고려대학교
KOREA UNIVERSITY

클라우드 컴퓨팅 실습 1

조교 정민재

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Section 1

클라우드 컴퓨팅 기초

What is Cloud Computing?

→ 원격지의 컴퓨팅 리소스(CPU, memory, disk, network)를 대여하여 사용하는 것

특징

- Pay-as-you-go

  → 사용한 만큼 지불, 초기 투자 비용 없음

- Scalable

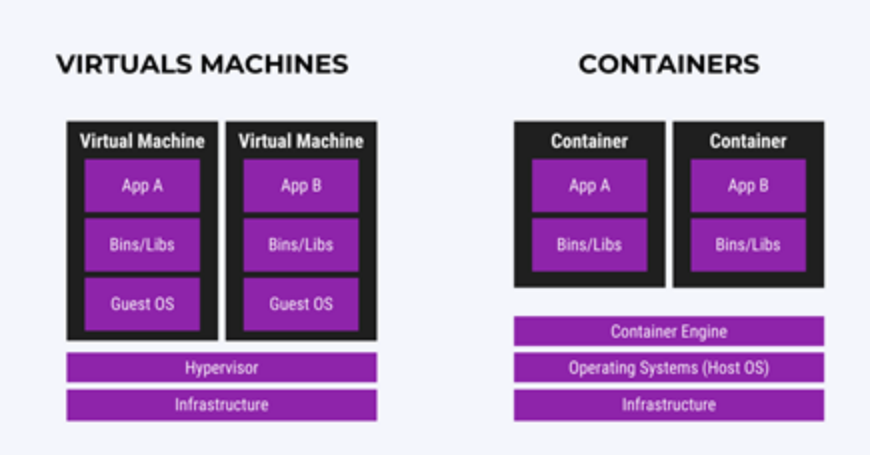
  → 필요한 만큼 리소스를 증가/감소시킬 수 있음, auto-scaling

- Responsibility

  → 서비스 제공자가 관리 책임

Virtualization and Cloud Computing

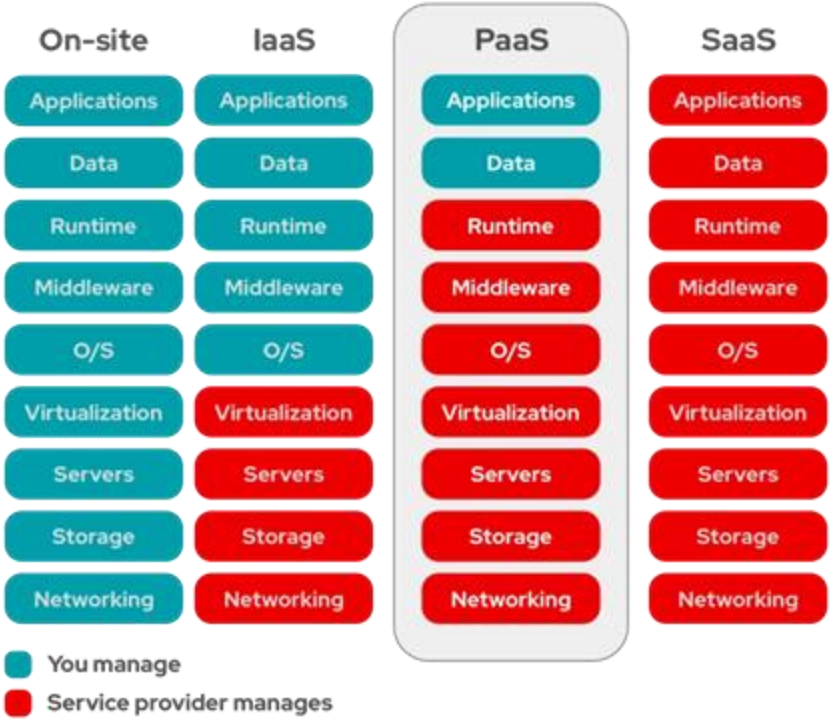
- 가상화 기술(VM, Container)을 사용하여 클라우드 컴퓨팅 서비스 구축에 활용
  - VM: 하이퍼바이저 위에 독립된 Guest OS를 사용하여 높은 격리 수준 보장
  - Container: 컨테이너 엔진을 사용하고 Host OS 커널을 공유하여 경량화 및 빠른 배포 가능



X as a Service (XaaS)

→ *서비스 제공자의 관리 범위*

- Infrastructure-as-a-Service (IaaS)
- Platform-as-a-Service (PaaS)
- Software-as-a-Service (SaaS)

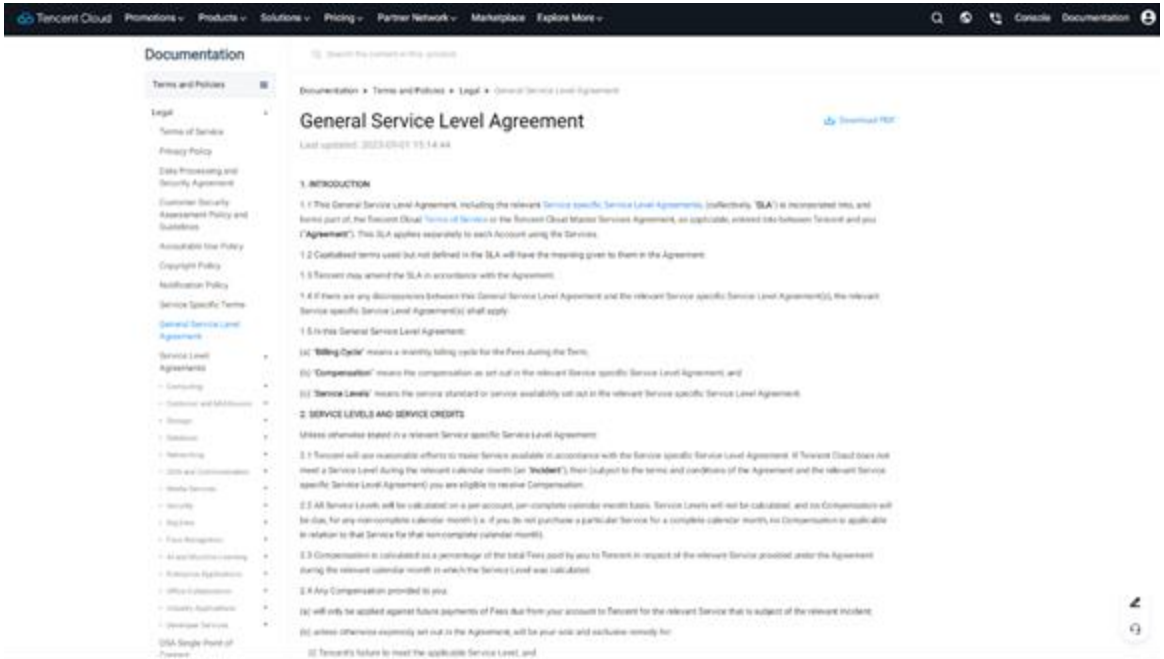


Service Level Agreement (SLA)

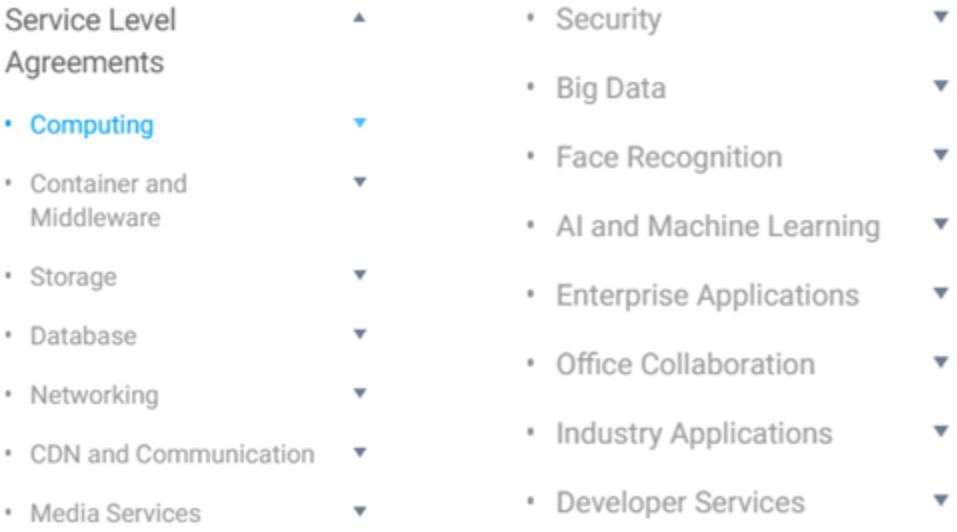
→ 제공하는 서비스에 대해 무엇을 보장하는지 명시

- 무엇을 보장할까?
- 성능 수준?
- 보상?

Service Level Agreement (SLA)

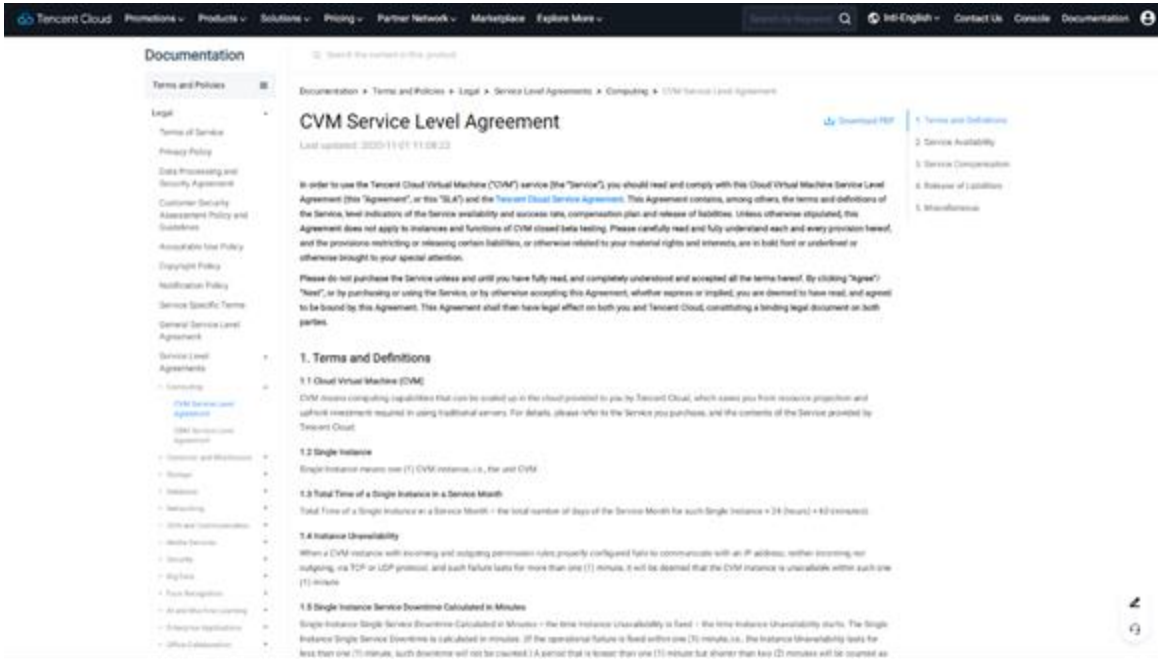


Service Level Agreement (SLA)



Service Level Agreement (SLA)

1. Terms and Definitions
2. Service Availability
3. Service Compensation
4. Release of Liabilities
5. Miscellaneous



Service Level Agreement (SLA)

2.2 Service Availability

(1) The Single Instance Service Availability of the Service provided by Tencent Cloud will be **no less than 99.975%**. You are entitled to the compensation as set forth in Section 3 below if the Service Availability fails to meet the aforementioned standard, other than in any circumstance as provided for in the release of liabilities provisions below. Assuming that a Service Month has thirty (30) days, the total available time of a Single Instance in such month shall be 30 (days) × 24 (hours) × 60 (minutes) × 99.975% = 43189.2 minutes; that is, the Service Downtime of the instance in such month will be 43200 − 43189.2 = 10.8 minutes.

