

## Como instalar e configurar o OpenVPN no Debian 9

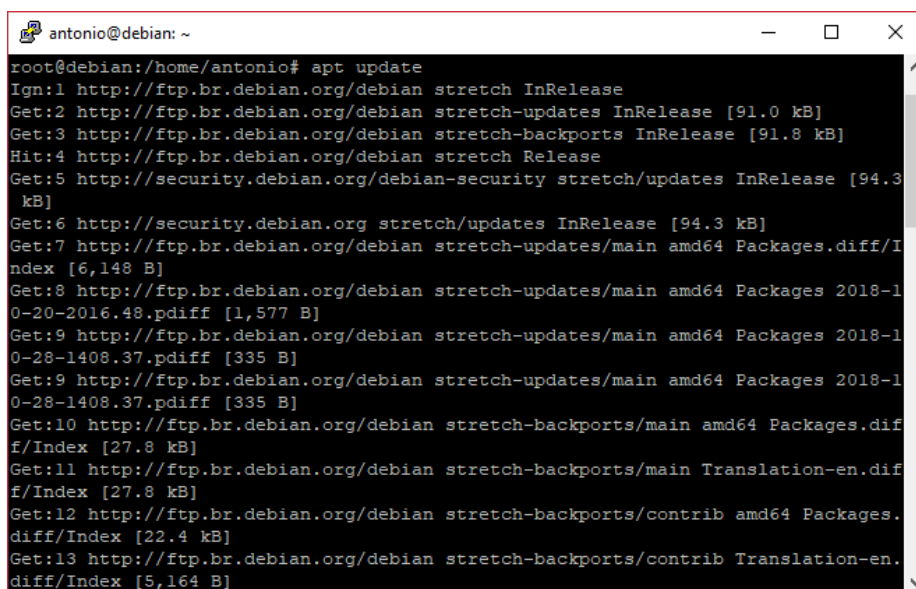
O OpenVPN é um software de rede privada virtual de código aberto. Ele é executado como um modelo cliente-servidor. Um servidor OpenVPN é executado em um computador remoto que está acessível publicamente e você pode se conectar a ele usando o *software* cliente OpenVPN instalado no seu computador. Dessa forma, é possível conectar a todos os computadores e dispositivos em execução na rede do computador remoto e também usar a conexão à Internet desse computador. O OpenVPN também pode ser usado para conectar-se à rede local dos diferentes locais remotos, que estão atrás do NAT e recebem endereços IP não roteáveis. Existem muitos outros usos do OpenVPN.

### 1) Instalando e configurando o OpenVPN:

Primeiro atualize o cache do repositório de pacotes APT de sua máquina Debian 9 com o seguinte comando:

```
#apt update
```

O cache do repositório de pacotes do APT deve ser atualizado.

A terminal window titled 'antonio@debian: ~' with standard window controls. It displays the output of the 'apt update' command. The output shows the system checking for updates from various sources like ftp.br.debian.org and security.debian.org, listing packages to be updated and their sizes. The window has a dark background and a light border.

```
antonio@debian: ~
root@debian:/home/antonio# apt update
Ign:1 http://ftp.br.debian.org/debian stretch InRelease
Get:2 http://ftp.br.debian.org/debian stretch-updates InRelease [91.0 kB]
Get:3 http://ftp.br.debian.org/debian stretch-backports InRelease [91.8 kB]
Hit:4 http://ftp.br.debian.org/debian stretch Release
Get:5 http://security.debian.org/debian-security stretch/updates InRelease [94.3
kB]
Get:6 http://security.debian.org stretch/updates InRelease [94.3 kB]
Get:7 http://ftp.br.debian.org/debian stretch-updates/main amd64 Packages.diff/I
ndex [6,148 B]
Get:8 http://ftp.br.debian.org/debian stretch-updates/main amd64 Packages 2018-1
0-20-2016.48.pdiff [1,577 B]
Get:9 http://ftp.br.debian.org/debian stretch-updates/main amd64 Packages 2018-1
0-28-1408.37.pdiff [335 B]
Get:9 http://ftp.br.debian.org/debian stretch-updates/main amd64 Packages 2018-1
0-28-1408.37.pdiff [335 B]
Get:10 http://ftp.br.debian.org/debian stretch-backports/main amd64 Packages.dif
f/Index [27.8 kB]
Get:11 http://ftp.br.debian.org/debian stretch-backports/main Translation-en.dif
f/Index [27.8 kB]
Get:12 http://ftp.br.debian.org/debian stretch-backports/contrib amd64 Packages.
diff/Index [22.4 kB]
Get:13 http://ftp.br.debian.org/debian stretch-backports/contrib Translation-en.
diff/Index [5,164 B]
```

