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How to Connect the CBI in a local network (LAN)

Instruction Manual

The CBI devices equipped with an Ethernet interface can be connected with various protocols (HTTP/HTTPS, SNMPv1-3, Modbus TCP) to configure them and monitor their operation. Other devices connected to the CBI via the ADELBus can be monitored and configured as well.
This guide refers to the CBI60, but applies also to other devices such as the CBI600 and CBI1000.
The easiest way to connect to a CBI60 is with a PC or LAPTOP running a web browser.
In order to allow the CBI60 communicating via Ethernet, both the CBI60's and PC network interfaces shall be configured.

1 First configuration

The IP (Internet Protocol) address is the number used by the CBI60 to be identified in a unique way in a network, in order to connect with its network interface.
The CBI60 supports two different types of IP addressing: static IP address and dynamic IP address.

A static IP address is an address which is fixed and does not change during CBI60's functionalities.
In order to communicate on a network with a CBI60 with a static IP address, it is necessary to know and precisely use the IP address itself; moreover, the static IP address must be supported by the local network configuration and must not be in conflict with other devices on the network. This kind of configuration requires specific knowledge of how the network is setup.

In most cases, the choice of dynamic addressing is easier to implement. Dynamic IP address is automatically assigned and managed by a DHCP (Dynamic Host Configuration Protocol) server in the network. Note that the DHCP server may assign a different address to the device at different times, especially if the device is disconnected or switched off.

At first switch on the CBI60 is factory-configured to operate with a static fixed IP address (192.168.1.100) on the standard HTTP port (number 80). This default fixed IP address may be not reachable or may be assigned to other devices connected to the same network (for example, another CBI60 device), in that case dynamic IP addressing shall be selected by enabling DHCP in the CBI60's configuration: no other network configuration is needed.

1.1 Step #1 – enabling temporary DHCP mode

The following procedure allows to temporarily enable DHCP on a device even if configured with a static IP address.

- Turn OFF the device
- Connect the device to the network with an Ethernet cable
- Press the CONFIG button on the front panel and keep it pressed
- Turn ON the device and continue to keep the button pressed for 5 seconds until the 4 top configuration LEDs blink alternatively in pairs (on the CBI600, the DIAG LED blinks red and green alternatively)
- LED 1 (on CBI600 LED FAIL) will blink slowly showing "Option 1 = DHCP forced".
- Release the button
- Confirm the choice by pressing again the CONFIG button for 5 seconds until LEDs stop blinking.
- Now temporary DHCP mode is selected

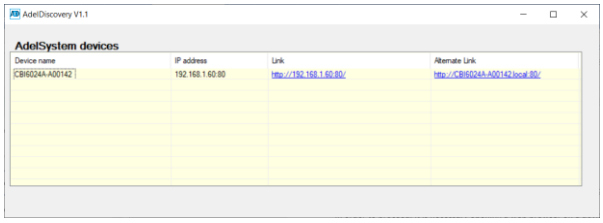
Please notice that, if accidentally the CONFIG button is pressed for less than 5 seconds before the confirmation operation succeeds, others options are selected. In that case press the button more times to cycle through the other options until "Option 1" is selected again: at this point is it possible to confirm the choice as described above.
At the end of Step #1, temporary DHCP mode is enabled, and it is kept until the CBI60 is switched off again.
In order to save the selection of DHCP mode in CBI60 memory and make this configuration permanent, it is necessary to proceed with the following steps.

1.2 Step #2 – identifying the CBI60 on the network

When DHCP mode is enabled, the CBI60 gets a dynamic IP address automatically assigned and managed by the DHCP server.
This is the address that shall be used for accessing the CBI60's internal web server via HTTP protocol.
As this address is randomly assigned, it is necessary to identify the CBI60 on the network.