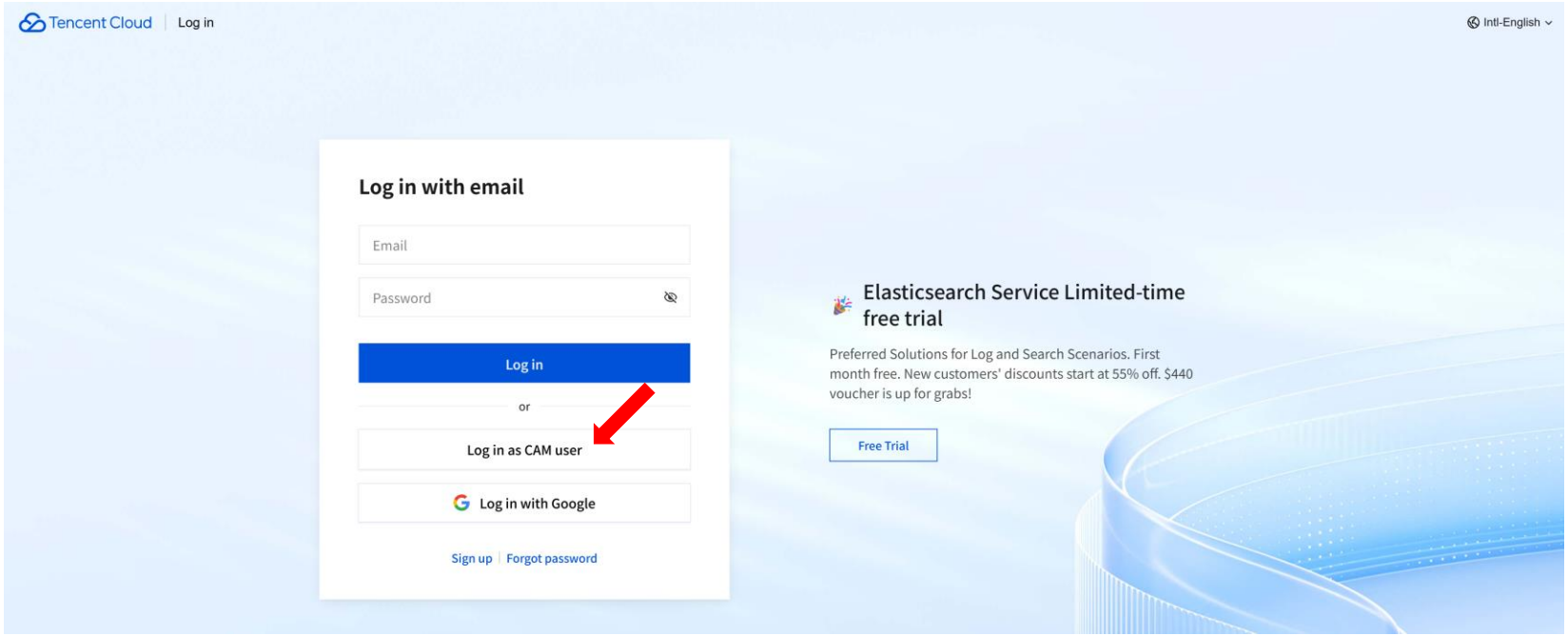
(2) The Service Availability Across Availability Zones in A Single Region of the Service provided by Tencent Cloud will be **no less than 99.995%**. You are entitled to the compensation as set forth in Section 3 below if the Service Availability fails to meet the aforementioned standard, other than in any circumstance as provided for in the release of liabilities provisions below. Assuming that a Service Month has thirty (30) days, the total available time of a Single Instance in such month shall be 30 (days) × 24 (hours) × 60 (minutes) × 99.995% = 43197.84 minutes; that is, the Service Downtime Across Availability Zones in A Single Region in such month will be 43200 − 43197.84 = 2.16 minutes.

Section 2

실습

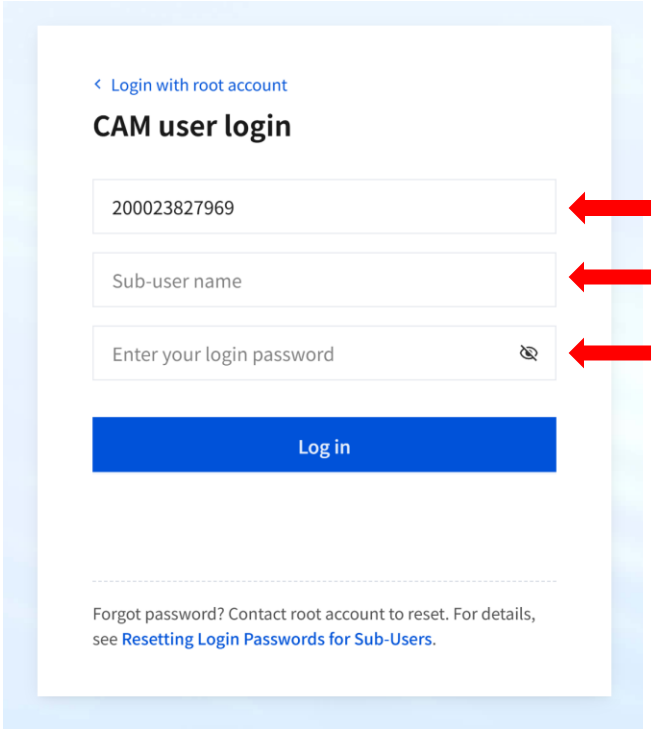
실습

Login 설명


Tencent Cloud
Log in
Intl-English
Log in with email
Email
Password
Log in
or
Log in as CAM user
Log in with Google
Sign up
Forgot password
Elasticsearch Service Limited-time free trial
Preferred Solutions for Log and Search Scenarios. First month free. New customers' discounts start at 55% off. $440 voucher is up for grabs!
Free Trial

실습

Login 설명



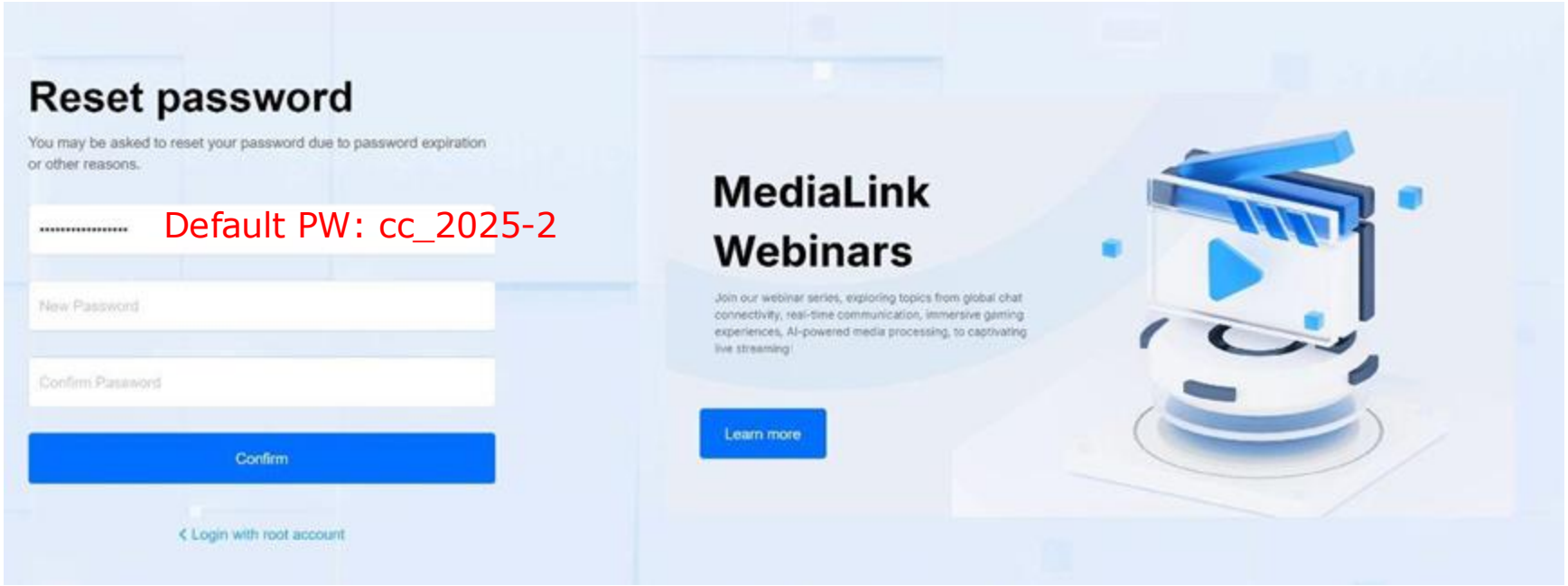
Root ID: 200023827969

Sub-user name: 본인 학번

Default PW: cc_2025-2

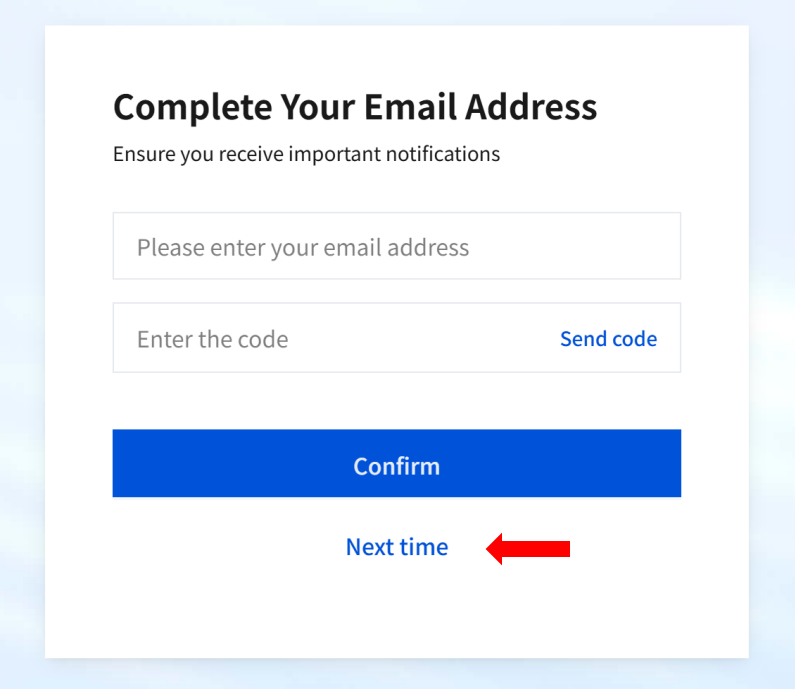
실습

Login 설명


Reset password
You may be asked to reset your password due to password expiration or other reasons.
Default PW: cc_2025-2
New Password
Confirm Password
Confirm
Login with root account
MediaLink
Webinars
Join our webinar series, exploring topics from global chat connectivity, real-time communication, immersive gaming experiences, AI-powered media processing, to captivating live streaming!
Learn more

