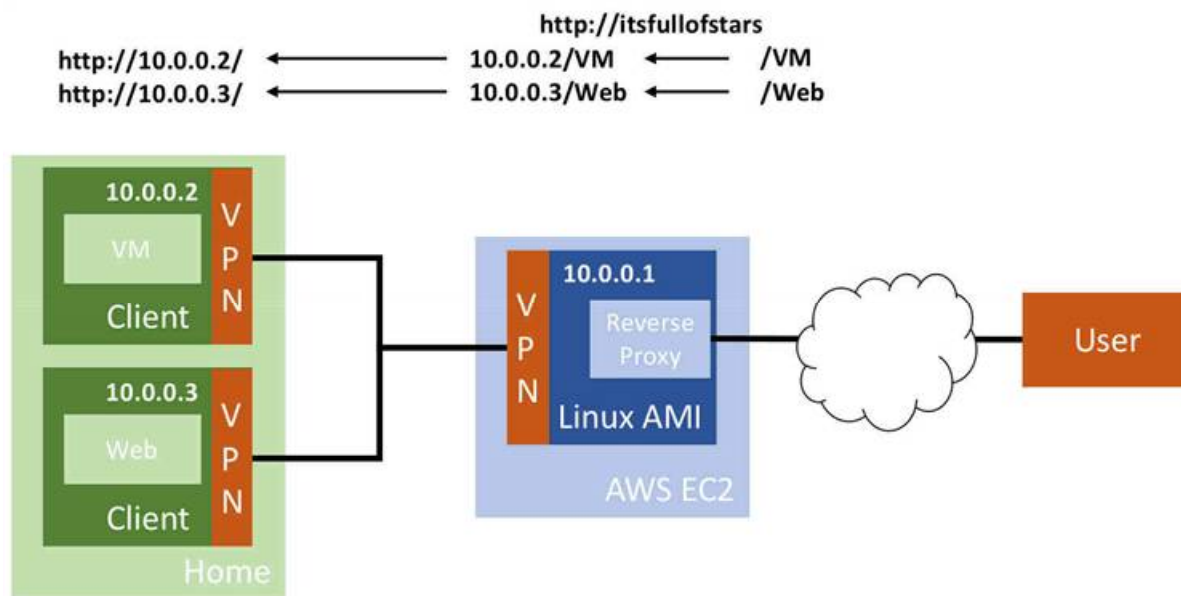


OpenVPN Assign static IP to client

<https://www.itsfullofstars.de/2018/09/openvpn-assign-static-ip-to-client/>

After configuring the overall OpenVPN client and server infrastructure, my clients can connect to a VPN. The client can access server resources and vice versa. While the server gets normally always the same IP assigned, the client IP address is assigned dynamically from a pool of IP addresses. Meaning: there is no guarantee that the client always gets the same IP address. Normally, this is not a problem, as the client connects to consume server resources. Such like a web site, or git repository. In my case, the architecture is that the OpenVPN server acts as a proxy to internal services. The web site, git repository, etc are running on the client. Therefore, the server must be able to connect to the client using a fix address.



To make this work, each time a client connects, the same IP must be assigned to. OpenVPN allows to assign a static IP to a client.

Configuration

1. In `/etc/openvpn` create folder `ccd`. Ccd stands for client config directory, meaning: it contains the configuration for a client.
2. Edit file `server.conf` and add line "`client-config-dir ccd`"

```
# EXAMPLE: Suppose the client
# having the certificate common name "Thelonious"
# also has a small subnet behind his connecting
# machine, such as 192.168.40.128/255.255.255.248.
# First, uncomment out these lines:
client-config-dir ccd
```

3. Create a configuration file for each client and put into directory `ccd`. As file name, use the same name for the client as used in the CN field of the client certificate.

```
ifconfig-push IP MASK
```

Example:

```
ifconfig-push 10.8.0.2 255.255.255.255
```

CLI steps

```
sudo mkdir /etc/openvpn/ccd
```

```
sudo touch /etc/openvpn/ccd/client1
sudo vim /etc/openvpn/server.conf
Uncomment the line containing client config parameter
client-config-dir ccd
```

```
# EXAMPLE: Suppose the client
# having the certificate common name "Thelonious"
# also has a small subnet behind his connecting
# machine, such as 192.168.40.128/255.255.255.248.
# First, uncomment out these lines:
client-config-dir ccd
```

```
sudo vim /etc/openvpn/ccd/client1
```

Insert:

```
ifconfig-push 10.8.0.2 255.255.255.255
```

Restart OpenVPN service on server

```
sudo /etc/init.d/openvpn restart
```

```
[ec2-user@ip-10-0-0-136 ~]$ sudo /etc/init.d/openvpn restart
openvpn beenden: [ OK ]
openvpn starten: [ OK ]
```

Client with automatic assignment of IP: 10.8.0.6

```
tun0      Link encap:UNSPEC  HWaddr 00-00-00-00-00-00-00-00-00-00-
          inet addr:10.8.0.6  P-t-P:10.8.0.5  Mask:255.255.255.255
```

After restart of OpenVPN server: IP is now 10.8.0.2

```
tun0      Link encap:UNSPEC  HWaddr 00-00-00-00-00-00-00-00-00-00-
          inet addr:10.8.0.2  P-t-P:255.255.255.255  Mask:255.255.255.255
```

Server log

```
openvpn[10952]: [client1] Peer Connection Initiated with [AF_INET]
openvpn[10952]: client1/      OPTIONS IMPORT: reading client specific options from: ccd/client1
openvpn[10952]: client1/      MULTI: Learn: 10.8.0.2 -> client1/
openvpn[10952]: client1/      MULTI: primary virtual IP for client1/      10.8.0.2
openvpn[10952]: client1/      PUSH: Received control message: 'PUSH_REQUEST'
```

Additional information can be found in [OpenVPN documentation](https://openvpn.net/index.php/open-source/documentation/manuals/65-openvpn-20x-manpage.html).

client-config-dir

“This file can specify a fixed IP address for a given client using `-ifconfig-push`, as well as fixed subnets owned by the client using `-iroute`.” <https://openvpn.net/index.php/open-source/documentation/manuals/65-openvpn-20x-manpage.html>

ifconfig-push

„Push virtual IP endpoints for client tunnel, overriding the `-ifconfig-pool` dynamic allocation.”

<https://openvpn.net/index.php/open-source/documentation/manuals/65-openvpn-20x-manpage.html>