

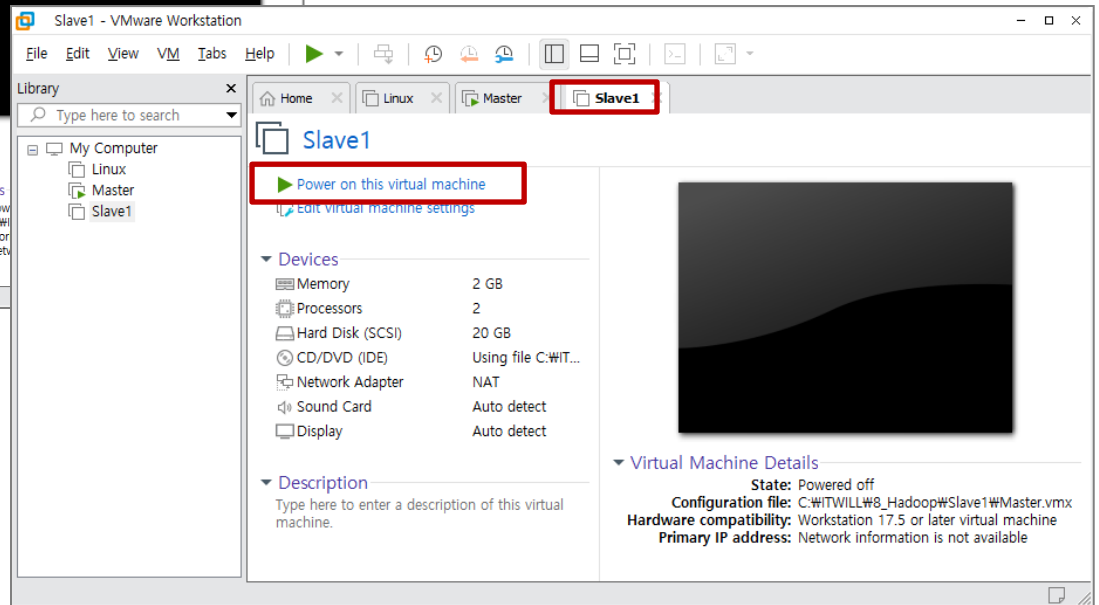
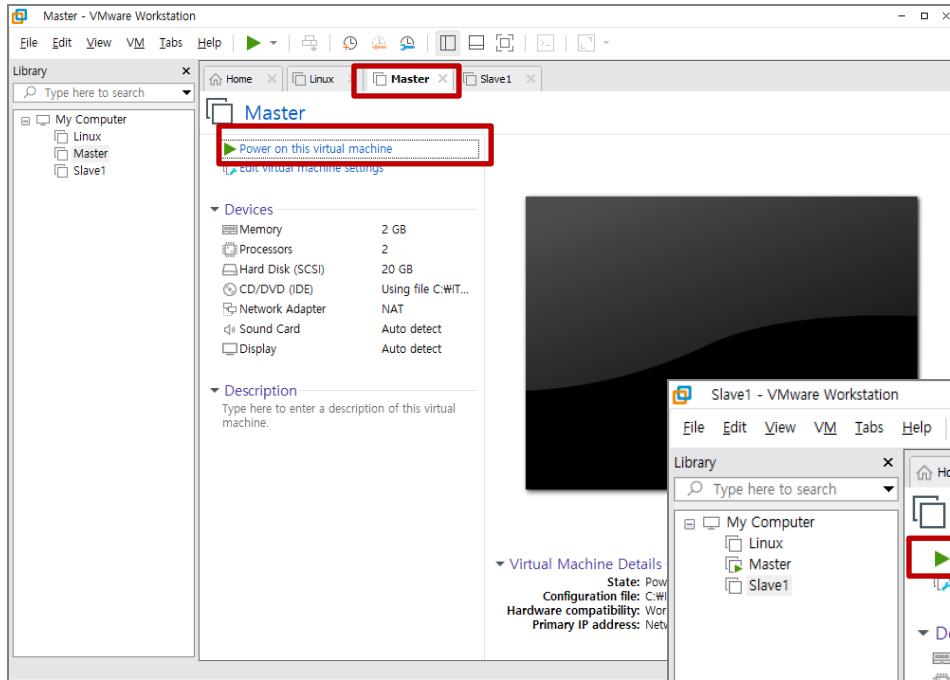
3. Master/Slave 인증키 생성 및 복사

