Appendix 13: Connecting to the Internet

Contents

Introduction

This article will go over the steps to connect the controller to the internet.

Objectives

- Show how to connect to the internet via PLCnext Engineer
- Show how to connect to the internet via SSH connection
- Test the internet connection

Procedure

Connect to the internet

This section will explain the process to connect the controller to the internet using PLCnext Engineer and SSH connection.

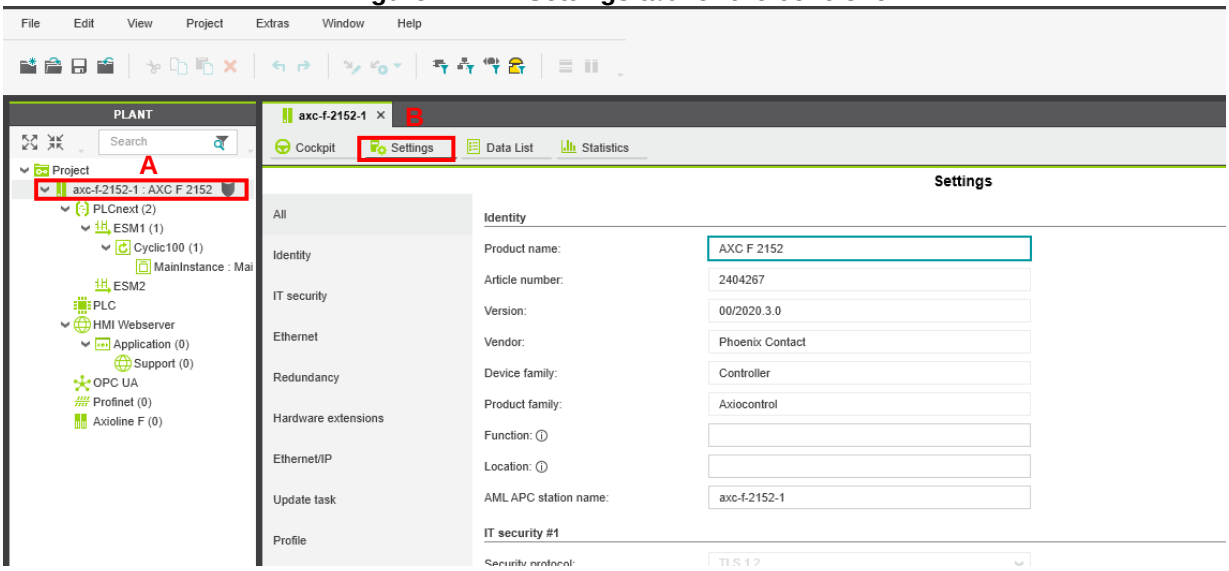
NOTE: You must know the IP address of your router/cellular modem! (By default the IP address is the x.x.x.1 for routers)

1.1 – PLCnext Engineer:

