

Lab2. Creating Linux Server Instance on Tencent Cloud

1. 목적

- 이번 Lab에서는 Tencent Cloud에서 제공하는 Compute의 제품 중 CVM(Cloud Virtual Machine)을 이용해서 Linux Server Instance를 생성하기로 한다.

2. 사전 준비물

- Tencent Cloud Account

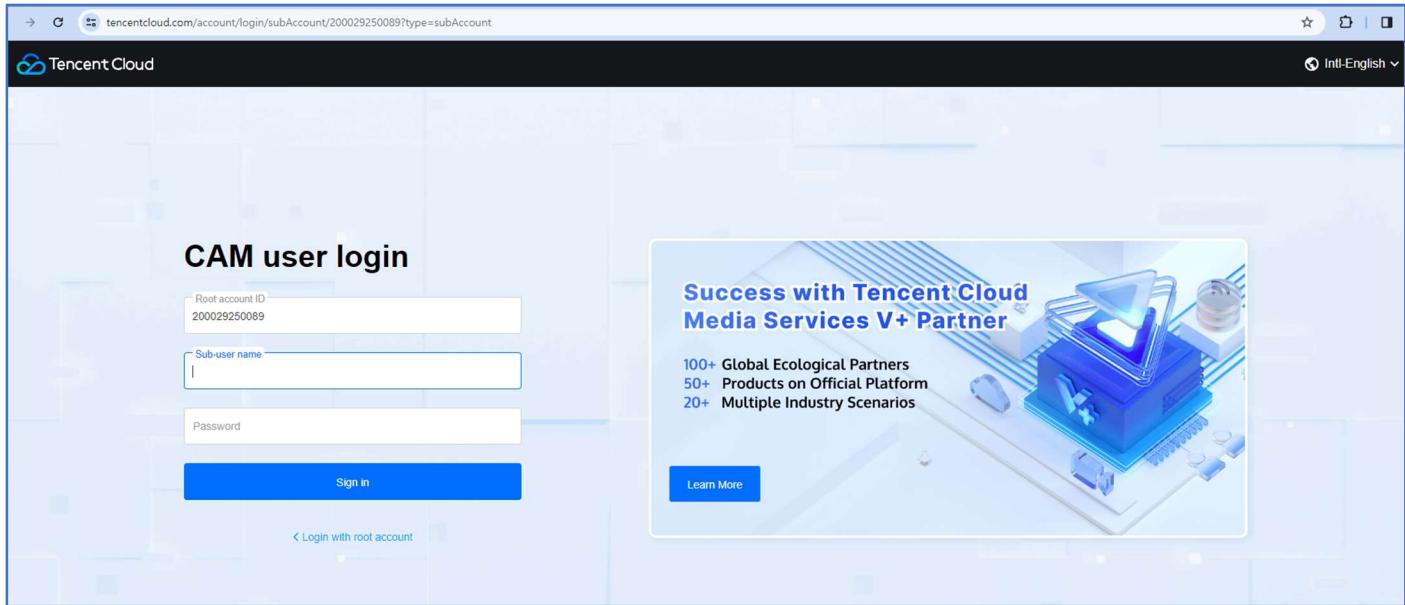
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- Task5. EIP 설정하고 Linux Server Instance에 연결하기
- Task6. Linux Server Instance 삭제하기

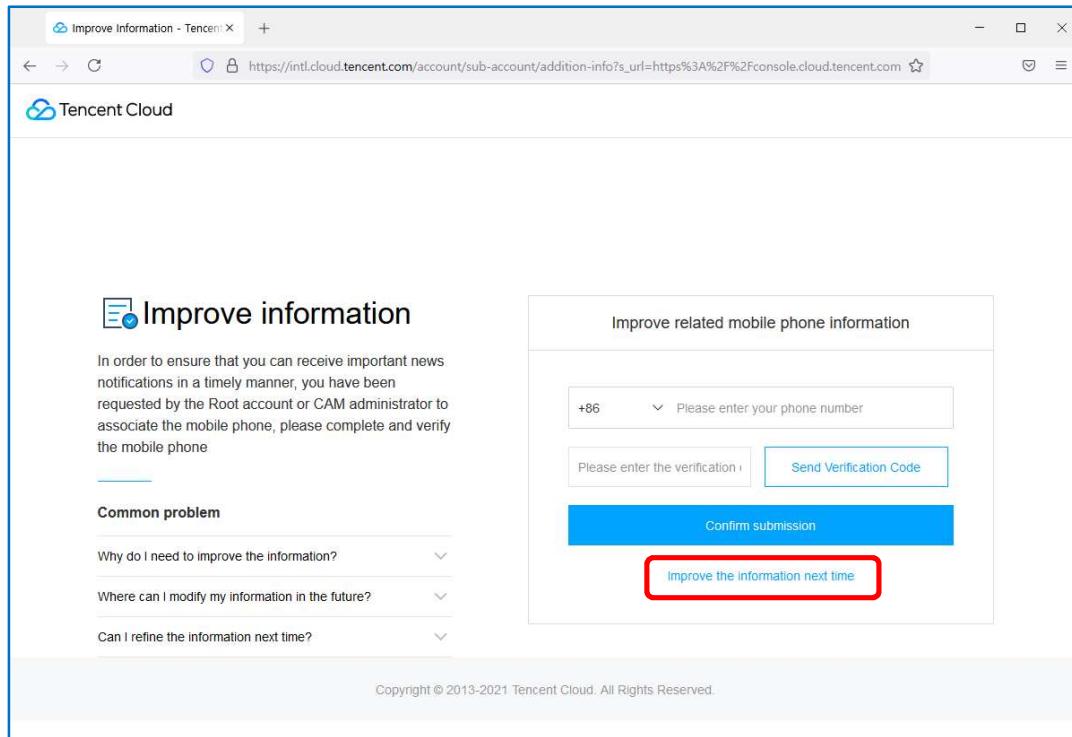
Task1. Cloud Virtual Machine 생성 전 작업하기

1. Tencent Cloud CAM User Sing in 페이지를 방문한다.

<https://www.tencentcloud.com/login/subAccount/200029250089?type=subAccount>



2. **Sub-user name**과 **Password**는 교육 당일 교육 진행요원 혹은 Trainer로부터 부여 받는다. 부여 받은 **Sub-user name**과 **Password**를 입력하고 **[Sing in]** 파란색 버튼을 클릭한다. 로그인 후 **[Improve information]** 페이지 또는 **[Complete information]** 페이지에서, 다음 그림처럼 **[Improve related mobile phone information]**창의 **the information next time** 링크를 또는 **[Add mobile number]** 창의 **[Next time]**을 클릭하여 전화번호 입력을 생략한다.



Complete information

Please add a mobile number and verify the number so that you won't miss important messages from Tencent Cloud.

FAQs

- Why do I need to complete my information? ▼
- What if I want to change the information later? ▼
- Can I complete the information next time? ▼

Add mobile number

+93

Send code

Confirm

Next time

3. 다음 그림은 로그인 과정을 모두 수행하면 나타나는 화면이다. 페이지 우측 상단에는 로그인한 **Sub-user name**이 나오고, 또한 페이지 상단에서 **Hello**, 다음에 **Sub-user name**이 나오게 된다.

The screenshot shows the Tencent Cloud dashboard. At the top left, there is a user profile box with a blue icon and the text "Hello, user-00" followed by "Account Id: 200029337219". This entire box is highlighted with a red rectangle. To the right of the profile, there are three status indicators: "Security Center" (0), "Alarms" (0), and "Pending Tickets" (0). Below these are sections for "Recently Visited" and "Currently in Use", each listing three services with their respective icons. On the far right, there is a sidebar titled "Product Documentation" with a "View More" link, listing several cloud services like Cloud Object Storage, Cloud Block Storage, and Cloud Virtual Machine.

All Products			
Compute	Data Migration	Network Security	Relational Database
Cloud Virtual Machine Tencent Cloud Lighthouse Auto Scaling Batch Compute	Migration Service Platform	Anti-DDoS Anti-DDoS Advanced Cloud Firewall Tencent Cloud EdgeOne	Cloud Native Database TDSQL-C TencentDB for MySQL TencentDB for MariaDB TencentDB for SQL Server TencentDB for PostgreSQL
Container Services	Data Development & Governance	Endpoint Security	Enterprise Distributed DBMS
Tencent Kubernetes Engine	Data Development and Governance Platform	Cloud Workload Protection Platform	
	CDN & Acceleration		

4. 로그인 후, 페이지 위쪽의 메뉴 중 [Products]에 마우스를 올려놓으면 아래와 같이 드롭다운 메뉴가 보여진다. 여기서 [Compute] > [Cloud Virtual Machine] 링크를 클릭한다.

Screenshot of the Tencent Cloud Products dropdown menu. The 'Compute' section is expanded, showing 'Cloud Virtual Machine' and 'Tencent Cloud Lighthouse' highlighted with a red box.

5. Cloud Virtual Machine의 대시보드 페이지이다. 좌측 메뉴가 [Instances]에 맞춰져 있다.

Screenshot of the Tencent Cloud Cloud Virtual Machine Instances dashboard. The left sidebar shows 'Instances' selected, which is highlighted with a red box.

6. 먼저 해당 **Instance**가 어느 **Region**에 생성되는지 설정해야 하는데, 기본값은 현재 **[Guangzhou]**에 맞춰져 있다. **[Guangzhou Other regions]**를 클릭하여 **[Seoul]** 리전으로 맞춘다.

The screenshot shows a dropdown menu titled "Instances" with a sub-menu for "Other regions". The "Guangzhou" option is currently selected. A red box highlights the "Seoul" option under the "Northeast Asia" section.

All regions			
South China	Hong Kong, Macau and Taiwan (China)	US West	South America
Guangzhou	Hong Kong, China	Silicon Valley	São Paulo
East China	Northeast Asia	Europe	North America
Shanghai	Seoul	Frankfurt	Toronto
Nanjing	Tokyo	Northeastern Europe	
North China region	Southeast Asia	South Asia	
Beijing	Singapore	Mumbai	
	Bangkok		
Southwest China	Jakarta	US East	
Chengdu		Virginia	
Chongqing			

7. **[Seoul]**에 설정되었다. 이제 **Instance**를 생성하기 위한 2가지 옵션이 보인다. 이번 랙에서는 가상 머신 생성에 대해 학습하기 때문에 2가지 옵션 중 왼쪽 옵션을 선택하기로 한다. **[Buy Now]** 파란색 버튼을 클릭한다.

The screenshot shows the "Choose the product according to your needs" step. It offers two options:

- Large-scale and Elastic Computing Scenarios**: Described as "Cloud Virtual Machine Rich specs, highly customizable". A "Buy Now" button is highlighted with a red box.
- SMEs and individual users**: Described as "TencentCloud Lighthouse Cost-efficient, lightweight, OOTB". A "Buy Now" button is also present here.

