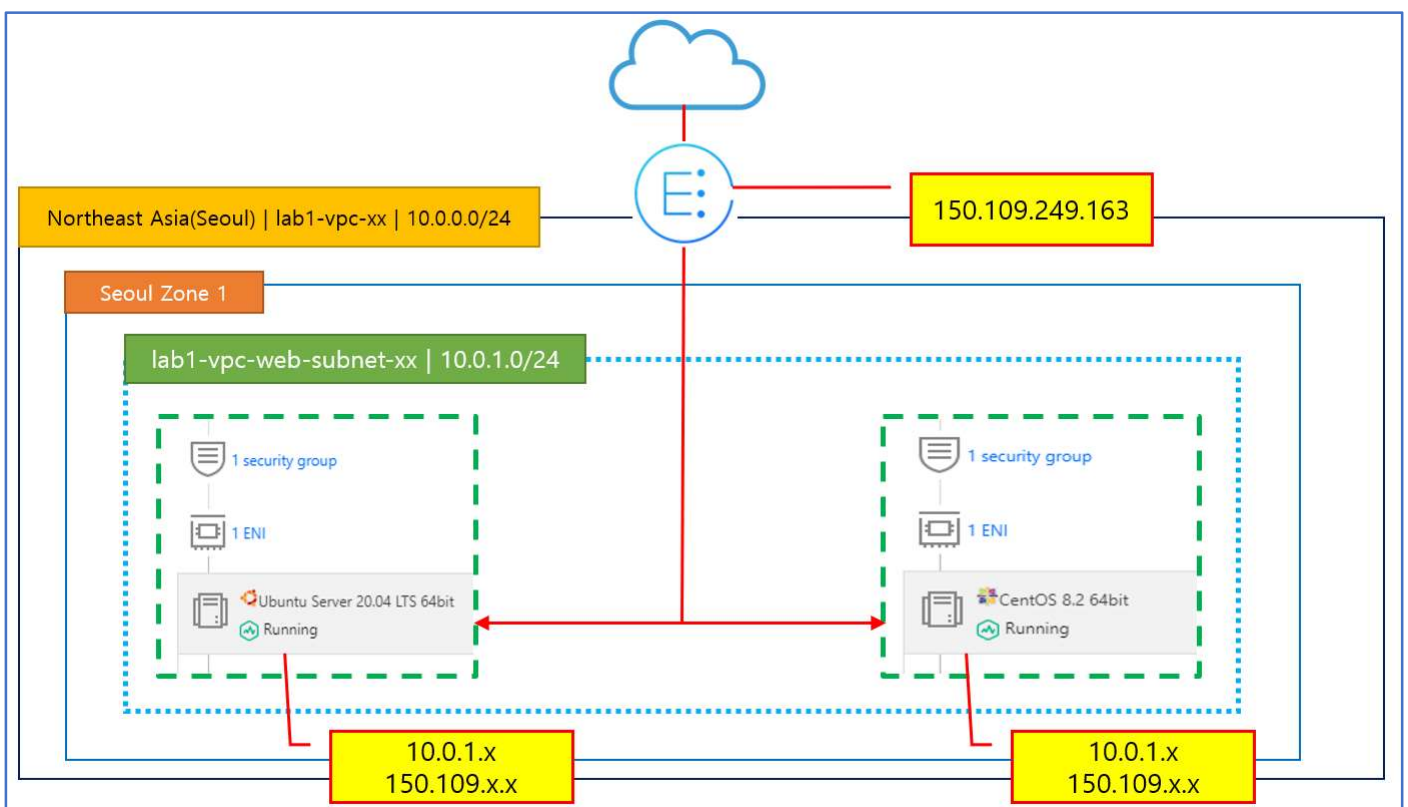
- 이번 Lab에서는 Tencent Cloud에서 제공하는 Cloud Load Balancer를 통해 부하분산에 대해 실습한다. CLB는 Back-end에 여러 Web Server들을 운영하는 경우 부하분산 뿐만 아니라 서비스의 연속성을 늘려주는 역할도 수행한다.

2. 사전 준비물

- Tencent Cloud Account

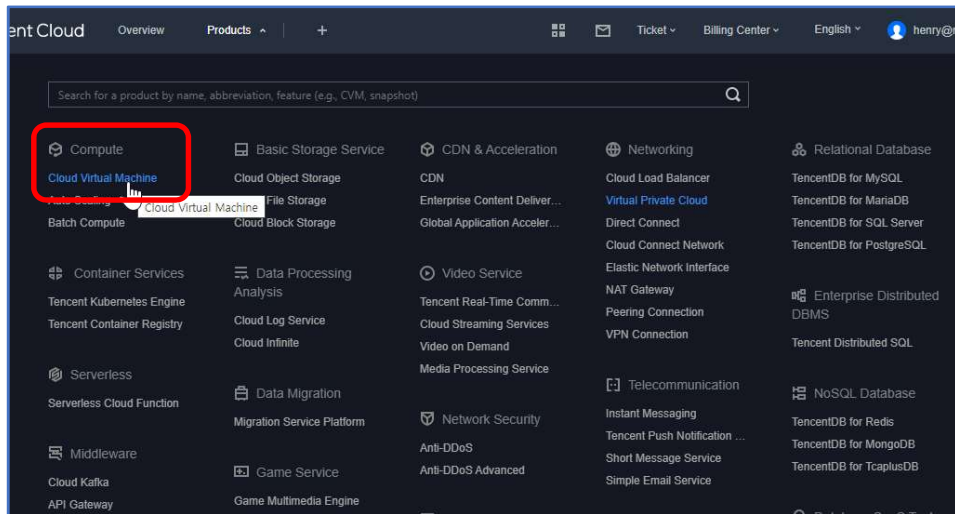
3. 목차

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- Task2. Cloud Load Balancer Instance 생성하기
- Task3. Cloud Load Balancer 설정하기
- Task4. Cloud Load Balancer 동작 확인하기

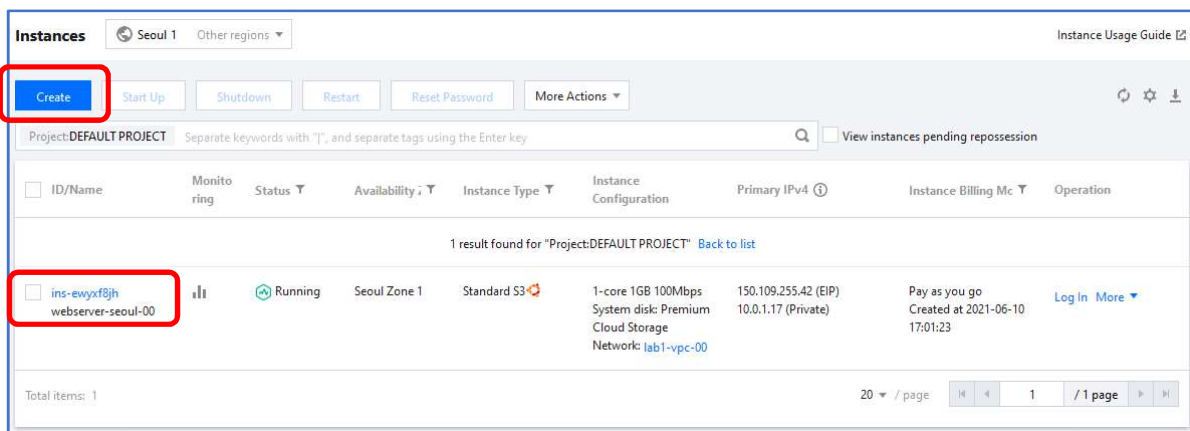


Task1. CLB를 위해 2번째 Web Server 생성하기

1. 또 하나의 웹 서버를 생성하기 위해 페이지 상단의 메뉴 중 **[Products] > [Compute] > [Cloud Virtual Machine]**을 클릭한다.