Agora instale o Git com o seguinte comando:

```
#apt install git
```

```
antonio@debian: ~  
root@debian:/home/antonio# apt install git  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  git-man less liberror-perl patch rsync  
Suggested packages:  
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk  
  gitweb git-arch git-cvs git-mediawiki git-svn ed diffutils-doc  
The following NEW packages will be installed:  
  git git-man less liberror-perl patch rsync  
0 upgraded, 6 newly installed, 0 to remove and 7 not upgraded.  
Need to get 6,258 kB of archives.  
After this operation, 32.3 MB of additional disk space will be used.  
Do you want to continue? [Y/n]
```

Instalar e configurar o OpenVPN manualmente é uma tarefa tediosa. Você terá que conhecer muitas coisas para configurá-lo corretamente. A boa notícia é que, na verdade, existe um repositório GitHub (que você pode encontrar em <https://github.com/Angristan/OpenVPN-install>) que ajuda a instalar e configurar o OpenVPN com muita facilidade.

Agora navegue até o diretório “/home/seu\_usuario/Downloads” com o seguinte comando:

```
#cd /home/antonio/Downloads
```

Clone o repositório OpenVPN-Install GitHub com o seguinte comando:

```
#git clone https://github.com/angristan/openvpn-install.git
```

```
antonio@debian: ~  
root@debian:/home/antonio/Downloads# git clone https://github.com/angristan/openvpn-install  
.git  
Cloning into 'openvpn-install'...  
remote: Enumerating objects: 4, done.  
remote: Counting objects: 100% (4/4), done.  
remote: Compressing objects: 100% (3/3), done.  
remote: Total 1289 (delta 0), reused 3 (delta 0), pack-reused 1285  
Receiving objects: 100% (1289/1289), 310.42 KiB | 364.00 KiB/s, done.  
Resolving deltas: 100% (680/680), done.  
root@debian:/home/antonio/Downloads#
```

Um novo diretório openvpn-install deve ser criado e todos os arquivos do repositório do OpenVPN-Install GitHub devem ser copiados dentro dele.

```
antonio@debian: ~  
root@debian:/home/antonio/Downloads# ls  
openvpn-install  
root@debian:/home/antonio/Downloads#
```

Agora navegue até o diretório “openvpn-install/” com o seguinte comando:

```
#cd openvpn-install
```

Encontre o arquivo “openvpn-install.sh” neste diretório.

```
#ls -las
```

```
antonio@debian: ~
root@debian:/home/antonio/Downloads/openvpn-install# ls -las
total 76
4 drwxr-xr-x 4 root root 4096 Nov 5 18:58 .
4 drwxr-xr-x 3 antonio antonio 4096 Nov 5 18:58 ..
4 drwxr-xr-x 8 root root 4096 Nov 5 18:58 .git
4 drwxr-xr-x 2 root root 4096 Nov 5 18:58 .github
4 -rw-r--r-- 1 root root 229 Nov 5 18:58 .gitlab-ci.yml
4 -rw-r--r-- 1 root root 1107 Nov 5 18:58 LICENSE
36 -rw-r--r-- 1 root root 36406 Nov 5 18:58 openvpn-install.sh
16 -rw-r--r-- 1 root root 12710 Nov 5 18:58 README.md
root@debian:/home/antonio/Downloads/openvpn-install#
```