A "View product introduction" link is visible below each scenario description.

Task2. Cloud Virtual Machine 생성하기 – Select basic configurations

1. CVM 생성 페이지이다. 다음의 각 단계별로 진행해 보자. 먼저 [Basic configurations] 섹션에서, [Billing mode]는 과금방법을 선택하는 것이다. [Billing Mode]는 사용한 만큼 지불하는 [Pay as you go](종량제)를 선택한다.

The screenshot shows the 'Cloud Virtual Machine (CVM)' creation interface. At the top, there's a navigation bar with the Tencent Cloud logo and a link to 'Purchase other cloud products'. Below it, the title 'Cloud Virtual Machine (CVM)' is displayed. Underneath, a 'Custom configuration' tab is selected, indicated by a blue underline. The main content area has two tabs: '1 Select basic configurations' (highlighted with a red box) and '2 Configure network and host'. An 'Instructions' section states: 'Tencent Cloud launches 2C2G configuration for standard CVM instances in some regions. The same price is applied to the same instance with either 1C2G or 2C2G configuration in the same AZ.' Below this, there are two sections: 'Basic configurations' and 'Spot instances'. The 'Basic configurations' section is further divided into 'Billing mode' and 'Pay-as-you-go'. The 'Pay-as-you-go' section is highlighted with a red box and contains the text: 'Up to 95% off for regions outside the Chinese mainland'. It also notes that it's applicable to scenarios where demands fluctuate significantly. The 'Spot instances' section shows a 95% discount for Hong Kong and other regions outside China, mentioning that spot instances may be automatically repurchased by Tencent.

2. [Region]은 [Seoul]에 맞추고, [Availability zone]은 [Seoul Zone 2]을 선택한다.

The screenshot shows the region and availability zone selection interface. At the top, there are tabs for 'Region', 'China', 'Asia Pacific' (which is selected), and 'Europe and America'. Below these are buttons for 'Seoul' (highlighted with a red box), 'Tokyo', 'Singapore', 'Bangkok', 'Jakarta' (with a 'New' badge), and 'Mumbai'. A note below says: 'Tencent Cloud products in different regions cannot communicate via a private network. The region cannot be changed after the creation. Please select the region closest to your customers to reduce access latency.' In the 'Availability zone' section, buttons for 'Random', 'Seoul Zone 1', and 'Seoul Zone 2' (highlighted with a red box) are shown. A note below says: 'Tencent Cloud products in different AZs in the same region can communicate via a private network.'

3. 두번째 [Instance configurations] 섹션에서는 CPU와 Memory등을 선택할 수 있다. 기본값은 **Standard Model**이다. [Instance] > [Instance family]는 [Standard]를 선택하고 [Model]에서는 [Standard S5]를 선택한다. 기본적으로 [Standard S5]가 보이지 않기 때문에 [Show all]을 클릭한 후, [Standard S5]를 선택한다.

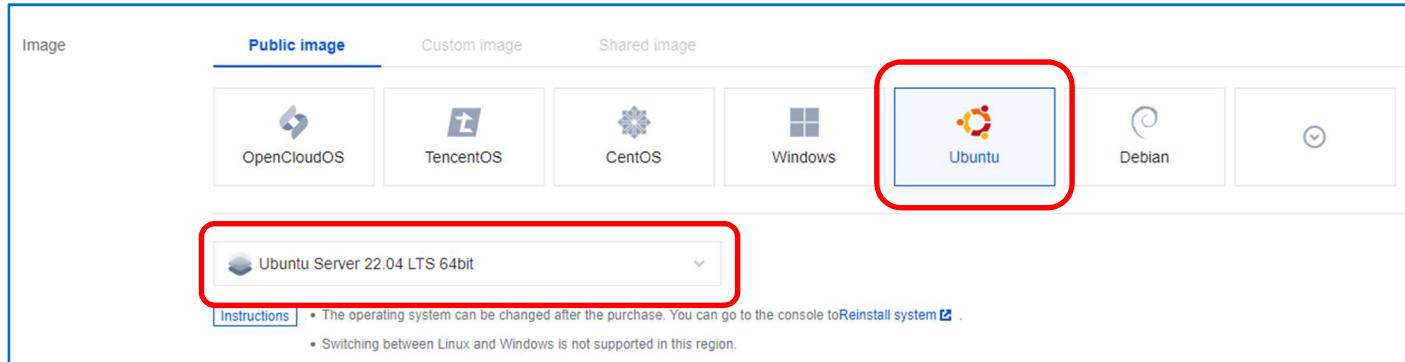
The screenshot shows the 'Instance configurations' section of the AWS Lambda console. At the top, there are filters for 'All CPU cores', 'All MEMs', and 'All architectures', followed by a 'Reset' button. Below these are two tabs: 'Standard' (highlighted with a red box) and 'MEM-optimized', with other categories like 'Compute', 'GPU-based', 'FPGA-based', 'High IO', 'Big Data', and 'Bare Metal' available. Under the 'Standard' tab, there's a 'High-Performance Compute Cluster' dropdown. The 'Model' section shows various models: All models, Standard SA5, Standard SA4, Standard S6, Standard SA3, Standard S3, Standard Storage Optimized S5se, Standard SR1, Standard Network-optimized SN3ne, Standard S2, Standard S1, and Standard S4. The 'Standard S5' model is highlighted with a red box. At the bottom, it says 'Selected model: S5 SMALL1 (Standard S5, 1C1G)' and a note about quota increase.

4. 위에서 선택한 [Standard S5]는 기본적으로 **1Core vCPU에 1GB의 Memory**를 가진다. 이번 랙에서는 Linux의 가상머신을 사용하기 때문에 기본값 **1Core vCPU, 1GB의 Memory**를 사용하기로 한다.

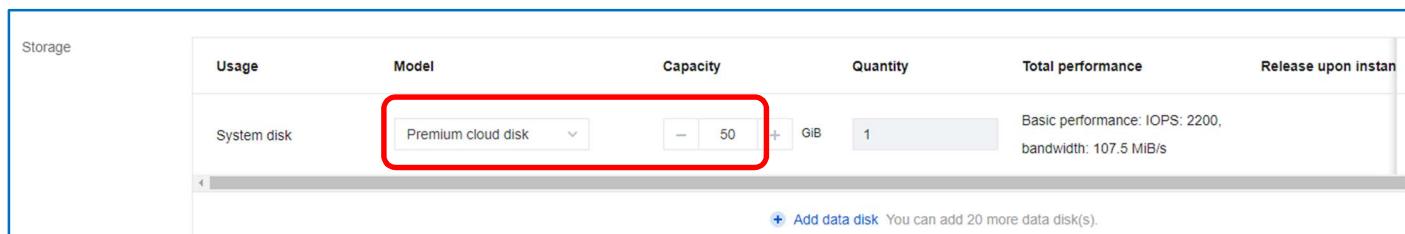
The screenshot shows a table of available instance types. The columns are: Instance, Specifications, vCPU, MEM, Processor, Private network bandwidth, Packets in/out, Supported AZs, and Reference fee. The first row, 'Standard S5 (22% off)', is highlighted with a red box. It shows the following details: S5.SMALL1, 1Core, 1GB, Intel Xeon Cascade Lake 8255C..., 1.5Gbps, 250K PPS, 20 AZ(s), and 0.01USD/hour. The table also lists other models like S5.SMALL2, S5.SMALL4, S5.MEDIUM2, S5.MEDIUM4, and S5.MEDIUM8, each with their respective specifications and costs. A note at the bottom says 'Total 37 items'.

Instance	Specifications	vCPU	MEM	Processor	Private network bandwidth	Packets in/out	Supported AZs	Reference fee
<input checked="" type="radio"/> Standard S5 (22% off)	S5.SMALL1	1Core	1GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	250K PPS	20 AZ(s)	0.01USD/hour
<input type="radio"/> Standard S5 (22% off)	S5.SMALL2	1Core	2GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	250K PPS	28 AZ(s)	0.02USD/hour
<input type="radio"/> Standard S5 (22% off)	S5.SMALL4	1Core	4GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	250K PPS	29 AZ(s)	0.05USD/hour
<input type="radio"/> Standard S5 (22% off)	S5.MEDIUM2	2Core	2GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	300K PPS	30 AZ(s)	0.02USD/hour
<input type="radio"/> Standard S5 (22% off)	S5.MEDIUM4	2Core	4GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	300K PPS	31 AZ(s)	0.04USD/hour
<input type="radio"/> Standard S5 (22% off)	S5.MEDIUM8	2Core	8GB	Intel Xeon Cascade Lake 8255C...	1.5Gbps	300K PPS	31 AZ(s)	0.09USD/hour

5. 서버 이미지를 선택하는 순서이다. [Public image]의 목록에서 Ubuntu, 64-bit를 선택하고 [Ubuntu Server 22.04 LTS 64bit]를 선택한다.



6. [Storage]에서 [Premium cloud disk]를 선택하고, 용량은 기본 용량 [50GB]를 사용하기로 한다.



7. 페이지를 스크롤다운하여 첫번째 설정 단계를 확인한다. 그리고 [Next: Configure network and host] 파란색 버튼을 클릭한다.



Task3. Cloud Virtual Machine 생성하기 – Configure network and host

1. [Network and bandwidth] 섹션에서, [Network]는 기본값 그대로 [Default-VPC(Default)]와 [Default-Subnet(Default)]를 선택한다. 또한 [Public network IP] 역시 기본값 그대로 [Get a free public IP]가 체크되어 있는지 확인하고, [Bandwidth]는 최대 100Mbps로 설정한다.

The screenshot shows the 'Cloud Virtual Machine (CVM)' configuration interface. The 'Custom configuration' tab is selected. The 'Network and bandwidth' section is highlighted with a red box. It includes fields for 'Network' (set to 'Default-VPC (Default)') and 'Default-Subnet (Default)', both of which are enclosed in a red box. Below these, there is a note about creating a VPC or subnet if existing ones don't meet requirements. Under 'Public network IP', the 'Get a free public IP' checkbox is checked. The 'Bandwidth billing mode' is set to 'By traffic'. A slider for 'Bandwidth' is set to 100 Mbps, also enclosed in a red box. A note at the bottom says the traffic fee is settled on an hourly basis and the service will be stopped in 2 hours if the account balance becomes negative.

2. [Security group] 섹션에서, 보안그룹을 새로 설정하기 위해 [New security group]를 선택하고, [Allow common IPs/ports]에서 ICMP, TCP:22, Open for pri...만 선택한다.