2. **[Cloud Virtual Machine] Dashboard** 페이지이다. 이미 Lab1에서 생성한 **webserver-seoul-xx**이 있다. 생성할 **Instances**가 위치할 **Region**이 **Seoul**임을 확인한다. 그리고 **Instances**를 생성하기 위해 **[Create]** 파란색 버튼을 클릭한다.



3. **CVM 생성** 페이지이다. 1단계 **Select Model**에서는 다음과 같이 설정한다.

- ① **[Billing Mode]** : Pay as you go
- ② **[Region]** : Seoul
- ③ **[Availability Zone]** : Seoul Zone 1
- ④ **[Network]** : lab1-vpc-00 | 10.0.0.0/16, lab1-vpc-web-subnet-00 | 10.0.1.0/24

1. Select Model 2. Complete Configuration 3. Confirm Configuration

Billing Mode: [Pay as you go](#) [Spot Instances](#) [Detailed Comparison](#)

Region: [Guangzhou](#) [Shanghai](#) [Nanjing](#) [Beijing](#) [Chengdu](#) [Chongqing](#) [Hong Kong, China](#)
[Singapore](#) [Bangkok](#) [Jakarta](#) [Mumbai](#) [Seoul](#) [Tokyo](#) [Silicon Valley](#) [Virginia](#)
[Toronto](#) [Frankfurt](#) [Moscow](#)

Tencent Cloud products in different regions cannot communicate via private network. Selecting the region closest to your customers can reduce access latency and increase download speed. CVM's region cannot be changed after the creation. [View My CVM Region](#) [Detailed Comparison](#)

Availability Zone: [Random AZ](#) [Seoul Zone 1](#) [Seoul Zone 2](#)

Network: [vpc-9er04x8 | lab1-vpc | 10.0.0.0/16](#) [subnet-im56h7n | lab1-vpc-web-subnet | *](#) [Available IPs in the subnet: 252](#)
If the existing VPC/subnet do not match your requirements, [Create Subnet](#). You can change the VPC and subnet later in the console.

⑤ [Instance] : Standard | Standard S3 | S3.SMALL1 | 1-core | 1GB | 0.02 USD/hr

Instance: All CPU Total Mem

All Models: [Standard](#) [High IO](#) [MEM-optimized](#) [Compute](#) [GPU-based](#) [Big Data](#) [Cloud Physical Machine 2.0](#)

All types: [Standard S5](#) [Standard SA2](#) [Standard S4](#) [Standard Network-optimized SN3ne](#) [Standard S3](#) [Standard SA1](#)
[Standard S2](#) [Standard S1](#)

Model	Specifications	vCPU	MEM	CPU	Private network bandwidth	Packets In/Out	Supported Availability Zones	Notes	Fee
<input checked="" type="radio"/> Standard S3	S3.SMALL1	1-core	1GB	Intel Xeon Skylake 6133(2.5 GHz)	1.5Gbps	200k PPS	8 availability zone(s)	None	0.02USD/hr
<input type="radio"/> Standard S3	S3.SMALL2	1-core	2GB	Intel Xeon Skylake 6133(2.5 GHz)	1.5Gbps	200k PPS	3 availability zone(s)	None	0.04USD/hr

⑥ [Image] : Public image | CentOS 64-bit 8.2

⑦ [System disk] : Premium Cloud Storage 50GB

⑧ [Data disk] : Nothing

⑨ [Public network bandwidth] : By Traffic | 100 Mbps

⑩ [Amount] : 1

Image: [Public image](#) [Custom Image](#) [Shared Image](#)

[CentOS](#) [64-bit](#) [CentOS 8.2 64bit](#)

Please note that instances purchased in this region cannot switch between Linux and Windows systems.

System disk: [Premium Cloud Storage](#) [50](#) GB [Learn more](#)

System disk type cannot be changed after purchase.

Data disk: [Add a cloud data disk](#) You can add 20 data disk(s)

Public network bandwidth: ☒ Assign a dedicated public IP for free
[By Traffic](#) [Detailed Comparison](#)

[1Mbps](#) [5Mbps](#) [20Mbps](#) [100Mbps](#) [1](#) Mbps

Note: the traffic fee is settled on an hourly basis. When your account balance becomes negative, the service will be stopped in 2 hours.

Selected Model: S3.SMALL1(Standard S3, 1-core, 1 GB) Configuration Fee: 0.03USD/hr [\(Billing Details\)](#)

Amount: [1](#) Network Fee: 0.12USD/GB

[Next: Complete Configuration](#)

⑪ [Next Complete Configuration] 파란색 버튼을 클릭한다.

4. 2단계 **Complete Configuration**에서는 다음과 같이 설정한다.

① **[Security Groups] : Existing Security Groups**

② **[Security Group Rules] : ICMP, TCP:22, TCP:80, TCP:443**

The screenshot shows the AWS Management Console interface for Security Groups. The 'Existing Security Groups' tab is selected. Below the tab, there is a dropdown menu showing 'sg-4noznpuh | Custom Template-2021052'. Below that, there is a link 'To open other ports, you can [New security group](#)'. The 'Security Group Rules' section is expanded, showing the 'Inbound rule' tab. The table below lists the inbound rules:

Source	Protocol Port	Policy	Notes
0.0.0.0/0	ICMP	Allow	Allow ping command
:::0	ICMPV6	Allow	Allow ping command
0.0.0.0/0	TCP:22	Allow	Allow Linux SSH login
:::0	TCP:22	Allow	Allow Linux SSH login
10.0.0.0/8	ALL	Allow	Allow private access (VPC)
172.16.0.0/12	ALL	Allow	Allow private access (VPC)

③ **[Project] : DEFAULT PROJECT**

④ **[Tag] : Nothing**

The screenshot shows the AWS console interface for the 'Project' and 'Tag' sections. The 'Project' dropdown is set to 'DEFAULT PROJECT'. The 'Tag' section shows a table with columns 'Tag key', 'Tag value', and 'Operation'. There are no tags added, and the 'Add' button is visible. Below the table, there is a link 'If the existing tags or tag values are not suitable, you can go to the console and [create new tags or tag values](#)'.

⑤ **[Instance Name] : webserver-pusan-xx(xx는 당일 부여된 번호)**

⑥ **[Login Methods] : Set Password**

⑦ **[Username] : root**

⑧ **[Password] : P@\$W0rd1234**

⑨ **[Confirm Password] : P@\$W0rd1234**

⑩ **[Security Reinforcement] : Enable for Free**

⑪ **[Cloud Monitoring] : Enable for Free**

Instance Name Supports batch sequential naming or pattern string-based naming. You can enter up to 60 characters. 42 characters remaining.

Login Methods Set Password SSH Key Pair Random Password

Note: please keep your password in mind. If you forgot your password, please reset it on CVM Console.

Username

Password

Confirm Password

Security Reinforcement ☒ Enable for Free
Install the component to activate Anti-DDoS and Cloud Workload Protection for free [Details](#)

Cloud Monitoring ☒ Enable for Free
FREE cloud monitoring, analysis, alarming, and server monitoring metrics (component installation required) [Details](#)

Scheduled Termination ☐ Enable Scheduled Termination
Enable it to terminate CVM at a specified time.

5. **Advanced Settings** 단계에서 다음과 같이 값을 설정한다.