1. Inside PLCnext Engineer, double click the axc-f-2152-1 in the plant window (A), then click the Settings tab (B).

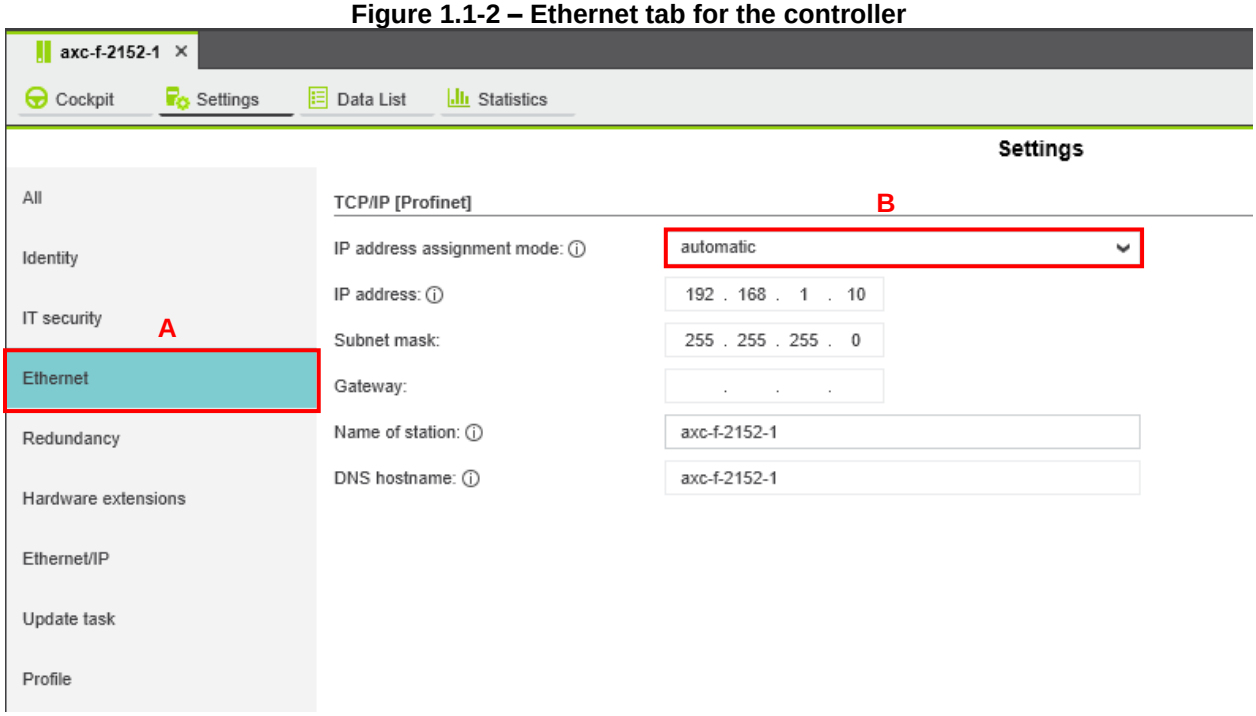
   If you are not familiar with PLCnext Engineer, refer to the Quick Start Guide.

Figure 1.1-1 – Settings tab for the controller



2. On the left of the settings window, click Ethernet (A), then change the IP address assignment mode to manual (B) as shown in Figure 1.1-2.

Figure 1.1-2 – Ethernet tab for the controller

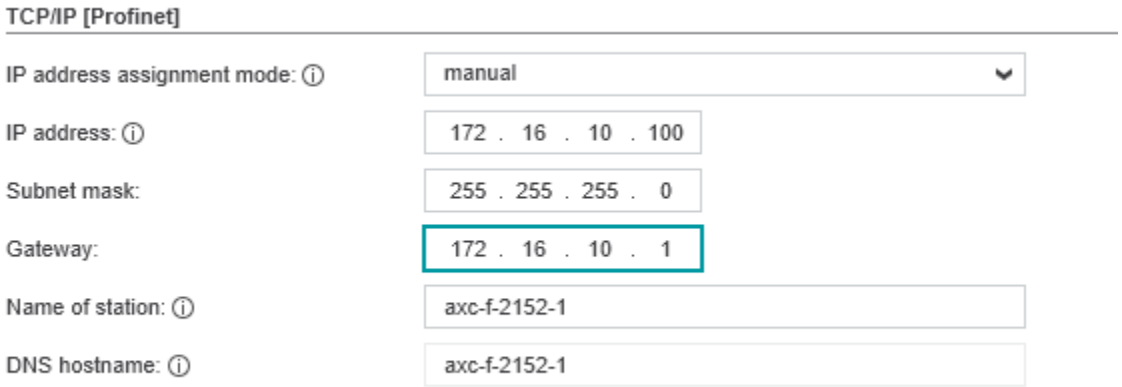


3. Once manual is selected, you can then change the IP address if needed.

NOTE: The IP address of the controller must be on the same subnet as the router/cellular modem!