Agora torne o arquivo executável “**openvpn-install.sh**” com o seguinte comando:

```
# chmod +x openvpn-install.sh
```

Como você pode observar, o script “openvpn-install.sh” agora é executável.

```
antonio@debian: ~
root@debian:/home/antonio/Downloads/openvpn-install# ls -las
total 76
4 drwxr-xr-x 4 root root 4096 Nov 5 18:58 .
4 drwxr-xr-x 3 antonio antonio 4096 Nov 5 18:58 ..
4 drwxr-xr-x 8 root root 4096 Nov 5 18:58 .git
4 drwxr-xr-x 2 root root 4096 Nov 5 18:58 .github
4 -rw-r--r-- 1 root root 229 Nov 5 18:58 .gitlab-ci.yml
4 -rw-r--r-- 1 root root 1107 Nov 5 18:58 LICENSE
36 -rwxr-xr-x 1 root root 36406 Nov 5 18:58 openvpn-install.sh
16 -rw-r--r-- 1 root root 12710 Nov 5 18:58 README.md
root@debian:/home/antonio/Downloads/openvpn-install#
```

Agora, execute o script “openvpn-install.sh” como root com o seguinte comando:

```
#./openvpn-install.sh
```

```
antonio@debian: ~
root@debian:/home/antonio/Downloads/openvpn-install# ./openvpn-install.sh
Welcome to the OpenVPN installer!
The git repository is available at: https://github.com/angristan/openvpn-install

I need to ask you a few questions before starting the setup.
You can leave the default options and just press enter if you are ok with them.

I need to know the IPv4 address of the network interface you want OpenVPN listening to.
Unless your server is behind NAT, it should be your public IPv4 address.
IP address: 10.0.1.251

It seems this server is behind NAT. What is its public IPv4 address or hostname?
We need it for the clients to connect to the server.
Public IPv4 address or hostname:
Public IPv4 address or hostname: 192.168.0.1

Checking for IPv6 connectivity...

Your host does not appear to have IPv6 connectivity.

Do you want to enable IPv6 support (NAT)? [y/n]: n

What port do you want OpenVPN to listen to?
1) Default: 1194
2) Custom
3) Random [49152-65535]
Port choice [1-3]:
```

Agora, verifique se o endereço IP está correto. Se você quiser alterá-lo, você pode alterá-lo aqui. Este será o endereço IP do servidor OpenVPN, uma vez instalado. Portanto, verifique se está correto. Quando terminar, pressione <Enter> para continuar.

Agora você precisa informar ao OpenVPN qual porta usar. A porta padrão é 1194. Mas você pode usar outra porta. Se você quiser usar uma porta específica, pressione 2 e, em seguida, pressione <Enter> . Então o OpenVPN pedirá que você digite um número de porta. Se você quiser que o OpenVPN escolha uma porta aleatória para usar, basta pressionar 3 e pressionar <Enter> . Eu estou indo com a porta padrão. Então, vou apenas pressionar <Enter> aqui.

```
antonio@debian: ~  
I need to know the IPv4 address of the network interface you want OpenVPN listening to.  
Unless your server is behind NAT, it should be your public IPv4 address.  
IP address: 10.0.1.251  
  
It seems this server is behind NAT. What is its public IPv4 address or hostname?  
We need it for the clients to connect to the server.  
Public IPv4 address or hostname:  
Public IPv4 address or hostname: 192.168.0.1  
  
Checking for IPv6 connectivity...  
  
Your host does not appear to have IPv6 connectivity.  
  
Do you want to enable IPv6 support (NAT)? [y/n]: n  
  
What port do you want OpenVPN to listen to?  
1) Default: 1194  
2) Custom  
3) Random [49152-65535]  
Port choice [1-3]:  
Port choice [1-3]: 1  
  
What protocol do you want OpenVPN to use?  
UDP is faster. Unless it is not available, you shouldn't use TCP.  
1) UDP  
2) TCP  
Protocol [1-2]: 1
```