The screenshot shows the 'Security group' configuration page. The 'New security group' button is highlighted with a red box. The 'Allow common IPs/ports' section is also highlighted with a red box. It contains several checkboxes: 'ICMP (Ping the CVM from public network)' (checked), 'TCP:22 (SSH remote login for Linux)' (checked), 'TCP:80 (HTTP Web server)' (unchecked), 'TCP:443 (HTTPS Web server)' (unchecked), 'TCP:3389 (RDP remote login for Windows)' (unchecked), and 'Open for private network (Private network access from other cloud resources (IPv4))' (checked). A note at the bottom says to make sure port 22 (Linux SSH login) and port 3389 (Windows remote login) are open in the selected security group.

3. [Other settings] 섹션에서, [Tag]는 관리 편의성을 위해 특정 문자열을 태깅하는 옵션이다. 이번 Lab에서는 태그 없이 진행하기로 한다.

The screenshot shows the 'Other settings' configuration page. The 'Tag' section is highlighted with a red box. It includes a 'Tag key' input field, a 'Tag value' input field, a 'Delete' button, and a '+ Add' button. There is also a dashed box area for adding new tags.

4. [Instance name]은 영문으로 입력한다. 여기서는 예제로 **lab2-cvmXX**(여기서 XX는 계정번호를 의미)으로 입력하기로 한다. 128자리까지 인스턴스 이름으로 지정할 수 있다.

The screenshot shows a form for creating a new instance. The 'Instance name' field is highlighted with a red box and contains the value 'lab2-cvm00'. Below the field, a note says 'Supports batch sequential naming or pattern string-based naming. Up to 128 characters. 118 more characters are allowed.'

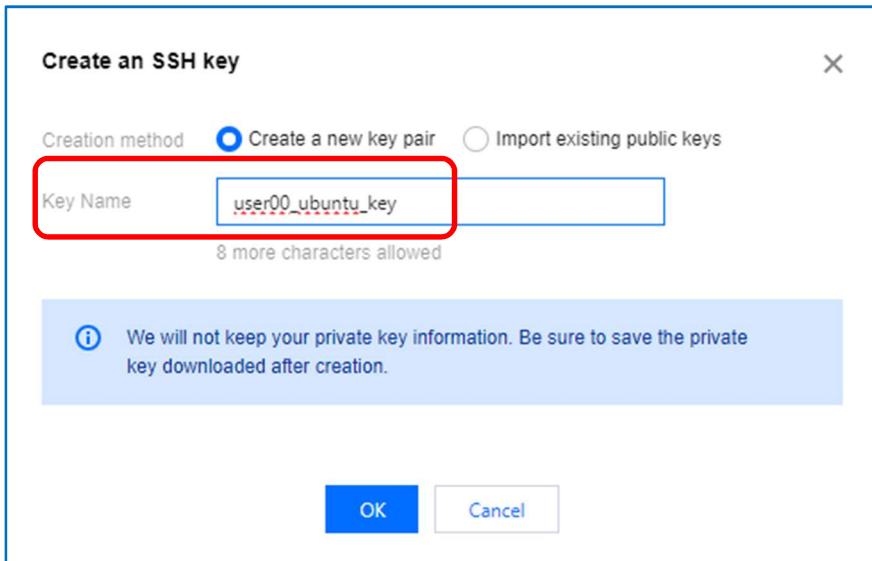
5. [Login methods]는 로그인 방법을 설정하는 것이다. 이번 랩에서는 [SSH key pair]를 선택한다. **Ubuntu Server**인 경우 [Login name]은 자동으로 **ubuntu**이다. 이 계정은 **Ubuntu Server**의 관리자 계정이다. [Key pair]는 비밀번호 입력 없이 **Public Key**와 **Private Key**를 이용한 로그인 방법이다. **Tencent Cloud**가 **Public Key**를 저장하고, 개인은 **Private Key**를 저장하여 두 개의 Key를 통해 로그인한다. 개인이 저장할 **Private Key**를 생성하기 위해 [create a new one] 링크를 클릭한다.

The screenshot shows the 'Login methods' configuration screen. The 'SSH key pair' tab is highlighted with a red box. Below it, the 'Login name' is set to 'ubuntu'. In the 'Key pair' section, there is a dropdown menu labeled 'Select a key pair' and a link 'If existing keys are not suitable, you can [create a new one](#)'. The 'create a new one' link is also highlighted with a red box.

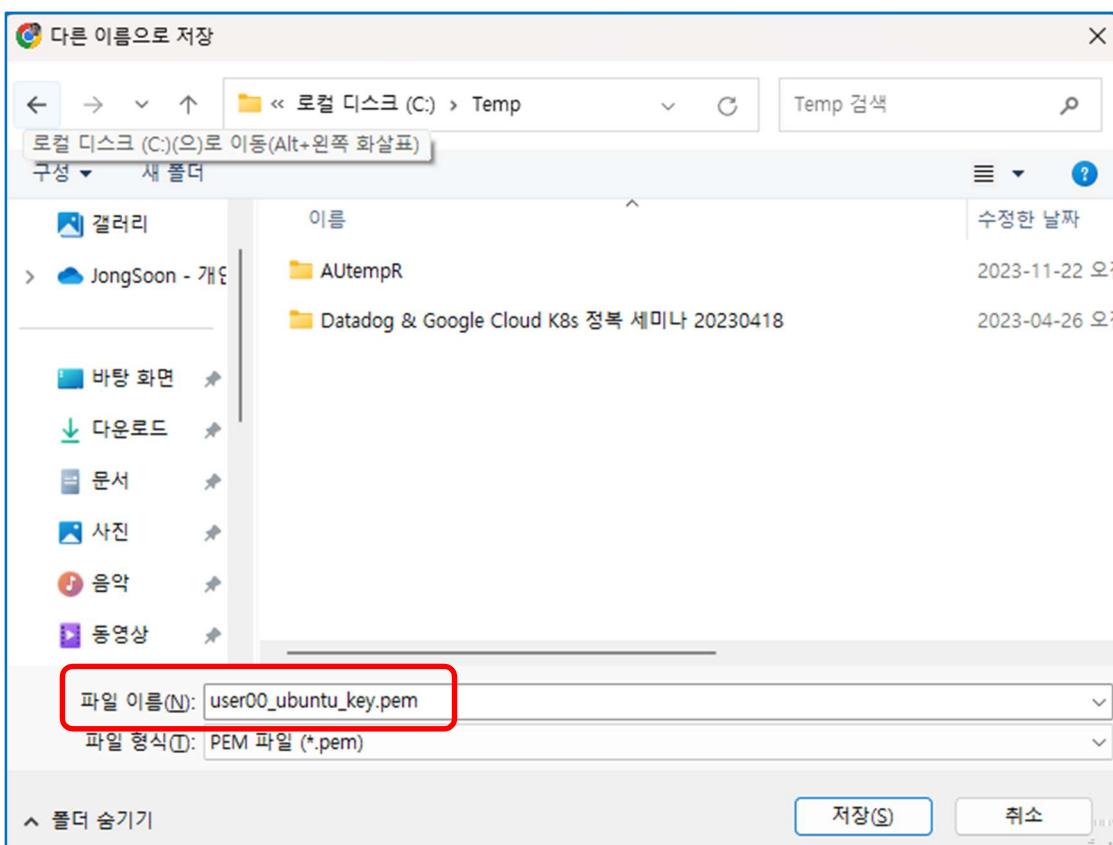
6. 웹 브라우저의 새 탭이 오픈하며 [SSH key] 페이지가 나온다. 여기서 키를 새로 생성하기 위해 [New] 파란색 버튼을 클릭한다.

The screenshot shows the Tencent Cloud SSH key management interface. On the left sidebar, 'SSH Key' is selected and highlighted with a blue bar. The main panel shows a table with a single row for a key named 'ID/name'. A red box highlights the 'New' button at the top left of the table. The table also includes columns for 'ID/name', 'Bound Instances', and a note 'Total items: 0'.

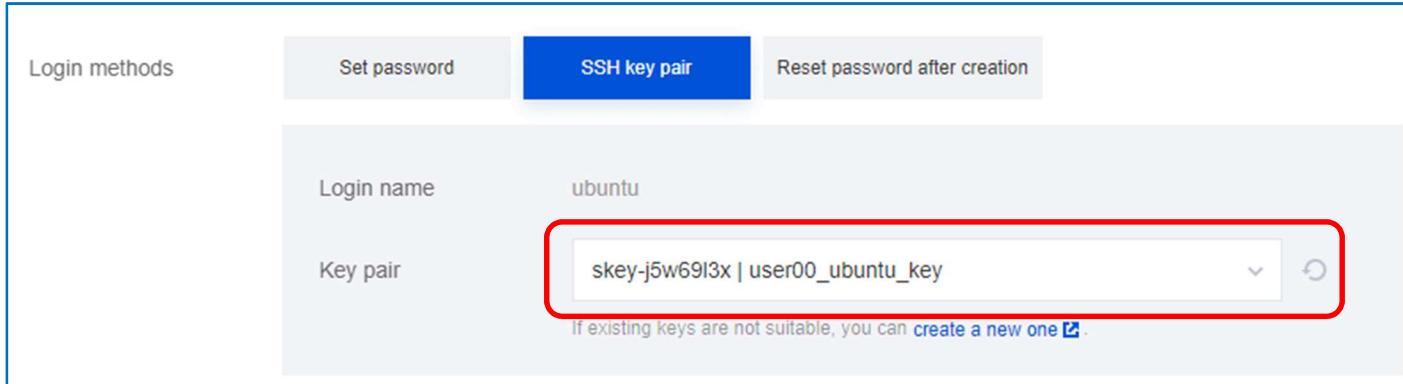
7. [Create an SSH key] 팝업창이다. [Key Name]은 userXX_ubuntu_key(여기서 XX는 계정번호를 의미)로 입력하고 [OK] 버튼을 누른다.



8. 그러면, 방금 생성한 Key의 **Private Key**를 저장할 위치를 묻는다. 적당한 위치에 저장한다. 파일 이름이 **pem** 파일임을 확인할 수 있다. 필자는 C:/Temp에 저장했다.



9. 다시 CVM 생성 페이지로 돌아와서  을 클릭하여 리프레쉬하고 목록에서 방금 생성한 키를 선택한다.