- 1) Master/Slave1 서버 실행
- 2) 인증키 생성 및 암호 해제
- 3) 다른 서버(slave1)에 인증키 복사
- 4) 각 서버 접속 테스트
- 5) Master/Slave 서버 종료
- 6) Master/Slave 서버 백업

master에서 인증키 만들어서 slave에 복사하는 이유

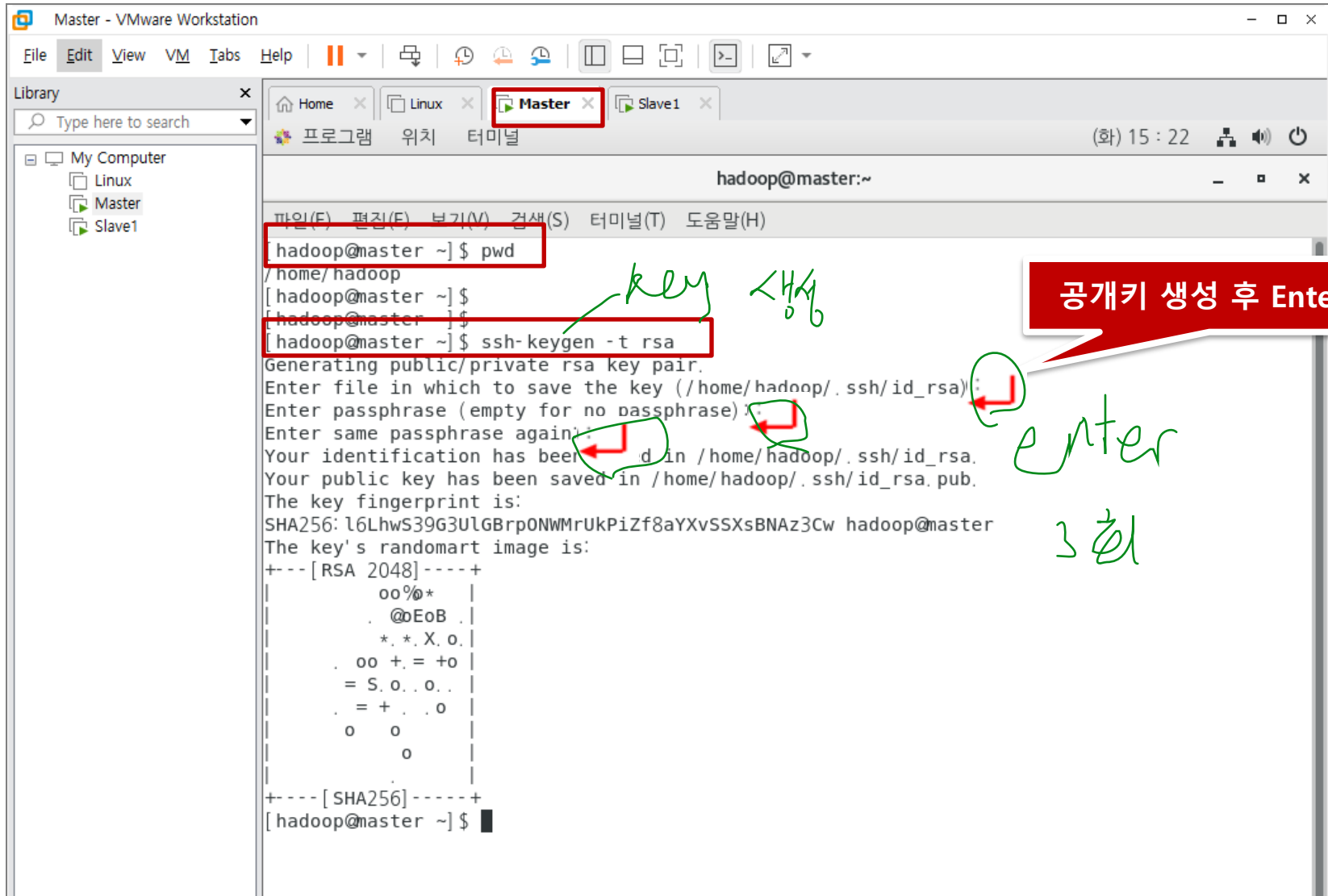
-> 마스터(Master) 서버가 슬레이브(Slave) 서버에 암호 없이 자동으로 접속하기 위해서

