CP6000

Network Configuration for Ethernet and VPN Connectivity

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This document explains how the station is connected to the cloud and other network entities when ethernet cable is used. The station connects to the router through the ethernet cable. From the router, the connectivity is established between the station and the ChargePoint VPN server over the public network, through a VPN tunnel. Since the traffic goes over public network, tunnel ensures that the traffic is encrypted. When the connection is established between the station and the ChargePoint Server, all ChargePoint nodes should be reachable from the station.
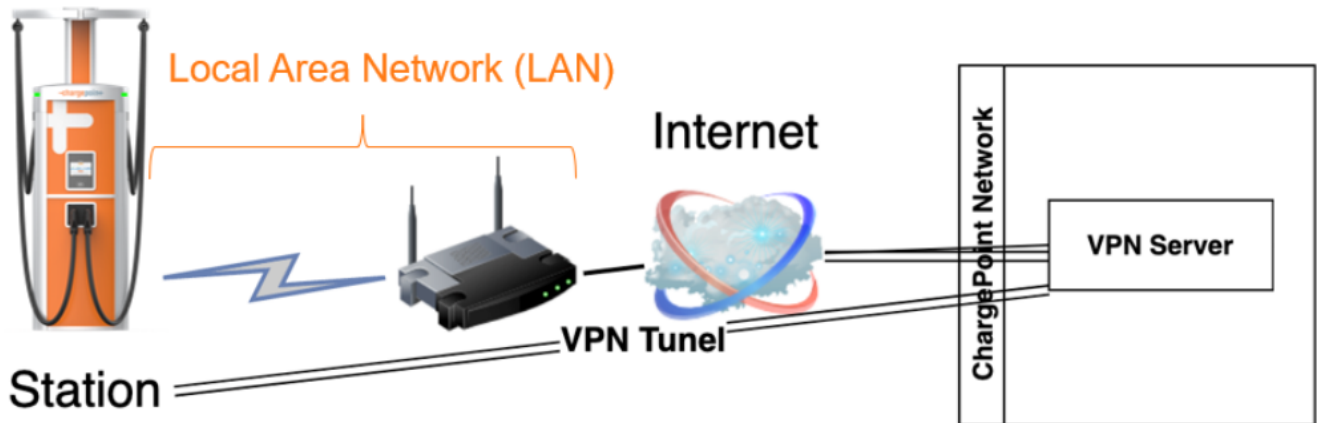
Disclaimer

ChargePoint does not permit the retrofit of ethernet connectivity onto existing stations due to compatibility issues with the USB to Ethernet accessory. A site host is required to purchase new station hardware or seek extraordinary approval from ChargePoint Product Management if a retrofit is necessary.

Materials Required

- Windows Laptop with a RJ45 ethernet port
- Ethernet cable

Definitions

- **VPN**: Virtual Private Network
- **Station**: Refers to the CP6000 station.
- **VPN Server**: Refers to the ChargePoint VPN Server.
- **VPN Client**: Refers to the client running on the CP6000 station.
- **IP**: Internet Protocol

How to Use this Guide

After successful completion of pre-installation checks, the technician must complete the following:

1. Refer to CP6000 Installation Guide EU to physically install the USB-to-Ethernet Field Module.
2. Verify the station's firmware version.
3. Use the Installer App to configure the CP6000 for Ethernet connectivity.

If the station fails to connect to the network after installing the Ethernet adapter, refer the Troubleshooting Ethernet Connectivity section for troubleshooting steps.

Installation and Configuration   **2**

Pre-Installation Checks

Perform the following steps on a Windows laptop to verify connectivity to the VPN server:

1. Using the Ethernet cable intended for the station (or alternatively, a cable connected to the site router), plug it into the laptop's RJ45 port.
2. Open Command Prompt and enter: `ipconfig`.
3. Check if the Ethernet Adapter has an IP as follows:

```
Ethernet adapter Ethernet 2:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::4397:bee8:a29e:b2dd%74
   IPv4 Address. . . . . . . . . . . : 172.16.98.88
   Subnet Mask . . . . . . . . . . . : 255.255.254.0
   Default Gateway . . . . . . . . . : 172.16.98.1
```

4. If an IP address is assigned (example, `172.16.98.88`), it indicates that the laptop is successfully connected to the router.
5. If no IP address is assigned, it indicates a connectivity issue. Contact the network or system administrator for support.

```
Ethernet adapter Bluetooth Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
```

6. Check VPN Server Resolution. In the Command Prompt, run the appropriate nslookup command based on your region.
   a. **Europe and United Kingdom**: "`nslookup vpn.eu.prod.chargepointnetwork.net`"