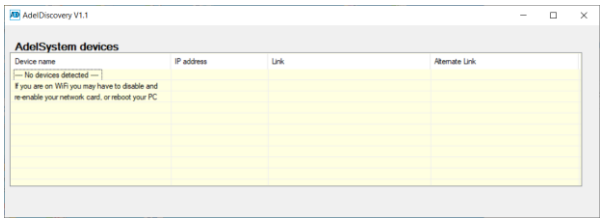
The assigned address can usually be retrieved from the local router configuration portal, but it can also be obtained more easily using the "AdelDiscovery" tool developed for this purpose. It can be downloaded from the following address.
For this purpose, AdelSystem S.r.l. has developed a tool named AdelDiscovery, which can be downloaded at the following address: https://www.adelsystem.com/foryou/AdelDiscovery.html.

Please install and run AdelDiscovery on a PC connected to the same network as the CBI60. AdelDiscovery tool will list all the Adel System devices connected on the network, as shown in the following picture.



The IP address listed by AdelDiscovery tool is exactly the address that shall be used in order to communicate with the relevant device.

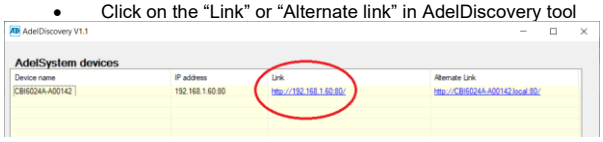
In case of failure of connecting with a CBI60 device, AdelDiscovery will display the message "no devices detected", as shown in the following picture. In that case, if the CBI60 is actually connected, please follow section 2: **Troubleshooting with AdelDiscovery tool**.



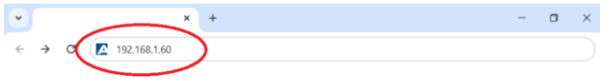
1.3 Step #3 – connection with CBI60's internal web server

There are two options for connecting with the CBI60's internal web server:

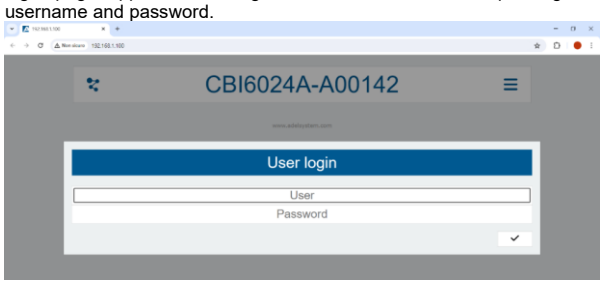
- Click on the "Link" or "Alternate link" in AdelDiscovery tool



- open a web browser on the PC and type the CBI60's IP address, previously retrieved with AdelDiscovery, into the browser's address bar (e.g. 192.168.1.60).



Now the browser is connected to the CBI60's internal web server and the login page appears, showing the device name and requesting the username and password.



In order to access the CBI60's internal web server, at the login page, the following default credentials must be used:

User: *admin*
Password: *password*

Note: the username can be one of "user", "admin", "service", depending on the level of access required. The default password is "password" for all of them but may have been changed in a previous access. In case of

lost or unknown credentials please refer to the user manual to reset the network configuration to factory defaults

If access succeeds, the dashboard page appears, showing device's basic info.

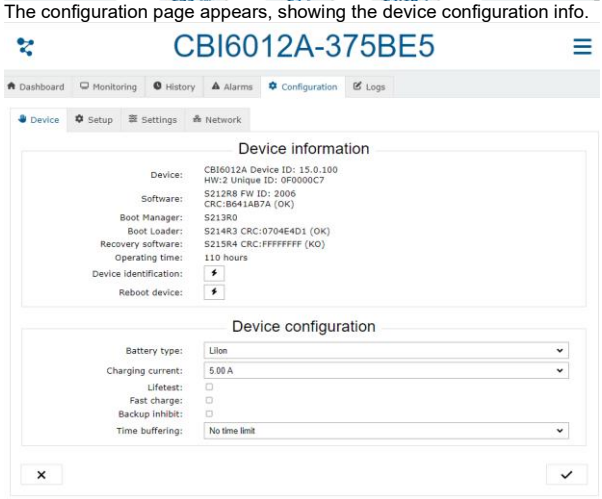
Please also notice that after 20 minutes of inactivity the web server automatically disconnects and login credentials must be entered again.

