



**BBM 465 INFORMATION SECURITY LAB  
EXPERIMENT 5 REPORT**

**Subject : VPN  
Group Number : 25**

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# OPENVPN

OpenVPN is an open source VPN protocol that executes virtual private network (VPN) techniques for producing safe site-to-site or point-to-point connections in remote access facilities and bridged or routed configurations. OpenVPN uses a custom security protocol which utilizes TLS/SSL for key exchange. It is able to traverse firewalls and network address translators (NATs). James Yonan wrote it and published it under the GNU General Public License (GPL).

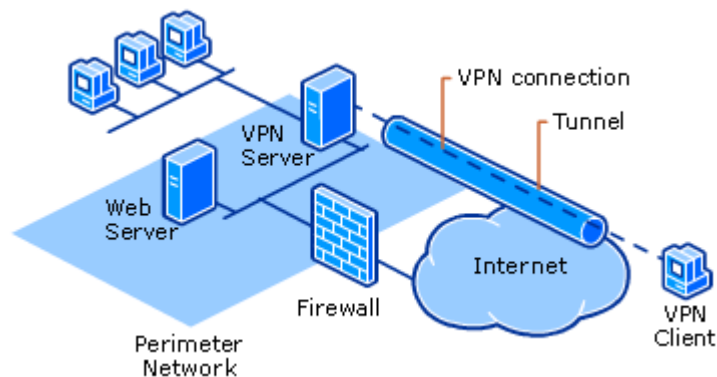
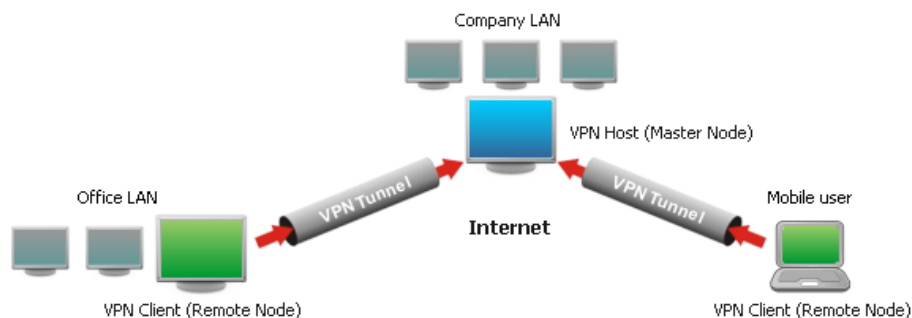
OpenVPN allows peers to authenticate each other using username and password, certificates, or a pre-shared secret key. When used in a multi-client server configuration, it allows the server to launch an authentication certificate for every user using certificate authority and signature. It uses the OpenSSL encryption library broadly as well as TLSv1/SSLv3 protocols and consists of many control and security features.

OpenVPN has been ported and embedded to several systems. For example, DD-WRT has the OpenVPN server function. SoftEther VPN, a multi-protocol VPN server, has an implementation of OpenVPN protocol.



## Advantages of OpenVPN include :

- Security provisions that function against both active and passive attacks.
- Compatibility with all major operating systems.
- High speed (1.4 megabytes per second is typical).
- Ability to configure multiple servers to handle numerous connections simultaneously.
- All encryption and authentication features of the OpenSSL library.
- Advanced bandwidth management.
- A variety of tunneling options.
- Compatibility with smart cards that support the Windows Crypto application program interface (API).