- ① **[Hostname]** : webserver-pusan-00
- ② **[Custom data]** : 아래 코드를 복사해서 붙여넣는다.

```
#!/bin/bash
dnf install -y httpd httpd-tools httpd-devel httpd-manual mod_ssl
systemctl start httpd.service
mv /var/www/html/index.html /var/www/html/index.bak
bash -c 'echo "<html><h1>Hello, Tencent Cloud!</h1></html>" > /var/www/html/index.html'
systemctl enable httpd
```

▼ Advanced Settings

Hostname Supports batch sequential naming or pattern string-based naming
2-60 characters, including uppercase and lowercase letters, numbers, hyphens "-" and dots ".". It supports the {R:number} format, but colons ":" and braces "{}" are not allowed. Hyphens "-" and dots "." cannot be used consecutively, and cannot be placed at the beginning or end of the hostname. A number-only password is not allowed.

CAM Role [Create a CAM role](#)

Placement Group ☐ Add the instance to a placement group

Custom data
☐ The above input is encoded with base64

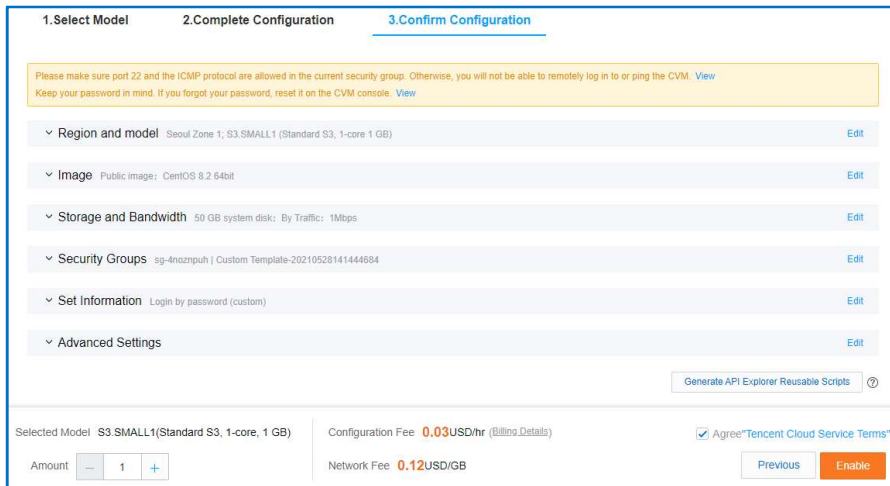
Selected Model S3.SMALL1(Standard S3, 1-core, 1 GB) Configuration Fee: 0.03USD/hr [\(Billing Details\)](#)

Amount Network Fee: 0.12USD/GB


[Previous](#) [Next: Confirm Configuration](#)

- ③ **[Next Confirm Configuration]** 파란색 버튼을 클릭한다.

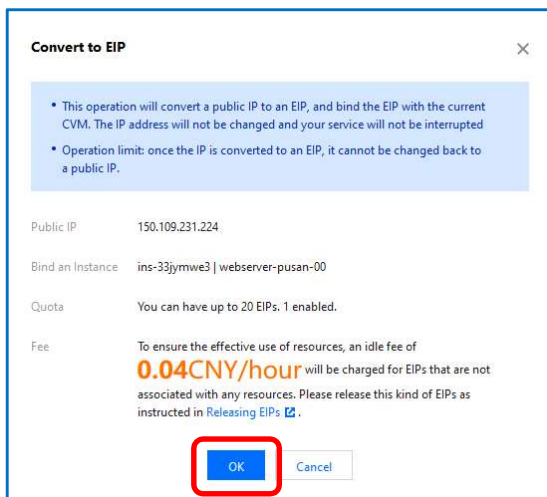
6. 마지막 3 단계에서 **[Agree Tencent Cloud Service Terms]**를 체크하고 **[Enable]** 주황색 버튼을 클릭한다.



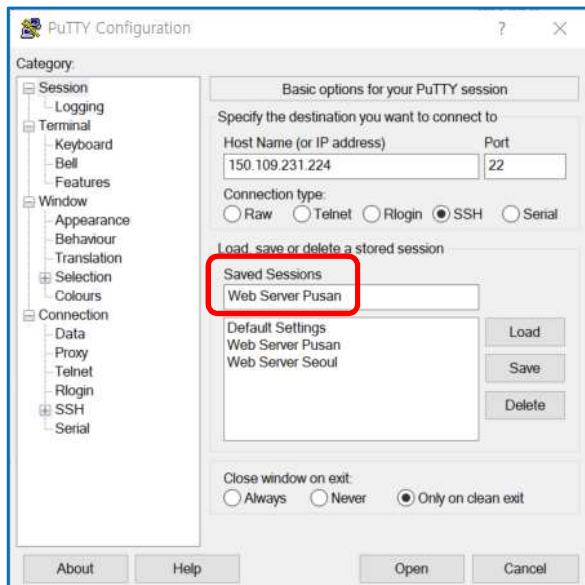
7. 방금 생성한 **webserver-pusan-xx** 인스턴스에 Lab1의 **webserver-seoul-xx**과 같이 **EIP**를 설정한다.

<input type="checkbox"/>	ins-33jymwe3 webserver-pusan-00	New	Running	Seoul Zone 1	Standard S3	1-core 1GB 100Mbps System disk: Premium Cloud Storage Network: lab1-vpc-00	150.109.231.224 (Public) 10.0.1.15 (Private)		Pay as you go Created at 2021-06-10 17:33:11	Log In More
--------------------------	------------------------------------	-----	---------	--------------	-------------	--	---	---	---	-------------

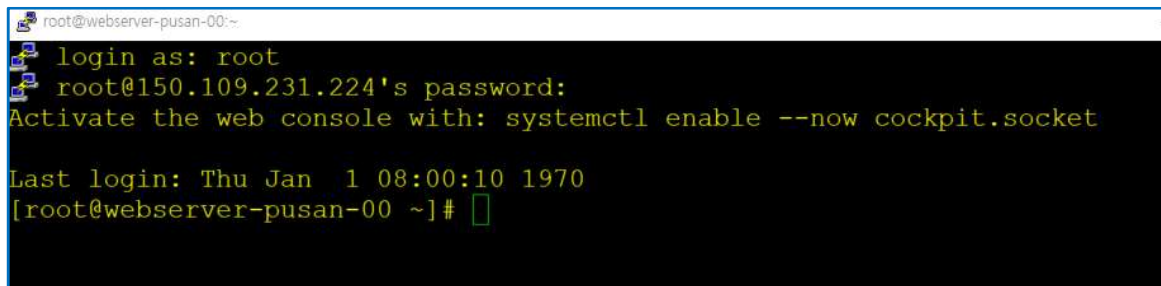
8. **[Convert to EIP]**창에서 **[OK]** 파란색 버튼을 클릭한다.



9. 방금 생성한 **webserver-pusan-xx** 가상 머신에 접속해 보자. 공인 IP를 이용하여 **PuTTY** 툴을 통해 접속한다. 필자는 **webserver-seoul-xx**과 구별하기 위해 터미널의 전경색은 노란색으로 배경색은 검은색으로 설정하고 **[Saved Sessions]**의 이름도 **Web Server Pusan**으로 설정하였다. 이제 **[Open]** 버튼을 클릭하여 연결한다.