실습

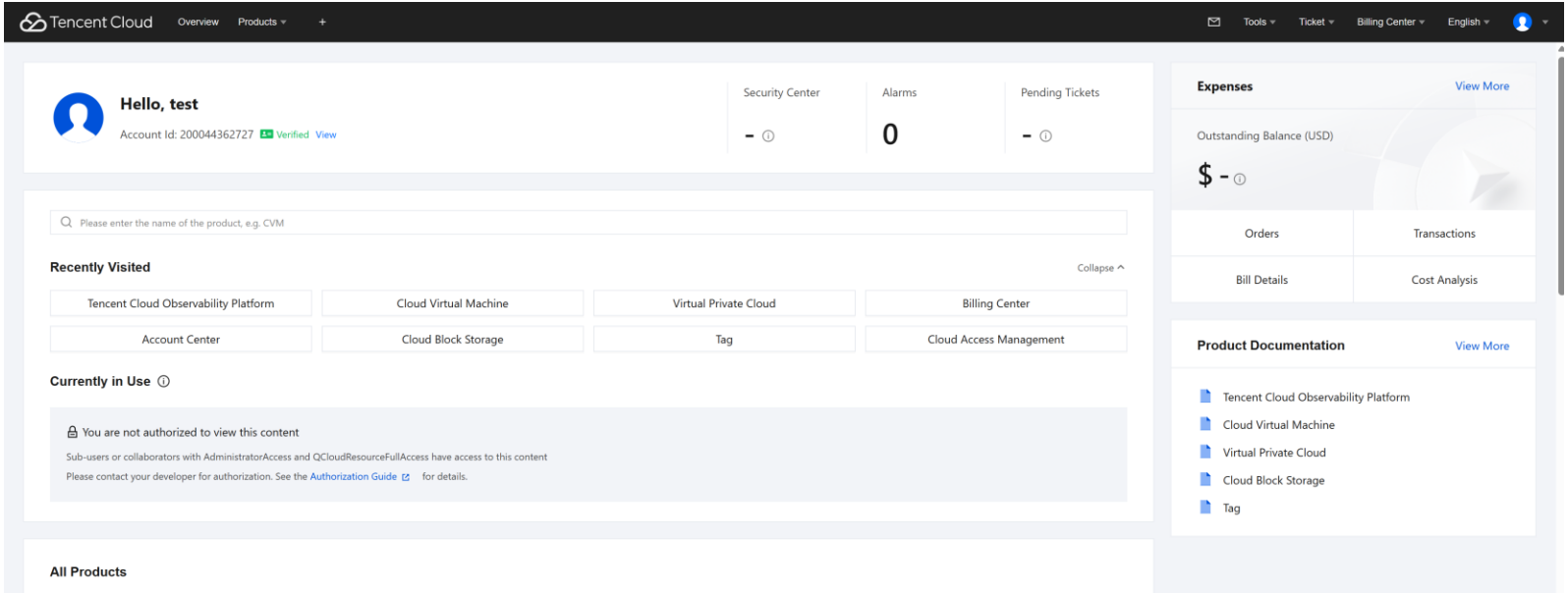
Login 설명


Complete Your Email Address
Ensure you receive important notifications
Please enter your email address
Enter the code
Send code
Confirm
Next time

실습

Tencent Cloud VM 생성

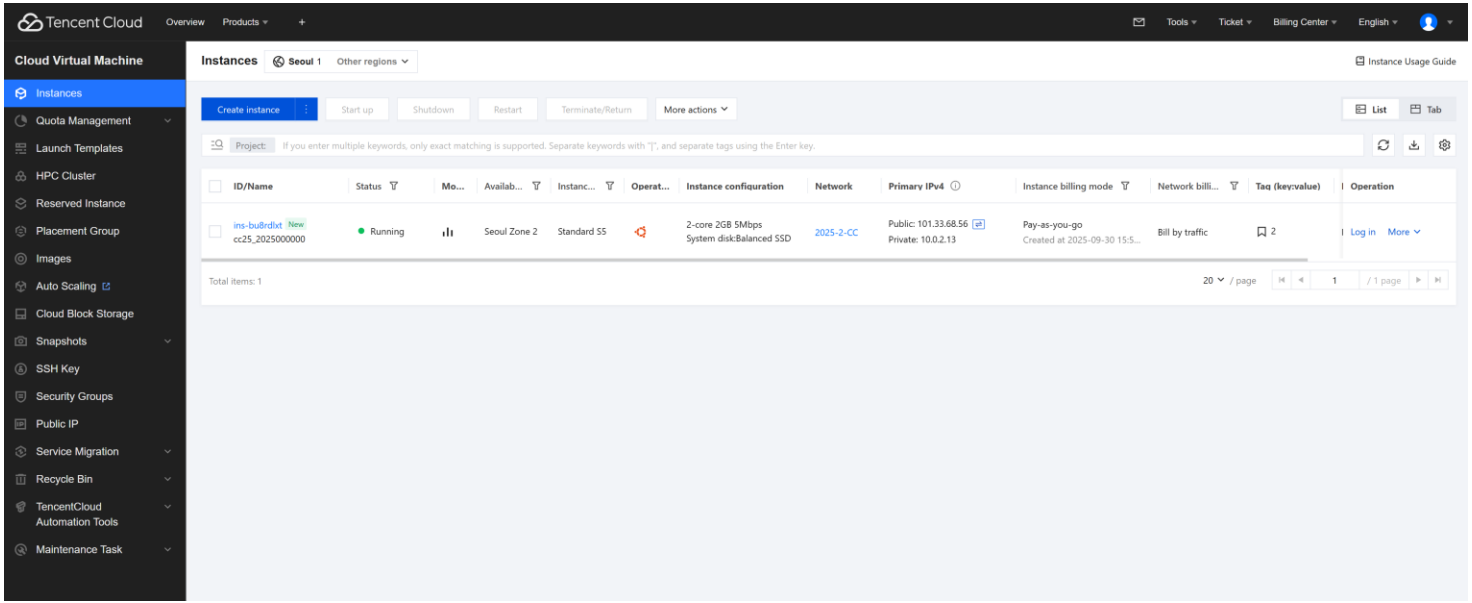
- 로그인 후 콘솔 창으로 이동 (우상단 “Console” 버튼)



실습

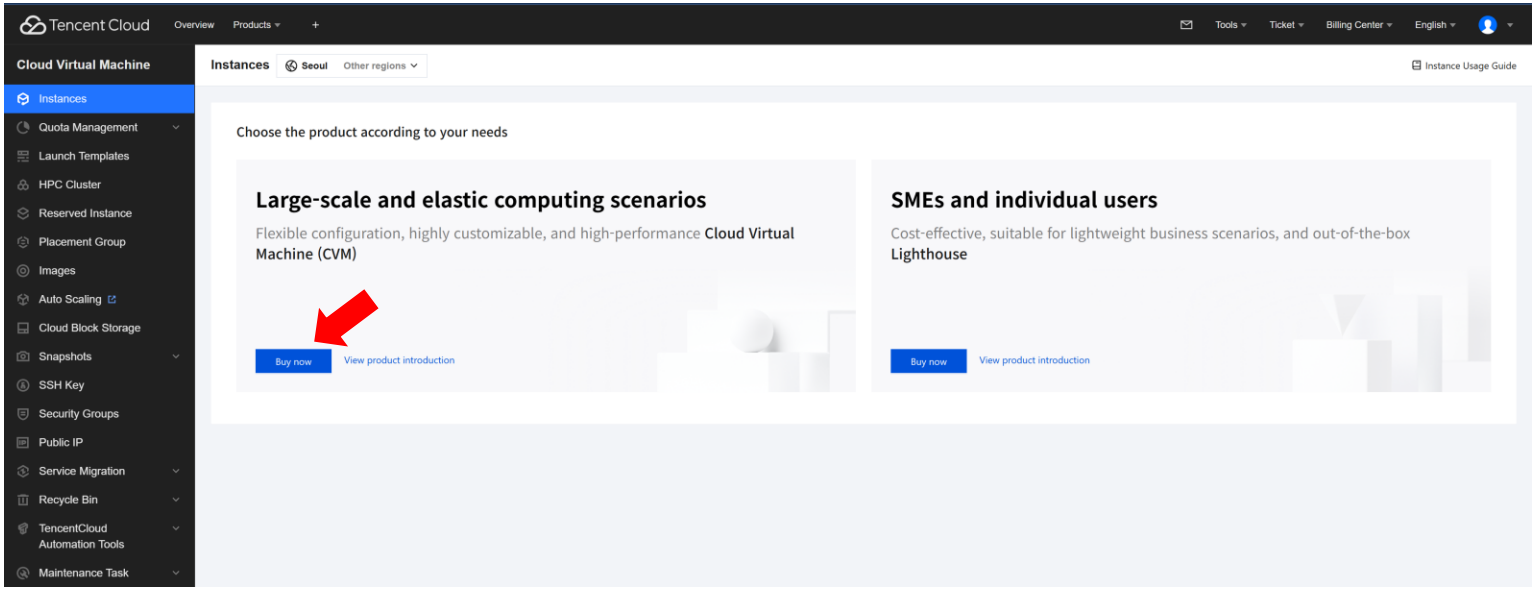
Tencent Cloud VM 생성

- CVM Instance List(상단 “Products”에서 Cloud Virtual Machine 찾기)