Agora você precisa informar ao OpenVPN qual protocolo de comunicação usar. Você pode usar UDP ou TCP. O UDP é selecionado por padrão e é mais rápido que o TCP. Quando terminar, pressione <Enter> .

```
antonio@debian: ~  
  
What port do you want OpenVPN to listen to?  
1) Default: 1194  
2) Custom  
3) Random [49152-65535]  
Port choice [1-3]:  
Port choice [1-3]: 1  
  
What protocol do you want OpenVPN to use?  
UDP is faster. Unless it is not available, you shouldn't use TCP.  
1) UDP  
2) TCP  
Protocol [1-2]: 1  
  
What DNS resolvers do you want to use with the VPN?  
1) Current system resolvers (from /etc/resolv.conf)  
2) Self-hosted DNS Resolver (Unbound)  
3) Cloudflare (Anycast: worldwide)  
4) Quad9 (Anycast: worldwide)  
5) Quad9 uncensored (Anycast: worldwide)  
6) FDN (France)  
7) DNS.WATCH (Germany)  
8) OpenDNS (Anycast: worldwide)  
9) Google (Anycast: worldwide)  
10) Yandex Basic (Russia)  
11) AdGuard DNS (Russia)  
DNS [1-10]:
```

Agora você tem que selecionar um provedor de DNS. O OpenVPN irá usá-lo para resolver nomes de host. Existem muitos fornecedores para escolher. Eu escolho o padrão, 1) resolvedores de sistema atuais (de /etc/resolv.conf). Isto irá usar o arquivo “/etc/resolv.conf” da sua máquina Debian 9 para resolver os nomes de host do DNS.

```
antonio@debian: ~  
3) Random [49152-65535]  
Port choice [1-3]:  
Port choice [1-3]: 1  
  
What protocol do you want OpenVPN to use?  
UDP is faster. Unless it is not available, you shouldn't use TCP.  
1) UDP  
2) TCP  
Protocol [1-2]: 1  
  
What DNS resolvers do you want to use with the VPN?  
1) Current system resolvers (from /etc/resolv.conf)  
2) Self-hosted DNS Resolver (Unbound)  
3) Cloudflare (Anycast: worldwide)  
4) Quad9 (Anycast: worldwide)  
5) Quad9 uncensored (Anycast: worldwide)  
6) FDN (France)  
7) DNS.WATCH (Germany)  
8) OpenDNS (Anycast: worldwide)  
9) Google (Anycast: worldwide)  
10) Yandex Basic (Russia)  
11) AdGuard DNS (Russia)  
DNS [1-10]: 1  
  
Do you want to use compression? It is not recommended since the VORACLE attack make use of it  
.  
Enable compression? [y/n]:
```

```
antonio@debian: ~  
3) Cloudflare (Anycast: worldwide)  
4) Quad9 (Anycast: worldwide)  
5) Quad9 uncensored (Anycast: worldwide)  
6) FDN (France)  
7) DNS.WATCH (Germany)  
8) OpenDNS (Anycast: worldwide)  
9) Google (Anycast: worldwide)  
10) Yandex Basic (Russia)  
11) AdGuard DNS (Russia)  
DNS [1-10]: 1  
  
Do you want to use compression? It is not recommended since the VORACLE attack make use of it  
.  
Enable compression? [y/n]: n  
  
Do you want to customize encryption settings?  
Unless you know what you're doing, you should stick with the default parameters provided by the script.  
Note that whatever you choose, all the choices presented in the script are safe. (Unlike OpenVPN's defaults)  
See https://github.com/angristan/openvpn-install#security-and-encryption to learn more.  
Customize encryption settings? [y/n]: n  
  
Okay, that was all I needed. We are ready to setup your OpenVPN server now.  
You will be able to generate a client at the end of the installation.  
Press any key to continue...
```