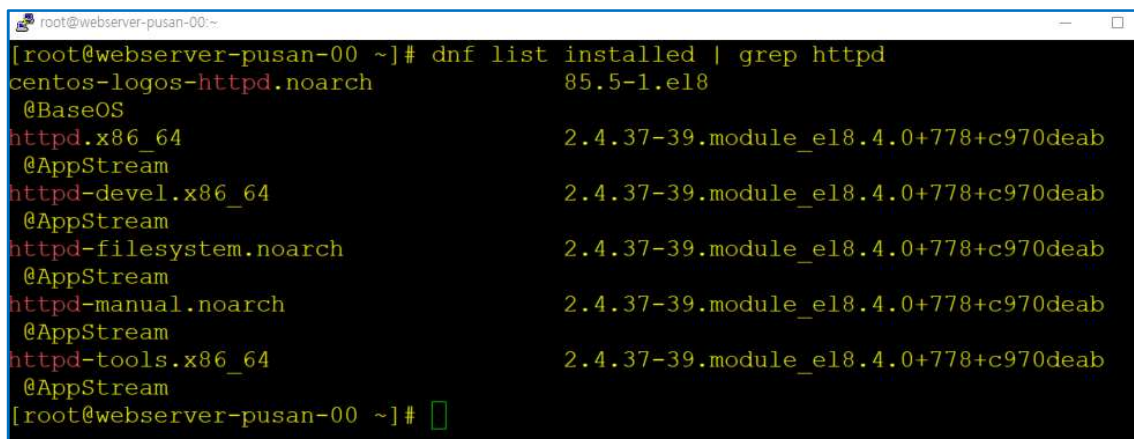


10. 터미널에서 인증서 처리한후, login 아이디는 **root**, 비밀번호는 **P@\$W0rd1234**를 입력하여 접속한다.



11. CentOS에 **Apache Web Server**가 제대로 설치되었는지 확인하자.

```
# dnf list installed | grep httpd
```



12. 아울러 설치 위치와 서비스가 가동 중 인지도 확인하자.

```
# which httpd
```

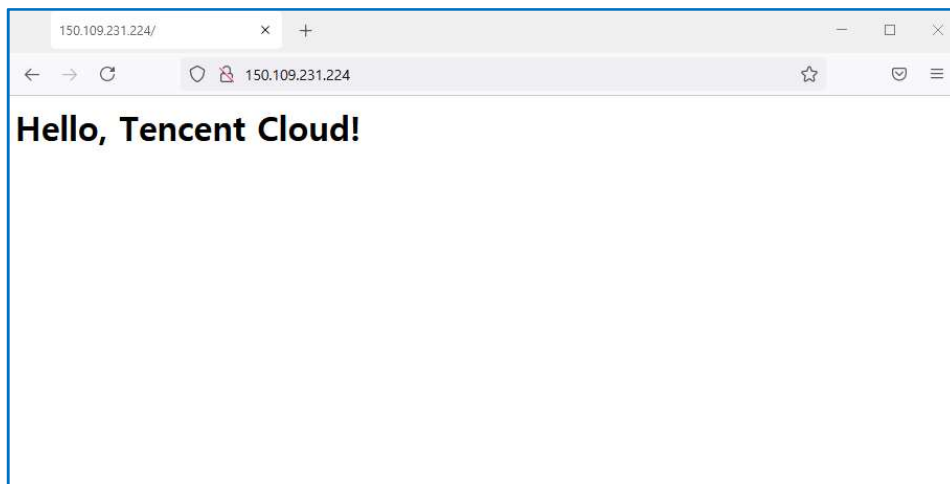
```
# systemctl status httpd.service
```



```
root@webserver-pusan-00:~# which httpd
/usr/sbin/httpd
root@webserver-pusan-00:~# systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor prese
   Active: active (running) since Thu 2021-06-10 16:34:04 CST; 7min ago
     Docs: man:httpd.service(8)
  Main PID: 2957 (httpd)
    Status: "Running, listening on: port 443, port 80"
     Tasks: 213 (limit: 5054)
    Memory: 27.8M
    CGroup: /system.slice/httpd.service
            └─2957 /usr/sbin/httpd -DFOREGROUND
              └─3077 /usr/sbin/httpd -DFOREGROUND
                └─3078 /usr/sbin/httpd -DFOREGROUND
                  └─3079 /usr/sbin/httpd -DFOREGROUND
                    └─3080 /usr/sbin/httpd -DFOREGROUND

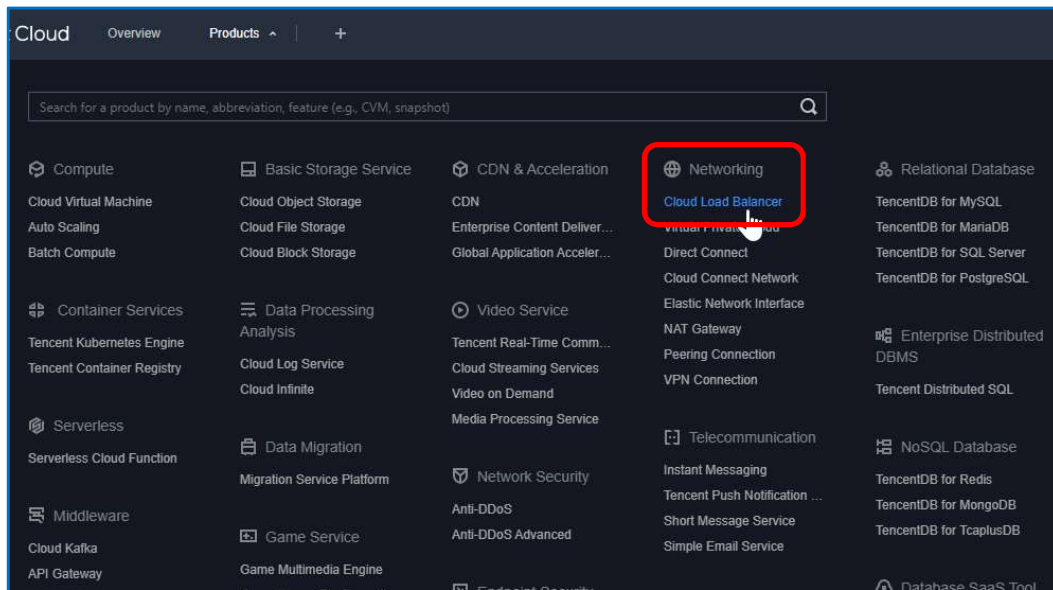
Jun 10 16:34:04 webserver-pusan-00 systemd[1]: Starting The Apache HTTP Server.
Jun 10 16:34:04 webserver-pusan-00 httpd[2957]: AH00558: httpd: Could not relia
Jun 10 16:34:04 webserver-pusan-00 systemd[1]: Started The Apache HTTP Server.
Jun 10 16:34:04 webserver-pusan-00 httpd[2957]: Server configured, listening on
lines 1-19/19 (END)
```

13. 마지막으로 공인 IP로 웹 브라우저에서 접속해 보자.

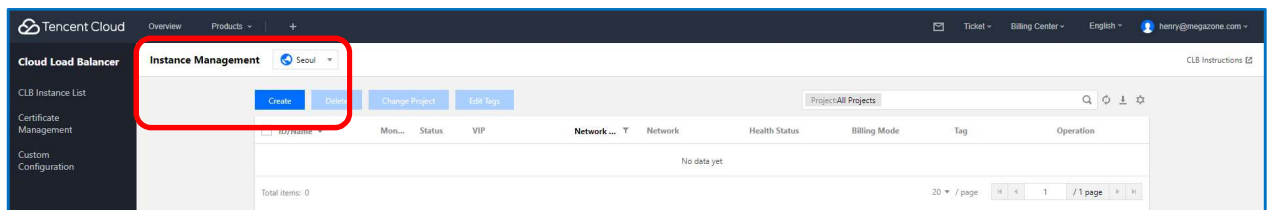


Task2. Cloud Load Balancer Instance 생성하기

1. 페이지 상단 메뉴에서 **[Products] > [Networking] > [Cloud Load Balancer]** 메뉴를 클릭한다.