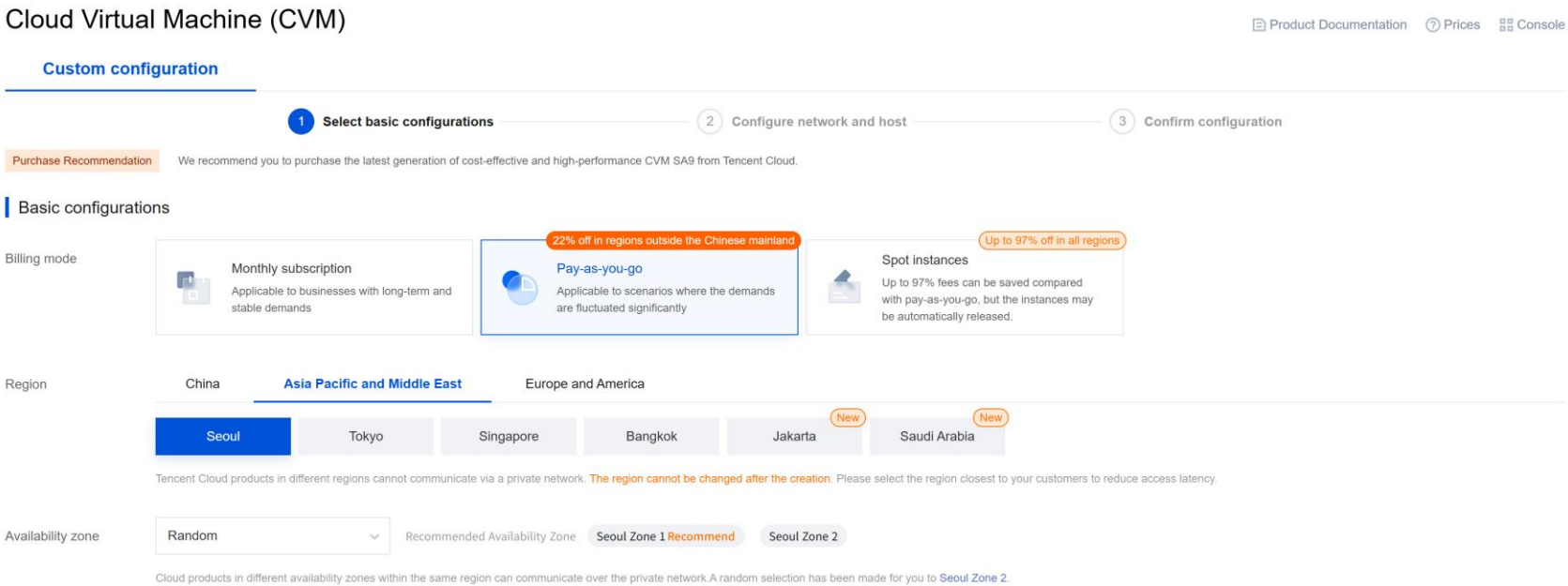
Tencent Cloud VM 생성

- CVM Instance 생성(상단 “Products”에서 Cloud Virtual Machine 찾기)