1.4 Step #4 – saving the DHCP mode setting

As the DHCP is temporarily enabled, the CBI60 would revert to static IP addressing after power cycling. Therefore, the DHCP must be enabled and confirmed in the network configuration page, as follows.

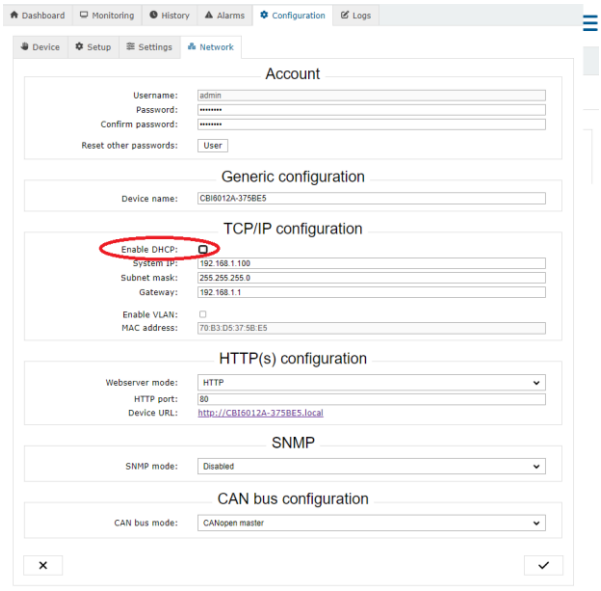
From the dashboard page, select the "Configuration" page.

The configuration page appears, showing the device configuration info.

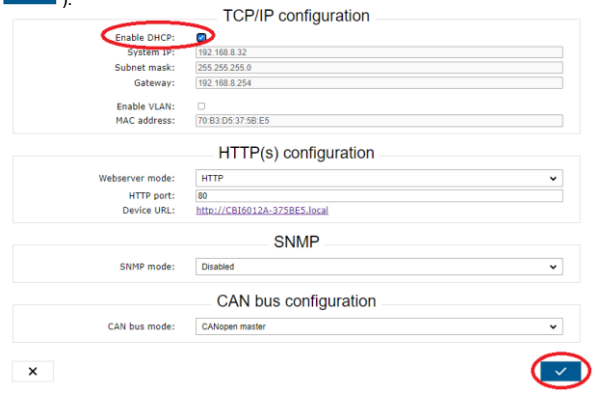


At this stage, the "Network" option shall be selected

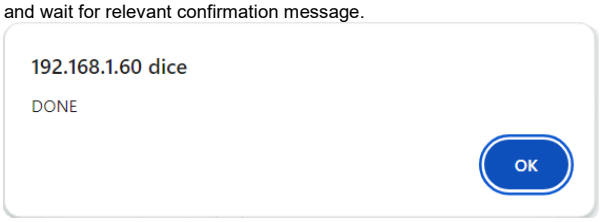
and the network page appears, showing the device configuration info: look at the "Enable DHCP" checkbox.



If the DHCP is not enabled, you should click on the checkbox and save the settings by clicking on the confirm button at the bottom of the page ( ):



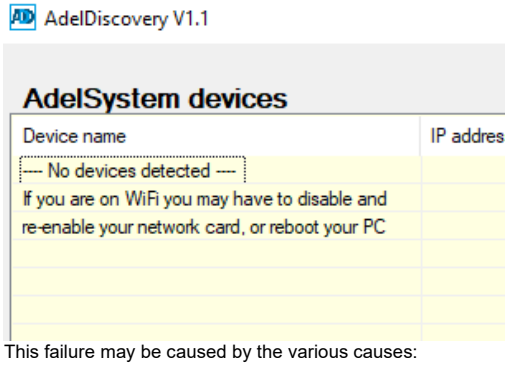
and wait for relevant confirmation message.