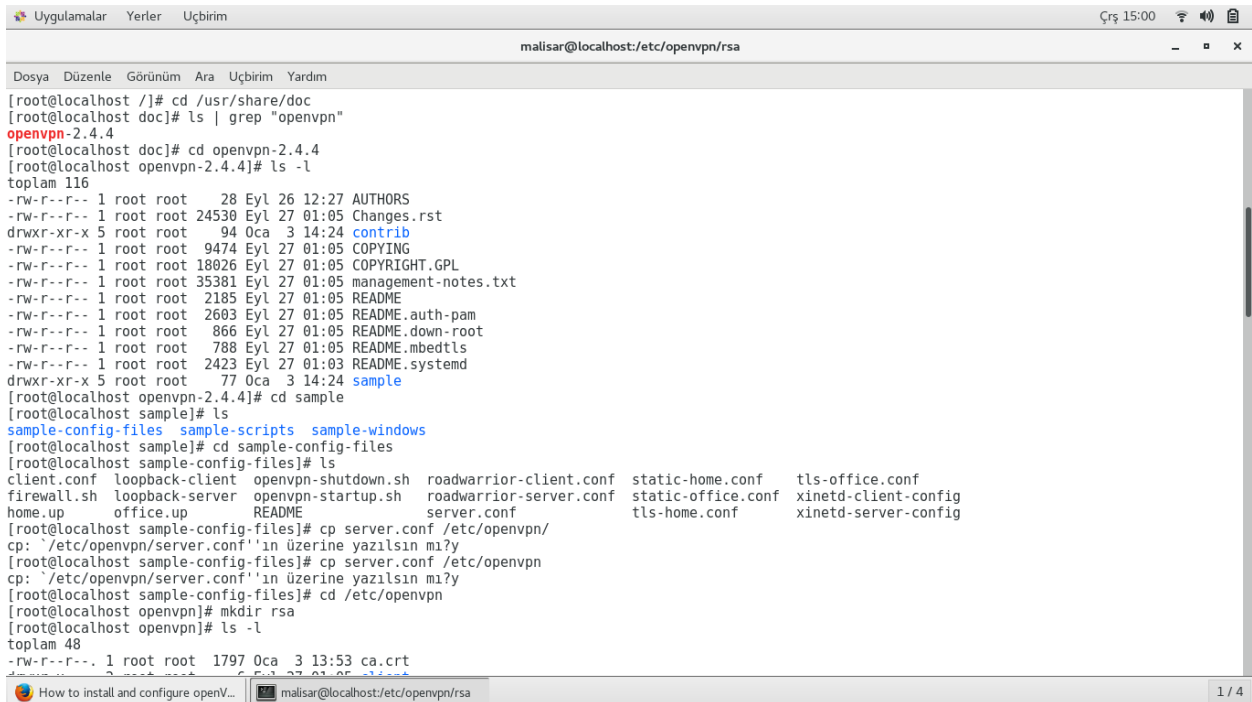


# Installing OpenVPN

Before we start we'll need to install the Extra Packages for Enterprise Linux (EPEL) repository. This is because OpenVPN isn't available in the default CentOS repositories. The EPEL repository is an additional repository managed by the Fedora Project containing non-standard but popular packages.

```
#yum install epel-release
```

```
#yum install openvpn easy-rsa -y
```



```
Uygulamalar Yerler Uçbirim Çrş 15:00
malisar@localhost:/etc/openvpn/rsa

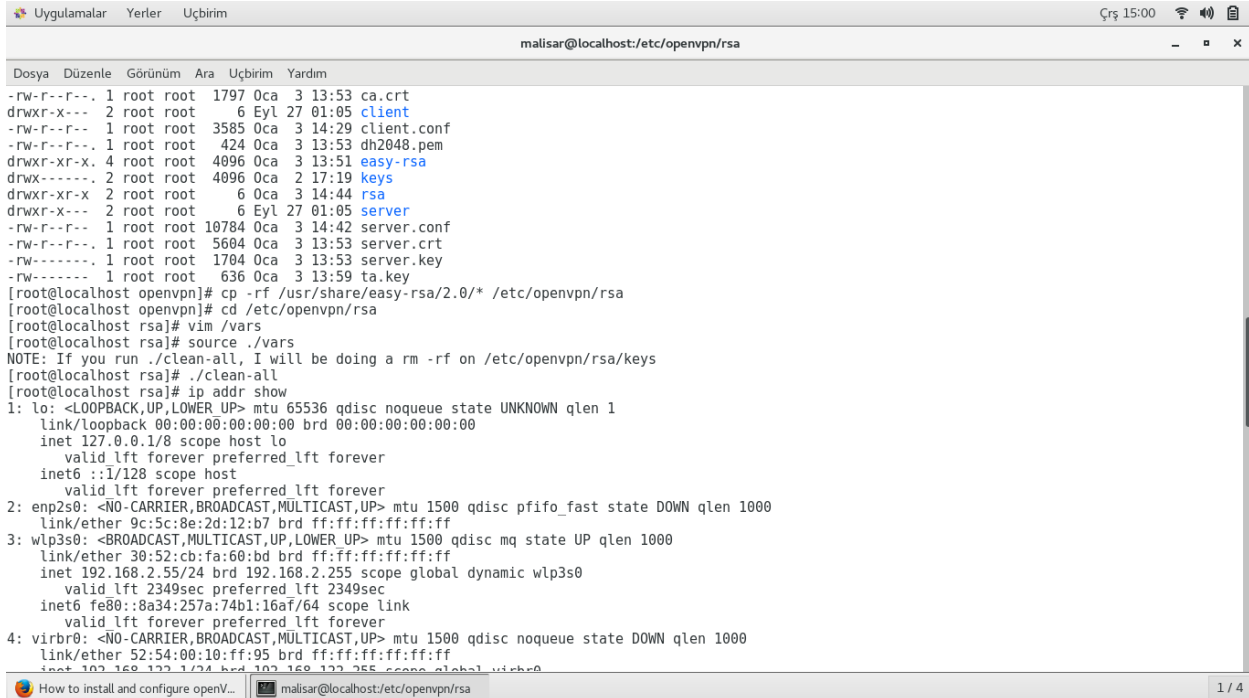
Dosya Düzenle Görünüm Ara Uçbirim Yardım

[root@localhost /]# cd /usr/share/doc
[root@localhost doc]# ls | grep "openvpn"
openvpn-2.4.4
[root@localhost doc]# cd openvpn-2.4.4
[root@localhost openvpn-2.4.4]# ls -l
toplam 116
-rw-r--r-- 1 root root 28 Eyl 26 12:27 AUTHORS
-rw-r--r-- 1 root root 24530 Eyl 27 01:05 Changes.rst
drwxr-xr-x 5 root root 94 Oca 3 14:24 contrib
-rw-r--r-- 1 root root 9474 Eyl 27 01:05 COPYING
-rw-r--r-- 1 root root 18026 Eyl 27 01:05 COPYRIGHT.GPL
-rw-r--r-- 1 root root 35381 Eyl 27 01:05 management-notes.txt
-rw-r--r-- 1 root root 2185 Eyl 27 01:05 README
-rw-r--r-- 1 root root 2603 Eyl 27 01:05 README.auth-pam
-rw-r--r-- 1 root root 866 Eyl 27 01:05 README.down-root
-rw-r--r-- 1 root root 788 Eyl 27 01:05 README.mbedtls
-rw-r--r-- 1 root root 2423 Eyl 27 01:03 README.systemd
drwxr-xr-x 5 root root 77 Oca 3 14:24 sample
[root@localhost openvpn-2.4.4]# cd sample
[root@localhost sample]# ls
sample-config-files sample-scripts sample-windows
[root@localhost sample]# cd sample-config-files
[root@localhost sample-config-files]# ls
client.conf loopback-client openvpn-shutdown.sh roadwarrior-client.conf static-home.conf tls-office.conf
firewall.sh loopback-server openvpn-startup.sh roadwarrior-server.conf static-office.conf xinetd-client-config
home.up office.up README server.conf tls-home.conf xinetd-server-config
[root@localhost sample-config-files]# cp server.conf /etc/openvpn/
cp: '/etc/openvpn/server.conf' in üzerine yazılsın mı?y
[root@localhost sample-config-files]# cp server.conf /etc/openvpn
cp: '/etc/openvpn/server.conf' in üzerine yazılsın mı?y
[root@localhost sample-config-files]# cd /etc/openvpn
[root@localhost openvpn]# mkdir rsa
[root@localhost openvpn]# ls -l
toplam 48
-rw-r--r-- 1 root root 1797 Oca 3 13:53 ca.crt
```

# SERVER CONFIGURATION

We configurate our /etc/openvpn/rsa/vars

```
#vim /vars
#source ./vars
#./clean-all
#ip addr show
```



```
malisar@localhost:/etc/openvpn/rsa$ cat /etc/openvpn/rsa/vars
-rw-r--r-- 1 root root 1797 Oca 3 13:53 ca.crt
drwxr-x--- 2 root root 6 Eyl 27 01:05 client
-rw-r--r-- 1 root root 3585 Oca 3 14:29 client.conf
-rw-r--r-- 1 root root 424 Oca 3 13:53 dh2048.pem
drwxr-xr-x 4 root root 4096 Oca 3 13:51 easy-rsa
drwx----- 2 root root 4096 Oca 2 17:19 keys
drwxr-xr-x 2 root root 6 Oca 3 14:44 rsa
drwxr-x--- 2 root root 6 Eyl 27 01:05 server
-rw-r--r-- 1 root root 10784 Oca 3 14:42 server.conf
-rw-r--r-- 1 root root 5604 Oca 3 13:53 server.crt
-rw----- 1 root root 1704 Oca 3 13:53 server.key
-rw----- 1 root root 636 Oca 3 13:59 ta.key
[root@localhost openvpn]# cp -rf /usr/share/easy-rsa/2.0/* /etc/openvpn/rsa
[root@localhost openvpn]# cd /etc/openvpn/rsa
[root@localhost rsa]# vim /vars
[root@localhost rsa]# source ./vars
NOTE: If you run ./clean-all, I will be doing a rm -rf on /etc/openvpn/rsa/keys
[root@localhost rsa]# ./clean-all
[root@localhost rsa]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid lft forever preferred_lft forever
2: enp2s0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state DOWN qlen 1000
    link/ether 9c:5c:8e:2d:12:b7 brd ff:ff:ff:ff:ff:ff
3: wlp3s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP qlen 1000
    link/ether 30:52:cb:fa:60:bd brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.55/24 brd 192.168.2.255 scope global dynamic wlp3s0
        valid lft 2349sec preferred_lft 2349sec
    inet6 fe80::8a34:257a:74b1:16af/64 scope link
        valid lft forever preferred_lft forever
4: virbr0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN qlen 1000
    link/ether 52:54:00:10:ff:95 brd ff:ff:ff:ff:ff:ff
    inet 10.169.122.1/24 brd 10.169.122.255 scope global virbr0
```