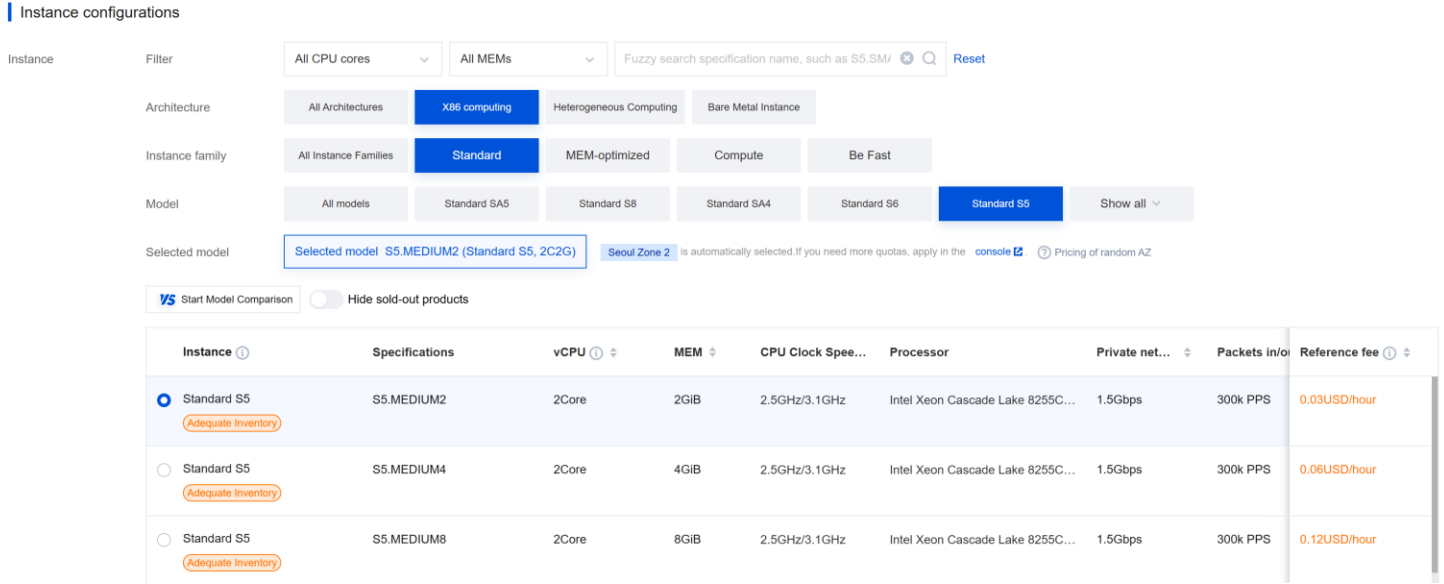
실습

Tencent Cloud VM 생성



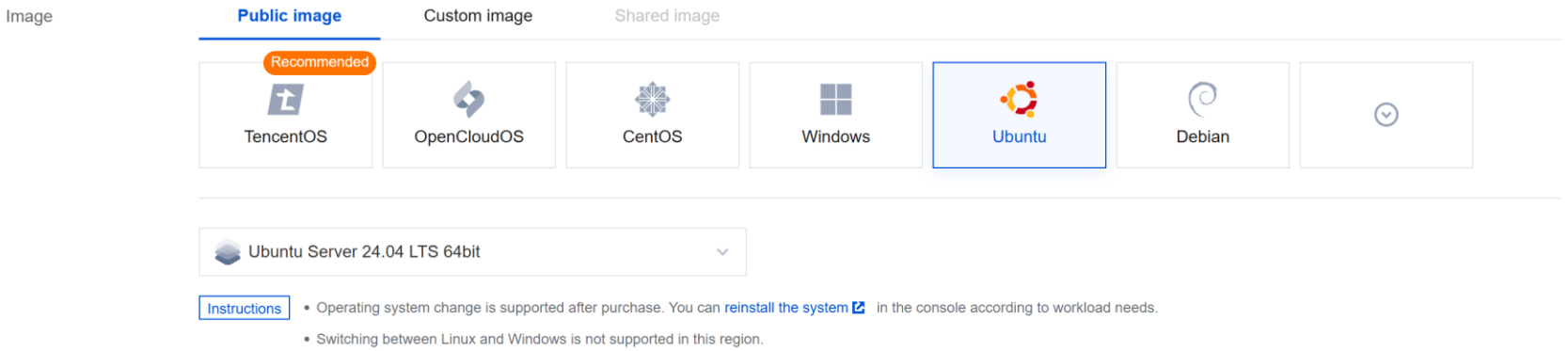
Tencent Cloud VM 생성

- Instance configurations



Tencent Cloud VM 생성

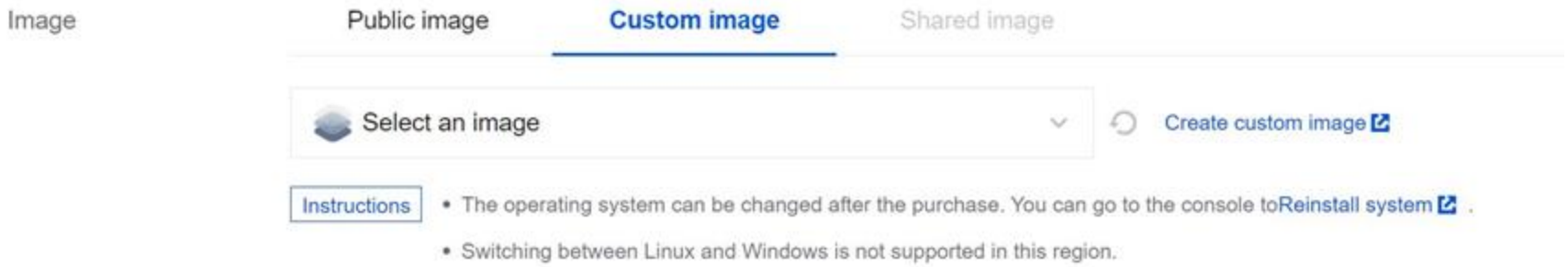
- Image



실습

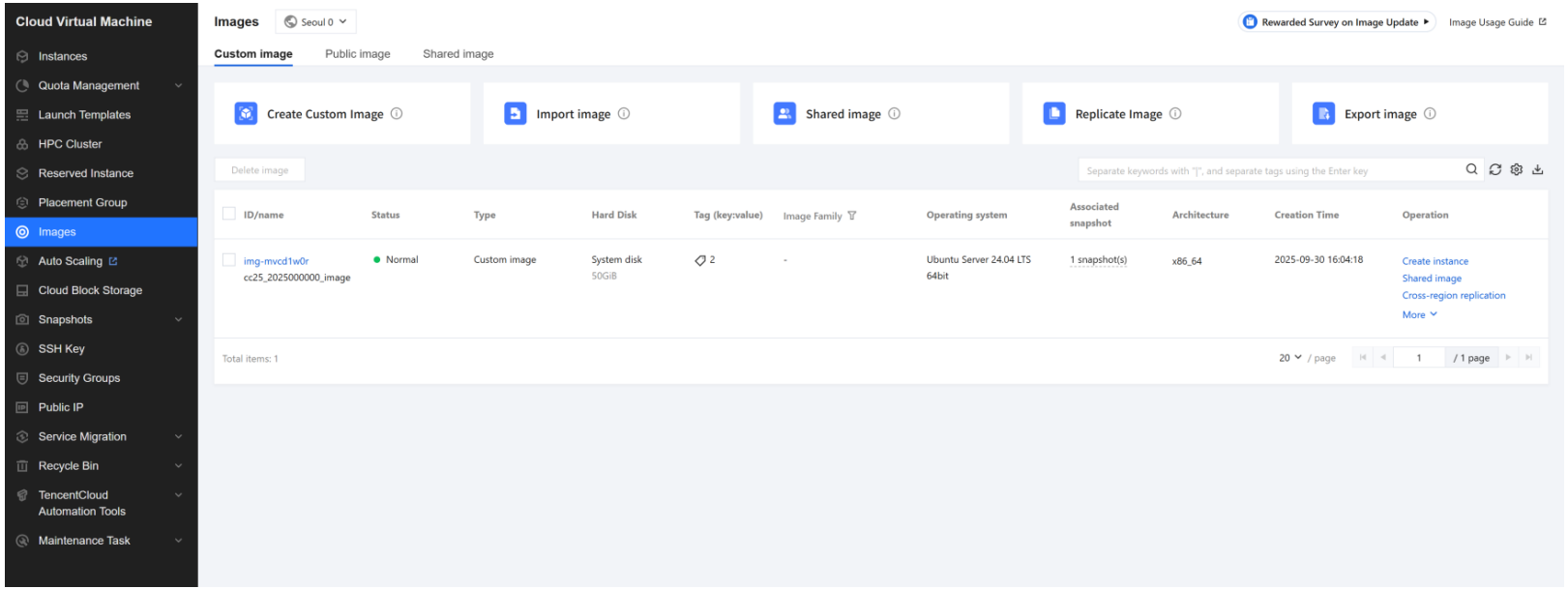
Tencent Cloud VM 생성

- Custom Image



Tencent Cloud VM 생성

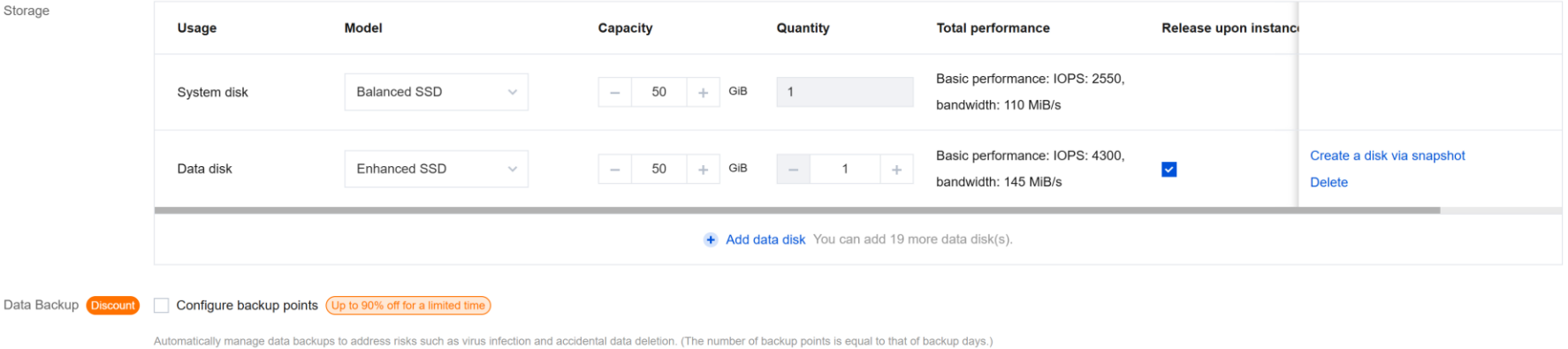
- Custom Image



실습

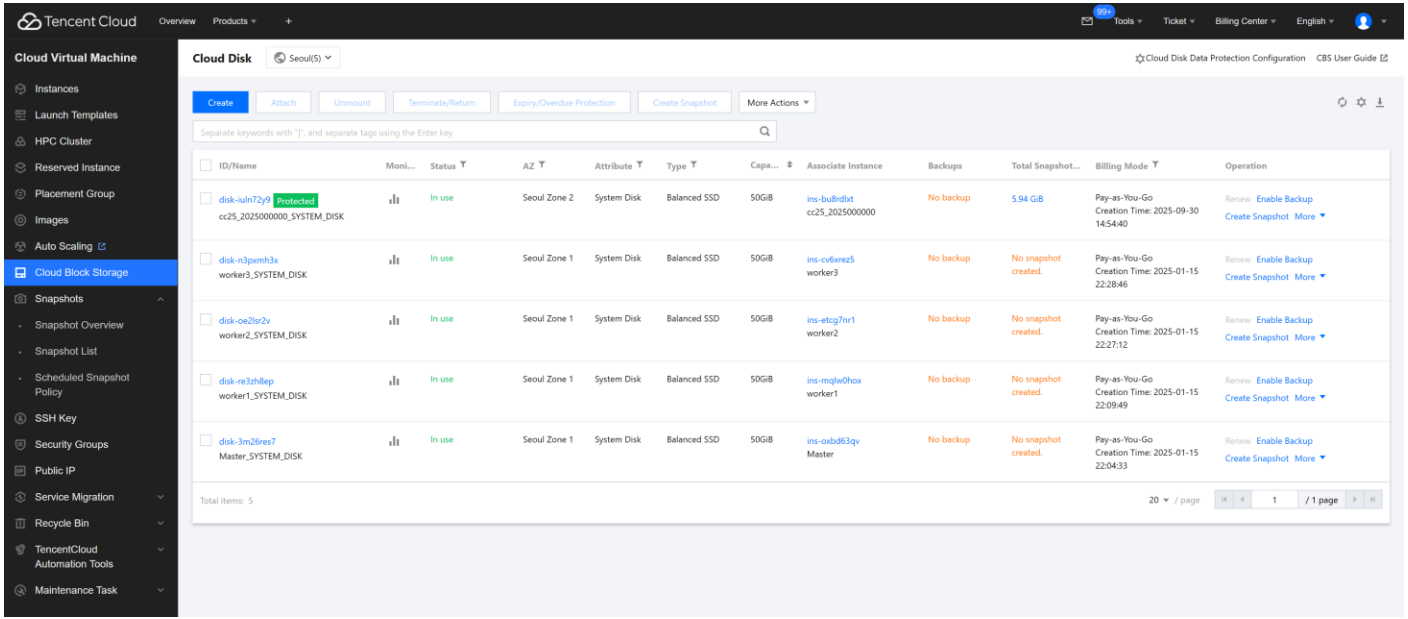
Tencent Cloud VM 생성

- Storage (IOPS, bandwidth, model)