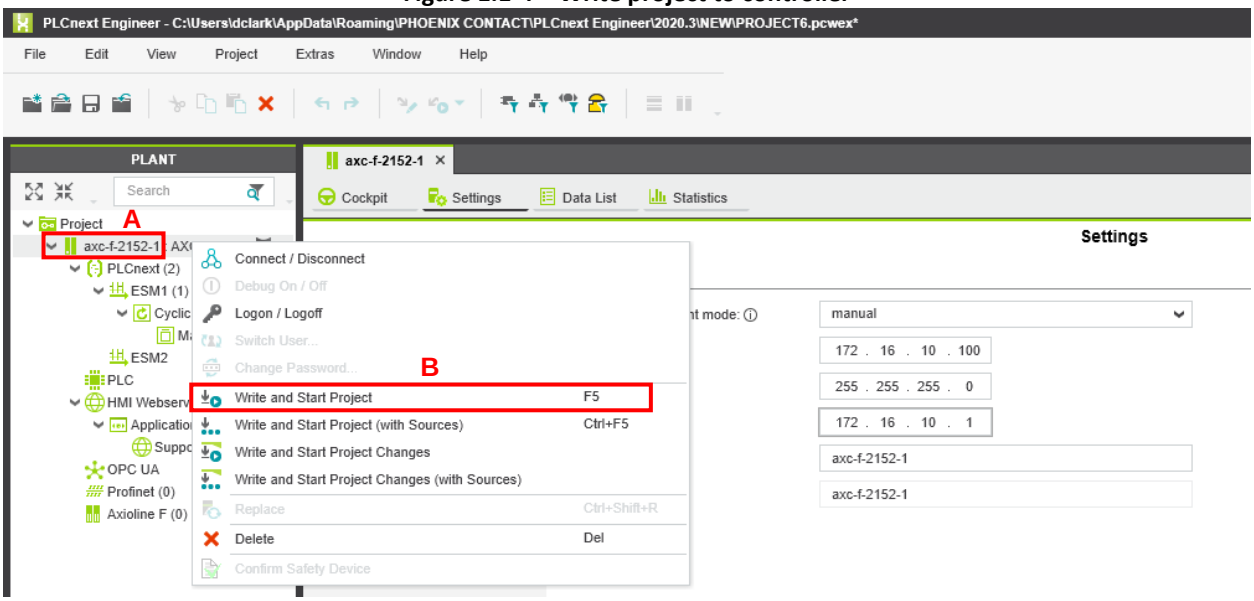
4. In the Gateway field as shown in Figure 1.1-3 enter the IP address of your router/cellular modem.

Figure 1.1-3 – Gateway IP address



5. If the IP address is the same, write the project to the controller as shown in Figure 1.1-4. Otherwise skip to step 6.

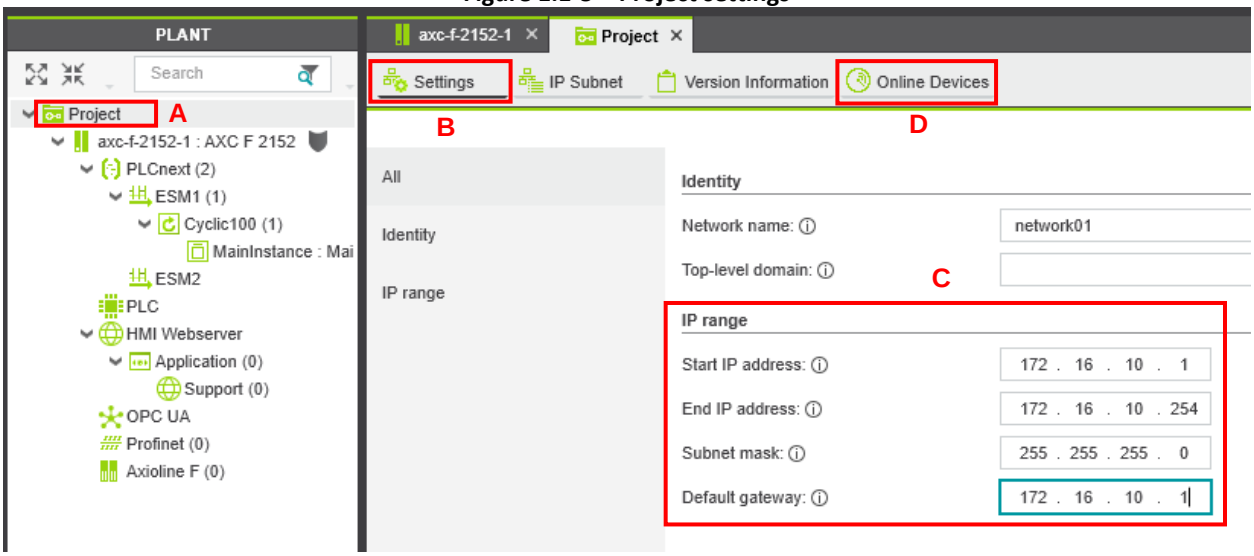
Figure 1.1-4 – Write project to controller



6. If the IP address differs, go to the Project tab in the Plant window (A), then Settings (B) and ensure the IP range (C) is correct for your controller as shown in Figure 1.1-5.