1) Master/Slave1 가상머신 실행



2) 인증키 생성/암호 해제[**master** 작업]

✓ 인증키 생성 목적 : 클러스터로 구성된 각 서버 간의 접속과정에서 암호 입력없이 접속



```
Master - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
  Linux
  Master
  Slave1

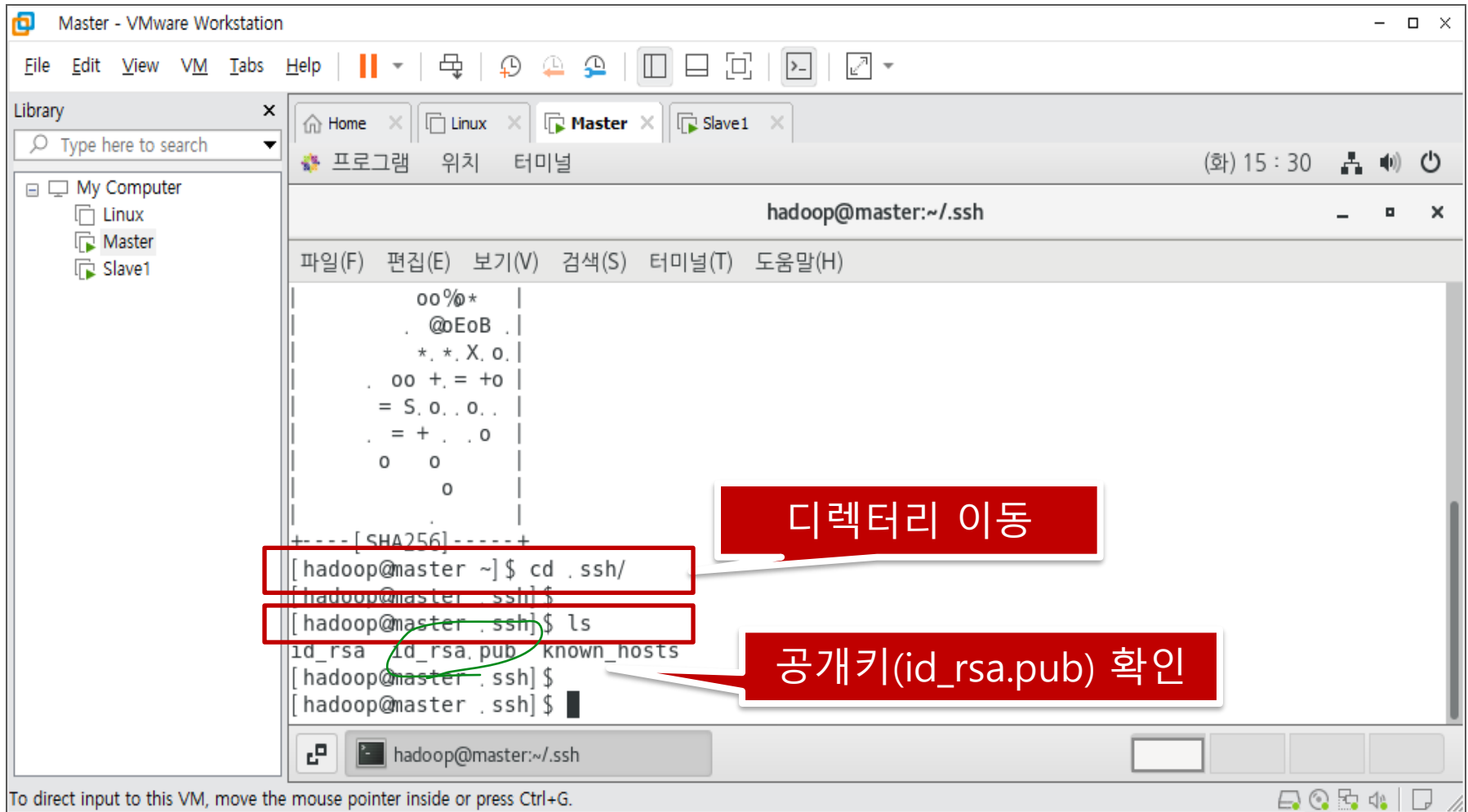
hadoop@master:~
파일(F) 편집(E) 보기(V) 검색(S) 터미널(T) 도움말(H)
hadoop@master ~]$ pwd
/home/hadoop
[hadoop@master ~]$
[hadoop@master ~]$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/hadoop/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/hadoop/.ssh/id_rsa.
Your public key has been saved in /home/hadoop/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:l6Lhws39G3UlGBRp0NWMruKPiZf8aYXvSSXsBNaz3Cw hadoop@master
The key's randomart image is:
+---[RSA 2048]-----+
|      oo%*      |
|      @oEoB     |
|      *. *.X.o.  |
|      oo +. = +o  |
|      = S.o..o..  |
|      = + ..o    |
|      o  o       |
|      o          |
|      .          |
+---[SHA256]-----+
[hadoop@master ~]$
```

