How to Set Up Passwordless SSH Login?

written by sysadmin | 1 January 2025

As a sysadmin, remote to a Linux server is a daily job to perform various checks on a Linux server. By default, if a sysadmin accesses a server, the sysadmin must enter a username and password. However, when the sysadmin has many servers, it is sometimes difficult for the sysadmin to enter the password for each server, especially if each server has a different password. Therefore, it needs to be made so that SSH does not need to enter a password when accessing a Linux server via SSH.

Problem

How to set up passwordless SSH Login?

Solution

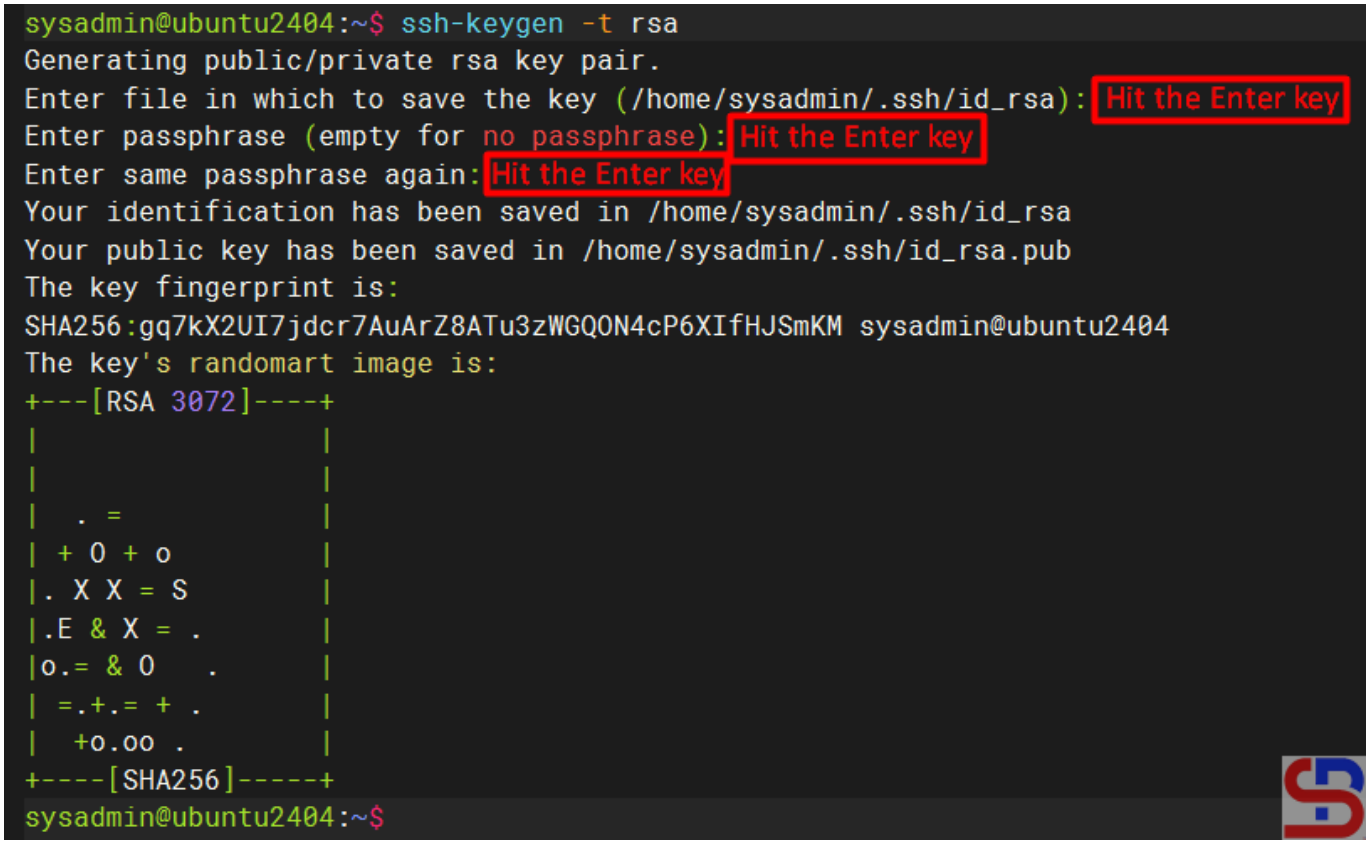
There are 3 steps to setting up passwordless SSH:

1. Generate a key pair

Use ssh-keygen to generate a key pair consisting of a public key and a private key on the client computer:

```
ssh-keygen -t rsa
```

The **-t rsa** option specifies that the type of the key should be the RSA algorithm. Hit **Enter** to accept the default.



