```
┌──(root㉿VOID)-[/home/ghost]
└─# sudo apt install strongswan -y
strongswan is already the newest version (6.0.3-1).
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 158
```

```
root@ghostVM:/home/ghost# sudo apt install strongswan strongswan-pki -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcharon-extauth-plugins libcharon-extra-plugins libstrongswan
  libstrongswan-standard-plugins strongswan-charon strongswan-libcharon
  strongswan-starter
```

```
  GNU nano 8.6                    /etc/ipsec.conf
#      rightid="C=CH, O=strongSwan Project CN=peer name"
#      auto=start
config setup
    charondebug="ike 2, knl 2, cfg 2"

conn tunnelVPN
    keyexchange=ikev2
    type=tunnel
    auto=add
    authby=psk

    left=192.168.106.129
    leftsubnet=10.10.2.0/24

    right=192.168.220.132
    rightsubnet=10.10.1.0/24

    ike=aes256-sha1-modp1024
    esp=aes256-sha1
```

```
config setup
    charondebug="ike 2, knl 2, cfg 2"

conn tunnelVPN
    keyexchange=ikev2
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    left=192.168.220.132
    leftsubnet=10.10.2.0/24
    right=192.168.106.129
    rightsubnet=10.10.1.0/24
    ike=aes256-sha1-modp1024
    esp=aes256-sha1
```

```
  GNU nano 8.6                    /etc/ipsec.secrets *
# This file holds shared secrets or RSA private keys for authentication.

# RSA private key for this host, authenticating it to any other host
# which knows the public part.
192.168.220.132 192.168.106.129 : PSK "vpnpassword"
```

```
  GNU nano 7.2                    /etc/ipsec.secrets *
# This file holds shared secrets or RSA private keys for authentication.

# RSA private key for this host, authenticating it to any other host
# which knows the public part.
192.168.220.132 192.168.106.129 : PSK "vpnpassword"
```

```
root@ghostVM:/home/ghost# sudo apt install strongswan strongswan-starter -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
strongswan is already the newest version (5.9.13-2ubuntu4.24.04.1).
strongswan-starter is already the newest version (5.9.13-2ubuntu4.24.04.1).
strongswan-starter set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 101 not upgraded.
root@ghostVM:/home/ghost# systemctl status strongswan-starter
● strongswan-starter.service - strongSwan IPsec IKEv1/IKEv2 daemon using ipsec
     Loaded: loaded (/usr/lib/systemd/system/strongswan-starter.service; enabl
     Active: active (running) since Mon 2025-12-01 21:15:23 IST; 27min ago
```

```
┌──(root㉿VOID)-[/home/ghost]
└─# sudo systemctl start strongswan-starter


┌──(root㉿VOID)-[/home/ghost]
└─# systemctl status strongswan-starter

 strongswan-starter.service - strongSwan IPsec IKEv1/IKEv2 daemon using ipsec.
     Loaded: loaded (/usr/lib/systemd/system/strongswan-starter.service; disabl
     Active: active (running) since Mon 2025-12-01 21:45:05 IST; 5s ago
Invocation: 033294c93fa042d1a29165cac7959b66
   Main PID: 6225 (starter)
```

```
┌──(root㉿VOID)-[/home/ghost]
└─# sudo systemctl restart strongswan-starter

┌──(root㉿VOID)-[/home/ghost]
└─# sudo ipsec up tunnelVPN

initiating IKE_SA tunnelVPN[1] to 192.168.220.132
generating IKE_SA_INIT request 0 [ SA KE No N(NATD_S_IP) N(NATD_D_IP) N(FRAG_SUP
) N(HASH_ALG) N(REDIR_SUP) ]
sending packet: from 192.168.106.129[500] to 192.168.220.132[500] (1080 bytes)
retransmit 1 of request with message ID 0
sending packet: from 192.168.106.129[500] to 192.168.220.132[500] (1080 bytes)
retransmit 2 of request with message ID 0
sending packet: from 192.168.106.129[500] to 192.168.220.132[500] (1080 bytes)
retransmit 3 of request with message ID 0
sending packet: from 192.168.106.129[500] to 192.168.220.132[500] (1080 bytes)
```

```
┌──(root㉿VOID)-[/home/ghost]
└─# ping 192.168.220.132
PING 192.168.220.132 (192.168.220.132) 56(84) bytes of data.