When we build the certificate authority, we will be asked to enter all the information we put into the varsfile, but we will see that your options are already set as the defaults. So, we pressed ENTER for each one.

```
#./build-ca
```

Next thing we generate the key and certificate for the server. Again we can just go through the questions and press ENTER for each one to use your defaults. At the end, answer Y (yes) to commit the changes.

```
#./build-key-server server
```

```
Uygulamalar Yerler Uçbirim malisar@localhost:/etc/openssl/rsa 15:00
Dosya Düzenle Görünüm Ara Uçbirim Yardım
Link/etner 52:54:00:10:11:95 drd 11:11:11:11:11:11
[root@localhost rsa]# ./build-ca
Generating a 2048 bit RSA private key
.....+++
writing new private key to 'ca.key'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [US]:
State or Province Name (full name) [CA]:
Locality Name (eg, city) [SanFrancisco]:
Organization Name (eg, company) [Fort-Funston]:
Organizational Unit Name (eg, section) [MyOrganizationalUnit]:
Common Name (eg, your name or your server's hostname) [Fort-Funston CA]:
Name [EasyRSA]:
Email Address [me@myhost.mydomain]:
[root@localhost rsa]# ls keys
ca.crt ca.key index.txt serial
[root@localhost rsa]# ./build-key-server
Generating a 2048 bit RSA private key
.....+++
writing new private key to 'server.key'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
```

```
Uygulamalar Yerler Uçbirim malisar@localhost:/etc/openssl/rsa 15:00
Dosya Düzenle Görünüm Ara Uçbirim Yardım
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [US]:
State or Province Name (full name) [CA]:
Locality Name (eg, city) [SanFrancisco]:
Organization Name (eg, company) [Fort-Funston]:
Organizational Unit Name (eg, section) [MyOrganizationalUnit]:
Common Name (eg, your name or your server's hostname) [server]:
Name [EasyRSA]:
Email Address [me@myhost.mydomain]:

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
Using configuration from /etc/openssl/rsa/openssl-1.0.0.cnf
Check that the request matches the signature
Signature ok
The Subject's Distinguished Name is as follows
countryName          :PRINTABLE:'US'
stateOrProvinceName  :PRINTABLE:'CA'
localityName         :PRINTABLE:'SanFrancisco'
organizationName     :PRINTABLE:'Fort-Funston'
organizationalUnitName:PRINTABLE:'MyOrganizationalUnit'
commonName           :PRINTABLE:'server'
name                 :PRINTABLE:'EasyRSA'
emailAddress         :IASSTRING:'me@myhost.mydomain'
Certificate is to be certified until Jan  1 11:59:28 2028 GMT (3650 days)
Sign the certificate? [y/n]:y

1 out of 1 certificate requests certified, commit? [y/n]:y
Write out database with 1 new entries
Data Base Updated
[root@localhost rsa]#
```

We build dh parameter.  
It takes 5 minutes to create  
**#./build-dh**

[illegible]

```
#cd easy-rsa/keys
#ls -l
```

We copy files in server to /etc/openvpn

```
#cp ca.crt server.crt server.key dh2048.pem /etc/openvpn
```

```
Yugulmalar Yerler Üçbirim Yardım
malisar@localhost:/etc/openssl

Dosya Düzenle Görünüm Ara Üçbirim Yardım
.....
[root@localhost rsa]# cd ..
[root@localhost openssl]# cd easy-rsa/keys
[root@localhost keys]# ls -l
toplam 88
-rw-r--r-- 1 root root 5604 Oca 3 13:52 01.pem
-rw-r--r-- 1 root root 5483 Oca 3 13:54 02.pem
-rw-r--r-- 1 root root 1797 Oca 3 13:52 ca.crt
-rw----- 1 root root 1708 Oca 3 13:52 ca.key
-rw-r--r-- 1 root root 5483 Oca 3 13:54 client.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:54 client.csr
-rw----- 1 root root 1704 Oca 3 13:54 client.key
-rw-r--r-- 1 root root 424 Oca 3 13:53 dh2048.pem
-rw-r--r-- 1 root root 298 Oca 3 13:54 index.txt
-rw-r--r-- 1 root root 21 Oca 3 13:54 index.txt.attr
-rw-r--r-- 1 root root 21 Oca 3 13:52 index.txt.attr.old
-rw-r--r-- 1 root root 149 Oca 3 13:52 index.txt.old
-rw-r--r-- 1 root root 3 Oca 3 13:54 serial
-rw-r--r-- 1 root root 3 Oca 3 13:52 serial.old
-rw-r--r-- 1 root root 5604 Oca 3 13:52 server.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:52 server.csr
-rw----- 1 root root 1704 Oca 3 13:52 server.key
-rw----- 1 root root 636 Oca 3 14:00 ta.key
[root@localhost keys]# cp ca.crt server.crt server.key dh2048.pem /etc/openssl
cp: '/etc/openssl/ca.crt' in üzerine yazılsın mı?
cp: '/etc/openssl/server.crt' in üzerine yazılsın mı?
cp: '/etc/openssl/server.key' in üzerine yazılsın mı?
cp: '/etc/openssl/dh2048.pem' in üzerine yazılsın mı?
[root@localhost keys]# cd ..
[root@localhost easy-rsa]# cd ..
[root@localhost openssl]# ls -l
toplam 52
-rw-r--r-- 1 root root 1797 Oca 3 15:07 ca.crt
drwxr-x-- 2 root root 6 Eyl 27 01:05 client
-rw-r--r-- 1 root root 3585 Oca 3 14:29 client.conf
```

```
C# Uygulamalar Yerler Uçbirin
malisar@localhost:/etc/openvpn

Dosya Düzene Görünüm Ara Uçbirim Yardım

-rw----- 1 root root 1704 Oca 3 13:54 client.key
-rw-r--r-- 1 root root 424 Oca 3 13:53 dh2048.pem
-rw-r--r-- 1 root root 298 Oca 3 13:54 index.txt
-rw-r--r-- 1 root root 21 Oca 3 13:54 index.txt.attr
-rw-r--r-- 1 root root 21 Oca 3 13:52 index.txt.attr.old
-rw-r--r-- 1 root root 149 Oca 3 13:52 index.txt.old
-rw-r--r-- 1 root root 3 Oca 3 13:54 serial
-rw-r--r-- 1 root root 3 Oca 3 13:52 serial.old
-rw-r--r-- 1 root root 5604 Oca 3 13:52 server.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:52 server.csr
-rw----- 1 root root 1704 Oca 3 13:52 server.key
-rw----- 1 root root 636 Oca 3 14:00 ta.key
[root@localhost keys]# cp ca.crt server.crt server.key dh2048.pem /etc/openvpn
cp: '/etc/openvpn/ca.crt' in üzerine yazılsın mı?y
cp: '/etc/openvpn/server.crt' in üzerine yazılsın mı?y
cp: '/etc/openvpn/server.key' in üzerine yazılsın mı?y
cp: '/etc/openvpn/dh2048.pem' in üzerine yazılsın mı?y
[root@localhost keys]# cd ..
[root@localhost easy-rsa]# cd ..
[root@localhost openvpn]# ls -l
toplam 52
-rw-r--r-- 1 root root 1797 Oca 3 15:07 ca.crt
drwxr-x--- 2 root root 6 Eyl 27 01:05 client
-rw-r--r-- 1 root root 3585 Oca 3 14:29 client.conf
-rw-r--r-- 1 root root 424 Oca 3 15:07 dh2048.pem
drwxr-xr-x 4 root root 4096 Oca 3 13:51 easy-rsa
drwxr----- 2 root root 4096 Oca 2 17:19 keys
drwxr-xr-x 3 root root 4096 Oca 3 14:54 rsa
drwxr-x--- 2 root root 6 Eyl 27 01:05 server
-rw-r--r-- 1 root root 10784 Oca 3 14:42 server.conf
-rw-r--r-- 1 root root 5604 Oca 3 15:07 server.crt
-rw----- 1 root root 1704 Oca 3 15:07 server.key
-rw----- 1 root root 636 Oca 3 13:59 ta.key
[root@localhost openvpn]# restorecon -Rv /etc/openvpn
[root@localhost openvpn]#
```

```
#vim server.conf
```

```
#systemctl -f start openvpn@server.service
```

```
#systemctl -f status openvpn@server.service
```

```
Uygulamalar Yönerge Açık Çıktı 15:17
malisar@localhost:etc/openssl

Dosya Düzene Görünüm Ara Üçbirim Yardım
-rw-r--r-- 1 root root 3585 Oca 3 14:29 client.conf
-rw-r--r-- 1 root root 424 Oca 3 15:07 dh2048.pem
drwxr-xr-x 4 root root 4096 Oca 3 13:51 easy-rsa
drwx----- 2 root root 4096 Oca 2 17:19 keys
drwxr-xr-x 3 root root 4096 Oca 3 14:54 rsa
drwxr-x-- 2 root root 6 Eyl 27 01:05 server
-rw-r--r-- 1 root root 10784 Oca 3 14:42 server.conf
-rw-r--r-- 1 root root 5604 Oca 3 15:07 server.crt
-rw----- 1 root root 1704 Oca 3 15:07 server.key
-rw----- 1 root root 636 Oca 3 13:59 ta.key
[root@localhost openssl]# restorecon -Rv /etc/openssl
[root@localhost openssl]# vim server.conf
[root@localhost openssl]# systemctl -f enable openssl@server.service
[root@localhost openssl]# systemctl -f start openssl@server.service
[root@localhost openssl]# systemctl -f status openssl@server.service
● openssl@server.service - OpenVPN Robust and Highly Flexible Tunneling Application On server
   Loaded: loaded (/usr/lib/systemd/system/openssl@server.service; enabled; vendor preset: disabled)
   Active: active (running) since Çrş 2018-01-03 15:14:33 +03; 2min 27s ago
 Main PID: 11578 (openssl)
   Status: "Initialization Sequence Completed"
   CGroup: /system.slice/system-openssl.slice/openssl@server.service
            └─11578 /usr/sbin/openssl --cd /etc/openssl/ --config server.conf

Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain systemd[1]: Started OpenVPN Robust And ...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Oca 03 15:14:33 localhost.localdomain openssl[11578]: Wed Jan 3 15:14:33 201...
Hint: Some lines were ellipsized, use -l to show in full.
[root@localhost openssl]#
```