Ex: If the IP address of the controller is 192.168.1.10, then: Start IP: 192.168.1.1, End IP: 192.168.1.254, Subnet Mask: 255.255.255.0, Default Gateway: IP address of router/cellular modem.

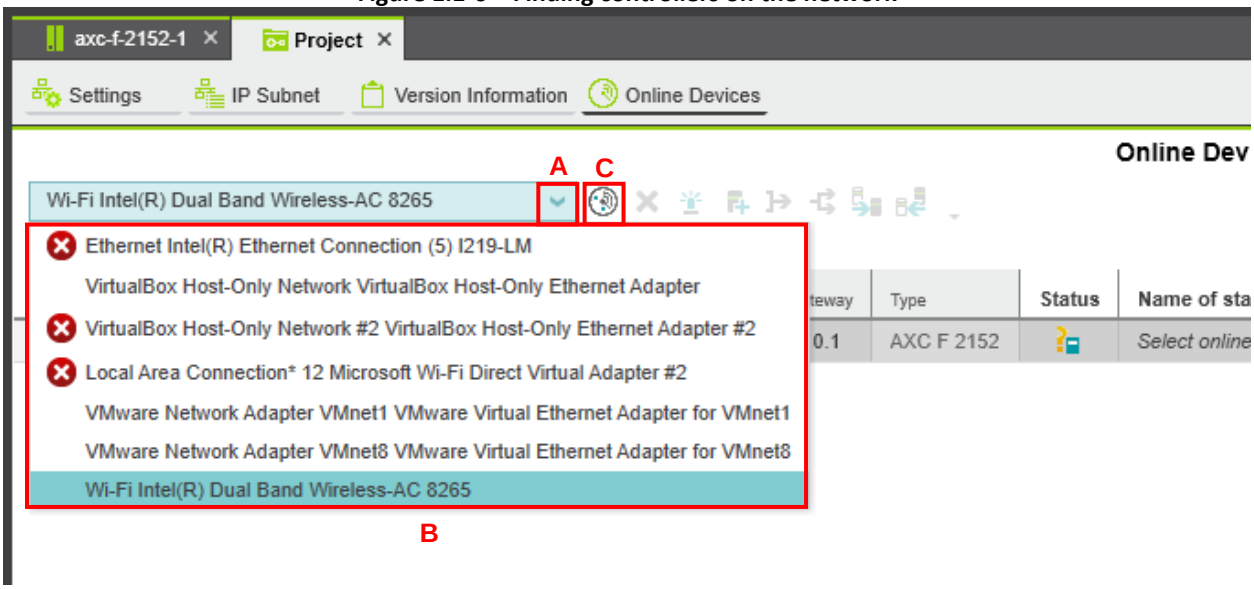
Figure 1.1-5 – Project settings



7. Now go to the Online Devices tab (D) in Figure 1.1-5.

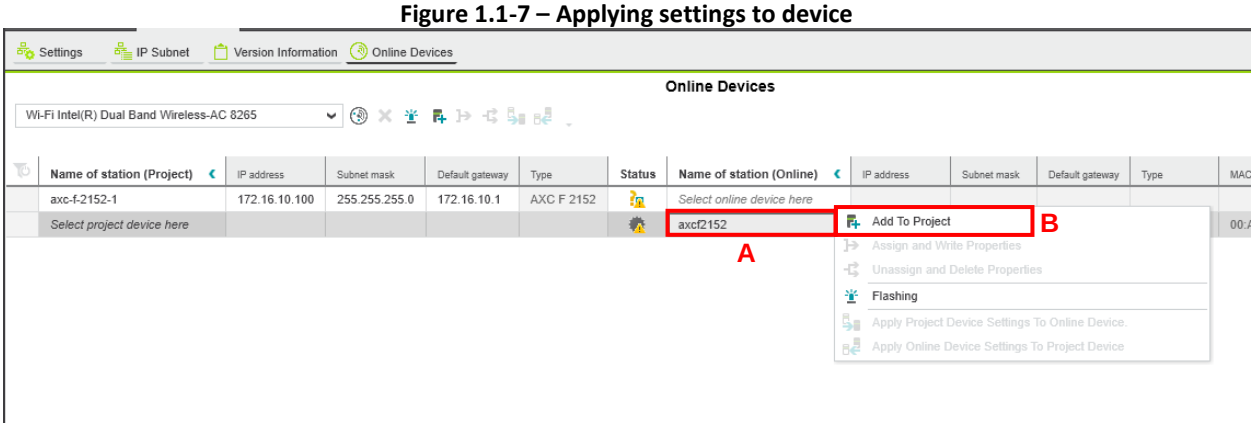
8. Once there select the correct Network Adapter by clicking the dropdown (A) and selecting the correct network adapter (B). Once selected, hit the radar dish to search for a controller on the network (C) as shown in Figure 1.1-6.

Figure 1.1-6 – Finding controllers on the network