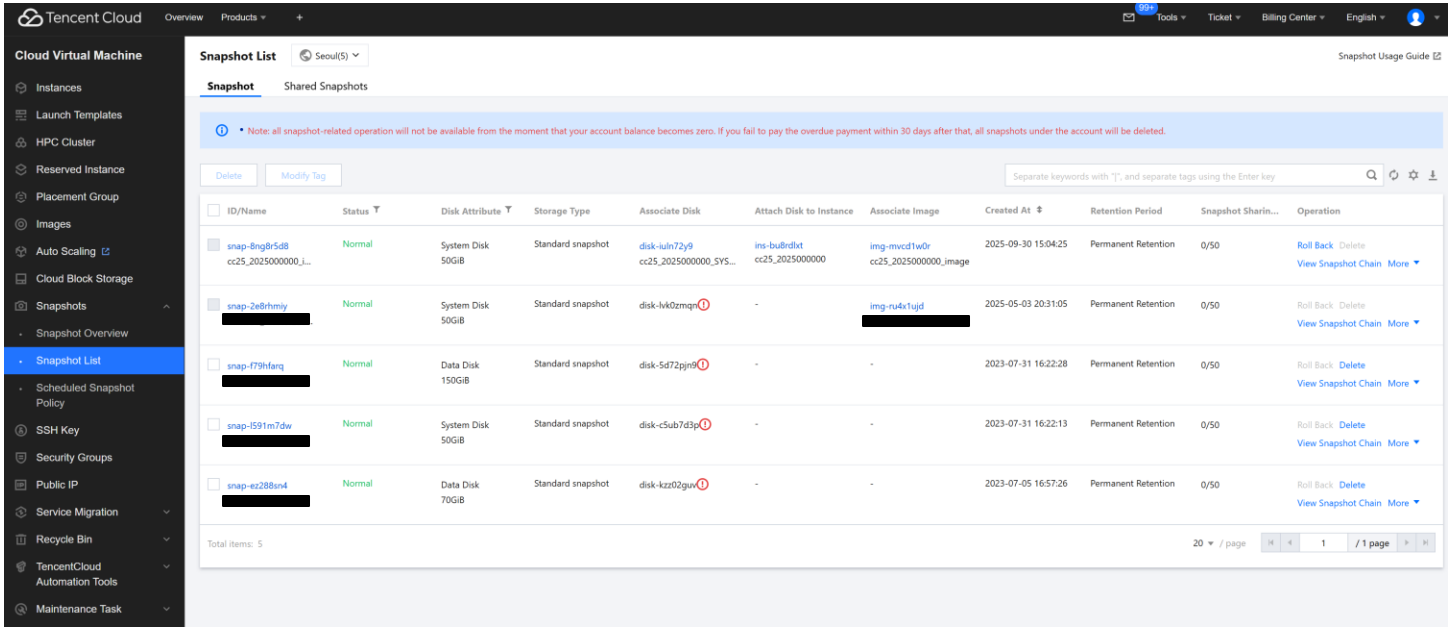
Tencent Cloud VM 생성

- Cloud Disk



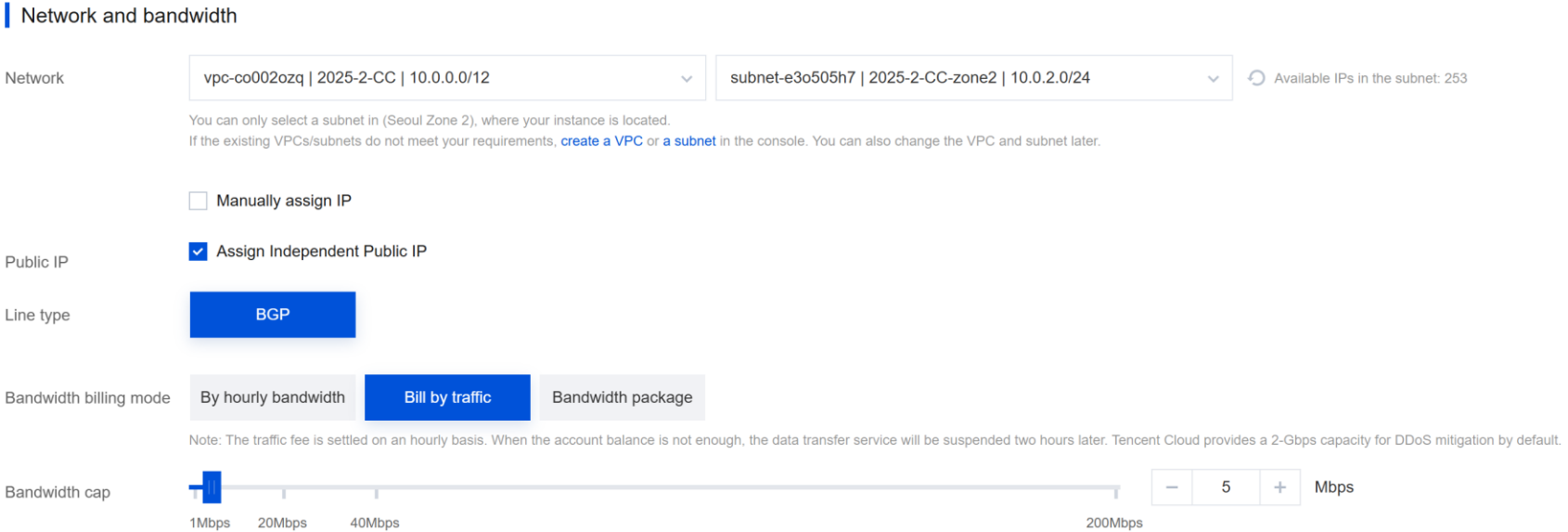
Tencent Cloud VM 생성

- Snapshot list



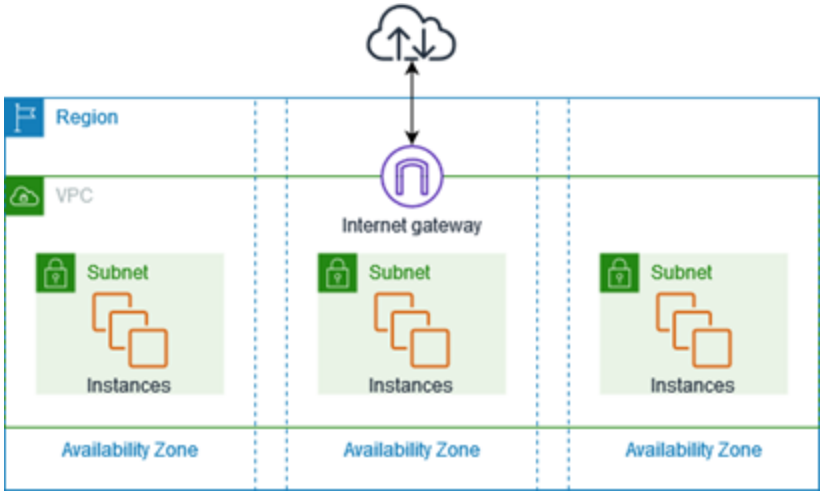
Tencent Cloud VM 생성

- Network and bandwidth



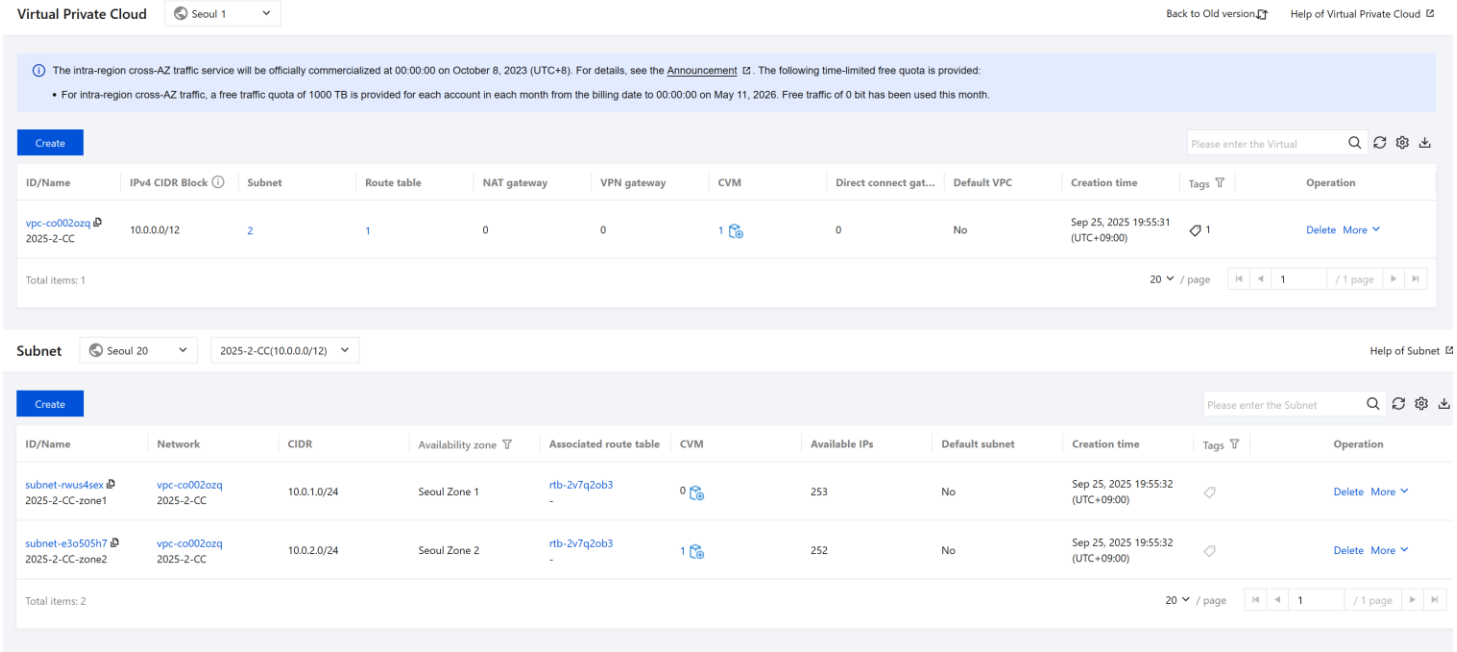
Tencent Cloud VM 생성

- What is VPC?
  - VPC는 자체 데이터 센터에서 운영하는 기존 네트워크와 유사한 가상 네트워크
  - VPC를 생성한 후 서브넷을 추가할 수 있음
  - 서브넷은 VPC의 IP 주소 범위



Tencent Cloud VM 생성

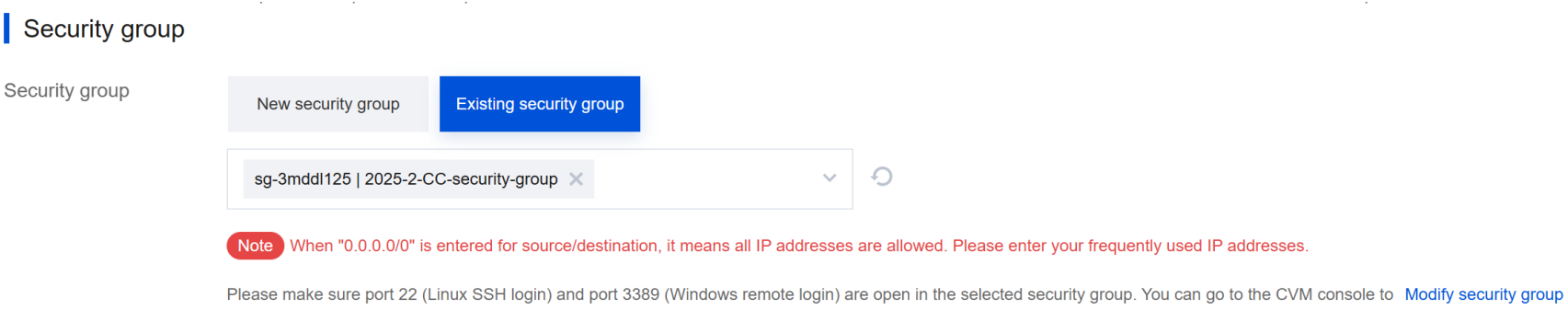
- Virtual Private Cloud (VPC)



실습

Tencent Cloud VM 생성

- Security group



실습

Tencent Cloud VM 생성

- Security group

Inbound rules | Outbound rules

Source	Protocol:port	Policy	Remark
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
0.0.0.0/0	TCP:3389	Allow	Allow Windows remote login
::/0	TCP:3389	Allow	Allow Windows remote login
10.0.0.0/8	ALL	Allow	Allow access via a private network (VPC)
172.16.0.0/12	ALL	Allow	Allow access via a private network (VPC)
192.168.0.0/16	ALL	Allow	Allow access via a private network (VPC)
0.0.0.0/0	TCP:80	Allow	Allow web service ports
::/0	TCP:80	Allow	Allow web service ports
0.0.0.0/0	TCP:443	Allow	Allow web service ports
::/0	TCP:443	Allow	Allow web service ports
0.0.0.0/0	ALL	Reject	-

실습

Tencent Cloud VM 생성

- Security group

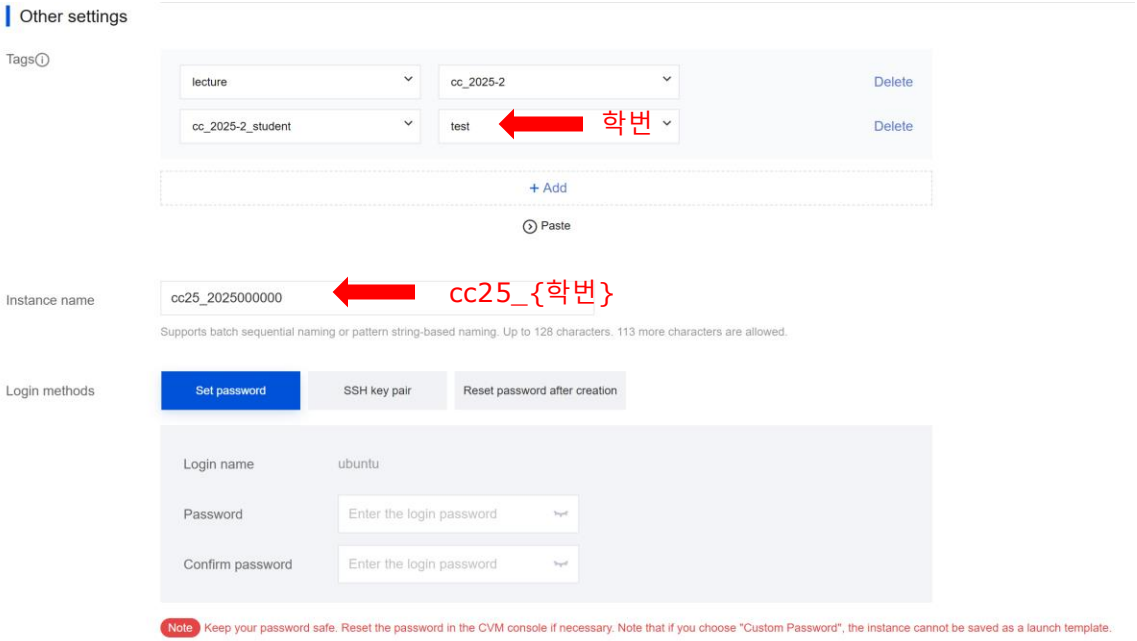
Inbound rules | Outbound rules

Target	Protocol:port	Policy	Remark
0.0.0.0/0	ALL	Allow	-
::/0	ALL	Allow	-
0.0.0.0/0	ALL	Reject	-