# #source ./vars

## We create our client key

# #./build-key myclient

```
Uygulamalar Yerler Uçbirim
malisar@localhost:/etc/openssl/easy-rsa

Dosya Düzenle Görünüm Ara Uçbirim Yardım
[root@localhost openssl]# cd easy-rsa/
[root@localhost easy-rsa]# ls -l
toplam 128
drwxr-xr-x. 3 root root 4096 Oca 2 17:13 2.0
-rwxr-xr-x. 1 root root 119 Oca 3 13:45 build-ca
-rwxr-xr-x. 1 root root 352 Oca 3 13:45 build-dh
-rwxr-xr-x. 1 root root 188 Oca 3 13:45 build-inter
-rwxr-xr-x. 1 root root 163 Oca 3 13:45 build-key
-rwxr-xr-x. 1 root root 157 Oca 3 13:45 build-key-pass
-rwxr-xr-x. 1 root root 249 Oca 3 13:45 build-key-pkcs12
-rwxr-xr-x. 1 root root 268 Oca 3 13:45 build-key-server
-rwxr-xr-x. 1 root root 213 Oca 3 13:45 build-req
-rwxr-xr-x. 1 root root 158 Oca 3 13:45 build-req-pass
-rwxr-xr-x. 1 root root 449 Oca 3 13:45 clean-all
-rwxr-xr-x. 1 root root 1471 Oca 3 13:45 inherit-inter
drwx----- 2 root root 320 Oca 3 14:00 keys
-rwxr-xr-x. 1 root root 302 Oca 3 13:45 list-crl
-rw-r--r-- 1 root root 7791 Oca 3 13:45 openssl-0.9.6.cnf
-rw-r--r-- 1 root root 8348 Oca 3 13:45 openssl-0.9.8.cnf
-rw-r--r-- 1 root root 8245 Oca 3 13:45 openssl-1.0.0.cnf
-rw-r--r-- 1 root root 8245 Oca 3 13:51 openssl.cnf
-rwxr-xr-x. 1 root root 12966 Oca 3 13:45 pkistool
-rwxr-xr-x. 1 root root 928 Oca 3 13:45 revoke-full
-rwxr-xr-x. 1 root root 178 Oca 3 13:45 sign-req
-rw-r--r-- 1 root root 2075 Oca 3 13:50 vars
-rwxr-xr-x. 1 root root 740 Oca 3 13:45 whichopensslcnf
[root@localhost easy-rsa]# source ./vars
NOTE: If you run ./clean-all, I will be doing a rm -rf on /etc/openssl/easy-rsa/keys
[root@localhost easy-rsa]# ./build-key myclient
Generating a 2048 bit RSA private key
.....+++
writing new private key to 'myclient.key'
-----
You are about to be asked to enter information that will be incorporated
```

```
Uygulamalar Yerler Uçbirim
malisar@localhost:/etc/openssl/easy-rsa

Dosya Düzenle Görünüm Ara Uçbirim Yardım
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [US]:
State or Province Name (full name) [CA]:
Locality Name (eg, city) [SanFrancisco]:
Organization Name (eg, company) [Fort-Funston]:
Organizational Unit Name (eg, section) [MyOrganizationalUnit]:
Common Name (eg, your name or your server's hostname) [myclient]:
Name [EasyRSA]:
Email Address [me@myhost.mydomain]:

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
Using configuration from /etc/openssl/easy-rsa/openssl-1.0.0.cnf
Check that the request matches the signature
Signature ok
The Subject's Distinguished Name is as follows
countryName :PRINTABLE:'US'
stateOrProvinceName :PRINTABLE:'CA'
localityName :PRINTABLE:'SanFrancisco'
organizationName :PRINTABLE:'Fort-Funston'
organizationalUnitName:PRINTABLE:'MyOrganizationalUnit'
commonName :PRINTABLE:'myclient'
name :PRINTABLE:'EasyRSA'
emailAddress :IA5STRING:'me@myhost.mydomain'
Certificate is to be certified until Jan 1 12:19:30 2028 GMT (3650 days)
Sign the certificate? [y/n]:y

1 out of 1 certificate requests certified, commit? [y/n]:y
Write out database with 1 new entries
Data Base Updated
[root@localhost easy-rsa]#
```

