1. receive files from my lecturer

名称 ^	修改日期	类型	大小
ca.crt	2025/9/16 14:08	安全证书	1 KB
config.yaml	2025/9/8 20:53	Yaml 源文件	14 KB
wangqingyu.crt	2025/9/16 14:21	安全证书	1 KB
wangqingyu.key	2025/9/16 14:21	KEY 文件	1 KB

2. make configuration file

```
pki:
  # The CAs that are accepted by this node. Must contain one or more certificates
  ca: D:/homework/2025-2026-1/CloudComputing/Lab2/nebula/ca.crt
  cert: D:/homework/2025-2026-1/CloudComputing/Lab2/nebula/wangqingyu.crt
  key: D:/homework/2025-2026-1/CloudComputing/Lab2/nebula/wangqingyu.key
  # blocklist is a list of certificate fingerprints that we will refuse t
  #blocklist:
```

3. run nebula

```
管理员: Windows PowerShell                                                    —   □   ×
PS C:\> cd D:\
PS D:\> cd homework\2025-2026-1\CloudComputing\Lab2\nebula
PS D:\homework\2025-2026-1\CloudComputing\Lab2\nebula> .\nebula -config .\config.yaml
time="2025-09-17T08:08:56+08:00" level=info msg="Firewall rule added" firewallRule="map[caName: caSha: direction:outgoin
g endPort:0 groups:[] host:any ip: localIp: proto:0 startPort:0]"
time="2025-09-17T08:08:56+08:00" level=info msg="Firewall rule added" firewallRule="map[caName: caSha: direction:incomin
g endPort:0 groups:[] host:any ip: localIp: proto:0 startPort:0]"
time="2025-09-17T08:08:56+08:00" level=info msg="Firewall started" firewallHashes="SHA:498215dec4e5687a2353f51c10838c113
bd1af35ef72b8e8c9f536986ada5417,FNV:2782948616"
2025/09/17 08:08:57 Using existing driver 0.14
2025/09/17 08:08:57 Creating adapter
time="2025-09-17T08:08:57+08:00" level=info msg="listening on 0.0.0.0:554"
time="2025-09-17T08:08:57+08:00" level=error msg="Falling back to standard udp sockets" error="bind: The attempted opera
tion is not supported for the type of object referenced."
time="2025-09-17T08:08:57+08:00" level=info msg="Main HostMap created" network=192.168.100.153/24 preferredRanges="[]"
time="2025-09-17T08:08:57+08:00" level=info msg="punchy enabled"
time="2025-09-17T08:08:57+08:00" level=info msg="Loaded send_recv_error config" sendRecvError=always
time="2025-09-17T08:08:57+08:00" level=info msg="Nebula interface is active" boringcrypto=false build=1.9.6 interface=ne
bula1 network=192.168.100.153/24 udpAddr="[::]:554"
time="2025-09-17T08:08:57+08:00" level=info msg="Handshake message sent" handshake="map[stage:1 style:ix_psk0]" initiato
rIndex=3011452982 localIndex=3011452982 remoteIndex=0 udpAddrs="[104.243.20.247:554]" vpnIp=192.168.100.1
time="2025-09-17T08:08:57+08:00" level=info msg="Handshake message received" certName=lighthouse durationNs=177718800 fi
ngerprint=fbf998b866c8275810bdbe0c175cd7cbf31be03d0adc2a831ae16f9669a52617 handshake="map[stage:2 style:ix_psk0]" initia
torIndex=3011452982 issuer=e430f526e15e22fd11dbb26e9482945865f17aa42c800481e56f68d087c892c0 remoteIndex=3011452982 respo
nderIndex=144799581 sentCachedPackets=2 udpAddr="104.243.20.247:554" vpnIp=192.168.100.1
time="2025-09-17T08:09:04+08:00" level=info msg="Handshake timed out" durationNs=7022630800 handshake="map[stage:1 style
:ix_psk0]" initiatorIndex=2535504252 localIndex=2535504252 remoteIndex=0 udpAddrs="[]" vpnIp=192.168.100.255
time="2025-09-17T08:10:14+08:00" level=info msg="Handshake timed out" durationNs=6683259200 handshake="map[stage:1 style
:ix_psk0]" initiatorIndex=2585170559 localIndex=2585170559 remoteIndex=0 udpAddrs="[]" vpnIp=192.168.100.255
```

4. test the connectivity from my laptop

```
PS C:\Users\beibe> ping 192.168.100.1

正在 Ping 192.168.100.1 具有 32 字节的数据:
来自 192.168.100.1 的回复: 字节=32 时间=168ms TTL=64
来自 192.168.100.1 的回复: 字节=32 时间=176ms TTL=64
来自 192.168.100.1 的回复: 字节=32 时间=155ms TTL=64
来自 192.168.100.1 的回复: 字节=32 时间=152ms TTL=64

192.168.100.1 的 Ping 统计信息:
    数据包: 已发送 = 4, 已接收 = 4, 丢失 = 0 (0% 丢失),
往返行程的估计时间(以毫秒为单位):
    最短 = 152ms, 最长 = 176ms, 平均 = 162ms
PS C:\Users\beibe> ssh nuist@192.168.100.1
nuist@192.168.100.1's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-151-generic x86_64)

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

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.
New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Tue Sep 16 09:06:35 2025 from 192.168.100.147
$
```