9. Once the network is scanned, the device(s) will populate as shown in Figure 1.1-7. To apply the settings we just changed to the device, right click on the device (A) and select Add to Project (B).

Figure 1.1-7 – Applying settings to device



10. Once the status symbol shows a check mark the settings have been applied to the device.

1.2 – SSH Connection:

If you do not know how to use PuTTY (used in this example), refer to Appendix 3, 4, and 5.

NOTE: The IP address of the controller must be on the same subnet as the router/cellular modem!

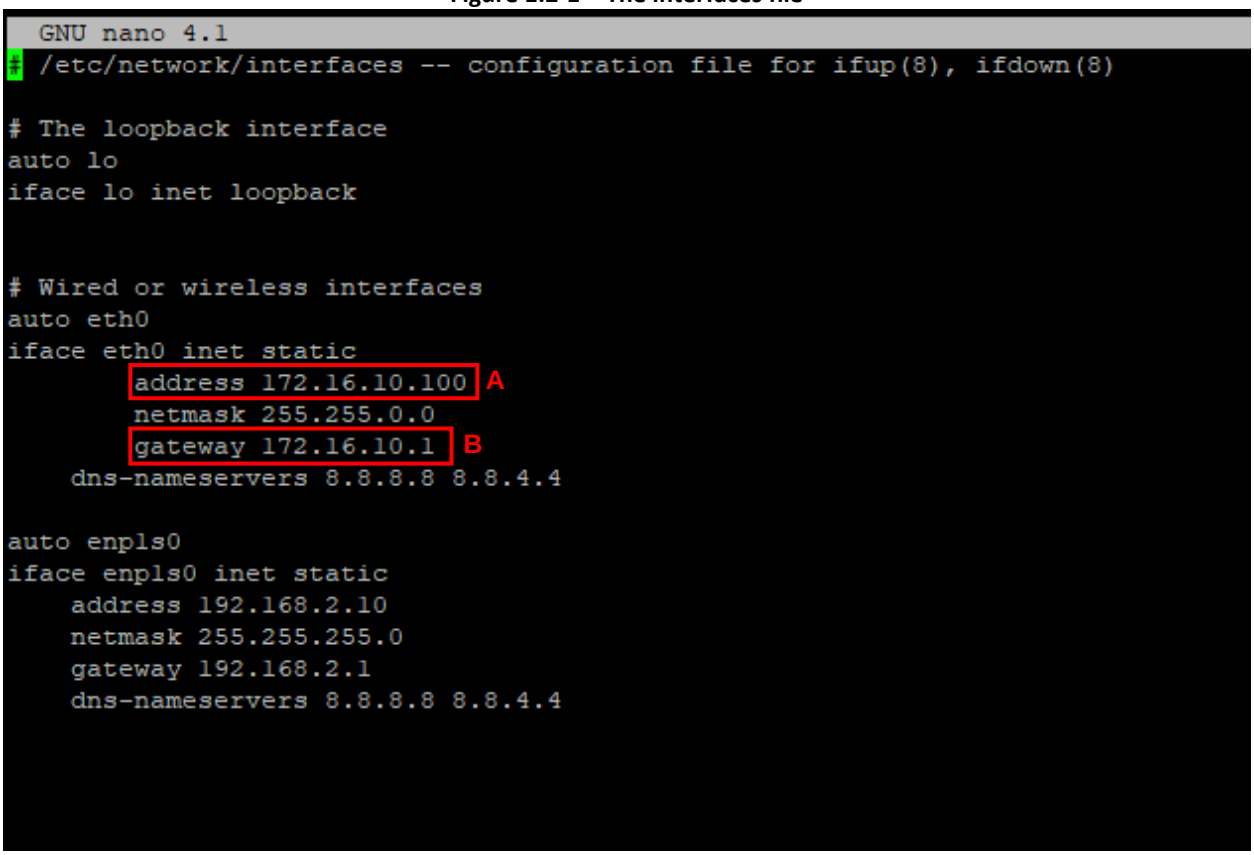
1. Connect to the controller using the current IP address (default is 192.168.1.10), log in as the root user and navigate to the `/etc/network/` directory.