We copied client configuration keys to /home/malisar/Indirilenler  
**#cp ca.crt myclient.crt myclient.key /home/malisar/Indirilenler**

```
Uygulamalar Yerler Uçbirim malisar@localhost:/home/malisar/Indirilenler
Dosya Düzenle Görünüm Ara Uçbirim Yardım
Write out database with 1 new entries
Data Base Updated
[root@localhost easy-rsa]# cd keys
[root@localhost keys]# ll
toplam 112
-rw-r--r-- 1 root root 5604 Oca 3 13:52 01.pem
-rw-r--r-- 1 root root 5483 Oca 3 13:54 02.pem
-rw-r--r-- 1 root root 5489 Oca 3 15:19 03.pem
-rw-r--r-- 1 root root 1797 Oca 3 13:52 ca.crt
-rw-r--r-- 1 root root 1708 Oca 3 13:52 ca.key
-rw-r--r-- 1 root root 5483 Oca 3 13:54 client.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:54 client.csr
-rw-r--r-- 1 root root 1704 Oca 3 13:54 client.key
-rw-r--r-- 1 root root 424 Oca 3 13:53 dh2048.pem
-rw-r--r-- 1 root root 449 Oca 3 15:19 index.txt
-rw-r--r-- 1 root root 21 Oca 3 15:19 index.txt.attr
-rw-r--r-- 1 root root 21 Oca 3 13:54 index.txt.attr.old
-rw-r--r-- 1 root root 298 Oca 3 13:54 index.txt.old
-rw-r--r-- 1 root root 5489 Oca 3 15:19 myclient.crt
-rw-r--r-- 1 root root 1102 Oca 3 15:19 myclient.csr
-rw-r--r-- 1 root root 1704 Oca 3 15:19 myclient.key
-rw-r--r-- 1 root root 3 Oca 3 15:19 serial
-rw-r--r-- 1 root root 3 Oca 3 13:54 serial.old
-rw-r--r-- 1 root root 5604 Oca 3 13:52 server.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:52 server.csr
-rw-r--r-- 1 root root 1704 Oca 3 13:52 server.key
-rw-r--r-- 1 root root 636 Oca 3 14:00 ta.key
[root@localhost keys]# cp ca.crt myclient.crt myclient.key /home/malisar/Indirilenler
[root@localhost keys]# cd /home/malisar/Indirilenler
[root@localhost Indirilenler]# ls -l
toplam 16
-rw-r--r-- 1 root root 1797 Oca 3 15:22 ca.crt
-rw-r--r-- 1 root root 5489 Oca 3 15:22 myclient.crt
-rw-r--r-- 1 root root 1704 Oca 3 15:22 myclient.key
drwxr-xr-x. 10 root root 157 Ara 28 10:20 pycharm-community-2017.3.1
[root@localhost Indirilenler]# chmod 644 myclient.key
How to install and configure openV... malisar@localhost:/home/malisar/In... 1 / 4
```

myclient.key is a special file so we use chmod command and special 644 value to copy this file  
**#chmod 644 myclient.key**

```
Uygulamalar Yerler Uçbirim malisar@localhost:/home/malisar/Indirilenler
Dosya Düzenle Görünüm Ara Uçbirim Yardım
-rw-r--r-- 1 root root 3 Oca 3 15:19 serial
-rw-r--r-- 1 root root 3 Oca 3 13:54 serial.old
-rw-r--r-- 1 root root 5604 Oca 3 13:52 server.crt
-rw-r--r-- 1 root root 1098 Oca 3 13:52 server.csr
-rw-r--r-- 1 root root 1704 Oca 3 13:52 server.key
-rw-r--r-- 1 root root 636 Oca 3 14:00 ta.key
[root@localhost keys]# cp ca.crt myclient.crt myclient.key /home/malisar/Indirilenler
[root@localhost keys]# cd /home/malisar/Indirilenler
[root@localhost Indirilenler]# ls -l
toplam 16
-rw-r--r-- 1 root root 1797 Oca 3 15:22 ca.crt
-rw-r--r-- 1 root root 5489 Oca 3 15:22 myclient.crt
-rw-r--r-- 1 root root 1704 Oca 3 15:22 myclient.key
drwxr-xr-x. 10 root root 157 Ara 28 10:20 pycharm-community-2017.3.1
[root@localhost Indirilenler]# chmod 644 myclient.key
[root@localhost Indirilenler]# ll
toplam 16
-rw-r--r-- 1 root root 1797 Oca 3 15:22 ca.crt
-rw-r--r-- 1 root root 5489 Oca 3 15:22 myclient.crt
-rw-r--r-- 1 root root 1704 Oca 3 15:22 myclient.key
drwxr-xr-x. 10 root root 157 Ara 28 10:20 pycharm-community-2017.3.1
[root@localhost Indirilenler]# ping 192.168.122.1
PING 192.168.122.1 (192.168.122.1) 56(84) bytes of data.
64 bytes from 192.168.122.1: icmp_seq=1 ttl=64 time=0.035 ms
64 bytes from 192.168.122.1: icmp_seq=2 ttl=64 time=0.045 ms
64 bytes from 192.168.122.1: icmp_seq=3 ttl=64 time=0.035 ms
64 bytes from 192.168.122.1: icmp_seq=4 ttl=64 time=0.036 ms
64 bytes from 192.168.122.1: icmp_seq=5 ttl=64 time=0.034 ms
64 bytes from 192.168.122.1: icmp_seq=6 ttl=64 time=0.037 ms
64 bytes from 192.168.122.1: icmp_seq=7 ttl=64 time=0.046 ms
^C
--- 192.168.122.1 ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 5999ms
rtt min/avg/max/mdev = 0.034/0.038/0.046/0.006 ms
[root@localhost Indirilenler]#
How to install and configure openV... malisar@localhost:/home/malisar/In... 1 / 4
```