key <항상>

공개키 생성 후 Enter키 3회

enter 3회

- 공개키는 홈 디렉터리 하위에 .ssh 폴더로 생성



The screenshot shows a VMware Workstation window titled "Master - VMware Workstation". Inside, a terminal window is open with the prompt "hadoop@master:~/ssh". The terminal displays the output of the command "cd .ssh/" and "ls". The "ls" command shows the files "id_rsa", "id_rsa.pub", and "known_hosts". A red box highlights the "cd .ssh/" command, and a red callout points to it with the text "디렉터리 이동". Another red box highlights the "ls" command, and a red callout points to it with the text "공개키(id_rsa.pub) 확인". The terminal also shows the output of the "ls" command, which lists the files "id_rsa", "id_rsa.pub", and "known_hosts".

```
hadoop@master:~/ssh
파일(F) 편집(E) 보기(V) 검색(S) 터미널(T) 도움말(H)

  oo%o* |
    @oEoB |
    *, *, X, o |
  . oo +, = +o |
    = S, o, . o, . |
  . = + . . o |
    o o |
    o |

+----[ SHA256 ]-----+
[hadoop@master ~]$ cd .ssh/
[hadoop@master .ssh]$ ls
id_rsa  id_rsa.pub  known_hosts
[hadoop@master .ssh]$
```