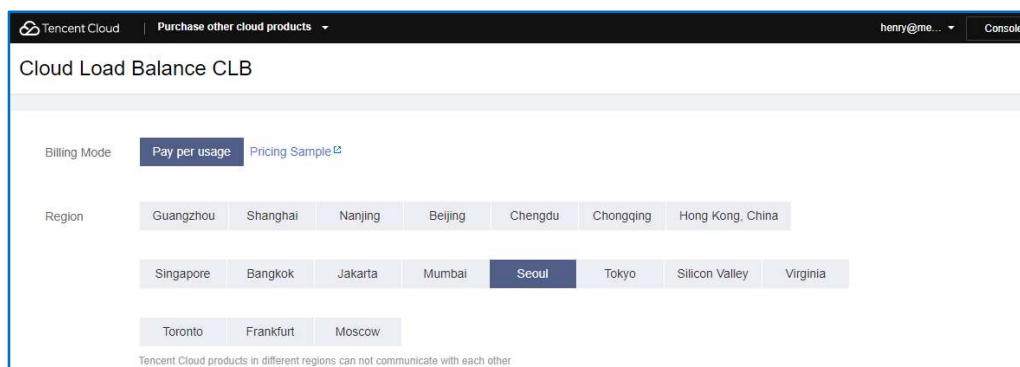
2. **[Cloud Load Balancer]** 페이지이다. CLB를 생성하기 위해 먼저 **Instance Management** 옆의 **Region**이 **Seoul**임을 확인한다. 그리고 **[Create]** 파란색 버튼을 클릭하여 CLB Instance를 생성한다.



3. 각 항목에 다음과 같이 설정한다.

① **[Billing Mode]** : Pay per usage

② **[Region]** : Seoul



③ **[Network type]** : Public network

- ④ [Network] : lab1-vpc-00
- ⑤ [Network Billing Mode] : By Traffic
- ⑥ [Bandwidth Cap] : 100 Mbps

Network ? vpc-gvcruh9q | lab1-vpc-00 ? ↺ ↻

If you want to change the network, please go to the Console to [Create a VPC](#)

Network Billing **By Traffic**

Mode

Bandwidth Cap 1Mbps 10Mbps 40Mbps 2048Mbps - 100 + Mbps

- ⑦ [Project] : DEFAULT PROJECT
- ⑧ [Tag] : Nothing
- ⑨ [Instance Name] : lab2-clb-xx(xx는 당일 부여된 번호)
- ⑩ [Quantity] : 1
- ⑪ [Cost]에서 예상 비용을 확인한 후, [Buy Now] 주황색 버튼을 클릭한다.

Project ? DEFAULT PROJECT ? ↺ ↻

Tag

Tag Key	Tag Value	Opera...
Please select a tag key ? ↺	Please select a tag value ? ↺	Delete

[Add](#)

If there is no desired tag key or value, you can go to the console to [Create](#)

Instance name lab2-clb-00 49 more chars allowed. chars; allowing letters, digits, Chinese characters, "-", ".", and "_", and 0-9.

Quantity - 1 +

Cost:

Instance Fee	Network Fee
0.009 USD/hour	0.12 USD/GB

If there is an available traffic pack in your account, it will be used first.

[Buy Now](#)

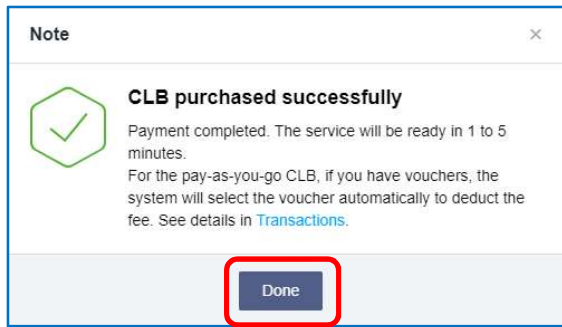
- ⑫ [Confirm] 창이 나타난다. 구매 확인을 하려면 [Confirm] 버튼을 클릭한다.

Confirm ×

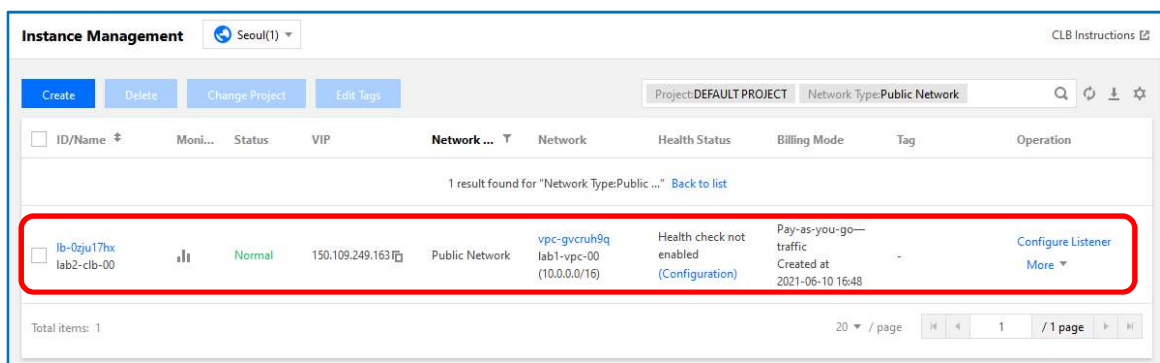
Confirm to purchase the selected load balancer?

[Confirm](#) [Cancel](#)

- ⑬ 성공적으로 CLB가 구매되었다는 메시지가 나타난다. **[Done]** 버튼을 클릭한다.

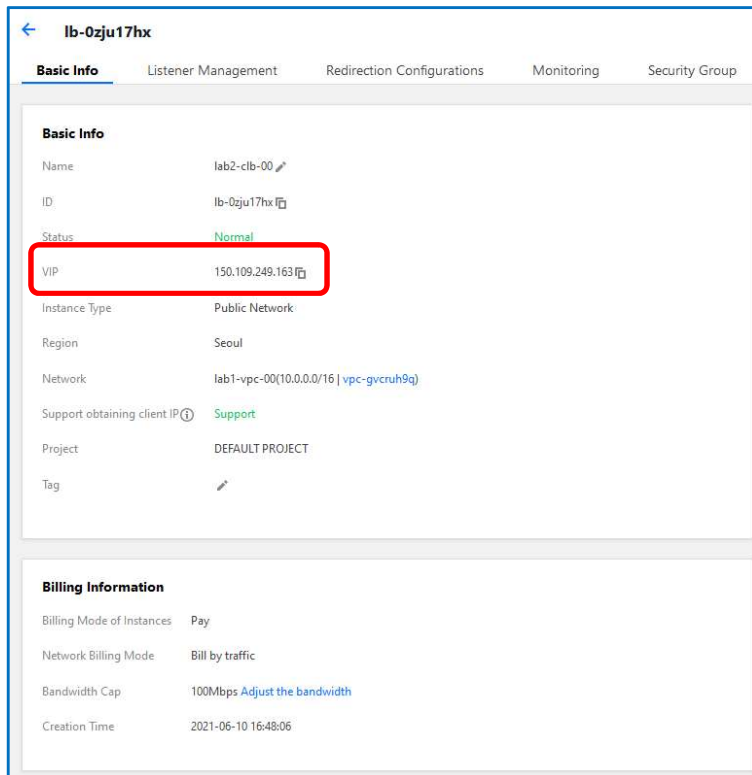


- ⑭ 잠시 뒤, **[Cloud Load Balancer]** 페이지의 **[CLB Instance List]**에 보면 방금 생성한 CLB가 목록에 있음을 확인할 수 있다.