Please notice that the TCP/IP Configuration group now shows the currently assigned IP address and network parameters that are not editable.

2 Troubleshooting with AdelDiscovery tool

As mentioned above, AdelDiscovery tool is a PC tool which is able to identify and list all the devices connected on the same network.
AdelDiscovery may fail to detect Adel System devices on a network for many reasons, showing the following message:



This failure may be caused by the various causes:

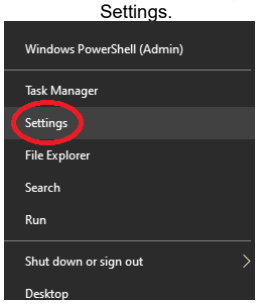
- The CBI60 may be physically disconnected from the network (e.g., the LAN cable is not correctly plugged into the Ethernet connector).
- AdelDiscovery tool is running on a PC connected to the network with Wi-Fi.

If the CBI60 is correctly plugged to the network and the PC is connected via Wi-Fi, it may be necessary to reset the PC's network card by rebooting the PC (easiest solution) or manually reset the network adapter as explained below, and restart the AdelDiscovery tool.

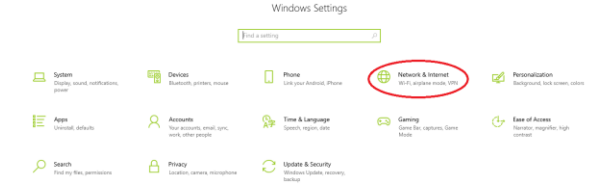
2.1 Resetting the PC's network card

The following example shows how to reset the PC's network adapter on Windows 10. The pictures and details may change depending on the actual version and configuration of the operating system.

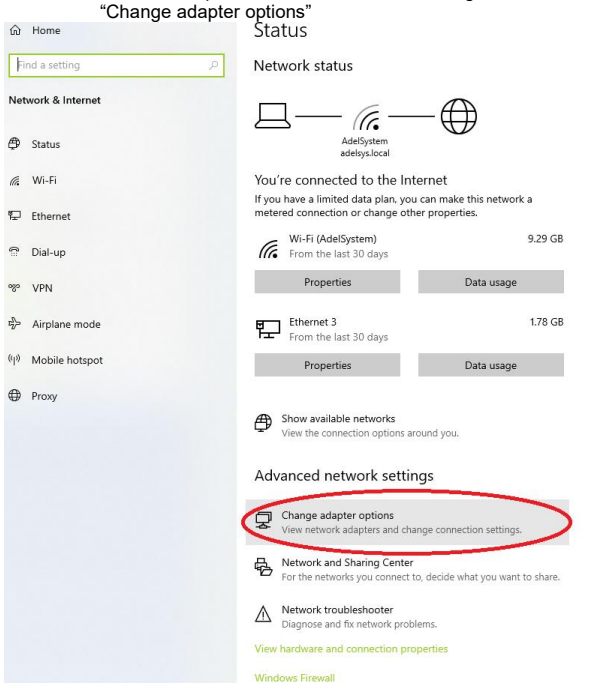
- On your PC, right-click the Start button and right-click on Settings.



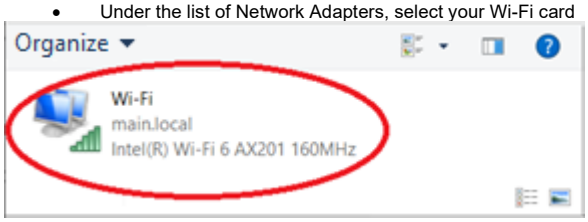
- Go to the Network & internet tab.



- Select the option Advanced network settings and click on "Change adapter options"



- Under the list of Network Adapters, select your Wi-Fi card



- Disable and then re-enable it.