

Remote Network Address

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1 Install SSH service

On virtual machine SSH server has been installed.

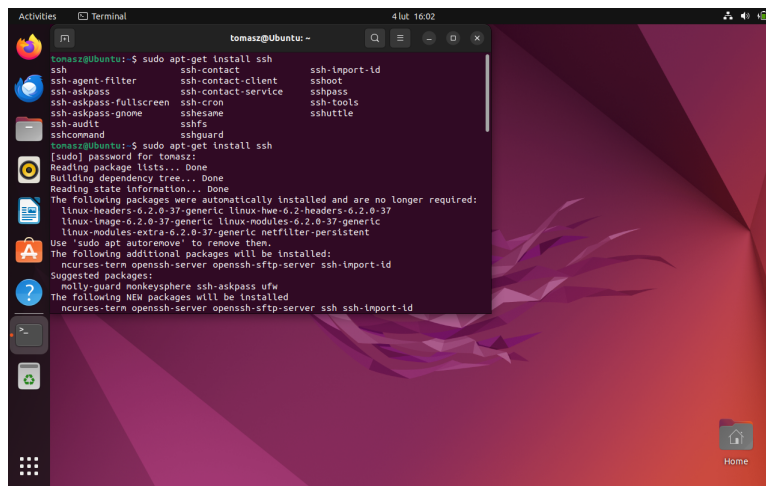


Figure 1: SSH server installation

2 Check whether SSH server is available

With nmap all listening ports on ubuntu virtual machine have been listed.

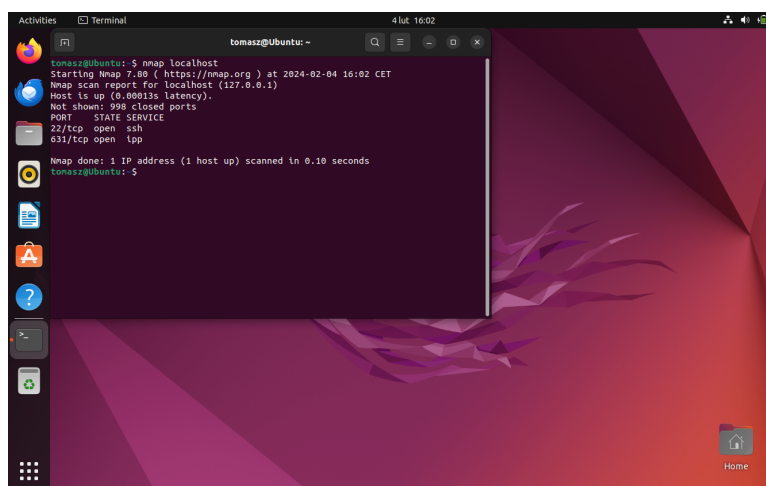
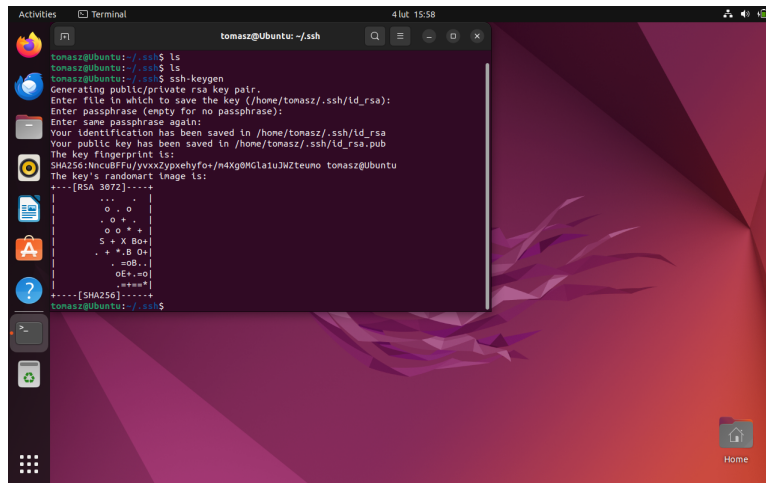