실습

Tencent Cloud VM 생성

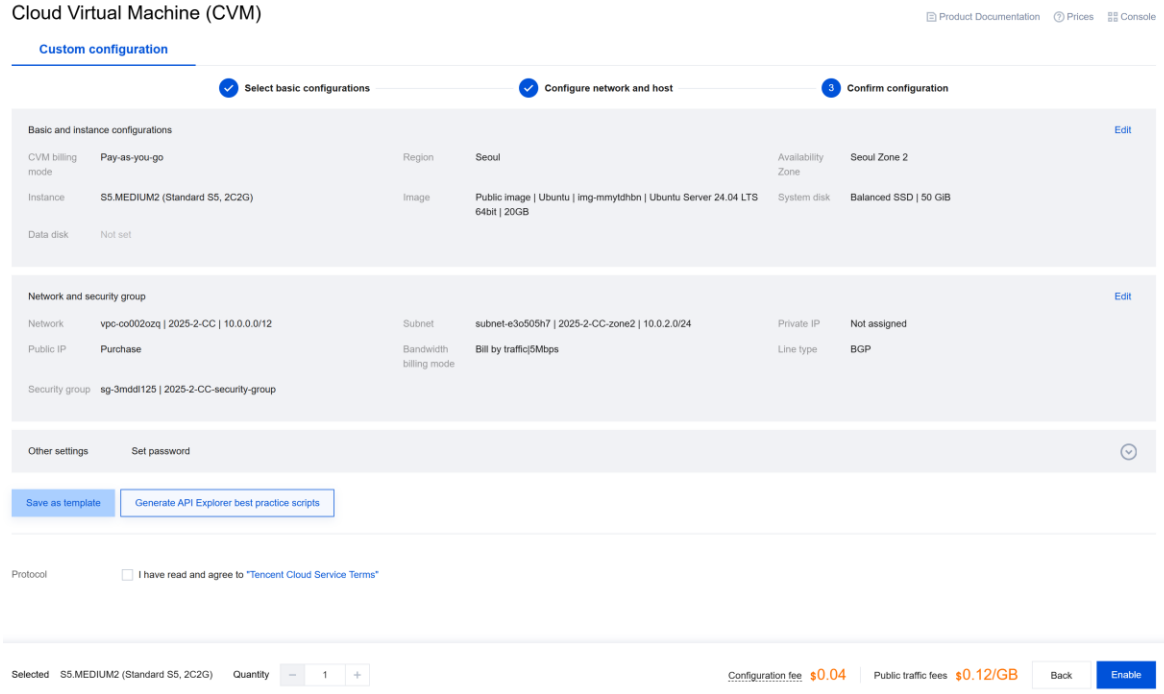
- Tags / Login methods



실습

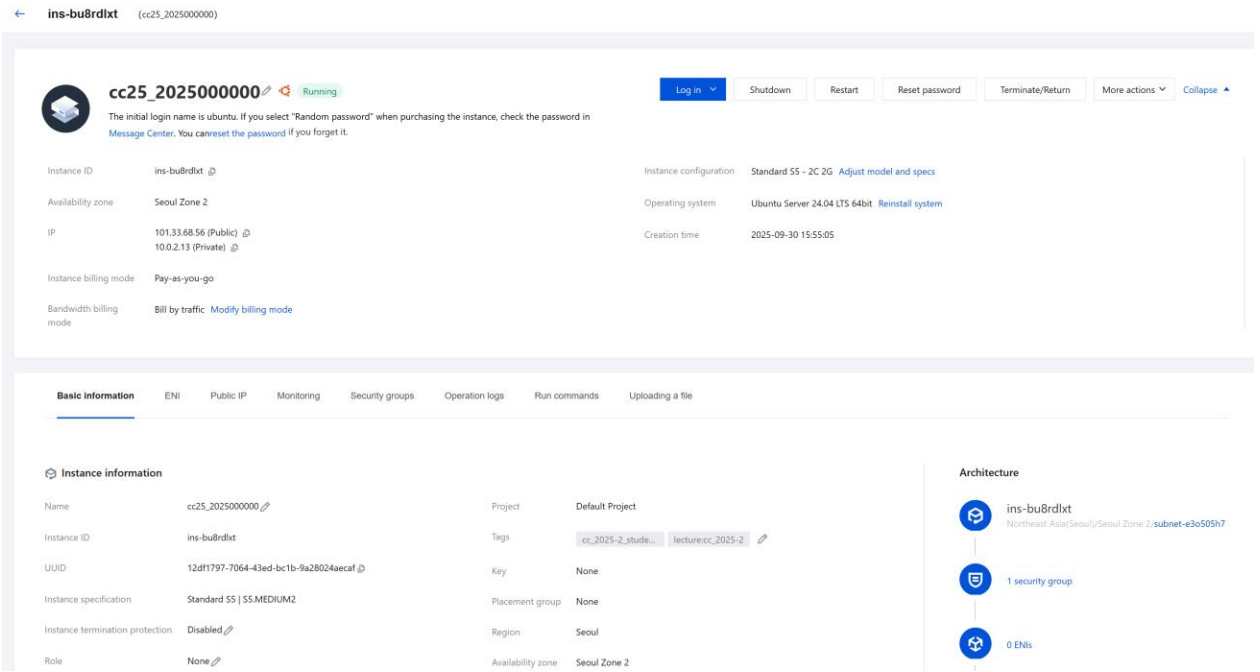
Tencent Cloud VM 생성

- Confirm configuration



Tencent Cloud VM 생성

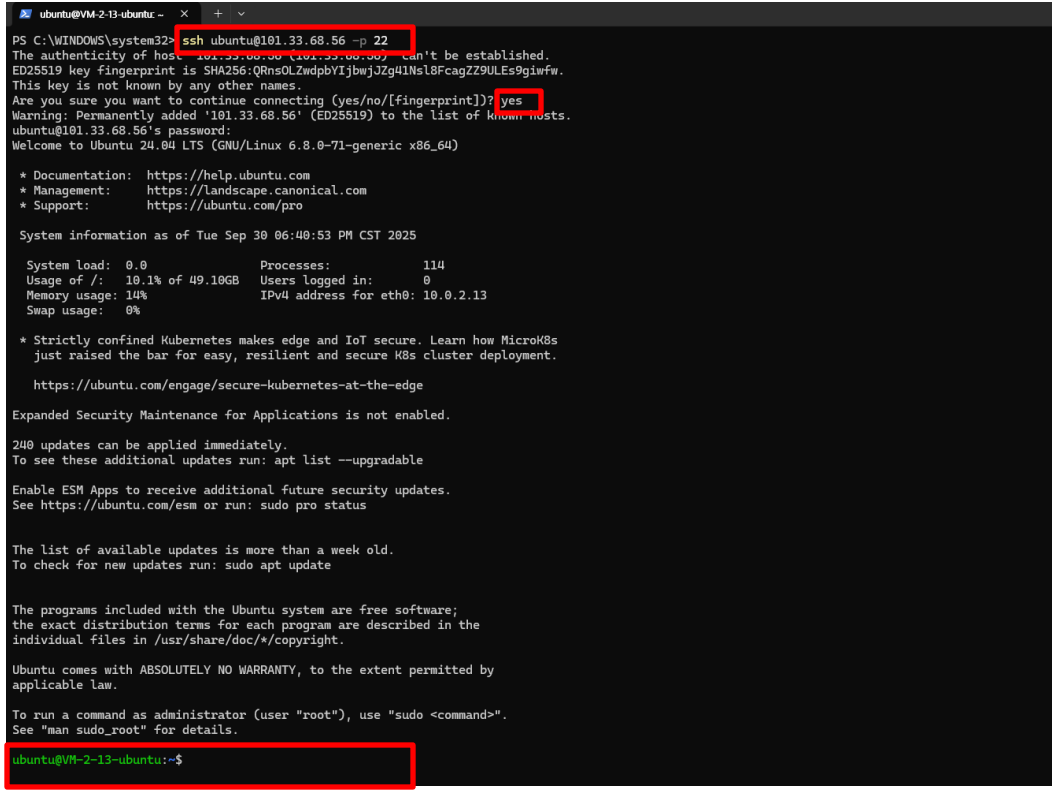
- CVM instance



실습

Tencent Cloud VM 생성

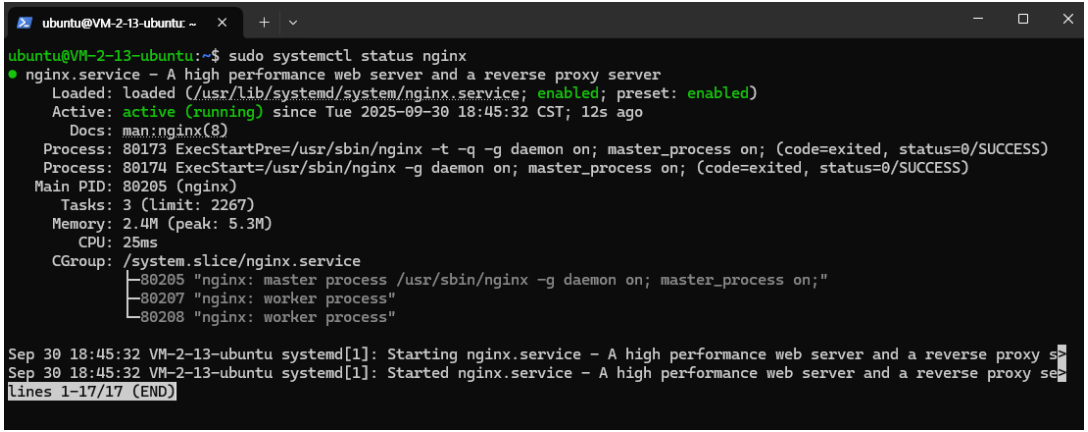
- ssh connection
  - ssh ubuntu@{public_IP} –p 22



실습

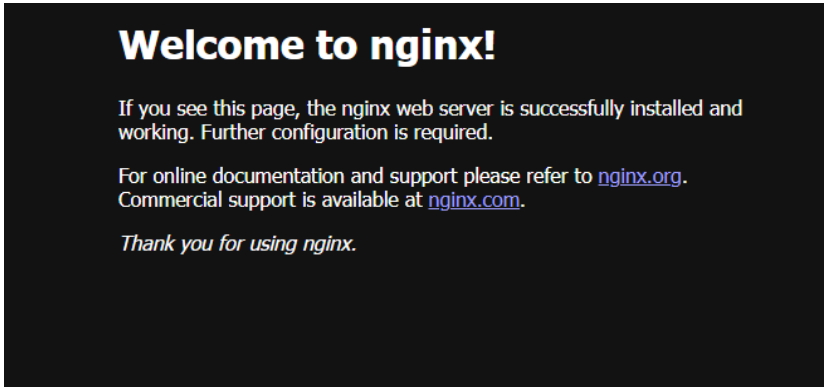
Tencent Cloud VM 생성

- Install nginx
  - sudo apt update
  - sudo apt install nginx
  - sudo systemctl status nginx