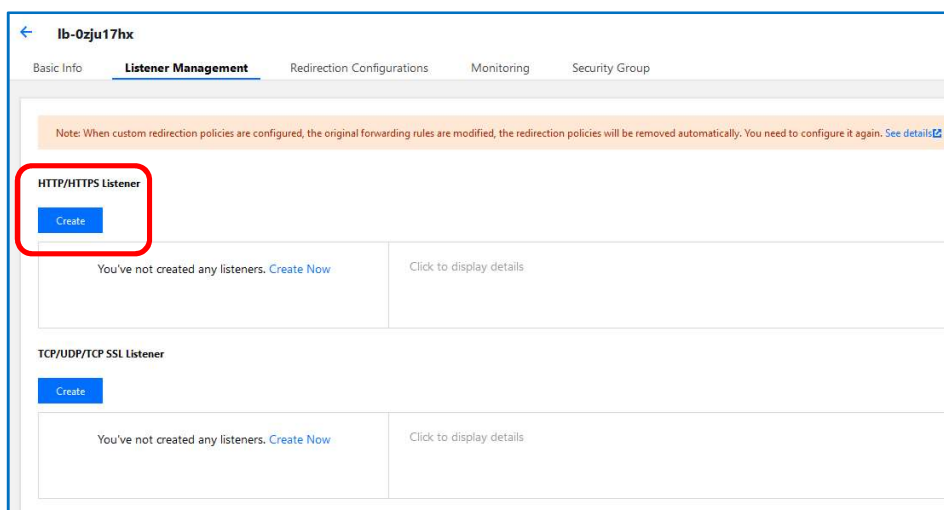


Task3. Cloud Load Balancer 설정하기

1. **[CLB Instance List]** 에서 방금 생성한 **CLB Instance**를 클릭하여 해당 **CLB**의 정보를 확인한다. 아래 그림과 같이 특별히 **[VIP]** 정보를 확인한다. 이 **VIP** 정보는 Lab1과 Lab2에서 생성한 Web Server를 대표하는 **CLB Virtual IP** 주소다.



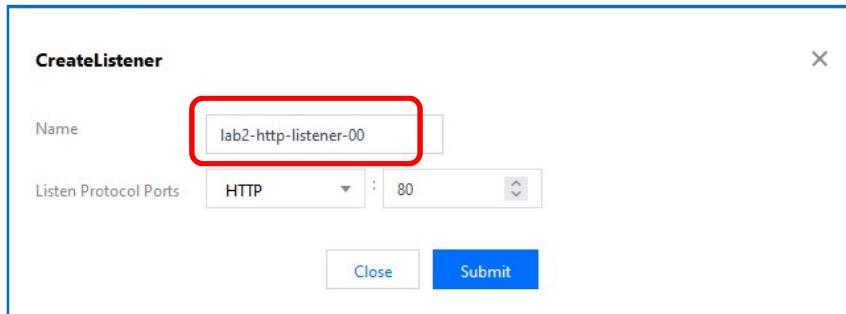
2. CLB 정보 페이지의 상단 메뉴 중 **[Listener Management]**를 클릭한다. 아직 **HTTP/HTTPS Listener**가 생성되어 있지 않은 것을 알 수 있다. 새 **Listener**를 생성하기 위해, **[HTTP/HTTPS Listener]** 섹션에서 **[Create]** 파란색 버튼을 클릭한다.



3. **[CreateListener]** 창이 나타나면 다음과 같이 각 값을 설정한 후, **[Submit]** 파란색 버튼을 클릭한다.

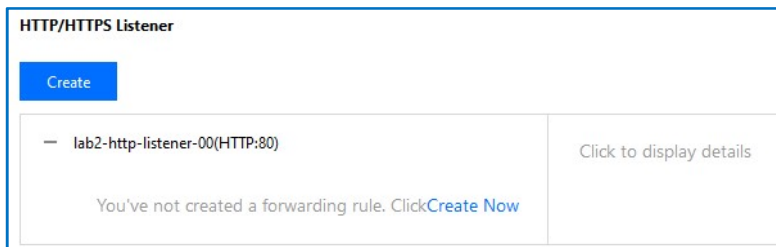
① **[Name]** : lab2-http-listener-xx(xx는 당일 부여된 번호)

② **[Listener Protocol Ports]** : HTTP | 80



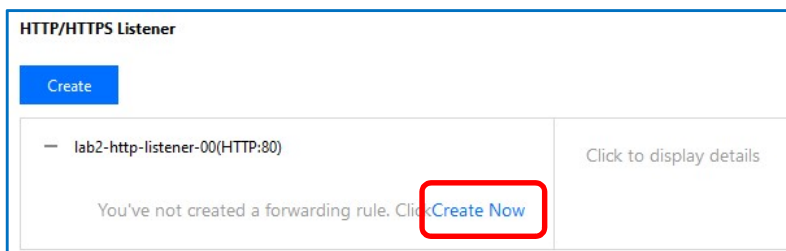
The screenshot shows a 'CreateListener' dialog box. The 'Name' field is highlighted with a red rectangle and contains the text 'lab2-http-listener-00'. Below it, the 'Listen Protocol Ports' field is set to 'HTTP' and '80'. At the bottom, there are 'Close' and 'Submit' buttons.

4. 잠시 후, **[HTTP/HTTPS Listener]** 섹션에 방금 생성한 **Listener**가 등록되었음을 확인할 수 있다. **Listener** 이름 앞에 있는 **[+]** 기호를 클릭해보자.



The screenshot shows the 'HTTP/HTTPS Listener' section. It has a 'Create' button at the top. Below it, there is a list item 'lab2-http-listener-00(HTTP:80)' with a minus sign icon. To the right of the list item is a link 'Click to display details'. At the bottom, there is a message: 'You've not created a forwarding rule. Click Create Now'.

5. 다음 단계는 이 **Listener**가 **80**번 포트로 수신했을 때 **Forwarding** 할 수 있도록 **Rule**을 설정하는 것이다. **Forwarding rule**을 설정하려면 **[Create Now]** 링크를 클릭한다.



This screenshot is identical to the previous one, showing the 'HTTP/HTTPS Listener' section. The 'Create Now' link in the message 'You've not created a forwarding rule. Click Create Now' is highlighted with a red rectangle.

6. 3단계로 **Forwarding Rule**을 생성한다. 먼저 1단계 **Basic Configuration** 단계이다. 다음의 각 값을 입력한 후, **[Next]** 파란색 버튼을 클릭하자.

① **[Domain Name]** : www.example.com

② **[URL]** : /

③ **[Balanced Method]** : Weighted Round Robin

CreateForwarding rules

1 Basic Configuration > 2 Health Check > 3 Session Persistence

Domain Name①

Default Domain Name Enable
If a client request does not match any domain names of this listener, the CLB instance will forward the request to the default domain name (Default Server). Each listener only can configure one listener and must configure one. [Details](#)

URL①

Balance Method①

Get client IP Enabled

Gzip compression Enabled①

[Close](#) [Next](#)

7. 다음 단계는 **[Health Check]** 단계이다. 다음의 각 값을 설정한 다음, **[Next]** 파란색 버튼을 클릭한다.

① **[Check Domain]** : **www.example.com**

② **[Path]** : **Root Directory of CVM | /**

CreateForwarding rules

✓ Basic Configuration > 2 Health Check > 3 Session Persistence

Health Check① ☒

Check Domain①

Path①

[Show advanced options](#) ▼

[Back](#) [Next](#)

8. 3번째 **[Session Persistence]** 단계이다. **[Submit]** 파란색 버튼을 클릭하여 설정을 마친다.