Figure 2: Check open ports on VM

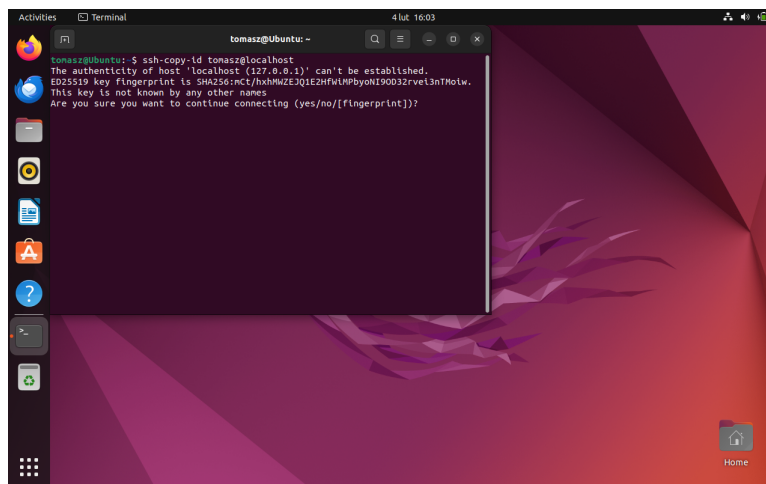
3 Create pair of public/private keys



```
tomasz@Ubuntu: ~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/tomasz/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/tomasz/.ssh/id_rsa
Your public key has been saved in /home/tomasz/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:NncuBFFu/yvxxZypxehyfo/n4Xg8GlaUjM2teumo tomasz@ubuntu
The key's randomart image is:
+--[RSA 3072]-----
  .
  o .
  + o +
  o o +
  S + X Bo+
  . + .B O+
  . oB..
  oE+..no
  +-----+
+----[SHA256]-----
tomasz@Ubuntu: ~$
```

Figure 3: Create pair of public and private keys

4 Copy public key to SSH server



```
tomasz@Ubuntu: ~$ ssh-copy-id tomasz@localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ED25519 key fingerprint is SHA256:nct/hxhMWZE3QIEZHFwLMPbyoN190D32rve13nTHotw.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

Figure 4: Copy public key to SSH server

5 Create answer script

To achieve expected results a special script answer.sh has been created. Content has been presented below.



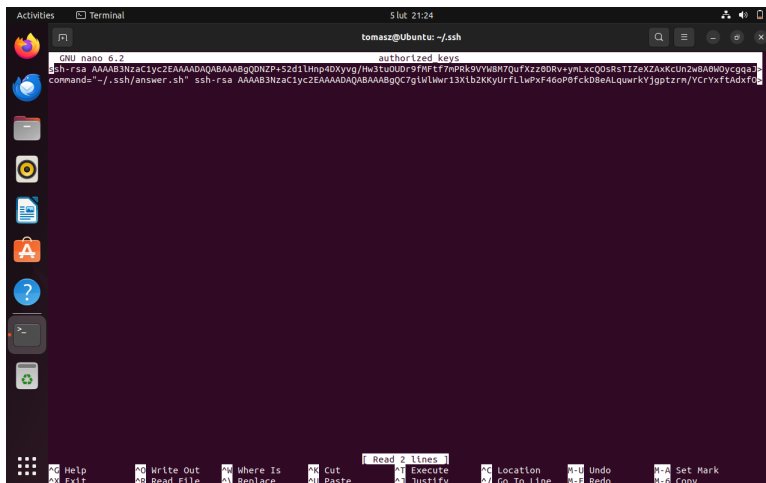
```
GNU nano 6.2 answer.sh
#!/bin/bash

if [ -z "${SSH_ORIGINAL_COMMAND}" ]
then
    echo "Bad Luck!"
else
    echo "Bad luck! You tried to run: ${SSH_ORIGINAL_COMMAND}"
fi
```

Figure 5: Content of answer.sh

6 Authorized keys modification

Command option has been added for public key created by localhost.