디렉터리 이동

공개키(id_rsa.pub) 확인

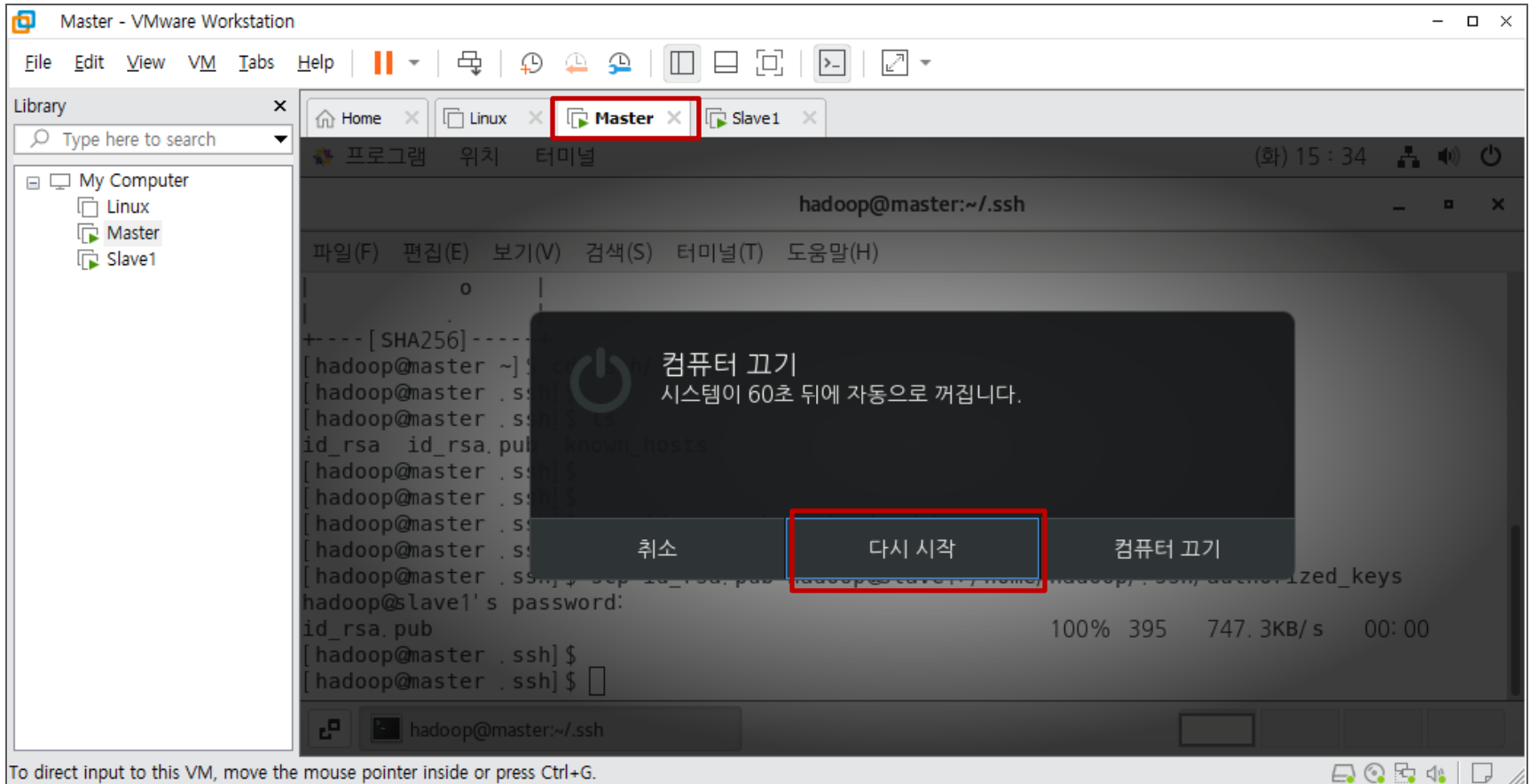
3) 다른 서버(slave1)에 인증키 복사

- ✓ Master에서 공개키를 복제 후 Slave1에도 동일한 공개키를 복제하여 동기화

```
hadoop@master: ~/.ssh
파일(F) 편집(E) 보기(V) 검색(S) 터미널(T) 도움말(H)
id_rsa id_rsa.pub
[hadoop@master .ssh]$
[hadoop@master .ssh]$
[hadoop@master .ssh]$
[hadoop@master .ssh]$
[hadoop@master .ssh]$ scp id_rsa.pub authorized_keys
[hadoop@master .ssh]$
[hadoop@master .ssh]$
[hadoop@master .ssh]$ scp id_rsa.pub hadoop@slave1: /home/hadoop/.ssh/authorized_keys
The authenticity of host 'slave1 (172.16.98.10)' can't be established.
ECDSA key fingerprint is SHA256:3UjsL+1HKA+hy4bC7BhAmCjUmY+TyLBCsbftepmlBs8.
ECDSA key fingerprint is MD5:23:8f:36:40:09:2b:ce:ab:2e:0f:46:8a:2e:b7:1b:99.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'slave1, 172.16.98.10' (ECDSA) to the list of known hosts.
hadoop@slave1's password: 1234
id_rsa.pub 100% 395 286.4KB/s 00:00
[hadoop@master .ssh]$
```

- ❖ 서버 복사 과정에서 오류가 발생하면 Slave1에서 Master과 ssh 명령어로 서버 연결 후 복사한다.

● Master 서버 재시작



4) Master -> Slave1 서버 접속 테스트

Master - VMware Workstation

File Edit View VM Tabs Help

Library

Type here to search

My Computer

- Linux
- Master
- Slave1

Home Linux Master Slave1

프로그램 위치 터미널

(화) 15 : 36

hadoop

slave1 연결

[hadoop@master ~]\$ ssh hadoop@slave1

Last login: Tue Jul 22 15:20:16 2025

[hadoop@slave1 ~]\$

[hadoop@slave1 ~]\$

[hadoop@slave1 ~]\$

[hadoop@slave1 ~]\$ hostname

slave1

[hadoop@slave1 ~]\$

[hadoop@slave1 ~]\$ logout

Connection to slave1 closed.