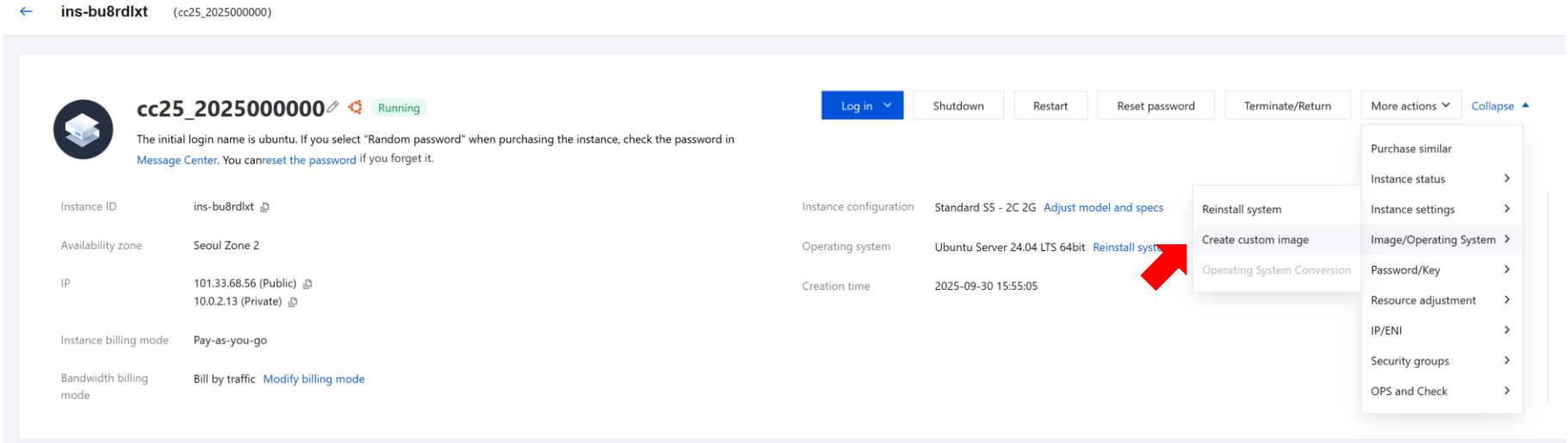
Tencent Cloud VM 생성

- Access the Nginx server via http
  - http://{public_ip}



클라우드 서비스 사용 관련 공지

Custom Image 만드는 방법



클라우드 서비스 사용 관련 공지

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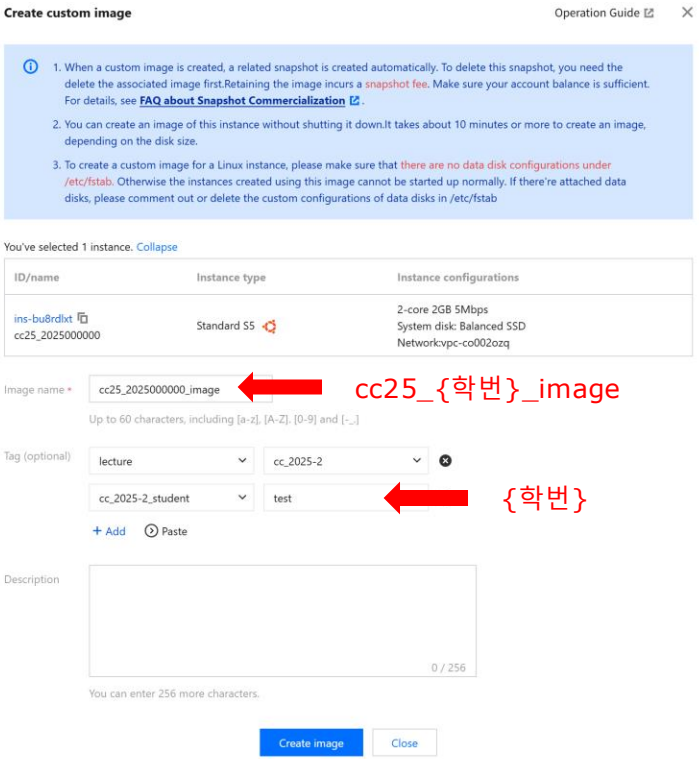

클라우드 서비스 사용 관련 공지

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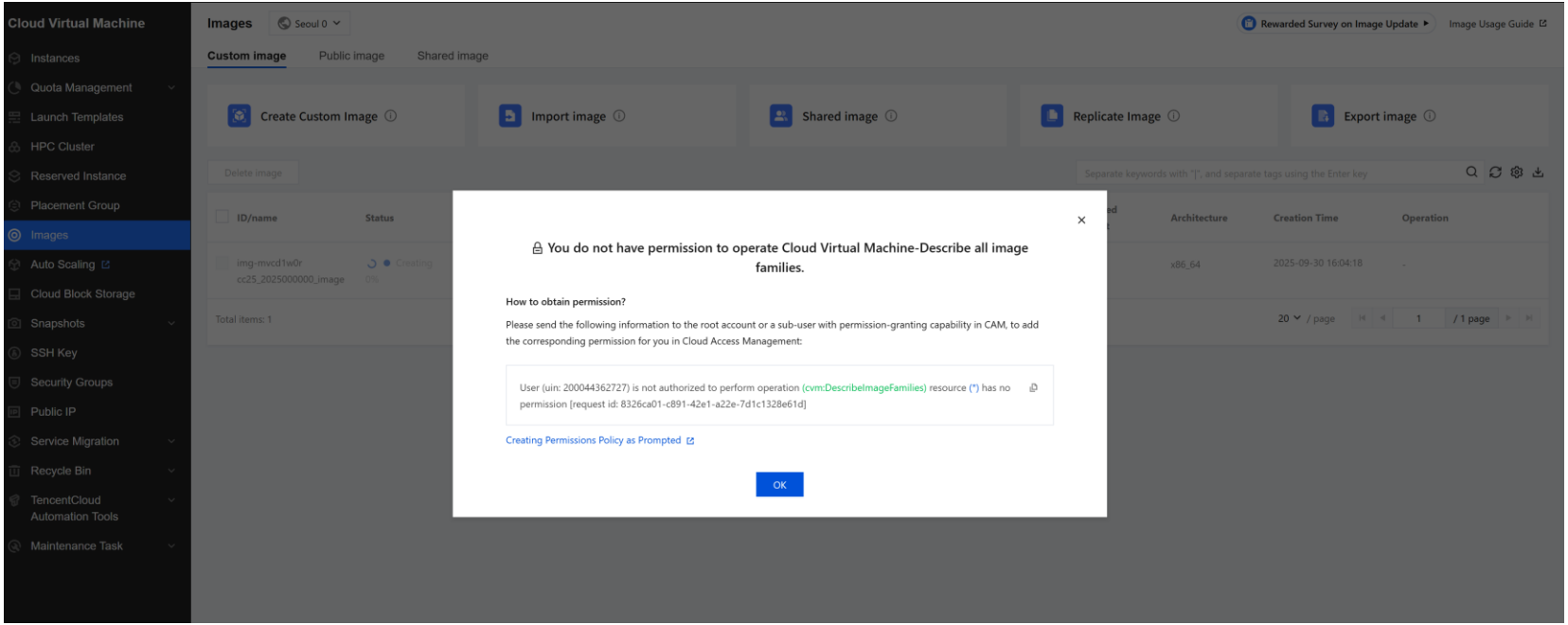

클라우드 서비스 사용 관련 공지

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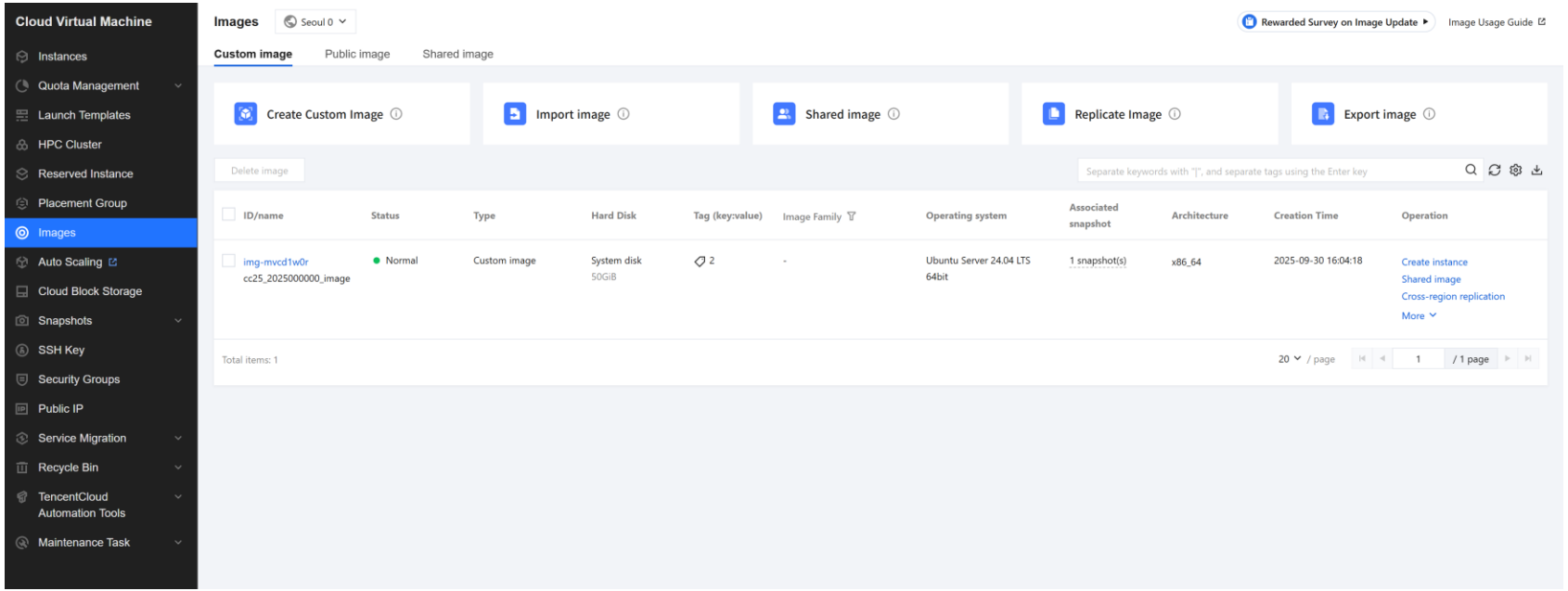
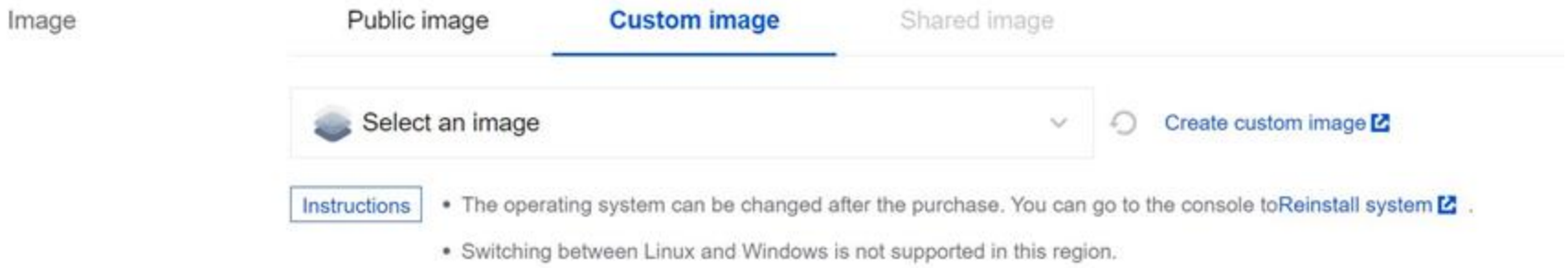


클라우드 서비스 사용 관련 공지

Custom Image 만드는 방법



Section 3

“클라우드 서비스 사용 관련 공지”

클라우드 서비스 사용 관련 공지

이용 가이드라인

- 생성 가능 리소스 종류
  - CVM
  - Custom image
- 인스턴스 terminate는 불가 (권한 없음)
- 인스턴스 사용하지 않을때 shutdown
- 인스턴스 S5.MEDIUM2 타입으로만 생성할 것 (품절시 메일 보내주시기 바람)
- 인스턴스 terminate/삭제 기준 (조교)
  - CVM instance 이름 형식에 준수하지 않을 경우 (형식: cc25_학번)
  - 태그 없이 인스턴스, custom image 생성하는 경우 (‘lecture’, ‘cc_2025-2_student’ tags)
  - S5.MEDIUM2 아닌 다른 타입의 인스턴스를 생성하는 경우
  - 매일 저녁 8:30-9:00에 모든 인스턴스 삭제 → custom image으로 저장하시길 (최대 1개)
  - 8:30 이전에 작업을 종료 (custom image로 저장), 9:00 이후 작업 재개 (CVM 재생성)

The End