64 bytes from 192.168.220.132: icmp_seq=1 ttl=64 time=0.655 ms
64 bytes from 192.168.220.132: icmp_seq=2 ttl=64 time=1.09 ms
64 bytes from 192.168.220.132: icmp_seq=3 ttl=64 time=0.715 ms
64 bytes from 192.168.220.132: icmp_seq=4 ttl=64 time=0.663 ms
64 bytes from 192.168.220.132: icmp_seq=5 ttl=64 time=0.625 ms
64 bytes from 192.168.220.132: icmp_seq=6 ttl=64 time=0.328 ms
64 bytes from 192.168.220.132: icmp_seq=7 ttl=64 time=0.370 ms
64 bytes from 192.168.220.132: icmp_seq=8 ttl=64 time=0.520 ms
64 bytes from 192.168.220.132: icmp_seq=9 ttl=64 time=0.680 ms
64 bytes from 192.168.220.132: icmp_seq=10 ttl=64 time=0.615 ms
64 bytes from 192.168.220.132: icmp_seq=11 ttl=64 time=1.27 ms
64 bytes from 192.168.220.132: icmp_seq=12 ttl=64 time=0.674 ms
64 bytes from 192.168.220.132: icmp_seq=13 ttl=64 time=0.745 ms
64 bytes from 192.168.220.132: icmp_seq=14 ttl=64 time=0.532 ms
64 bytes from 192.168.220.132: icmp_seq=15 ttl=64 time=1.05 ms
```

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udp.port == 500 || udp.port == 4500 || esp

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
2	0.000662745	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
3	1.014155854	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
4	1.014543291	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
5	2.038202755	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
6	2.038760829	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
7	3.062155210	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
8	3.062651319	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
9	4.086058217	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
10	4.086817598	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
11	5.077961741	VMware_cd:98:aa	VMware_e2:b3:79	ARP	42	Who has 192.168.220.132?
12	5.078269924	VMware_e2:b3:79	VMware_cd:98:aa	ARP	60	192.168.220.132 is at 00:
13	5.110498362	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
14	5.110960746	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
15	5.387427741	VMware_e2:b3:79	VMware_cd:98:aa	ARP	60	Who has 192.168.220.129?
16	5.387465693	VMware_cd:98:aa	VMware_e2:b3:79	ARP	42	192.168.220.129 is at 00:
17	6.134235807	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
18	6.135436458	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0
19	7.135883786	192.168.220.129	10.10.1.1	ICMP	98	Echo (ping) request id=0
20	7.136881012	10.10.1.1	192.168.220.129	ICMP	98	Echo (ping) reply id=0

```
▸ Frame 1: Packet, 98 bytes on wire (784 bits), 98 b
▸ Ethernet II, Src: VMware_cd:98:aa (00:0c:29:cd:98:
▸ Internet Protocol Version 4, Src: 192.168.220.129,
▸ Internet Control Message Protocol
```

```
0000  00 0c 29 e2 b3 79 00 0c  29 cd 98 aa 08 00 45
0010  00 54 03 6e 40 00 40 01  8f 06 c0 a8 dc 81 0a
0020  01 01 08 00 d9 5b 00 0e  00 01 fc c6 2d 69 00
0030  00 00 31 92 04 00 00 00  00 00 10 11 12 13 14
0040  16 17 18 19 1a 1b 1c 1d  1e 1f 20 21 22 23 24
0050  26 27 28 29 2a 2b 2c 2d  2e 2f 30 31 32 33 34
0060  36 37
```

```
root@ghostVM:/home/ghost# sudo ufw allow 500/udp
Skipping adding existing rule
Skipping adding existing rule (v6)
root@ghostVM:/home/ghost# sudo ufw allow 4500/udp
Rules updated
Rules updated (v6)
```