2. Once in the `/etc/network/` directory, type the below command :

```
nano interfaces
```

3. Once inside the file, you can also change the IP address, or netmask of the controller if needed (A). For internet connection you will need to change the gateway IP address to the IP address of the router/cellular modem (B).

Figure 1.2-1 – The interfaces file



4. Once this is changed, hold control and click the S key to save.

5. Once saved, hold control and click the X key to exit.

6. Once the file is changed a reboot needs to be performed to make the IP address changes. Type the below command as root.

```
reboot
```

If you log out of the root user, you must type the below command:

```
sudo reboot
```

1.3 Testing the connection to the internet

Testing the connection is not necessary, but it is a good idea to ensure all of your settings are correct for your controller.

If you do not know how to use PuTTY (used in this example), refer to Appendix 3

1. Log into the controller with PuTTY.
2. Type the below command:

```
ping 8.8.8.8
```

3. If the terminal returns results like Figure 2.1-1, you are connected to the internet! If you see the results in Figure 2.1-2, the controller can cannot connect to the internet.
4. To exit the “ping” command, hold the control key and press the C key.

NOTE: If you are on a corporate server you will need to add your company’s DNS nameserver! Only possible to change this with SSH currently.

Figure 2.1-1 – Connection to the internet successful

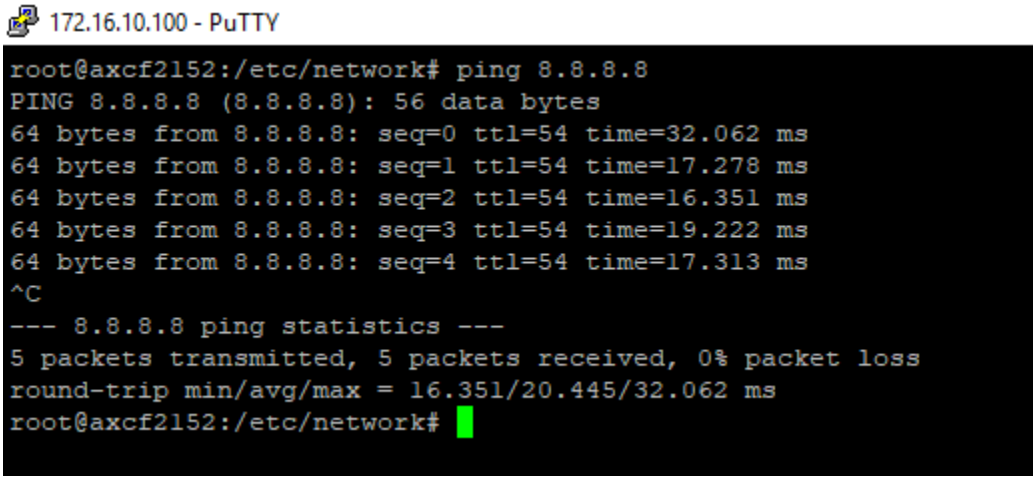


Figure 2.1-2 – Connection to the internet failed