Agora digite o nome do cliente (não use espaços) e pressione <Enter> .

```
antonio@debian: ~  
Note: using Easy-RSA configuration from: ./vars  
  
Using SSL: openssl OpenSSL 1.1.0f 25 May 2017  
Using configuration from ./safessl-easyrsa.cnf  
  
An updated CRL has been created.  
CRL file: /etc/openvpn/easy-rsa/pki/crl.pem  
  
* Applying /etc/sysctl.d/20-openvpn.conf ...  
net.ipv4.ip_forward = 1  
* Applying /etc/sysctl.d/99-sysctl.conf ...  
* Applying /etc/sysctl.conf ...  
Created symlink /etc/systemd/system/multi-user.target.wants/openvpn@server.service → /etc/systemd/system/openvpn@.service.  
Created symlink /etc/systemd/system/multi-user.target.wants/iptables-openvpn.service → /etc/systemd/system/iptables-openvpn.service.  
  
Tell me a name for the client.  
Use one word only, no special characters.  
Client name: cebolinha  
  
Do you want to protect the configuration file with a password?  
(e.g. encrypt the private key with a password)  
1) Add a passwordless client  
2) Use a password for the client  
Select an option [1-2]:
```

Use a opção 2 para inserir uma senha ao cliente.

```
antonio@debian: ~  
1) Add a passwordless client  
2) Use a password for the client  
Select an option [1-2]: 2  
⚠ You will be asked for the client password below ⚠  
  
Note: using Easy-RSA configuration from: ./vars  
  
Using SSL: openssl OpenSSL 1.1.0f 25 May 2017  
Generating an EC private key  
writing new private key to '/etc/openvpn/easy-rsa/pki/private/cebolinha.key.jv2b7lF6Q7'  
Enter PEM pass phrase:  
Verifying - Enter PEM pass phrase:  
-----  
Using configuration from ./safessl-easyrsa.cnf  
Check that the request matches the signature  
Signature ok  
The Subject's Distinguished Name is as follows  
commonName      :ASN.1 12:'cebolinha'  
Certificate is to be certified until Oct 20 21:28:45 2021 GMT (1080 days)  
  
Write out database with 1 new entries  
Data Base Updated  
  
Client cebolinha added, the configuration file is available at /root/cebolinha.ovpn.  
Download the .ovpn file and import it in your OpenVPN client.  
If you want to add more clients, you simply need to run this script another time!  
root@debian:/home/antonio/Downloads/openvpn-install#
```

Agora você deve ser capaz de encontrar um arquivo OVPN no diretório ROOT com o mesmo nome do nome do seu cliente (como você definiu anteriormente). No meu caso, o nome do arquivo é cebolinha.ovpn.

```
antonio@debian: ~  
root@debian:~# ls -las  
total 40  
4 drwx----- 4 root root 4096 Nov  5 19:28 .  
4 drwxr-xr-x 22 root root 4096 Oct  4 19:00 ..  
4 -rw----- 1 root root 2019 Oct 30 11:51 .bash_history  
4 -rw-r--r-- 1 root root 570 Jan 31 2010 .bashrc  
4 drwx----- 2 root root 4096 Oct  4 19:09 .cache  
4 -rw-r--r-- 1 root root 2813 Nov  5 19:28 cebolinha.ovpn  
4 drwxr-xr-x 2 root root 4096 Oct 22 17:18 .nano  
4 -rw-r--r-- 1 root root 148 Aug 17 2015 .profile  
4 -rw----- 1 root root 1024 Nov  5 19:28 .rnd  
4 -rw-r--r-- 1 root root 165 Nov  5 19:26 .wget-hsts  
root@debian:~#
```

## 2) Conectando ao servidor OpenVPN:

Se você quiser se conectar ao seu servidor OpenVPN de outro computador, você precisará de uma cópia do arquivo OVPN (no meu caso cebolinha.ovpn) que foi gerado pelo instalador do OpenVPN. No computador cliente, você precisa instalar o software cliente OpenVPN.