[hadoop@master ~]\$

[hadoop@master ~]\$

[hadoop@master ~]\$ hostname

master

[hadoop@master ~]\$

[hadoop@master ~]\$

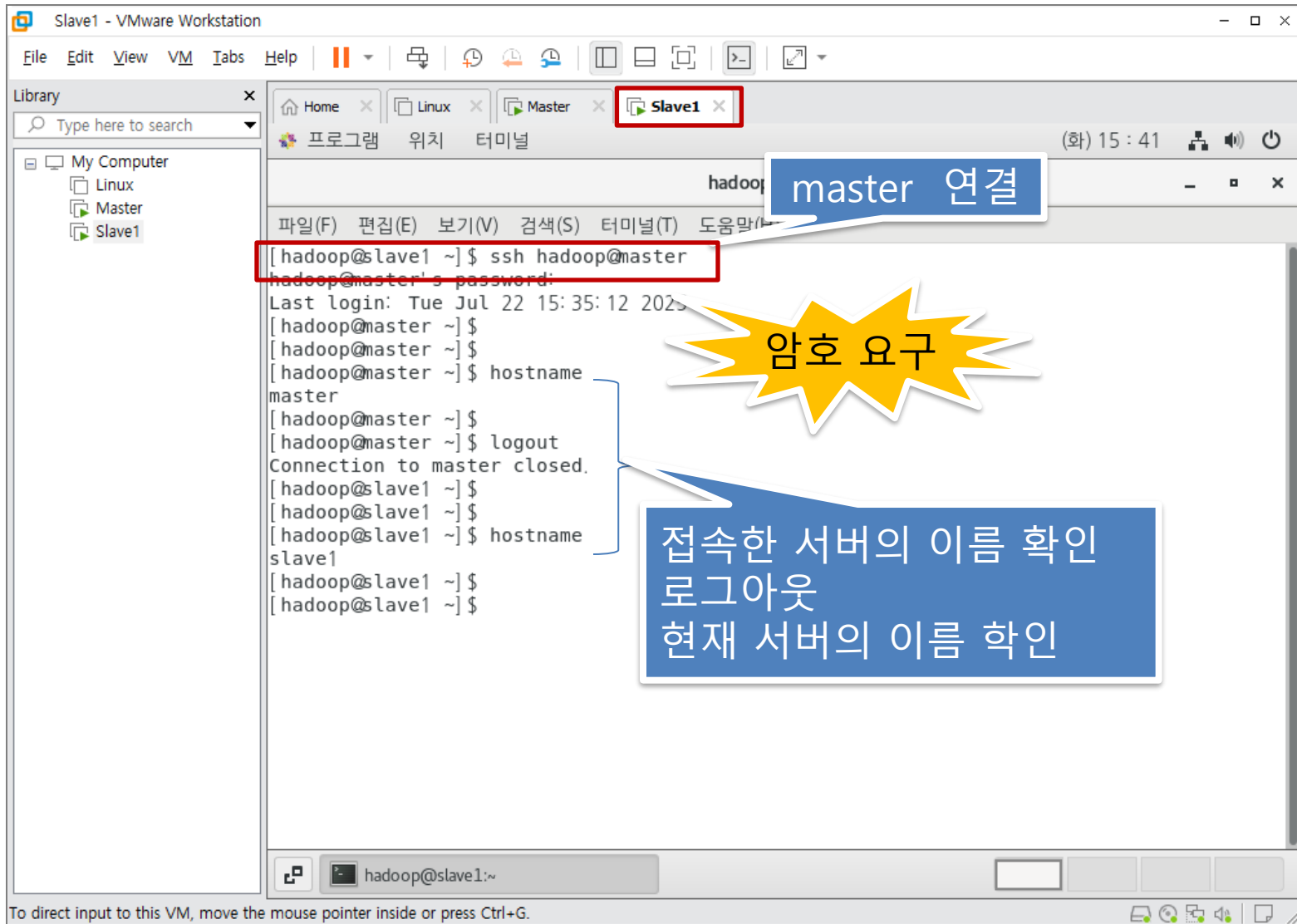
암호 요구 없음

접속한 서버의 이름 확인
로그아웃
현재 서버의 이름 확인

hadoop@master:~

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

● Slave1 -> Master 서버 접속 테스트



Slave1 - VMware Workstation

File Edit View VM Tabs Help

Library

Type here to search

My Computer

- Linux
- Master
- Slave1

Home Linux Master Slave1

프로그램 위치 터미널

(화) 15:41

hadoop master 연결

```
[hadoop@slave1 ~]$ ssh hadoop@master
hadoop@master's password:
Last login: Tue Jul 22 15:35:12 2025
[hadoop@master ~]$
[hadoop@master ~]$
[hadoop@master ~]$ hostname
master
[hadoop@master ~]$
[hadoop@master ~]$ logout
Connection to master closed.
[hadoop@slave1 ~]$
[hadoop@slave1 ~]$
[hadoop@slave1 ~]$ hostname
slave1
[hadoop@slave1 ~]$
[hadoop@slave1 ~]$
```