7. If the VPN server endpoint URL can be resolved by the DNS server, the output will display the IP address of the VPN server.

```
                    @CP-US-JJX5R7GQQ2 ~ % nslookup vpn.eu.prod.chargepoint.com
Server:         2001:558:feed::1
Address:        2001:558:feed::1#53

Non-authoritative answer:
vpn.eu.prod.chargepoint.com        canonical name = default-us.chargepoint.com.
default-us.chargepoint.com         canonical name = default-us.chargepoint.com.cdn.cloudflare.net.
Name:   default-us.chargepoint.com.cdn.cloudflare.net
Address: 104.18.21.81
Name:   default-us.chargepoint.com.cdn.cloudflare.net
Address: 104.18.20.81
```

8. If the VPN Server URL cannot be resolved, the command will be unsuccessful as shown in the image below. Contact the network or system administrator for support.

```
C:\Users\Loaner>nslookup vpn-eu.prod.chargepointnetwork.net
Server:  dns.google
Address:  8.8.8.8

*** dns.google can't find vpn-eu.prod.chargepointnetwork.net: Non-existent domain
```

Verify Station Firmware Version

To check the firmware version on the station:

1. Click "**?**" icon located at the bottom right of the display.
2. Select the **gear** symbol on the bottom right of the menu.
3. Select **About** option.

If the firmware version is lower than the one listed below, ethernet connectivity cannot be enabled. Please contact ChargePoint for support.

- **CP6000**: 2024.03.00.428

![chargepoint logo]

Troubleshooting Ethernet Connectivity 3

To check the station's connectivity status, follow these steps:

1. Navigate to the **Network Signal** page.
2. Click the "**?**" icon located at the bottom right of the display.
3. Select the **gear** symbol on the bottom right of the menu.
4. Select **Network Signal** option.
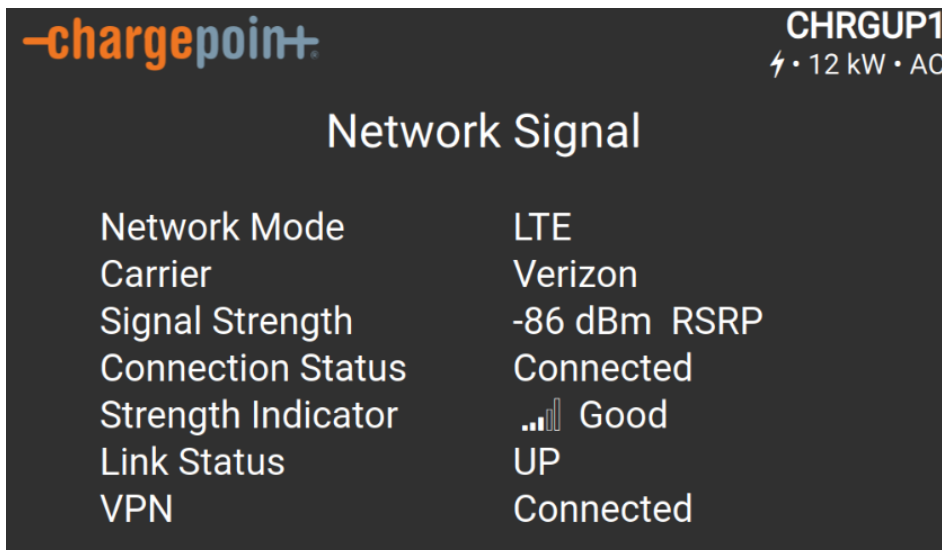
Link Status

- UP: Indicates that the ethernet port has an IP and the connectivity to the router is established.
- DOWN: Indicates that the ethernet link does not have an IP.

VPN

- Connected: Indicates that the station is connected to the VPN server.
- Disconnected: Indicates that the station is not able to connect to VPN Server.

Connection Status

- Connected: Indicates that the station is connected to the cloud.
- Disconnected: Indicates that the station is not able to connect to the cloud.

Link Status	VPN	Meaning	Debugging Steps
Down	Not Connected	Physical ethernet connection issue	The station is unable to establish a physical connection to the router. • Verify with the network administrator for any loose or damaged wiring. • Power cycle the station by disconnecting the breaker for 30 seconds. • Repeat the steps outlined in theTroubleshooting Ethernet Connectivity section.
Up	Disconnected	The VPN client on the station is not able to connect to the VPN server.	There can be multiple causes for this: DNS resolution failure: • Ensure that your laptop can resolve the VPN server endpoint by performing the Troubleshooting Ethernet Connectivity. Firewall restrictions: • If the DNS resolves successfully, consult with the network administrator to verify if any firewall rules are blocking the connection. No network connectivity from station to public network: • Check with network administrator. The station needs to connect to the following ports: • Usage: HTTPS, Protocol: TCP, Port: 443 • Usage: NTP, Protocol: UDP, Port: 123 • Usage: VPN, Protocol: TCP, Ports: 52007, 52017 Refer Site Qualification Form for details.
Up	Connected	A ethernet connection is established and the VPN client on the station is connected to the ChargePoint VPN Server.	If there are still network connectivity issues, • Contact ChargePoint customer support.

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