Login methods

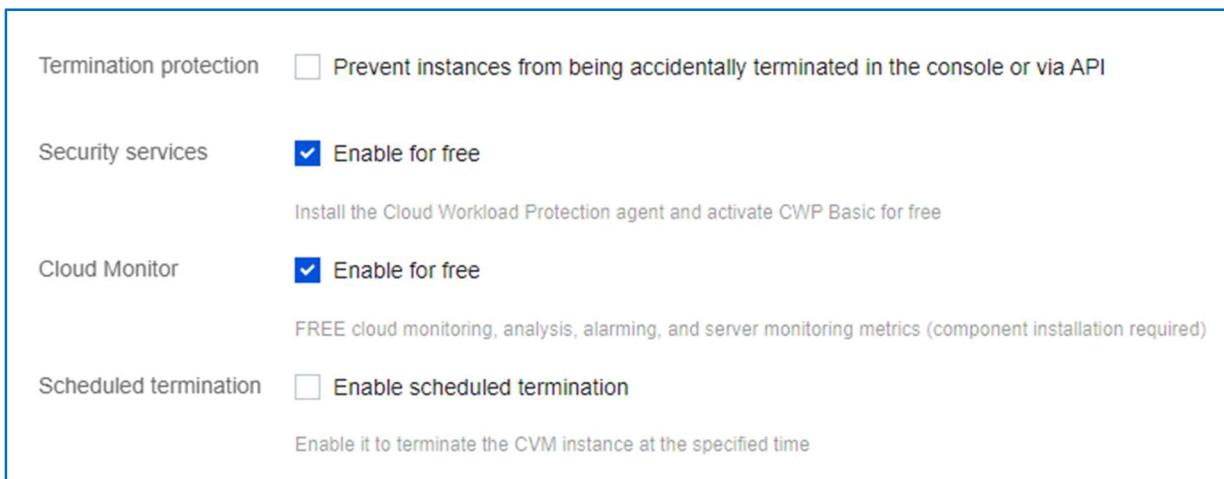
Set password **SSH key pair** Reset password after creation

Login name: ubuntu

Key pair: **skey-j5w69l3x | user00_ubuntu_key**

If existing keys are not suitable, you can [create a new one](#).

10. 무료로 사용할 수 있는 **[Security Reinforcement]**와 **[Cloud Monitoring]** 서비스를 설정한다. 이번 Lab에서는 기본사항을 그대로 체크된 상태로 사용하기로 한다. **[Scheduled Termination]** 역시 필요하지 않기 때문에 기본 해제 상태 그대로 진행한다.



Termination protection Prevent instances from being accidentally terminated in the console or via API

Security services Enable for free
Install the Cloud Workload Protection agent and activate CWP Basic for free

Cloud Monitor Enable for free
FREE cloud monitoring, analysis, alarming, and server monitoring metrics (component installation required)

Scheduled termination Enable scheduled termination
Enable it to terminate the CVM instance at the specified time

11. [Advanced Settings (Hostname, CVM role, placement group, custom data)] 링크를 클릭하면 숨겨진 여러 가지 설정 화면이 나타난다. [Hostname]에 lab2-cvmXX(여기서 XX는 계정번호를 의미)을 입력한다. 나머지 값들은 기본값 그대로 이용한다. [Placement group]은 재해복구를 위해 배치 방법을 설정하는 옵션이다. 재해복구가 필요하지 않으니 [Placement group] 체크박스는 해제하고 진행하기로 한다.

Advanced settings (hostname, CVM role, placement group, custom data)

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

Project

CAM role

Placement group Add the instance to a placement group
If the existing placement groups are not suitable, please [create a new one](#)

Custom data
(Optional) It's used for configuration while launching an instance. It supports the Shell format. The size of original data is up to 16 KB. Shell script should start with #!, following by a path pointed to the parser to read the script (usually /bin/bash).

The above input is encoded with base64.

12. 페이지를 스크롤다운하여 다음 그림에서 [Next: Confirm configuration] 파란색 버튼을 클릭하여 다음 단계를 진행한다.

Selected S5.SMALL1 (Standard S5, 1C1G)
Quantity

Configuration fee **\$0.02** | Public traffic fees **\$0.12/GB**

Task4. Cloud Virtual Machine 생성하기 – Confirm configuration

1. [Confirm Configuration] 화면에서는 지금까지 선택한 옵션들을 일목요연하게 보여준다. 설정의 마지막 화면이다. 각각의 내용을 확인하고 수정이 필요하면 [Edit] 링크를 클릭하여 수정하면 된다.

The screenshot shows the 'Cloud Virtual Machine (CVM)' configuration page. At the top, there are three tabs: 'Select basic configurations' (selected), 'Configure network and host' (selected), and 'Confirm configuration'. Below these tabs, there are two sections: 'Selected configurations' and 'Network and security group'. The 'Selected configurations' section displays basic information like CVM billing mode (Pay-as-you-go), Region (Seoul), Availability zone (Seoul Zone 2), Instance type (S5.SMALL1), Image (Ubuntu Server 22.04 LTS 64bit | 20GB), and Data disk (Not set). The 'Network and security group' section shows the network (vpc-peejuei2), subnet (subnet-6ohnniy), private IP (Not assigned), public IP (Purchase), bandwidth billing mode (Bill by traffic 100Mbps), and security group (Custom template).

2. 설정을 마치기 위해 [Terms and Agreement] 체크박스에 체크하고, [Enable] 파란색 버튼을 클릭한다.

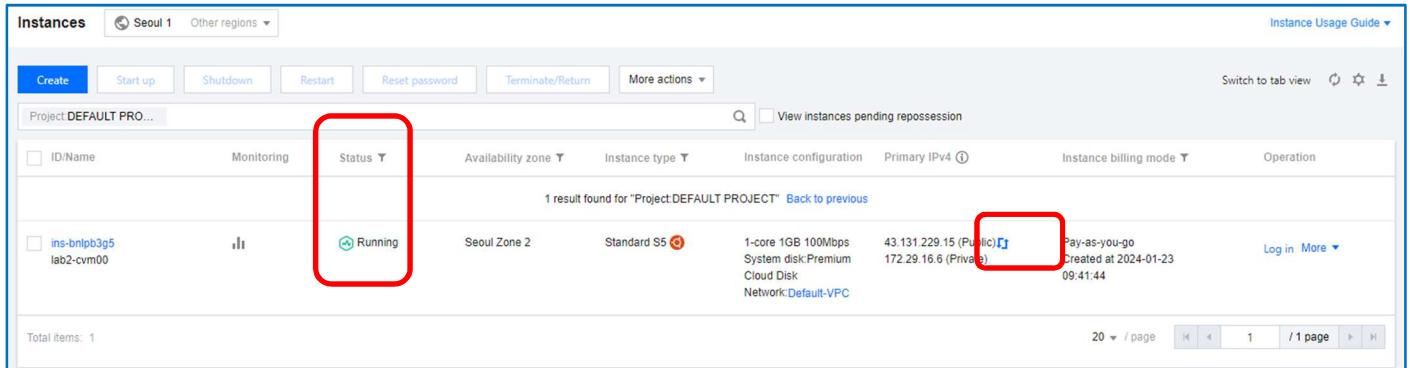
The screenshot shows a configuration summary page. It includes a 'Generate API Explorer best practice scripts' button, a 'Terms and Agreement' section with a checked checkbox for accepting terms, and a summary of selected instance details (S5.SMALL1, 1C1G, quantity 1). It also shows configuration fees (\$0.02) and public traffic fees (\$0.12/GB). A red box highlights the 'Enable' button, which is highlighted in blue.

3. 잠시 시간이 흐른 뒤, Instance가 생성되면 다음 그림과 같이 새로운 인스턴스가 만들어진 것을 볼 수 있다.

The screenshot shows the 'Instances' list page. It displays a table of instances, with one row highlighted by a red box. The highlighted row shows an instance named 'ins-brnlpb3g5' (lab2-cvm00), which is currently 'Running' in 'Seoul Zone 2' with a 'Standard S5' configuration. It has 1-core 1GB 100Mbps, a System disk (Premium Cloud Disk), and a Network (Default-VPC). The instance was created on 2024-01-23 at 09:41:44. The 'Create' button is visible at the top left of the page.

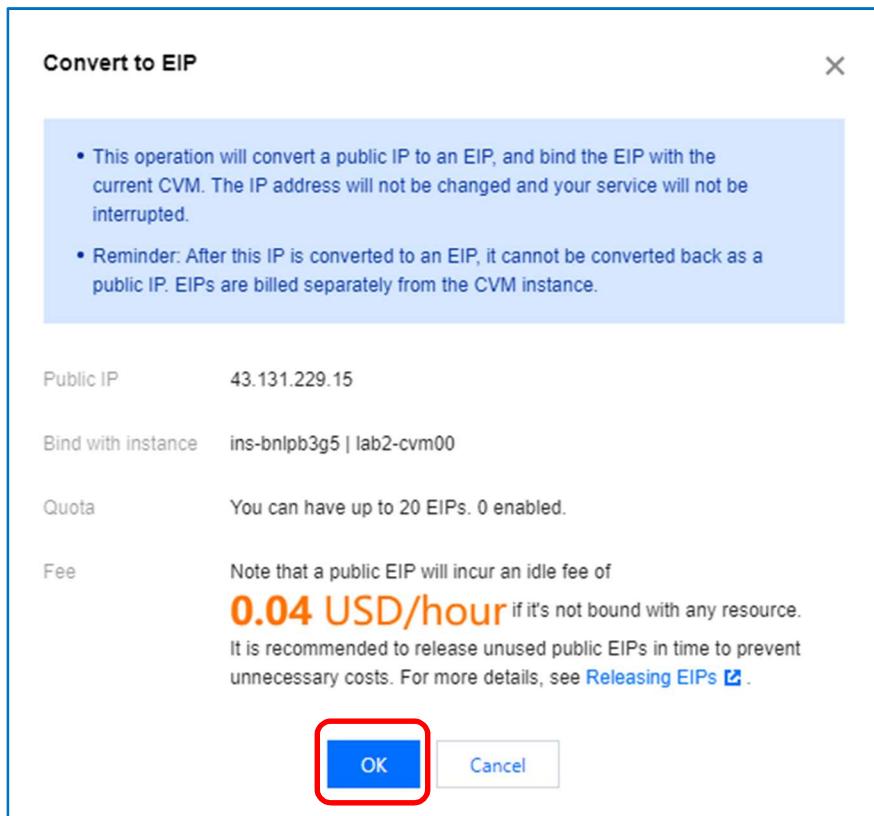
Task5. EIP 설정하고 Linux Server Instance에 연결하기

- EIP는 고정 IP를 설정하는 것이다. 기본적으로 제공되는 Public IP는 시스템 재 부팅할 때, 다른 IP주소로 변경될 수 있다. 따라서 고정 IP로 설정하려면 EIP를 구매하고 설정해야 한다. 방금 생성한 Instance의 [Status]가 **Running**임을 확인하고, [Primary IPv4]의 [Public] 오른쪽의 EIP 버튼  을 클릭한다.