Se você estiver usando o sistema operacional Linux, instale o OpenVPN lá e copie o arquivo OVPN lá e instale o OpenVPN com o seguinte comando:

```
#apt install openvpn
```

Depois copie o arquivo cebolinha.ovpn para a máquina cliente. Agora, execute o seguinte comando para se conectar ao seu servidor OpenVPN:

```
#openvpn --config cebolinha.ovpn
```

Você deve estar conectado ao seu servidor OpenVPN.

```
Server Authentication  
Sat Sep  1 22:38:50 2018 VERIFY OK: CN=server_e2qSGhthkhBOBRnk  
Sat Sep  1 22:38:50 2018 VERIFY X509NAME OK: CN=server_e2qSGhthkhBOBRnk  
Sat Sep  1 22:38:50 2018 VERIFY OK: depth=0, CN=server_e2qSGhthkhBOBRnk  
Sat Sep  1 22:38:50 2018 Data Channel Encrypt: Cipher 'AES-128-CBC' initialized with 128 bit key  
Sat Sep  1 22:38:50 2018 Data Channel Encrypt: Using 256 bit message hash 'SHA256' for HMAC authentication  
Sat Sep  1 22:38:50 2018 Data Channel Decrypt: Cipher 'AES-128-CBC' initialized with 128 bit key  
Sat Sep  1 22:38:50 2018 Data Channel Decrypt: Using 256 bit message hash 'SHA256' for HMAC authentication  
Sat Sep  1 22:38:50 2018 Control Channel: TLSv1.2, cipher TLSv1/SSLv3 DHE-RSA-AES128-GCM-SHA256, 3072 bit RSA  
Sat Sep  1 22:38:50 2018 [server_e2qSGhthkhBOBRnk] Peer Connection Initiated with [AF_INET]192.168.1.0:671194  
Sat Sep  1 22:38:52 2018 SENT CONTROL [server_e2qSGhthkhBOBRnk]: 'PUSH_REQUEST' (status=1)  
Sat Sep  1 22:38:52 2018 PUSH: Received control message: 'PUSH_REPLY,dhcp-option DNS 192.168.10.1,redirect-gateway def1 bypass-dhcp,route-gateway 10.8.0.1,topology subnet,ping 10,ping-restart 120,ifconfig 10.8.0.2 255.255.255.0,peer-id 0'  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: timers and/or timeouts modified  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: --ifconfig/up options modified  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: route options modified  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: route-related options modified  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: --ip-win32 and/or --dhcp-option options modified  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: peer-id set  
Sat Sep  1 22:38:52 2018 OPTIONS IMPORT: adjusting link_mtu to 1572  
Sat Sep  1 22:38:52 2018 ROUTE_GATEWAY 192.168.10.1/255.255.255.0 IFACE=ens32 HWADDR=00:0c:29:c3:05:38  
Sat Sep  1 22:38:52 2018 TUN/TAP device tun0 opened  
Sat Sep  1 22:38:52 2018 TUN/TAP TX queue length set to 100  
Sat Sep  1 22:38:52 2018 do_ifconfig, tt->ip6=0, tt->did_ifconfig_ip6_setup=0  
Sat Sep  1 22:38:52 2018 /sbin/ip link set dev tun0 up mtu 1500  
Sat Sep  1 22:38:52 2018 /sbin/ip addr add dev tun0 10.8.0.2/24 broadcast 10.8.0.255  
Sat Sep  1 22:38:52 2018 /sbin/ip route add 192.168.10.0/24 dev ens32  
Sat Sep  1 22:38:52 2018 /sbin/ip route add 0.0.0.0/1 via 10.8.0.1  
Sat Sep  1 22:38:52 2018 /sbin/ip route add 128.0.0.0/1 via 10.8.0.1  
Sat Sep  1 22:38:52 2018 Initialization Sequence Completed
```

Como você pode ver, uma interface tun0 é adicionada ao meu servidor Debian.