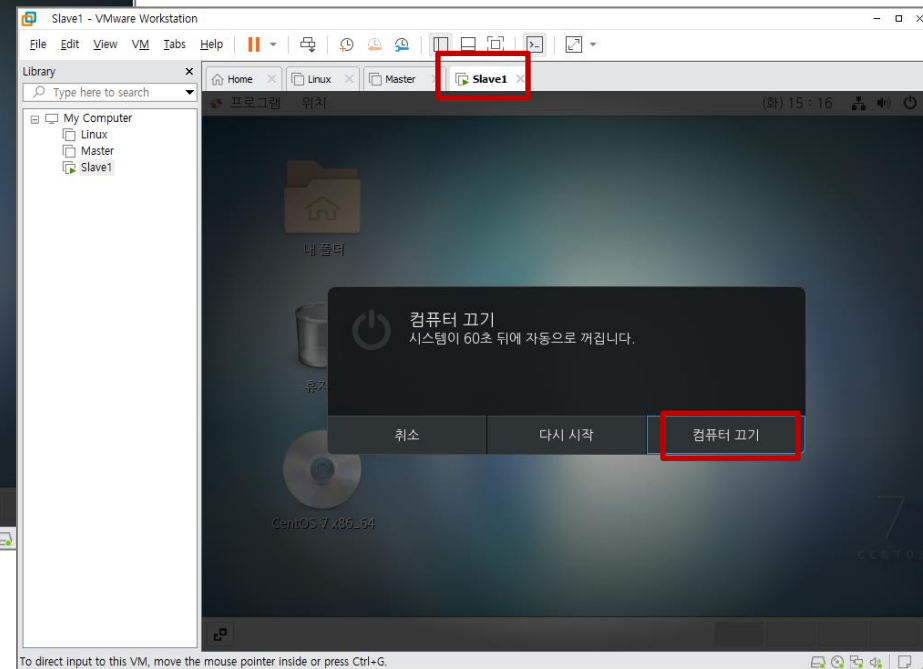
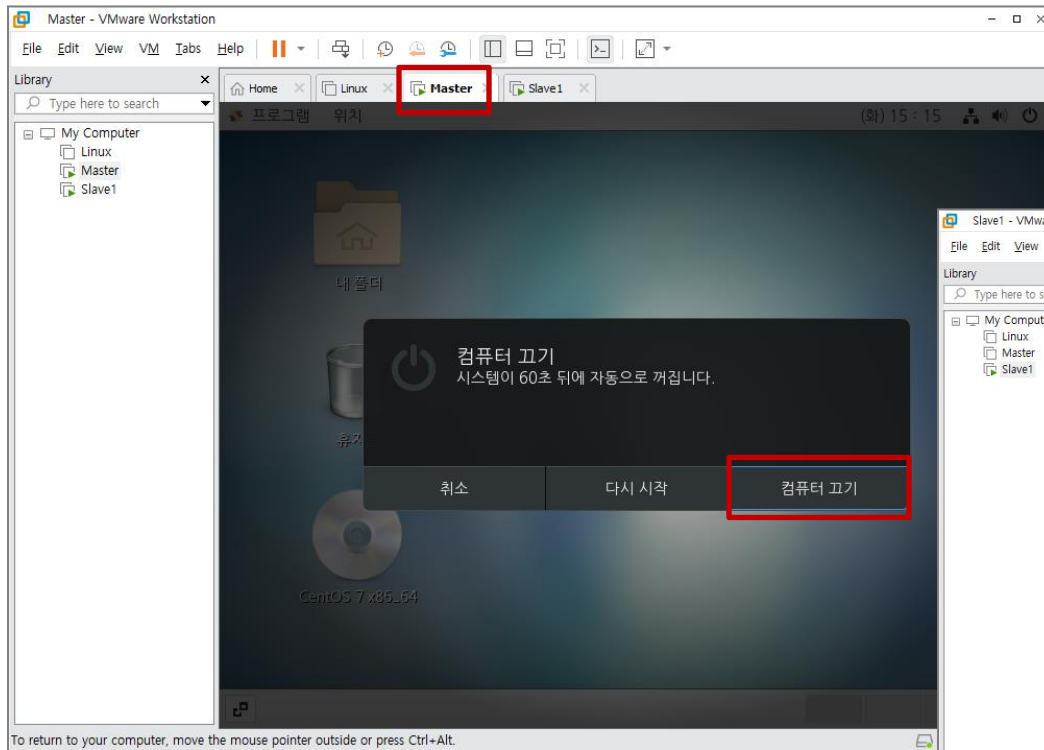
암호 요구