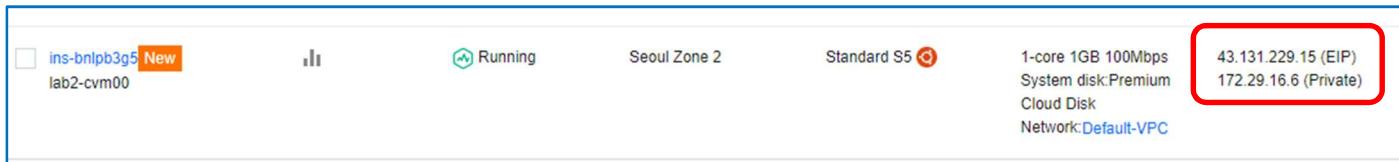


The screenshot shows the Instances page in the Cloud Service Provider's interface. A single instance named 'ins-bnlpb3g5' is listed under the 'Project: DEFAULT PRO...' section. The instance status is 'Running'. In the 'Primary IPv4' column, there are two IP addresses: '43.131.229.15 (Public)' and '172.29.16.6 (Private)'. The '43.131.229.15 (Public)' address has a blue square icon with a white arrow pointing right, indicating it is the EIP. A red box highlights this icon. Another red box highlights the '43.131.229.15 (Public)' text.

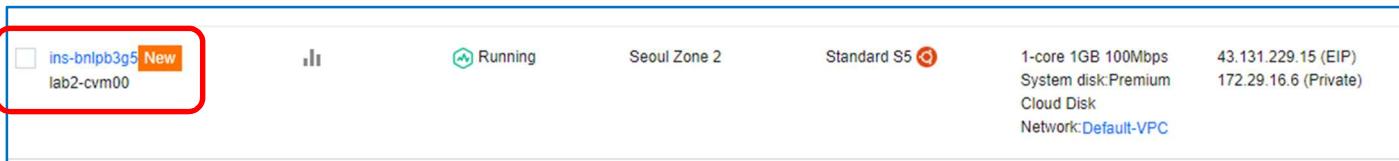
- [Convert to EIP]창이 나타나면 [OK] 파란색 버튼을 클릭한다.



3. EIP 설정이 성공적으로 마쳐지면 방금 생성한 인스턴스의 [Primary IPv4]의 Public IP가 EIP로 변경된 것을 볼 수 있다.



4. 인스턴스와 연결하기 위해 방금 생성한 인스턴스를 [Instances] 목록에서 링크 클릭한다.



5. 방금 생성한 Linux Server 인스턴스 요약 페이지이다. 화면 아래쪽의 [EIP]의 IP Address의 버튼을 클릭하여 주소를 복사한다.

The screenshot shows the instance summary for 'lab2-cvm00'. It includes basic information like name, instance ID, UUID, specification, termination protection, role, and network settings. On the right, there is a detailed architecture diagram and a summary of system resources. The 'EIP' field in the network section is highlighted with a red box.

Basic information

Name	lab2-cvm00	Project	Default Project
Instance ID	ins-bnlpb3g5	Tags	None
UUID	fad6a4f8-efa9-41f2-9fa2-7d9d82c5e543	Key	skey-j5w69i3x(user00_ubuntu_key)
Instance specification	Standard S5 S5 SMALL1	Placement group	None
Instance termination protection	Disabled	Region	Seoul
Role	None	Availability zone	Seoul Zone 2

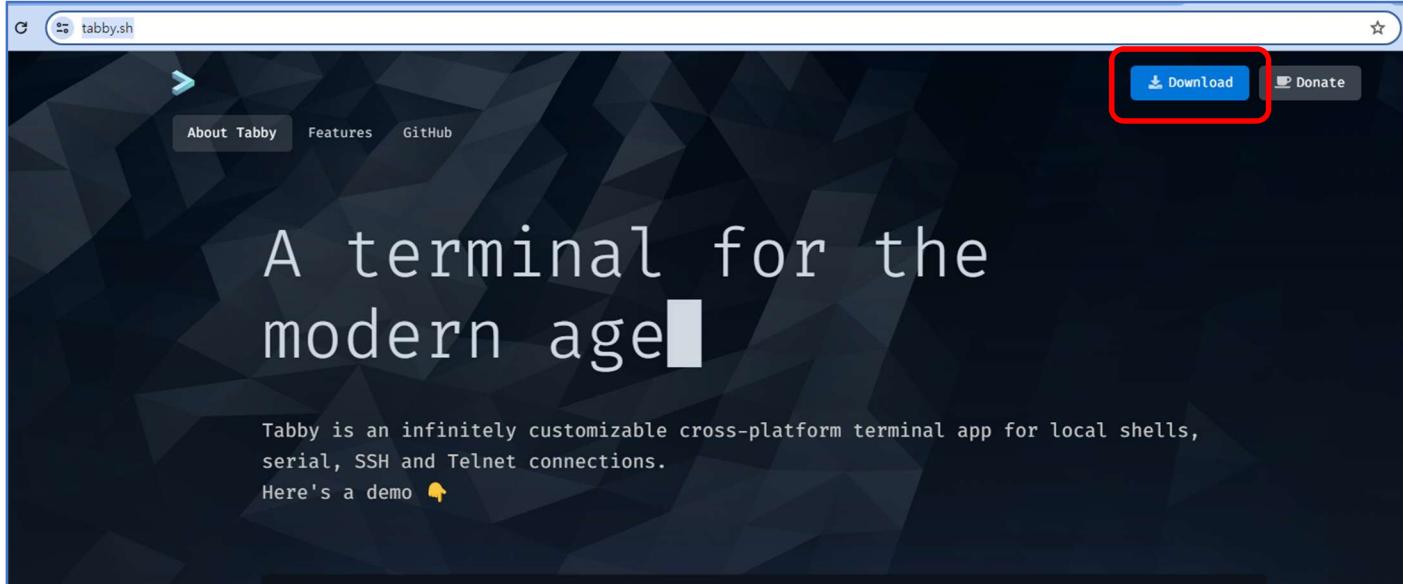
Network information

Network	vpc-peejuei2(Default-VPC 172.29.0.0/16)	Primary private IPv4	172.29.16.6
Subnet	subnet-6ohhniyl(Default-Subnet)	Act as internet gateway	No
EIP	43.131.229.15		

Architecture

```
graph TD; Root(( )) --> Ins((ins-bnlpb3g5  
Northeast Asia(Seoul)/Seoul Zone 2/  
subnet-6ohhniyl)); Ins --> SG[1 security group]; SG --> ENI[1 ENI]; ENI --> VM[Ubuntu Server 22.04 LTS 64bit  
Running]; VM --> Disk[System disk disk-igq1pcd1(lab2-cvm00_SYSTEM_DISK)  
Premium Cloud Disk, 50GB  
Pay-as-you-go Creation Time: 2024-01-23 09:44:20]
```

6. Linux 인스턴스 접속을 위해서는 일반적으로 SSH 접속용 프로그램이 필요하다. 가장 일반적으로 사용하는 SSH 툴은 Putty이다. 하지만, 서버에 접속하기 위해 직접 비밀번호를 입력할 경우 또는 ppk를 사용해서 접속하는 경우에는 Putty를 사용하지만, 이번 실습처럼 pem 파일을 사용할 경우에는 Putty를 사용할 수 없다. 그래서 pem을 사용할 수 있는 SSH 무료 tool을 사용할 것이다. 그것은 바로 Tabby라는 툴이다. Windows뿐만 아니라 macOS에서도 사용 가능한 툴이다. 다운로드는 <https://tabby.sh/> 에 접속한 후, [Download] 버튼을 클릭한다.

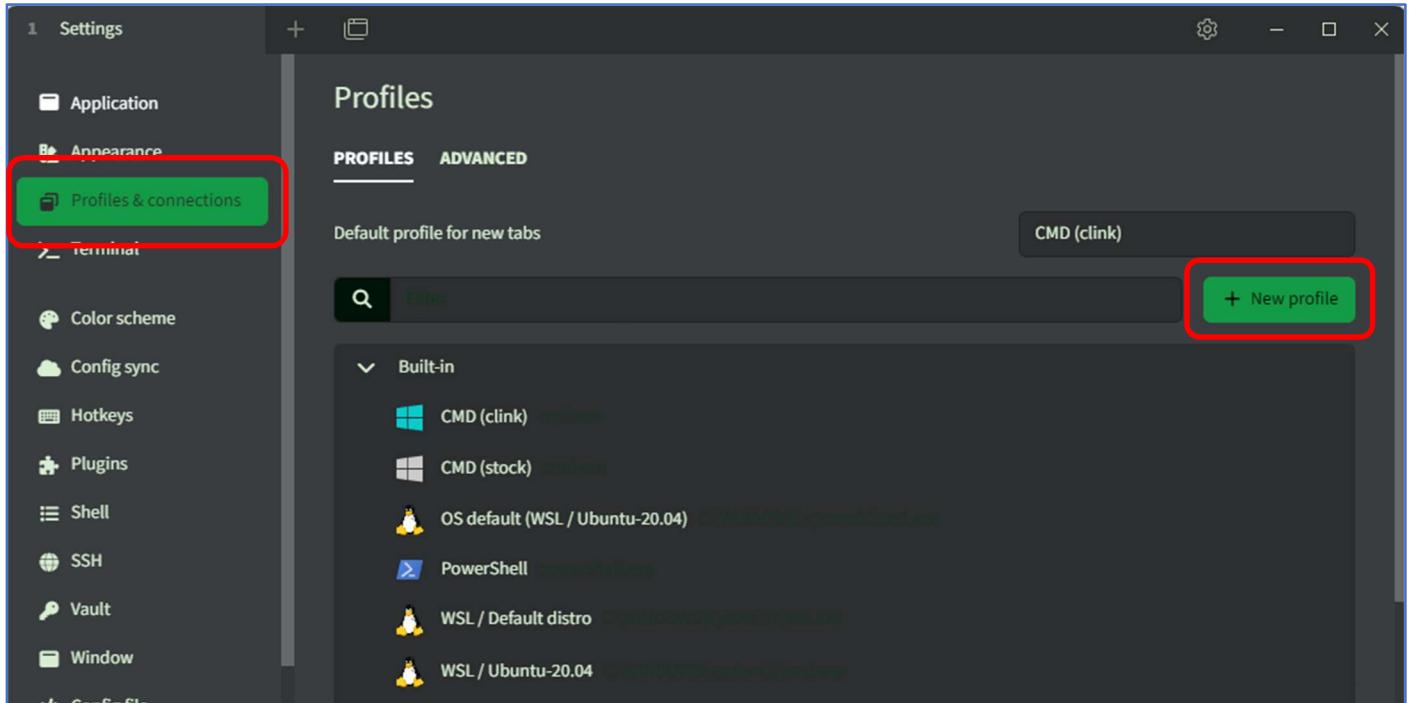


7. 목록에서 본인 PC 혹은 Notebook의 운영체제 버전(Windows or macOS)과 CPU Architecture(32-bit or 64-bit)를 확인하여 다운로드 받을 수 있도록 링크를 클릭한다. 여기서는 일반적으로 Windows의 64-bit를 다운로드 받기 위해 해당 링크(tabby-1.0.205-setup-x64.exe)를 클릭하도록 하겠다.

