Advanced network configurations

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In most cases, connecting to the target using its dynamic IP address is straightforward and requires no additional setup. This dynamic IP is either assigned by a DHCP server when the target is connected to a local network or auto-assigned for targets running firmware version 2025.2 beta or later.

Whenever possible, we recommend using dynamic IP instead of static IP as it does not require any additional setup. To do so, please refer to the [Programming and operating imperix controllers](#) page.

If using a dynamic IP address is not feasible, static IPs can be used as an alternative. This page presents various scenarios and explains how to configure static IP addresses to establish a connection. While the focus is on imperix targets, the principles described here apply to any device. These are standard IP networking concepts.

Scenario A: a single target directly connected to the computer

The imperix targets are always accessible using the pre-configured static IP address `192.168.222.22`. To connect to it, the host computer Ethernet interface must be configured to use a **static IP in the same subnet**, but *different from that of the target*. For instance, the Ethernet interface can be configured with the IP `192.168.222.50` with the subnet mask `255.255.255.0`.

Windows 10

- Navigate to **Control Panel** > **Network and Internet** > **Network and Sharing Center** > from the left pane, **Change adapter settings**.
- Right-click on the Ethernet adapter that is connected to the target and select **Properties**.
- Highlight Internet **Protocol Version 4 (TCP/IPv4)** and click **Properties**.
- Set the **IP address** and **Subnet mask** as shown below.

Windows 11

- Open the **Settings** app (`Windows + I`).
- Go to **Network & internet**.
- Select **Ethernet**.
- Select the Ethernet interface connect to the target.
- Under **IP assignment**, click **Edit**
- Set the **IP address** and **Subnet mask** as shown below.

Internet Protocol Version 4 (TCP/IPv4) Properties ✕

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

◉ Use the following IP address:

IP address:	192 . 168 . 222 . 50
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	. . .

○ Obtain DNS server address automatically

◉ Use the following DNS server addresses:

Preferred DNS server:	. . .
Alternate DNS server:	. . .

☐ Validate settings upon exit

Advanced...

OK　　Cancel

Edit IP settings

Manual ⌄

IPv4

🔵 On

IP address

192.168.222.50 ✕

Subnet mask

255.255.255.0

Gateway

Scenario B: one master-slaves system directly connected to the computer

When multiple targets are interconnected in a master-slaves configuration using SFP optical fiber, only the Ethernet port of the top master needs to be connected to the host computer. The static IP 1 is automatically incremented for each slave device:
– Device #0: 192.168.222.22
– Device #1: 192.168.222.23
– Device #2: 192.168.222.24
– Etc.

This configuration requires the same connection procedure as described in scenario A.
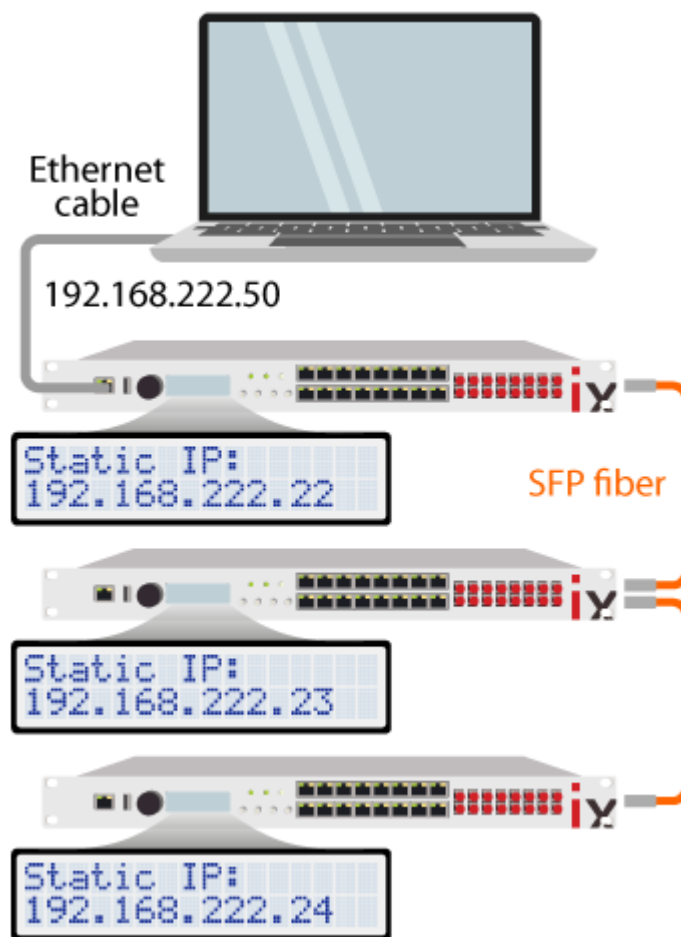