접속한 서버의 이름 확인
로그아웃
현재 서버의 이름 확인

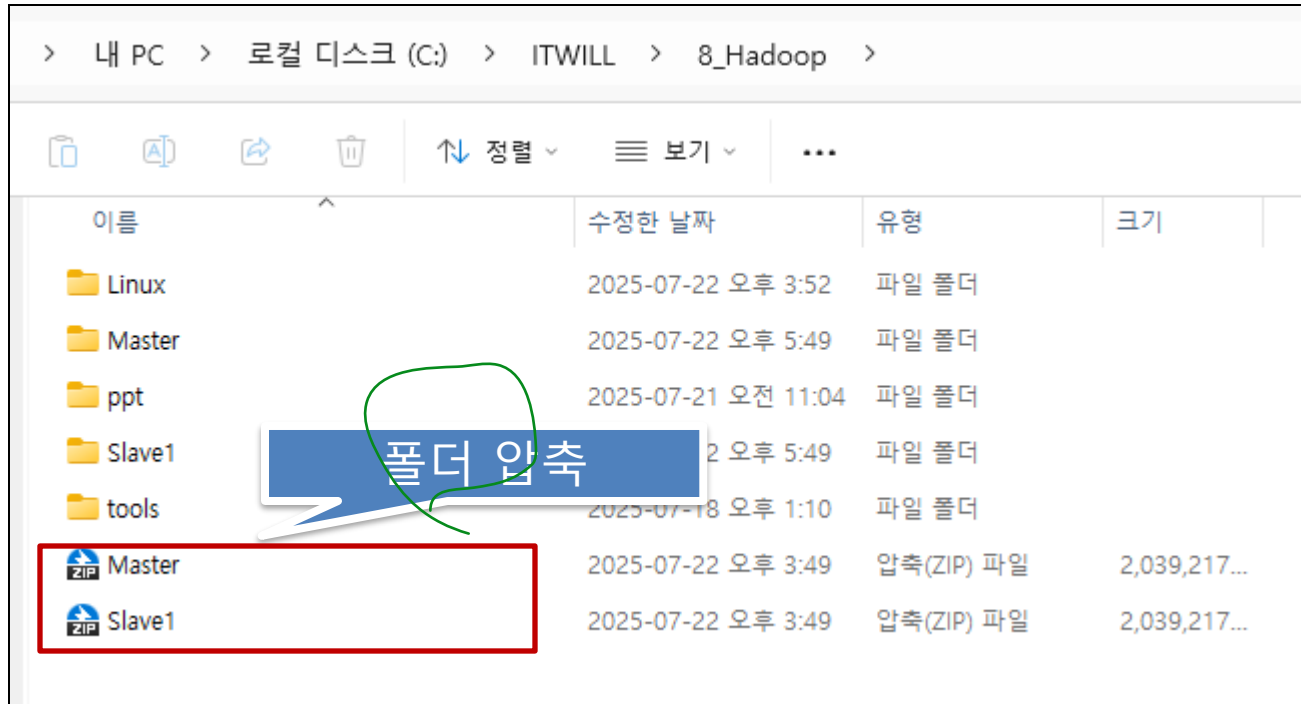
hadoop@slave1:~

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

5) Master/Slave 서버 종료



6) Master/Slave 서버 백업



(서버에서 중요한 설정, 로그, 소스코드, 데이터 파일 등이 파일과 폴더 형태로 존재하기 때문에
->그것들을 압축 파일로 묶어두면 **백업본(스냅샷)**이 되는 거예요.