```
GNU nano 6.2 authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgGNZP+5zd1lHnp4Dxyvg/Hw3tu0UDr9fNF1f7mPRk9VYwBR7ouFzz80Rv++yMLcQ0sRStIZeXZAkkUn2wBAW0ycgaA
Command="/.ssh/answer.sh" ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQC7gKlLwlr13Xlb2KkyUrFLlWpF46oP9fckDBeALqwrkYjggtzrn/YCrVxftadxfC
```

Figure 6: Content of authorized_keys file

7 Answer on localhost

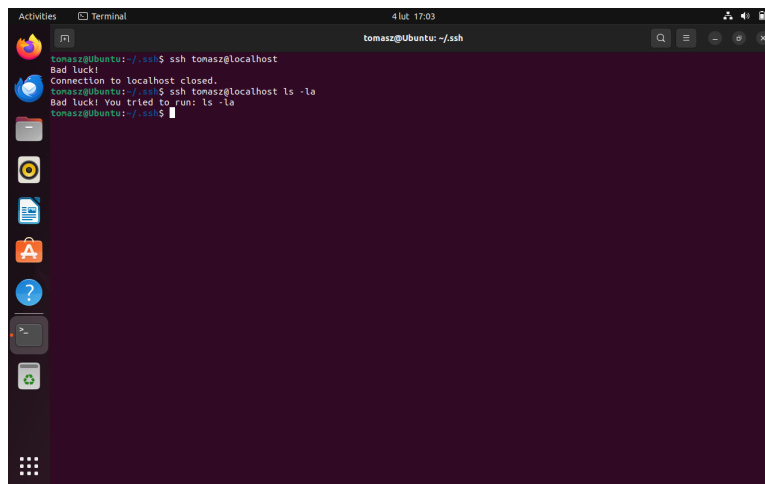


Figure 7: Answer on ssh connection request from localhost

8 Answer from Host machine

Via host-only adapter behaviour of ssh server for other hosts has been checked. Firstly on VM ip-address of host only adapter has been checked.

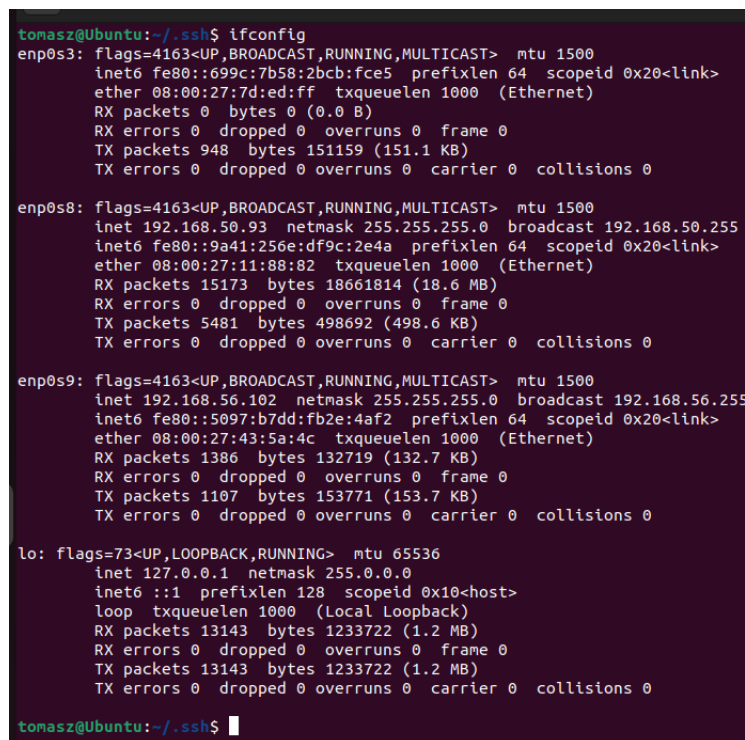


Figure 8: Check ip address of host-only adapter

```
tomasz@tomasz-Aspire-A515-54G:/etc/ssh$ ssh tomasz@192.168.56.102
tomasz@192.168.56.102's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.5.0-15-generic x86_64)

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

Expanded Security Maintenance for Applications is not enabled.

11 updates can be applied immediately.
8 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Sun Feb  4 17:07:58 2024 from 127.0.0.1
tomasz@Ubuntu:~$
```

Figure 9: Answer on ssh connection request from other hosts

Behaviour is standard. Test has been accomplished successfully.