Running the ssh-keygen command

2. Upload the public key to the remote server

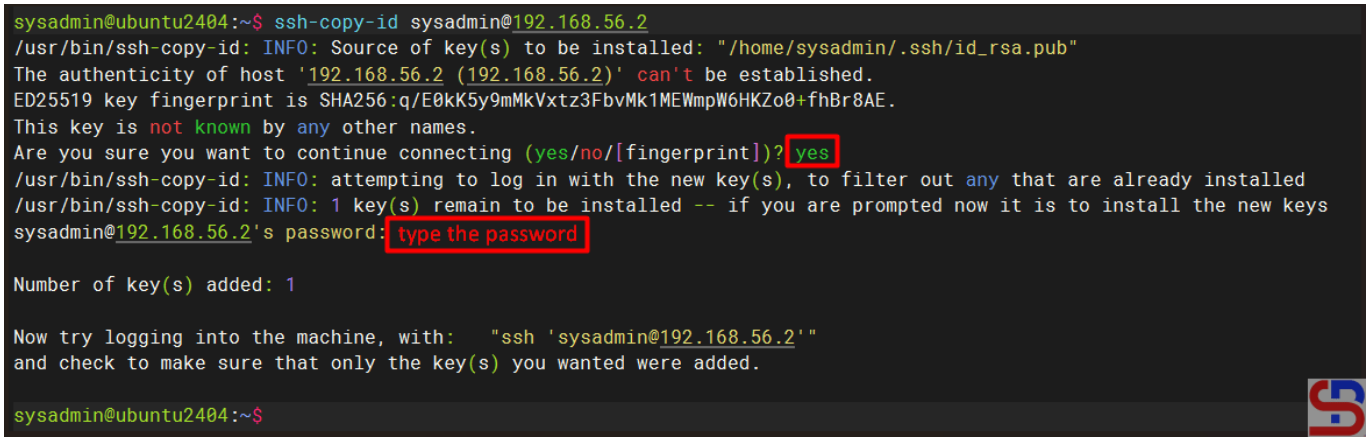
Use **ssh-copy-id** to propagate the public key to the server:

```
ssh-copy-id remote_username@remote_server_ip_address
```

For example, if you want to upload it to the server 192.168.56.2 with the username sysadmin, then use the command below:

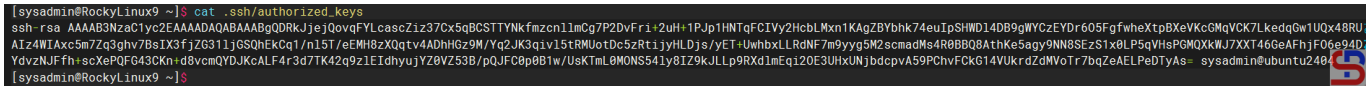
```
ssh-copy-id sysadmin@192.168.56.2
```

Type **yes** when prompted and type the password for the remote server.



Running the ssh-copy-id command

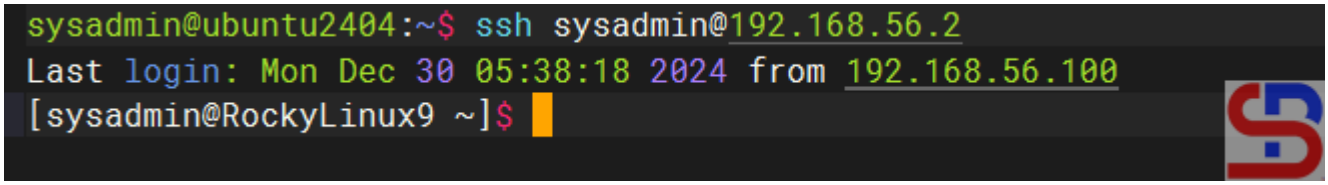
For your information, the **id_rsa.pub** file will be saved in the **.ssh/authorized_keys** file on the remote server, like in the image below:



The authorized_keys file

3. Test login via SSH

Try to connect to the server using SSH, you should be able to directly access the server without entering the password first. For example, I have 2 Linux servers, each of which uses Ubuntu OS with IP 192.168.56.100 and RockyLinux OS with IP 192.168.56.2. I want to access the RockyLinux server from the Ubuntu server without entering a password. I ran the three steps above to set up passwordless SSH on an Ubuntu server, and the results are as in the image below:



Access the server without entering a username and password

From the image above, you can see that I can directly access the server without entering the server password.

Note

By default, the system will generate a 2048-bit key in the first step when you run the ssh-keygen command. However, if you want to be more secure, you can use 4096-bit encryption by using the command below:

```
ssh-keygen -t rsa -b 4096
```

Besides RSA, you can also use several other public key algorithms, such as ECDSA or ED25519. Elliptic Curve Digital Signature Algorithm, or ECDSA, is one of the more complex public key cryptography encryption algorithms that supports three key sizes: 256, 384, and 521 bits. You can use the command below when using ECDSA:

```
ssh-keygen -t ecdsa -b 521
```

Ed25519 is an elliptic curve signing algorithm using EdDSA and Curve25519, and this is a new algorithm added in OpenSSH. You can use the command below when using ed25519:

```
ssh-keygen -t ed25519
```

Unfortunately, support for this among clients is not yet universal. Therefore, its use in general-purpose applications may not be advisable.

References

strongdm.com
phoenixnap.com
ssh.com
encryptionconsulting.com
cryptography.io