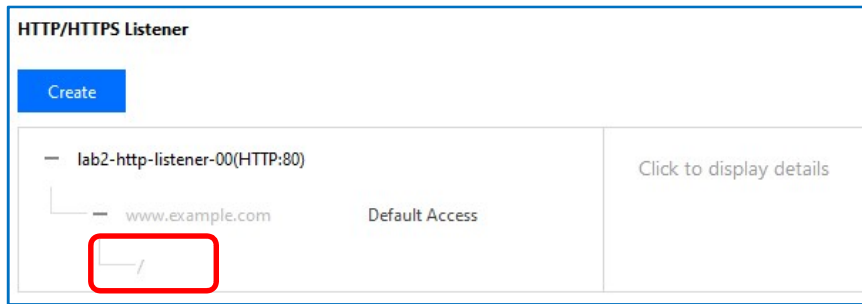
CreateForwarding rules

✓ Basic Configuration > ✓ Health Check > 3 Session Persistence

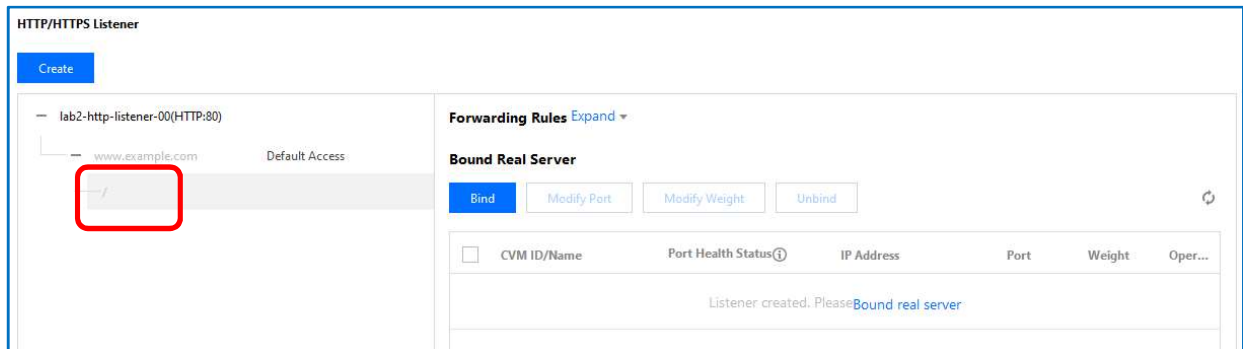
Session Persistence① ☐

[Back](#) [Submit](#)

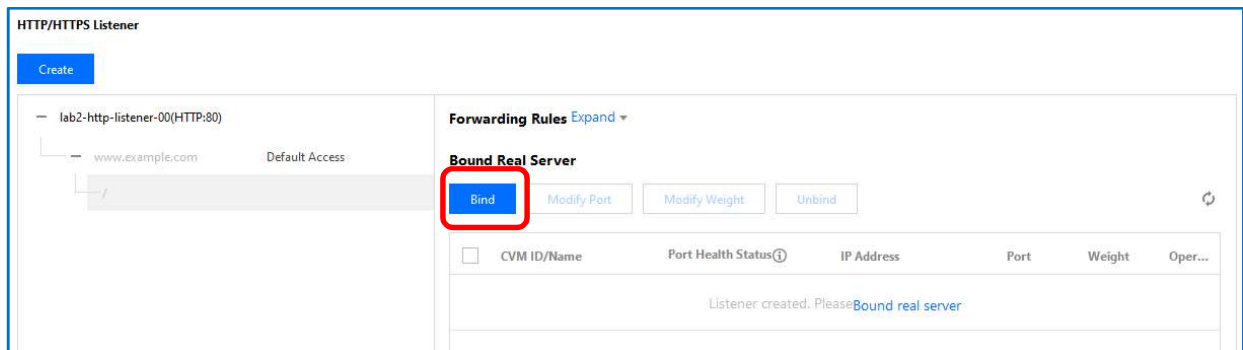
9. [HTTP/HTTPS Listener] 섹션에 **Forwarding Rule**이 생성된 것을 확인할 수 있다.



10. Listener가 받은 요청을 **Forwarding Rule**을 통해 Web Server에서 전달하려면 **Forwarding Rule**과 Web Server를 **Binding** 해야 한다. **Binding**을 설정하기 위해 **www.example.com** 밑에 **/**를 마우스로 클릭한다.



11. 그리고 우측에 나타나는 **[Forwarding Rules]**의 **[Bound Real Server]** 섹션의 **[Bind]** 파란색 버튼을 클릭한다.



12. 다음과 같이 각 값을 설정한 후, **[Confirm]** 파란색 버튼을 클릭한다.

- ① **[Network]** : lab1-vpc-xx(xx는 당일 부여된 번호)
- ② **[Select an instance]** : CVM | webserver-pusan-xx, webserver-seoul-xx
- ③ **[Selected]** :
 - i. **[Port]** : 80
 - ii. **[Weight]** : 10

Bind with backend service

Network

lab1-vpc-00 (vpc-gvcruh9q)

Select an instance

CVM

ENI

Please enter the de

IP address

Search by IP address, and

Instance ID/name

ins-33jymwe3(webserver-pusan-00)

150.109.231.224(Public)/10.0.1.15(Private)

ins-ewyxf8jh(webserver-seoul-00)

150.109.255.42(Public)/10.0.1.17(Private)

10 / page

1 / 1 page

Press Shift key to select more

Selected (2)

Instance ID/name	Port	Weight	
ins-33jymwe3(webserver-pusan-00) 150.109.231.224(Public)/10.0.1.15(Private)	80	10	<div>Add Port</div> <div>Delete</div>
ins-ewyxf8jh(webserver-seoul-00) 150.109.255.42(Public)/10.0.1.17(Private)	80	10	<div>Add Port</div> <div>Delete</div>

Confirm

Cancel

13. Forwarding Rule와 Web Server 2대의 Binding 작업이 끝났다.

Forwarding Rules Expand

Bound Real Server

Bind

Modify Port

Modify Weight

Unbind

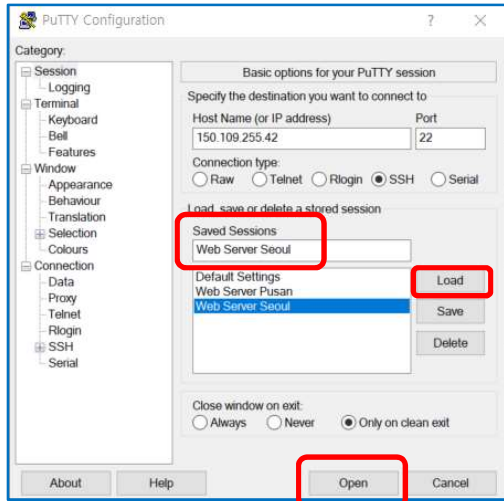
<input type="checkbox"/>	CVM ID/Name	Port Health Status	IP Address	Port	Weight	Oper...
<input type="checkbox"/>	ins-ewyxf8jh webserver-seoul-00	Healthy	150.109.255.42 (public) 10.0.1.17(Private)	80	10	Unbind
<input type="checkbox"/>	ins-33jymwe3 webserver-pusan-00	Healthy	150.109.231.224 (public) 10.0.1.15(Private)	80	10	Unbind

Task4. Cloud Load Balancer 동작 확인하기

1. 현재 Lab1과 Lab2를 통해 생성한 Web Server는 2대이다. 각 Web Server는 동일한 페이지를 Rendering 하기 때문에 어느 CLB를 통해 접근했는지 웹페이지상으로는 알 수 없다. 그래서 각 Web Server의 **index.html**을 수정해서 CLB를 통해 접근한 페이지를 확인하도록 하자.