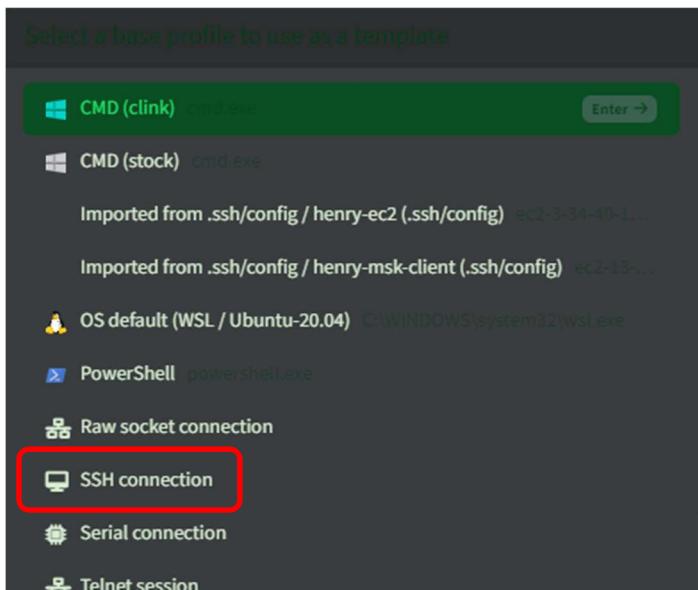
A screenshot of a download page for the Tabby application. The page lists several files with their sizes and last modified dates. A red oval highlights the first few items in the list, which correspond to the Mac OS X 64-bit version. The columns in the table are "File", "Size", and "Last Modified".

tabby-1.0.205-macos-arm64.dmg	116 MB	Nov 21, 2023
tabby-1.0.205-macos-arm64.dmg.blockmap	125 KB	Nov 21, 2023
tabby-1.0.205-macos-arm64.zip	112 MB	Nov 21, 2023
tabby-1.0.205-macos-x86_64.dmg	122 MB	Nov 21, 2023
tabby-1.0.205-macos-x86_64.dmg.blockmap	131 KB	Nov 21, 2023
tabby-1.0.205-macos-x86_64.zip	117 MB	Nov 21, 2023
tabby-1.0.205-portable-arm64.zip	131 MB	Nov 21, 2023
tabby-1.0.205-portable-x64.zip	130 MB	Nov 21, 2023
tabby-1.0.205-setup-arm64.exe	99.5 MB	Nov 21, 2023
tabby-1.0.205-setup-arm64.exe.blockmap	107 KB	Nov 21, 2023
tabby-1.0.205-setup-x64.exe	96 MB	Nov 21, 2023
tabby-1.0.205-setup-x64.exe.blockmap	103 KB	Nov 21, 2023
Source code (zip)		Nov 21, 2023
Source code (tar.gz)		Nov 21, 2023

8. 해당 파일이 다운로드가 끝나면 바로 탐색기에서 더블클릭하여 프로그램을 설치한다. 설치 후 프로그램을 로딩한다. 텁니바퀴(설정)을 클릭하여 [Profiles & connections]를 선택한다. 새 커넥션을 생성하기 위해 [New profile] 초록색 버튼을 클릭한다.

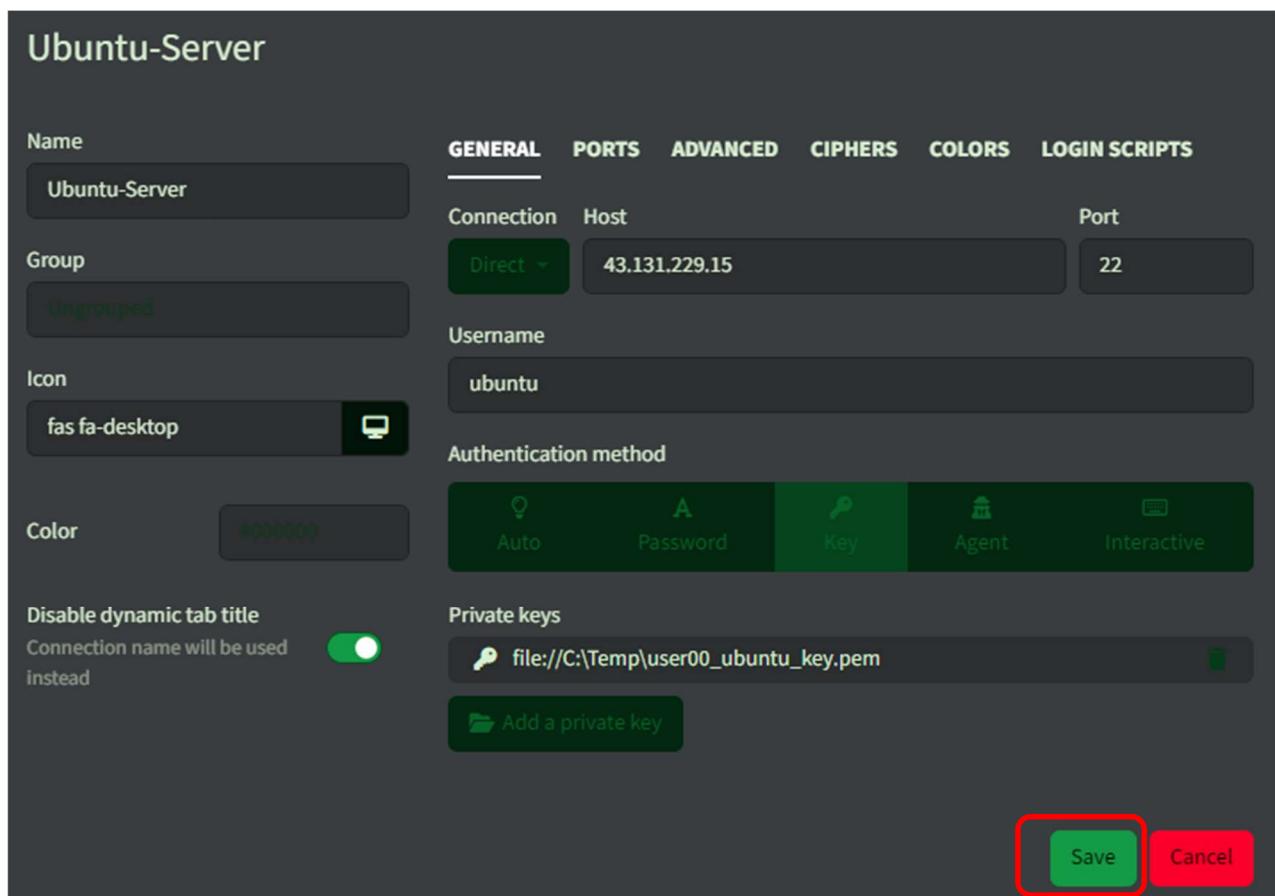


9. 목록에서 [SSH connection]을 선택한다.

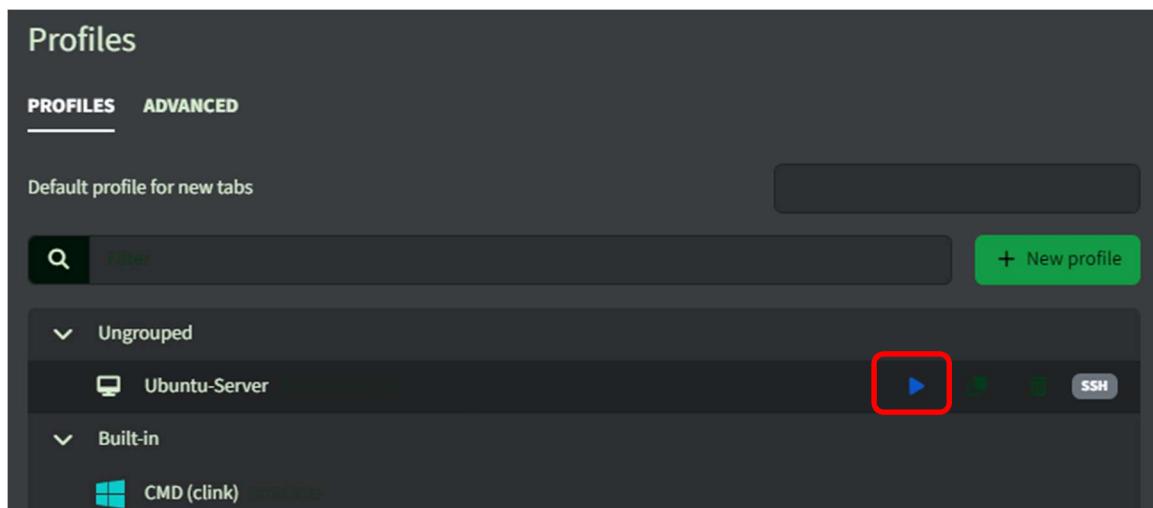


10. 다음과 같이 설정한 후 [Save] 버튼을 클릭한다.

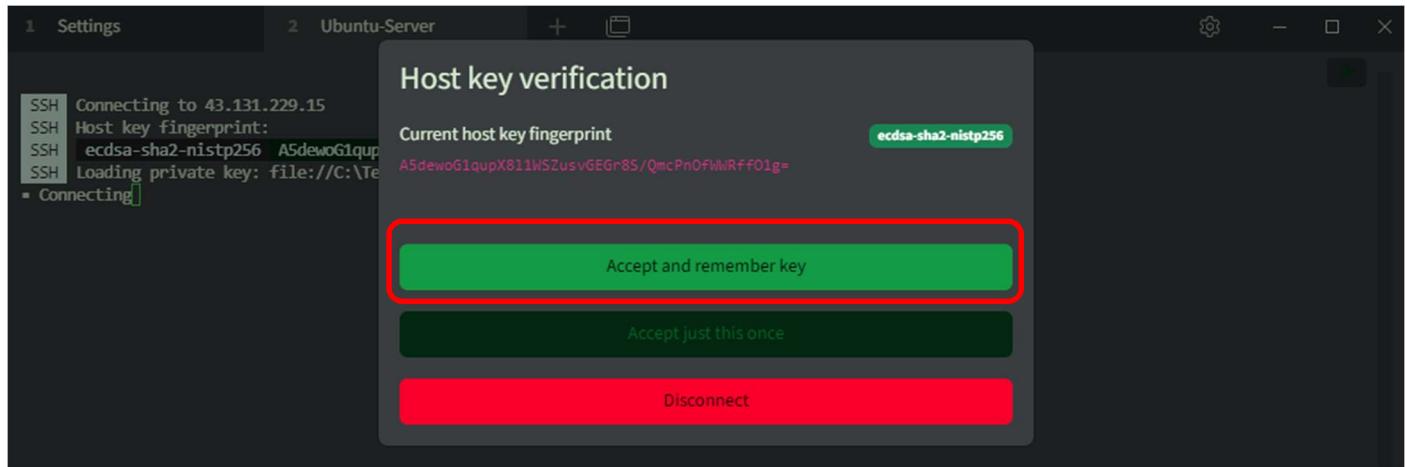
- A. [Name] : Ubuntu-Server
- B. [Host] : 방금 생성한 Linux Server EIP
- C. [Username] : ubuntu
- D. [Authentication method] : Key
- E. [Private keys] : [Add a private key] 버튼을 클릭하여 앞에서 저장한 pem 파일 지정