Tsync is remote update protocol the network connection of rsync makes it possible to transfer only differences between two file groups

```
#rsync ca.crt myclient.crt myclient.key
malisar@192.168.122.1:/home/malisar/openvpnclient/
```

```
Uygulamalar Yerler Uçbirim malisar@localhost:~/İndirilenler
Dosya Düzenle Görünüm Ara Uçbirim Yardım
[malisar@localhost İndirilenler]$ rsync ca.crt myclient.crt myclient.key malisar@192.168.122.1:/home/malisar/openvpnclient/
malisar@192.168.122.1's password:
[malisar@localhost İndirilenler]$
```

```
#vim /etc/sysctl.conf
#sysctl -p
#touch /etc/pam.d/openvpn
#vim /etc/pam.d/openvpn
#vim /etc/openvpn/server.conf
#systemctl restart openvpn@server.service
#systemctl status openvpn@server.service
```

```
Uygulamalar Yerler Uçbirim malisar@localhost:/home/malisar/İndirilenler
Dosya Düzenle Görünüm Ara Uçbirim Yardım
[root@localhost malisar]# vim /etc/sysctl.conf
[root@localhost malisar]# sysctl -p
net.ipv4.ip_forward = 1
[root@localhost malisar]# touch /etc/pam.d/openvpn
[root@localhost malisar]# cd /home/malisar/İndirilenler
[root@localhost İndirilenler]# touch /etc/pam.d/openvpn
[root@localhost İndirilenler]# vim /etc/pam.d/openvpn
[root@localhost İndirilenler]# vim /etc/openvpn/server.conf
[root@localhost İndirilenler]# vim /etc/openvpn/server.conf
[root@localhost İndirilenler]# systemctl restart openvpn@server.service
[root@localhost İndirilenler]# systemctl status openvpn@server.service
● openvpn@server.service - OpenVPN Robust And Highly Flexible Tunneling Application On server
   Loaded: loaded (/usr/lib/systemd/system/openvpn@server.service; enabled; vendor preset: disabled)
   Active: active (running) since Çrş 2018-01-03 16:27:53 +03; 10s ago
     Main PID: 13810 (openvpn)
    Status: "Initialization Sequence Completed"
   CGroup: /system.slice/system-openvpn.slice/openvpn@server.service
           └─13810 /usr/sbin/openvpn --cd /etc/openvpn/ --config server.conf
             13812 /usr/sbin/openvpn --cd /etc/openvpn/ --config server.conf

Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 /sbin/ip addr add dev tun0 local 10.8.0.1 peer 10.8.0.2
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 /sbin/ip route add 10.8.0.0/24 via 10.8.0.2
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 Could not determine IPv4/IPv6 protocol. Using AF_INET
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 UDPv4 link local (bound): [AF_INET][undef]:1194
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 UDPv4 link remote: [AF_UNSPEC]
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 MULTI: multi init called, r=256 v=256
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 IFCONFIG POOL: base=10.8.0.4 size=62, ipv6=0
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 IFCONFIG POOL LIST
Oca 03 16:27:53 localhost.localdomain openvpn[13810]: Wed Jan 3 16:27:53 2018 Initialization Sequence Completed
[root@localhost İndirilenler]#
```

# CLIENT CONFIGURATION

We create openvpn file for client user and configure it.

**#touch myclient.ovpn**

**#vim myclient.ovpn**

```
Uygulamalar Yerler Uçbirim Çrş 16:29
orcun@localhost:/home/malisar/openvpnclient
orcun@localhost:/home/malisar/openvpnclient 168x43
[root@localhost /]# cd /home/malisar
[root@localhost malisar]# ll
toplam 201864
drwxr-xr-x. 2 malisar malisar 6 Ara 21 19:17 Belgeler
-rw-r--r--. 1 root root 186642081 Ara 28 10:09 eclipse-java-oxygen-ia-linux-gtk-x86_64.tar.gz
drwxrwxr-x. 5 malisar malisar 56 Ara 28 10:14 eclipse-workspace
drwxr-xr-x. 2 malisar malisar 6 Ara 21 19:17 Genel
drwxr-xr-x. 3 malisar malisar 94 Oca 3 15:24 Indirilenler
drwxr-xr-x. 4 malisar malisar 4096 Oca 3 00:22 Masaustu
drwxr-xr-x. 2 malisar malisar 6 Ara 21 19:17 Müzik
drwxrwxr-x. 2 malisar malisar 60 Oca 3 15:55 openvpnclient
drwxrwxr-x. 17 malisar malisar 4096 Oca 1 21:15 Python-3.5.0
-rw-r--r--. 1 root root 20053428 Oca 1 21:12 Python-3.5.0.tgz
drwxr-xr-x. 3 malisar malisar 4096 Oca 3 16:08 Resimler
drwxr-xr-x. 2 malisar malisar 6 Ara 21 19:17 Sablonlar
drwxr-xr-x. 2 malisar malisar 6 Ara 21 19:17 Videolar
[root@localhost malisar]# cd openvpnclient/
[root@localhost openvpnclient]# ls -l
toplam 16
-rw-r--r-- 1 malisar malisar 1797 Oca 3 15:55 ca.crt
-rw-r--r-- 1 malisar malisar 5489 Oca 3 15:55 myclient.crt
-rw-r--r-- 1 malisar malisar 1704 Oca 3 15:55 myclient.key
[root@localhost openvpnclient]# touch myclient.ovpn
[root@localhost openvpnclient]# ll
toplam 16
-rw-r--r-- 1 malisar malisar 1797 Oca 3 15:55 ca.crt
-rw-r--r-- 1 malisar malisar 5489 Oca 3 15:55 myclient.crt
-rw-r--r-- 1 malisar malisar 1704 Oca 3 15:55 myclient.key
-rw-r--r-- 1 root root 0 Oca 3 16:13 myclient.ovpn
[root@localhost openvpnclient]# vim myclient.ovpn
[root@localhost openvpnclient]# cd openvpnclient/
bash: cd: openvpnclient/: Böyle bir dosya ya da dizin yok
[root@localhost openvpnclient]#
```

## #openvpn myclient.ovpn

```
Uygulamalar Yerler Uçbirim Çrş 16:37

orcun@localhost:/home/malisar/openvpnclient

orcun@localhost:/home/malisar/openvpnclient 168x43
[root@localhost openvpnclient]# openvpn myclient.ovpn
Options error: Unrecognized option or missing or extra parameter(s) in myclient.ovpn:11: ca.crt (2.4.4)
Use --help for more information.
[root@localhost openvpnclient]# vim myclient.ovpn
[root@localhost openvpnclient]# openvpn myclient.ovpn
Wed Jan 3 16:30:43 2018 WARNING: file 'myclient.key' is group or others accessible
Wed Jan 3 16:30:43 2018 OpenVPN 2.4.4 x86_64-redhat-linux-gnu [Fedora EPEL patched] [SSL (OpenSSL)] [LZO] [LZ4] [EPOLL] [PKCS11] [MH/PKTINFO] [AEAD] built on Sep 26 2017
Wed Jan 3 16:30:43 2018 library versions: OpenSSL 1.0.2k-fips 26 Jan 2017, LZO 2.06
Enter Auth Username: root
Enter Auth Password: *****
Wed Jan 3 16:30:59 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:30:59 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:30:59 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:30:59 2018 UDP link local: (not bound)
Wed Jan 3 16:30:59 2018 UDP link remote: [AF_INET]192.168.122.1:1194
^CWed Jan 3 16:31:33 2018 event wait : Interrupted system call (code=4)
Wed Jan 3 16:31:33 2018 SIGINT[hard,] received, process exiting
[root@localhost openvpnclient]# openvpn myclient.ovpn
Wed Jan 3 16:32:52 2018 WARNING: file 'myclient.key' is group or others accessible
Wed Jan 3 16:32:52 2018 OpenVPN 2.4.4 x86_64-redhat-linux-gnu [Fedora EPEL patched] [SSL (OpenSSL)] [LZO] [LZ4] [EPOLL] [PKCS11] [MH/PKTINFO] [AEAD] built on Sep 26 2017
Wed Jan 3 16:32:52 2018 library versions: OpenSSL 1.0.2k-fips 26 Jan 2017, LZO 2.06
Enter Auth Username: root
Enter Auth Password: *****
Wed Jan 3 16:32:58 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:32:58 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:32:58 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:32:58 2018 UDP link local: (not bound)
Wed Jan 3 16:32:58 2018 UDP link remote: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:33:59 2018 TLS Error: TLS key negotiation failed to occur within 60 seconds (check your network connectivity)
Wed Jan 3 16:33:59 2018 TLS Error: TLS handshake failed
Wed Jan 3 16:33:59 2018 SIGUSR1[soft,tls-error] received, process restarting
Wed Jan 3 16:33:59 2018 Restart pause, 5 second(s)
Wed Jan 3 16:34:04 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:34:04 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:34:04 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:34:04 2018 UDP link local: (not bound)
Wed Jan 3 16:34:04 2018 UDP link remote: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:35:04 2018 TLS Error: TLS key negotiation failed to occur within 60 seconds (check your network connectivity)
Wed Jan 3 16:35:04 2018 TLS Error: TLS handshake failed
Wed Jan 3 16:35:04 2018 SIGUSR1[soft,tls-error] received, process restarting
Wed Jan 3 16:35:04 2018 Restart pause, 5 second(s)
```