2. 먼저 **webserver-seoul-xx(xx는 당일 부여된 번호)**의 홈페이지는 다음과 같이 수정한다.

① PuTTY에서 [Session] > [Saved Sessions] 목록에서 **Web Server Seoul**을 [Load] 하고 [Open] 한다.



② Login ID는 **ubuntu**, 비밀번호는 **P@\$SW0rd1234**로 로그인하자.

```
ubuntu@webserver-seoul-00: ~
login as: ubuntu
ubuntu@150.109.255.42's password:
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.4.0-72-generic x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Thu 10 Jun 2021 05:03:10 PM CST

System load:  0.0               Processes:            110
Usage of /:   6.8% of 49.16GB   Users logged in:     0
Memory usage: 26%              IPv4 address for eth0: 10.0.1.17
Swap usage:   0%

* Pure upstream Kubernetes 1.21, smallest, simplest cluster ops!

https://microk8s.io/

Last login: Thu Jun 10 16:12:09 2021 from 175.209.15.230
ubuntu@webserver-seoul-00:~$
```

③ Nano 편집기를 이용해서 다음과 같이 **index.html**을 수정한다.

```
$ sudo nano /var/www/html/index.html
```

```
ubuntu@webserver-seoul: ~
GNU nano 4.8 /var/www/html/index.html Modified
<html><h1>Hello, Seoul Web Server!!!</h1></html>

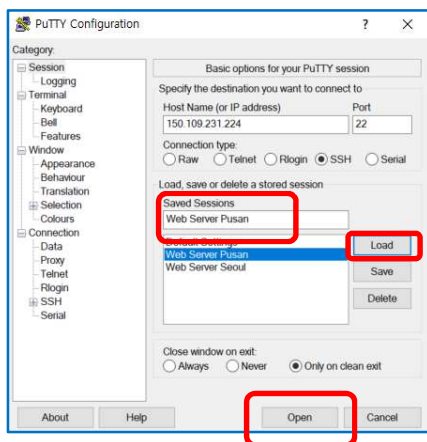
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^_ Go To Line
```

- ④ **Ctrl + O**를 눌러서 저장하고, **Ctrl + X**를 눌러서 Nano 편집기를 나온다.
- ⑤ 한번 더, 내용을 확인해 보자.

\$ cat /var/www/html/index.html

```
ubuntu@webserver-seoul-00: ~
ubuntu@webserver-seoul-00:~$ sudo nano /var/www/html/index.html
ubuntu@webserver-seoul-00:~$ cat /var/www/html/index.html
<html><h1>Hello, Seoul Web Server!!!</h1></html>
ubuntu@webserver-seoul-00:~$
```

- 3. 터미널에서 exit를 클릭하여 창을 닫고, 다시 **PutTY**에서 이번에는 **Web Server Pusan**을 [Load]하여 연결하자.



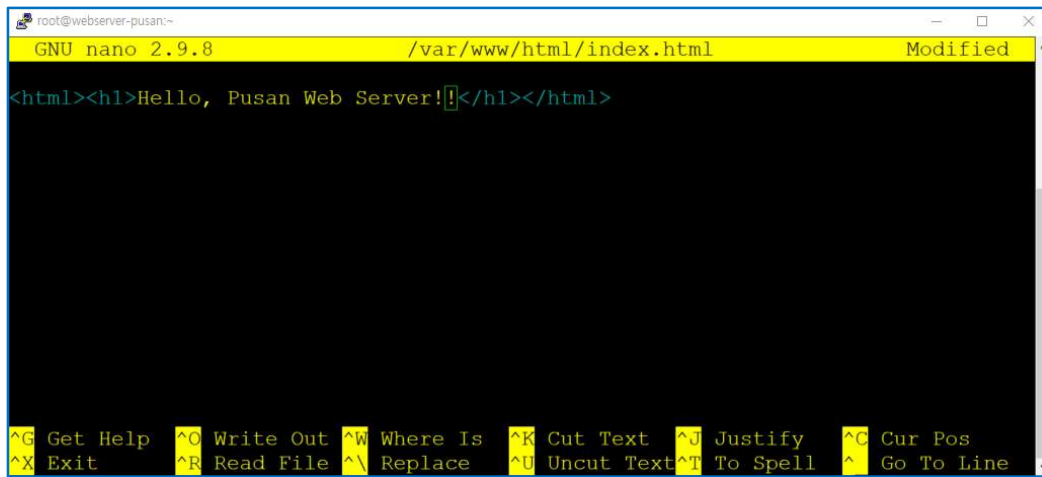
- ① Login ID는 **root**, 비밀번호는 **P@\$W0rd1234**이다.

```
root@webserver-pusan-00: ~
login as: root
root@150.109.231.224's password:
Activate the web console with: systemctl enable --now cockpit.socket

Last login: Thu Jun 10 16:39:02 2021 from 175.209.15.230
[root@webserver-pusan-00 ~]#
```

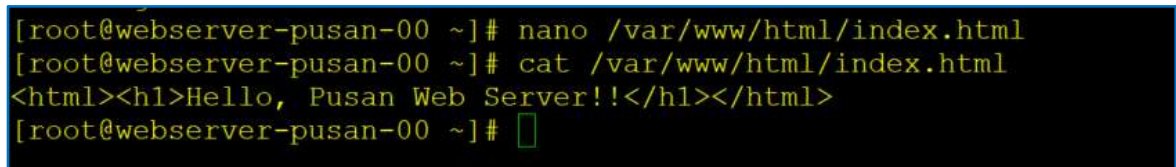
- ② 역시 다음의 명령으로 **Nano** 편집기를 이용해서 **index.html** 코드를 수정한다.

nano /var/www/html/index.html

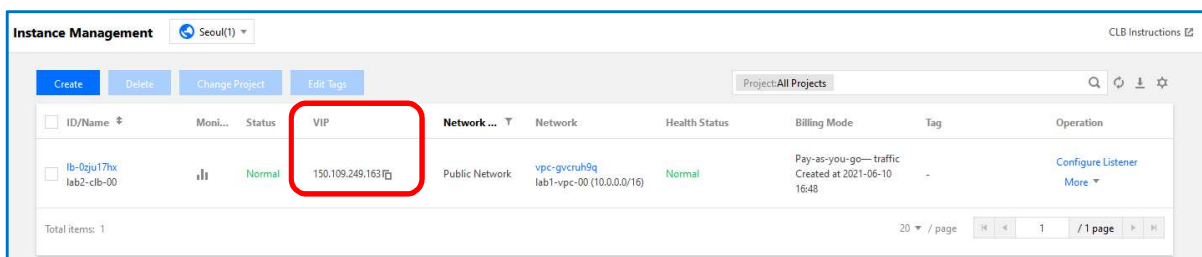


- ③ **Ctrl + O**를 눌러서 저장하고, **Ctrl + X**를 눌러서 **Nano** 편집기를 나온다.
- ④ 방금 수정한 코드를 확인해 보자

cat /var/www/html/index.html



- 4. [CLB Instance List] 페이지의 목록에 있는 **CLB**의 **VIP** 주소를 확인한다.



ID/Name	Moni...	Status	VIP	Network ...	Network	Health Status	Billing Mode	Tag	Operation
lb-0qul7hx-lab2-clb-00		Normal	150.109.249.163	Public Network	vpc-gvcruh9q-lab1-vpc-00 (10.0.0.0/16)	Normal	Pay-as-you-go—traffic Created at 2021-06-10 16:48	-	Configure Listener More

- 5. 웹 브라우저를 띄우고 이 주소로 접속해서 HTTP 요청을 보내본다. **webserver-seoul-00**과 **webserver-pusan-00** 이 두개의 Web Server가 번갈아서 웹페이지를 보여준다.