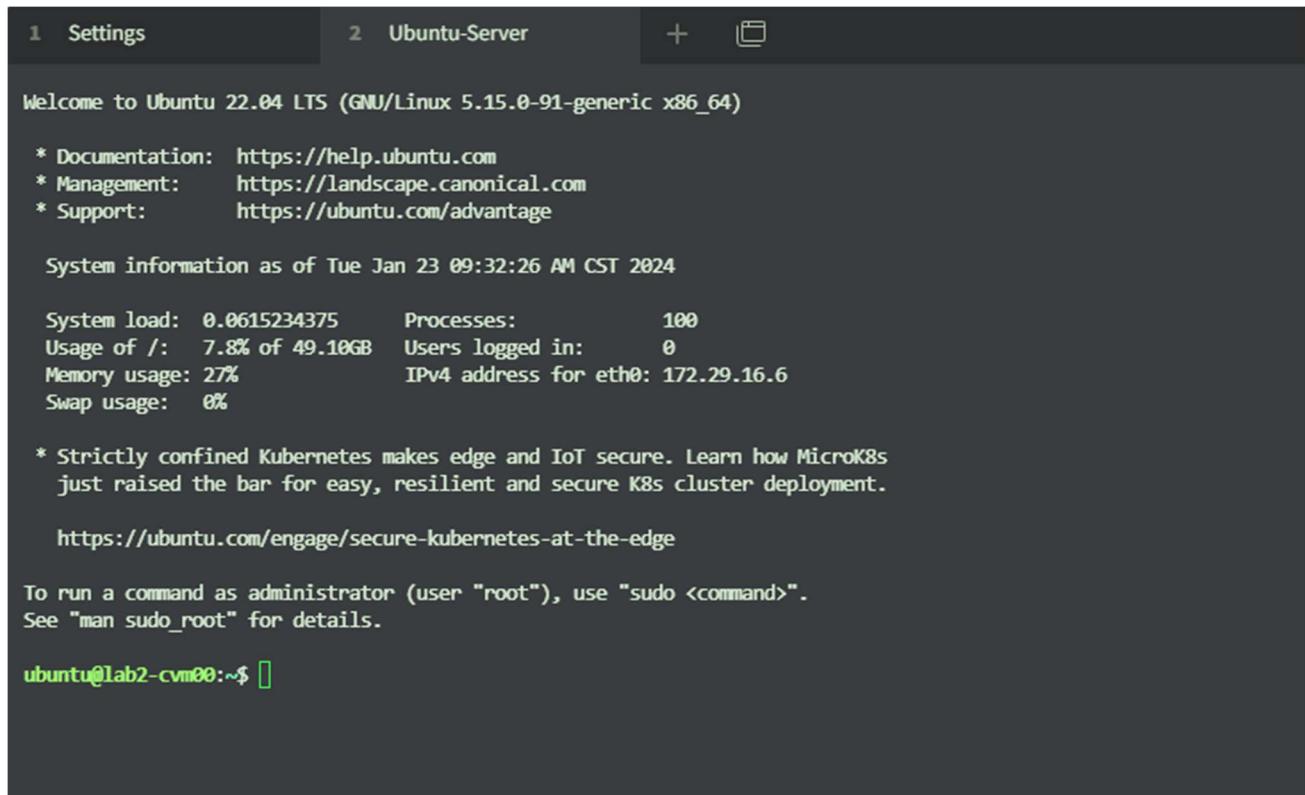
11. [Group] 이름을 지정하지 않았기 때문에, 목록에서 [Ungrouped] > Ubuntu-Server에 마우스를 올려놓으면
▶ 버튼이 보인다. 그 버튼을 클릭한다.



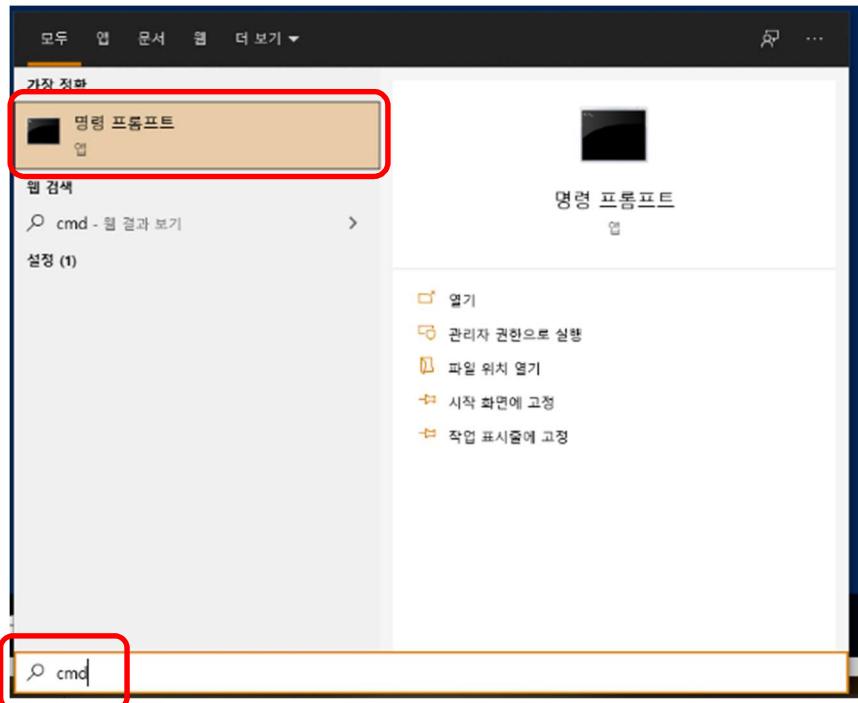
12. 서버와의 연결에 성공하면, 아래의 그림처럼 인증서창이 나타난다. 여기서 [Accept and remember key] 초록색 버튼을 클릭한다.



13. 정상적으로 서버와 원격 연결이 되면 다음과 같은 창을 만나게 된다.



14. 현재 유저의 노트북이나 데스크탑에서 시작 버튼 오른쪽의 검색 창에서 cmd를 입력하여 [명령 프롬프트] 창을 실행한다.



15. [명령 프롬프트]창에서 다음과 같이 PING test를 한다. Ping 다음 주소는 방금 생성한 Linux Server Instance의 EIP이다.

ping 43.155.160.248

```
C:\WINDOWS\system32\cmd + v

Microsoft Windows [Version 10.0.22621.3007]
(c) Microsoft Corporation. All rights reserved.

C:\Users\MZC01-HENRY>ping 43.131.229.15

Ping 43.131.229.15 32바이트 데이터 사용:
43.131.229.15의 응답: 바이트=32 시간=6ms TTL=52
43.131.229.15의 응답: 바이트=32 시간=34ms TTL=52
43.131.229.15의 응답: 바이트=32 시간=6ms TTL=52
43.131.229.15의 응답: 바이트=32 시간=10ms TTL=52

43.131.229.15에 대한 Ping 통계:
    패킷: 보냄 = 4, 받음 = 4, 손실 = 0 (0% 손실),
    왕복 시간(밀리초):
        최소 = 6ms, 최대 = 34ms, 평균 = 14ms

C:\Users\MZC01-HENRY>
```

16. 방금 생성한 Linux Server Instance가 인터넷이 잘 되는지 원격 연결되어 있는 PuTTY 터미널 안에서 다음의 명령어를 사용해 보자. 에러없이 인터넷에 잘 연결되는 것을 확인할 수 있다.

\$ sudo apt update

```
ubuntu@lab2-cvm00:~$ sudo apt update
Hit:1 http://mirrors.tencentyun.com/ubuntu jammy InRelease
Get:2 http://mirrors.tencentyun.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://mirrors.tencentyun.com/ubuntu jammy-security InRelease [110 kB]
Get:4 http://mirrors.tencentyun.com/ubuntu jammy-updates/main amd64 Packages [1,282 kB]
Get:5 http://mirrors.tencentyun.com/ubuntu jammy-updates/main Translation-en [262 kB]
Get:6 http://mirrors.tencentyun.com/ubuntu jammy-updates/restricted amd64 Packages [1,276 kB]
Get:7 http://mirrors.tencentyun.com/ubuntu jammy-updates/restricted Translation-en [208 kB]
Get:8 http://mirrors.tencentyun.com/ubuntu jammy-updates/universe amd64 Packages [1,031 kB]
Get:9 http://mirrors.tencentyun.com/ubuntu jammy-updates/universe Translation-en [231 kB]
Get:10 http://mirrors.tencentyun.com/ubuntu jammy-updates/multiverse amd64 Packages [42.1 kB]
Get:11 http://mirrors.tencentyun.com/ubuntu jammy-security/main amd64 Packages [1,067 kB]
Get:12 http://mirrors.tencentyun.com/ubuntu jammy-security/main Translation-en [202 kB]
Get:13 http://mirrors.tencentyun.com/ubuntu jammy-security/restricted amd64 Packages [1,248 kB]
Get:14 http://mirrors.tencentyun.com/ubuntu jammy-security/restricted Translation-en [204 kB]
Get:15 http://mirrors.tencentyun.com/ubuntu jammy-security/universe amd64 Packages [832 kB]
Get:16 http://mirrors.tencentyun.com/ubuntu jammy-security/universe Translation-en [158 kB]
Fetched 8,273 kB in 5s (1,551 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
143 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@lab2-cvm00:~$
```

17. 서버를 종료하기 위해 다음의 명령을 사용한다. 다음 그림과 같이 서버와의 네트워크 연결이 끊어지게 된다.

\$ sudo shutdown -h now

```
ubuntu@lab2-cvm00:~$ sudo shutdown -h now
ubuntu@lab2-cvm00:~$ 
SSH 43.131.229.15: session closed
Press any key to reconnect
```

18. 다시 Tencent Cloud 창으로 돌아가서, 페이지를 리프레쉬해보면 서버가 **Shutdown**되어 있음을 확인할 수 있다.

