

OpenVPN server (CentOS 7): client devices are pulling VPN addresses outside of the defined DHCP Address Range.

Last Modified on 05/17/2021 4:36 pm EDT

Products Affected:

CentOS7 based OpenVPN server on Wave 7.0

Issue:

With this particular configuration, when you apply adjustments made to this range, the OpenVPN services will be restarted as expected; however, the client devices will start pulling VPN addresses from the lowest available IP. In the example shown below, the first client will be 10.10.2.2 as 10.10.2.1 is the tun0 interface on the OpenVPN server itself.

Vertical OpenVPN: Off Wave - DHCP configurations

OpenVPN Network Password VPN Server Network Test Connection/User Sync Certificate Maintenance

OpenVPN must create a specific network for your VPN phones to operate on. These are the settings for that network.

Do not change these settings unless the default 10.10.2.0 subnet is already in use on your network. In that case, change these settings to a unique subnet.

VPN Client Subnet: 10.10.2.0

VPN Client Subnet Mask: 255.255.255.0

Start End

DHCP Address Range: 10.10.2.10 to 10.10.2.255

Primary DNS Server: 8.8.8.8

Secondary DNS Server:

Domain (optional):

OK Cancel

Cause:

This appears related to the OpenVPN release, 2.4.x, used on the server when configured to use 'topology subnet'. This setting allows the OpenVPN server to utilize the entire address space in the client subnet. The previous

OpenVPN release running on CentOS 6, by default, did honor this setting; but was configured to allocate a /30 network (reserving 4 IP addresses) for each client device.

Symptoms:

In Station Monitor, you'll see that the phones below are getting client IP addresses, 10.10.2.2 & 10.10.2.3 as shown below. This is contrary to the DHCP Address Range above showing that the first available IP should be 10.10.2.10.

Primary Ext	Display Name	State	In Use By	Other Party	Slot:Port / MAC	Phone Type	Phone Status	IP Address
12138	5ki-24g,2500	Idle			B40EDCBAE6A7	Edge 5000i-24G(v.Edge ...		10.10.2.3
12143	9830,2500	Idle			B061C705AE24	Edge 9830(v.Vertical Edg...		10.10.2.2

Solution:

The solution here is to understand that whatever network you assign to the OpenVPN clients, ALL of the addresses will be available for client devices with the exception of the following:

1. The network address, e.g. 10.10.2.0.
2. The broadcast address, e.g. 10.10.2.255.
3. The first host IP in the network, e.g. 10.10.2.1, that is allocated to the OpenVPN server itself.

The benefit here is that in a /24 (255.255.255.0) network, rather than 63 clients being available to the CentOS 6 based OpenVPN server, you can now get 253 clients in the same address space.