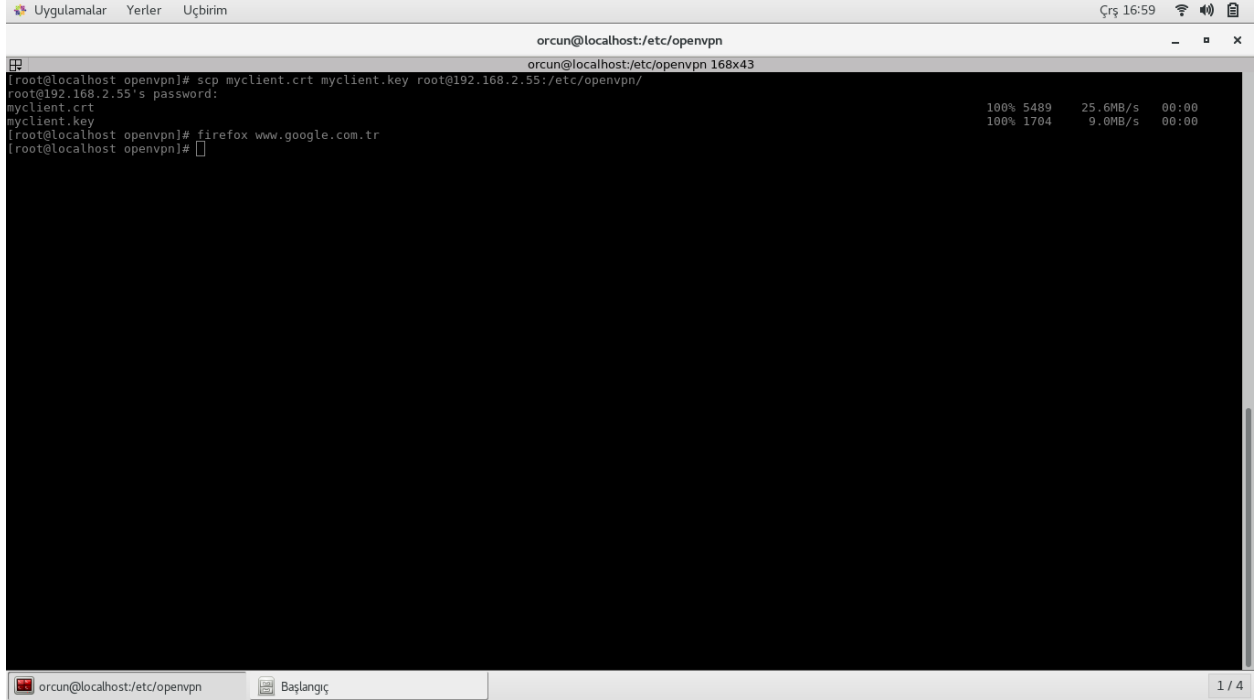
```
Uygulamalar Yerler Uçbirim Çrş 16:37

orcun@localhost:/home/malisar/openvpnclient

orcun@localhost:/home/malisar/openvpnclient 168x43
Wed Jan 3 16:30:59 2018 UDP link remote: [AF_INET]192.168.122.1:1194
^CWed Jan 3 16:31:33 2018 event wait : Interrupted system call (code=4)
Wed Jan 3 16:31:33 2018 SIGINT[hard,] received, process exiting
[root@localhost openvpnclient]# openvpn myclient.ovpn
Wed Jan 3 16:32:52 2018 WARNING: file 'myclient.key' is group or others accessible
Wed Jan 3 16:32:52 2018 OpenVPN 2.4.4 x86_64-redhat-linux-gnu [Fedora EPEL patched] [SSL (OpenSSL)] [LZO] [LZ4] [EPOLL] [PKCS11] [MH/PKTINFO] [AEAD] built on Sep 26 2017
Wed Jan 3 16:32:52 2018 library versions: OpenSSL 1.0.2k-fips 26 Jan 2017, LZO 2.06
Enter Auth Username: root
Enter Auth Password: *****
Wed Jan 3 16:32:58 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:32:58 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:32:58 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:32:58 2018 UDP link local: (not bound)
Wed Jan 3 16:32:58 2018 UDP link remote: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:33:59 2018 TLS Error: TLS key negotiation failed to occur within 60 seconds (check your network connectivity)
Wed Jan 3 16:33:59 2018 TLS Error: TLS handshake failed
Wed Jan 3 16:33:59 2018 SIGUSR1[soft,tls-error] received, process restarting
Wed Jan 3 16:33:59 2018 Restart pause, 5 second(s)
Wed Jan 3 16:34:04 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:34:04 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:34:04 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:34:04 2018 UDP link local: (not bound)
Wed Jan 3 16:34:04 2018 UDP link remote: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:35:04 2018 TLS Error: TLS key negotiation failed to occur within 60 seconds (check your network connectivity)
Wed Jan 3 16:35:04 2018 TLS Error: TLS handshake failed
Wed Jan 3 16:35:04 2018 SIGUSR1[soft,tls-error] received, process restarting
Wed Jan 3 16:35:09 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:35:09 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:35:09 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:35:09 2018 UDP link local: (not bound)
Wed Jan 3 16:35:09 2018 UDP link remote: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:36:09 2018 TLS Error: TLS key negotiation failed to occur within 60 seconds (check your network connectivity)
Wed Jan 3 16:36:09 2018 TLS Error: TLS handshake failed
Wed Jan 3 16:36:09 2018 SIGUSR1[soft,tls-error] received, process restarting
Wed Jan 3 16:36:09 2018 Restart pause, 5 second(s)
Wed Jan 3 16:36:14 2018 WARNING: No server certificate verification method has been enabled. See http://openvpn.net/howto.html#mitm for more info.
Wed Jan 3 16:36:14 2018 TCP/UDP: Preserving recently used remote address: [AF_INET]192.168.122.1:1194
Wed Jan 3 16:36:14 2018 Socket Buffers: R=[212992->212992] S=[212992->212992]
Wed Jan 3 16:36:14 2018 UDP link local: (not bound)
Wed Jan 3 16:36:14 2018 UDP link remote: [AF_INET]192.168.122.1:1194
```

Finally Client connected to server's network by using openvpn.