The screenshot shows the instance details page for 'lab2-cvm00'. At the top, there is a red box around the 'Shut down' button. Below it, a message states: 'The initial login name is ubuntu. If you select "Random password" when purchasing the instance, check the password in Message Center. You can reset the password if you forget it.' On the right side, there are buttons for 'Log in', 'Start up', 'Restart', 'Reset password', and 'Terminate/Return'. Below these buttons, there are tabs for 'Basic information', 'ENI', 'Public IP', 'Monitoring', 'Security groups', and 'Operation logs'. Under 'Basic information', there is an 'Instance information' section with fields: Name (lab2-cvm00), Project (Default Project), Instance ID (ins-bnlpb3g5), Tags (None). To the right, there is an 'Architecture' section with a blue icon and the text 'ins-bnlpb3g5 Northeast Asia'.

19. 서버를 다시 시작하려면 **[Start Up]** 버튼을 클릭하면 된다. 그리고 **[Start Up]** 팝업창에서 **[OK]**를 클릭하면 된다.

The screenshot shows the same instance details page for 'lab2-cvm00'. A red box highlights the 'Start up' button in the top navigation bar. Below it, the same shutdown message and architecture details are visible. The 'Basic information' tab is selected.

The screenshot shows a 'Start up' confirmation dialog box. It contains the message 'You've selected 1 instance. Collapse'. Below this is a table with three columns: 'ID/Name', 'Instance type', and 'Instance configuration'. The table shows one row for 'ins-bnlpb3g5' and 'lab2-cvm00' with 'Standard S5' type. The 'Instance configuration' column lists: '1-core 1GB 100Mbps', 'System disk:Premium', 'Cloud Disk', and 'Network:vpc-peejuei2'. At the bottom, it says 'Confirm to startup selected instances' and has 'OK' and 'Close' buttons. The 'OK' button is highlighted with a red box.

20. 서버를 다시 시작해도 **EIP**가 변경되지 않음을 확인할 수 있다.

Network information	
Network	vpc-peejuei2(Default-VPC 172.29.0.0/16)
Subnet	subnet-6ohhniyl(Default-Subnet)
EIP	43.131.229.15

Task6. Linux Server Instance 삭제 및 EIP 반납하기

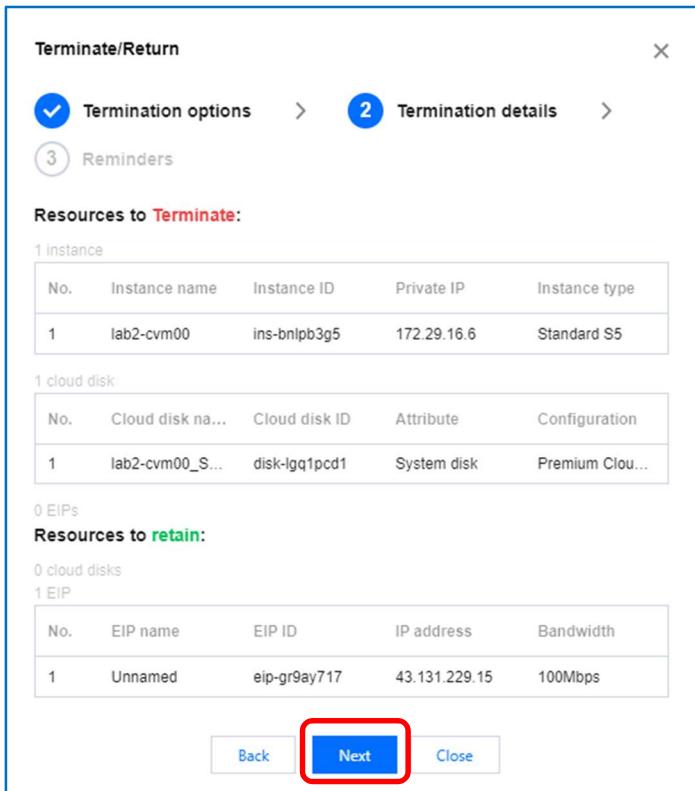
1. Linux Server를 삭제하기 위해 [Terminate/Return] 버튼을 클릭한다.

The screenshot shows the instance details for 'lab2-cvm00'. The instance is currently 'Running'. At the top right, there are several buttons: 'Log in', 'Shutdown', 'Restart', 'Reset password', 'Terminate/Return' (which is highlighted with a red box), and 'More actions'. Below the buttons, there's a message about the initial login name being 'ubuntu'. Under the 'Basic information' tab, there are tabs for 'ENI', 'Public IP', 'Monitoring', 'Security groups', 'Operation logs', 'Run commands', and 'Uploading a file'. In the 'Instance information' section, it shows the instance name 'lab2-cvm00', project 'Default Project', instance ID 'ins-bnlpb3g5', and architecture 'ins-bnlpb3g5 Northeast Asia(Seoul)/Seoul Zone'.

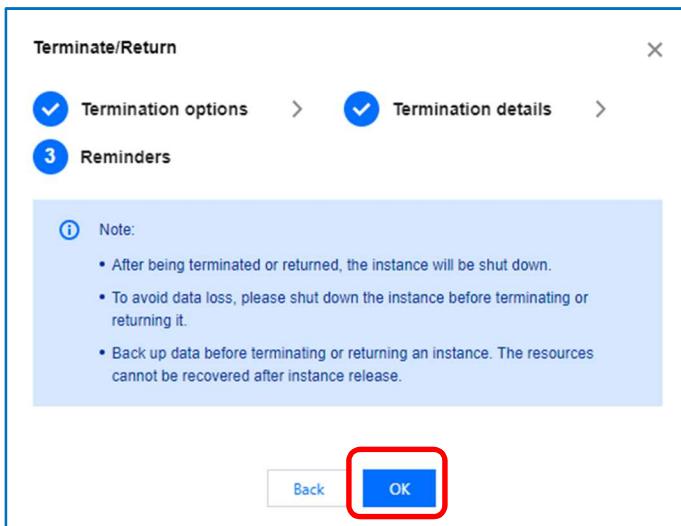
2. [Terminate/Return] 팝업창이 나타난다. 삭제 1번째 단계에서, [Start termination]에는 [Terminate now]를 선택하고 [Release resources]는 [Release now]를 선택한 후, [Next] 파란색 버튼을 클릭한다.

The screenshot shows the 'Terminate/Return' dialog box. It has three steps: 1. Termination options, 2. Termination details, and 3. Reminders. Step 1 shows the selected instance 'ins-bnlpb3g5' (Status: Running, Type: Standard S5). Step 2 shows the termination options: 'Start termination' (radio buttons for 'Terminate now' and 'Scheduled termination') and 'Release resources' (radio buttons for 'Release now' and 'Release 2 hours later'). The 'Release now' option under 'Release resources' is highlighted with a red box. Step 3 contains a reminder message: 'After termination (immediate release and scheduled termination), all data will be cleared and cannot be recovered. Please back up your data in advance.' and 'After the instance is terminated, the bound EIP will be retained and incur an IP resource fee of 0.04 CNY/hour. You can bind it with cloud resources to avoid IP resource fee, or release it on the EIP console'.

3. 삭제 2번째 단계에서 [Next] 파란색 버튼을 클릭한다.



4. 마지막 단계에서 [OK] 버튼을 클릭한다.



5. Linux Server Instance가 삭제된 후, 이 머신에서 사용했던 EIP도 반납해야 한다. 그렇지 않으면 계속 비용이 Charging 되기 때문이다. [Cloud Virtual Machine] 페이지의 좌측 메뉴에서 [Public IP]를 선택한다. 아래의 그림과 같이 **Not bound**되어 있는 EIP를 확인할 수 있다.

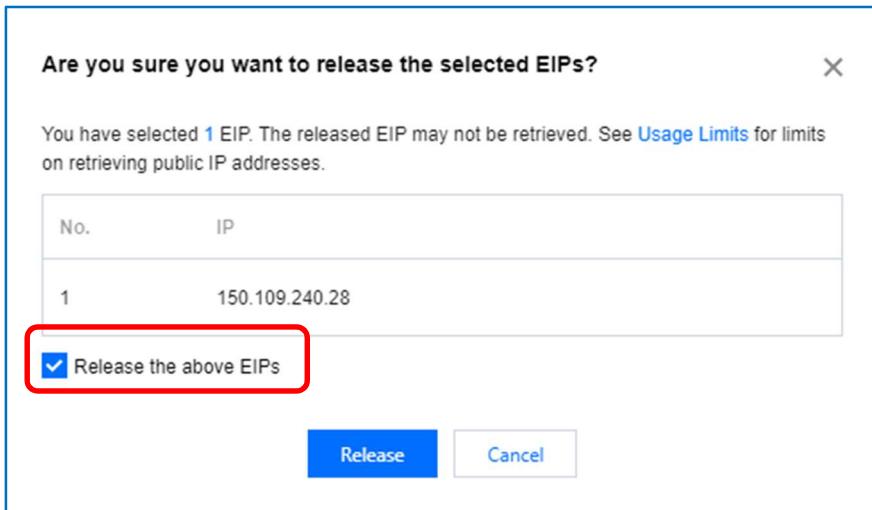
The screenshot shows the Tencent Cloud Public IP/EIP management interface. On the left sidebar, under the 'Cloud Virtual Machine' section, the 'Public IP' option is selected. The main area displays a table of EIPs. One specific row is highlighted with a red box. The highlighted row contains the following information:

ID/Name	Type	Status	Public IP	Billing mode	Bandwidth cap
eip-g7oexvll Unnamed	EIP	Not bound, incurring idle fee	150.109.240.28	Bill by traffic	100 Mbps

6. 해당 항목을 체크하고 [Release] 버튼을 눌러 반납한다.

This screenshot shows the same Public IP/EIP management interface as the previous one, but with a different focus. The 'Release' button in the top navigation bar is highlighted with a red box. Below the table, there is a checkbox next to the EIP entry, which is now checked. The rest of the interface remains the same, showing the list of EIPs and their details.

7. Release할 것인지 한 번 묻는다. [Release the above EIPs]를 체크하고 [Release] 버튼을 클릭한다.



8. 완전히 Release가 되면 [Public IP/EIP] 페이지에서 항목이 사라진다.

The image shows the Public IP/EIP management page. At the top, there are tabs for "Public IP/EIP" (selected), "Seoul" (region), and "Other regions (0)". A note says "The public IPs include common IPs and EIPs. [Learn more](#)". Below are buttons for "Apply", "Retrieve IP", "Release", and "More". A search bar with placeholder text "Separate keywords with 'T'; press Enter to separate filter tags" and a magnifying glass icon is present. Filter options include "ID/Name", "Mo...", "Type", "Status", "Public IP", "Billing mode", "Bandwidth cap", and "Bind resource". A message at the bottom right says "No data yet".