#scp myclient.crt myclient.key [root@192.168.122.1:/etc/openvpn/](mailto:root@192.168.122.1:/etc/openvpn/)  
#firefox www.google.com.tr



The screenshot shows a terminal window titled "orcun@localhost:/etc/openvpn" with a 168x43 size. The terminal output is as follows:

```
orcun@localhost:/etc/openvpn
[orcun@localhost openvpn]# scp myclient.crt myclient.key root@192.168.2.55:/etc/openvpn/
root@192.168.2.55's password:
myclient.crt                                100% 5489      25.6MB/s   00:00
myclient.key                                100% 1704       9.0MB/s    00:00
[orcun@localhost openvpn]# firefox www.google.com.tr
[orcun@localhost openvpn]#
```

Below the terminal window, a Firefox browser window is visible, showing the address bar with "orcun@localhost:/etc/openvpn" and a "Başlangıç" (Start) button. The bottom right corner of the browser window displays "1 / 4".

## Musa Alişar (What is my ip adress)

Firefox Web Browser

IP Adresim Nedir? IP Adresi Araçları ve Dahası - Mozilla Firefox

https://whatismyipaddress.com/tr/ip-im

IP Adresi | Arama

WhatIsMyIPAddress.com

IP'im IP Arama Hız Testi Kara Liste Kontrolü Eposta İzle Sür IP'yi Değiştir IP'yi Gizle IP Araçları

**IP Arama**  
Başka bir bilgisayarın IP adresini mi biliyorsunuz? Dünyanın neresinde olduğunu —ve daha fazlasını bulabilirsiniz.

**Eposta İzle Sür**  
Aldığınız bir e-postanın çıkış noktasını ve coğrafi konumunu izinden bulabilirsiniz.

**Kara Liste Kontrolü**  
Kullandığınız IP adresi yüzünden kara listeye mi alandınız? Görmek için buraya tıklayın.

**Hız Testi**  
İnternet bağlantınız maksimum hızda mı? Hemen tıklayarak ücretsiz öğrenin.

**IP'yi Gizle**  
İnternet kontrolü bir "aracı" ile gizleyin.

**VULTR High Performance Cloud**  
Deploy a server in under a minute.  
Deploy Now →

**IP Adresiniz:**  
**78.167.28.14**

**IP Detaylarınız:**  
ISP: Turk Telekom  
Şehir: Ankara  
Bunların bilinmesini istemiyor musunuz?  
[IP detaylarınızı gizleyin](#)

Daha fazla ayrıntı için tıklayınız

What you don't know **can** hurt you online.  
[Learn More](#)

**VULTR High Performance**

[malisar@localhost/home/malisar] IP Adresim Nedir? IP Adresi Araçları ... 1 / 4

## Orçun Sancar (What is my ip)

Firefox Web Browser

What Is My IP? Shows your real IP address - WhatIsMyIP.com ® - Mozilla Firefox

https://www.whatismyip.com

Welcome to CentOS x what's my ip — Yande... x What Is My IP? Show... x +

WhatIsMyIP.com®  
THE IP ADDRESS EXPERTS

Log In Create Account

My IP Speed Test IP Lookup Hide My IP Change My IP

Search this website ...

Questions & Answers >  
IP Tools >  
How To >  
Knowledge Base >  
Resources >

BLACK DESERT SİMDİ ONA  
DEVASA GÖNCELİ MEDIAH 2

f 42.7K  
1.4K

Ads by Google

Internet Speed Test  
What Is VPN

Email Lookup  
Find Address

**Your IP Address Is:**  
**78.167.28.14**

City: Ankara  
State: Ankara  
Country: Turkey

**Google Cloud Platform**  
Start your free trial  
Deploy on an infrastructure protected by more than 700 top experts

What Is My IP? Shows your real IP a... [orcun@kerberos:/home/orcun] 1 / 4

## Musa Alişar ifconfig

```
Uygulamalar Yerler Uçbirim Cum 00:16 malisar@localhost:/home/malisar

Dosya Düzenle Görünüm Ara Uçbirim Yardım
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1 (Local Loopback)
RX packets 297 bytes 25690 (25.0 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 297 bytes 25690 (25.0 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

tun0: flags=4305<UP,POINTOPOINT,RUNNING,NOARP,MULTICAST> mtu 1500
inet 10.8.0.1 netmask 255.255.255.255 destination 10.8.0.2
inet6 fe80::8108:3da5:d228:a1ab prefixlen 64 scopeid 0x20<link>
unspec 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00 txqueuelen 100 (UNSPEC)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 3 bytes 144 (144.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
ether 52:54:00:10:ff:95 txqueuelen 1000 (Ethernet)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 0 bytes 0 (0.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlp3s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.225.141.153 netmask 255.255.0.0 broadcast 10.225.255.255
inet6 fe80::4f8b:c97a:292c:2202 prefixlen 64 scopeid 0x20<link>
ether 30:52:cb:fa:60:bd txqueuelen 1000 (Ethernet)
RX packets 46767 bytes 27257593 (25.9 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 31166 bytes 4415036 (4.2 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@localhost malisar]#
```

## Orçun Sancar ifconfig

```
Uygulamalar Yerler Uçbirim Cum 00:18 orcun@localhost:/home

orcun@localhost:/home 168x43
enp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
ether 9c:5c:8e:2d:12:b7 txqueuelen 1000 (Ethernet)
RX packets 847174 bytes 1205169683 (1.1 GiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 427491 bytes 32899907 (30.6 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1 (Local Loopback)
RX packets 297 bytes 25690 (25.0 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 297 bytes 25690 (25.0 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

tun0: flags=4305<UP,POINTOPOINT,RUNNING,NOARP,MULTICAST> mtu 1500
inet 10.8.0.1 netmask 255.255.255.255 destination 10.8.0.2
inet6 fe80::8108:3da5:d228:a1ab prefixlen 64 scopeid 0x20<link>
unspec 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00 txqueuelen 100 (UNSPEC)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 3 bytes 144 (144.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
ether 52:54:00:10:ff:95 txqueuelen 1000 (Ethernet)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 0 bytes 0 (0.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlp3s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.225.141.153 netmask 255.255.0.0 broadcast 10.225.255.255
inet6 fe80::4f8b:c97a:292c:2202 prefixlen 64 scopeid 0x20<link>
ether 30:52:cb:fa:60:bd txqueuelen 1000 (Ethernet)
RX packets 46798 bytes 27262572 (25.9 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 31212 bytes 4419933 (4.2 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[orcun@localhost home]$
```



# REFERENCES

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- <https://openvpn.net/index.php/access-server/docs/admin-guides-sp-859543150/howto-connect-client-configuration.html>
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