Scenario C: multiple targets directly connected to the computer

If multiple independent targets are connected directly to the computer, their default Static IP 1 addresses will conflict. Since all targets use the same default IP address (192.168.222.22), the computer cannot distinguish between them, leading to

communication errors. To resolve this, each target (including slave devices) must be assigned a unique Static IP 2 address using Cockpit.

Configuration procedure

1. Connect each target **one at a time** to the computer using its default **Static IP 1** address (see scenario A procedure).
2. Open **Cockpit**.
3. Navigate to the **Target Configuration** window.
4. Assign a unique **Static IP 2** address to the device.
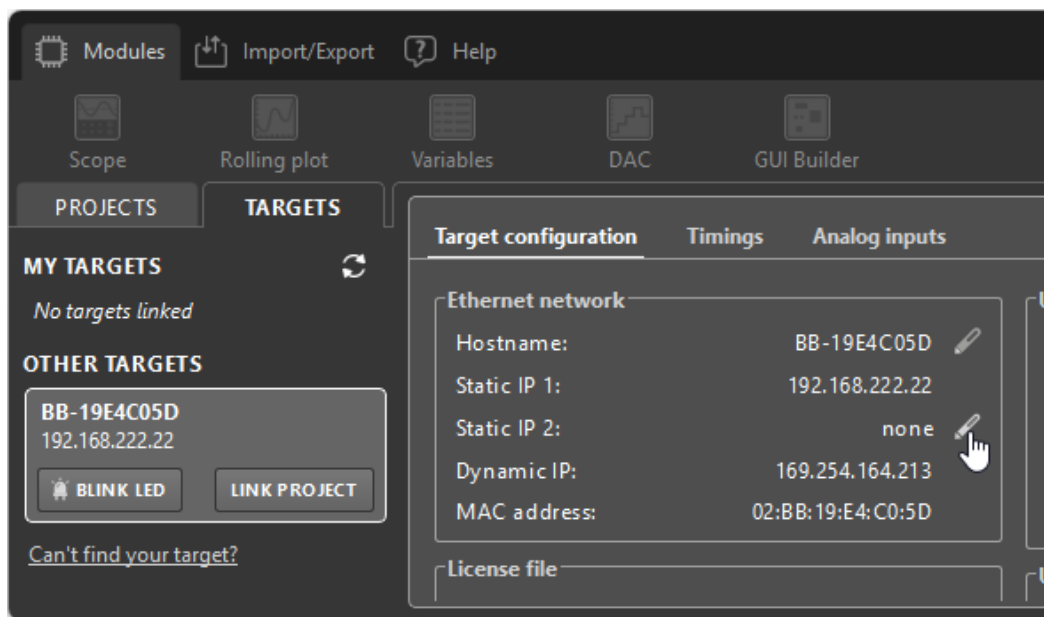

IP assignment recommendations

It is recommended to assign Static IP 2 addresses in a different subnet than Static IP 1 to avoid conflicts. For example:

- Target 1: 192.168.100.10
- Target 2: 192.168.100.11
- Target 3: 192.168.100.12
- …and so on

The computer's Ethernet interface must be configured to match the Static IP 2 subnet. For example, set the interface to:

- IP address: 192.168.100.1
- Subnet mask: 255.255.255.0

Once configured, all targets can be connected to the computer simultaneously without IP conflicts.
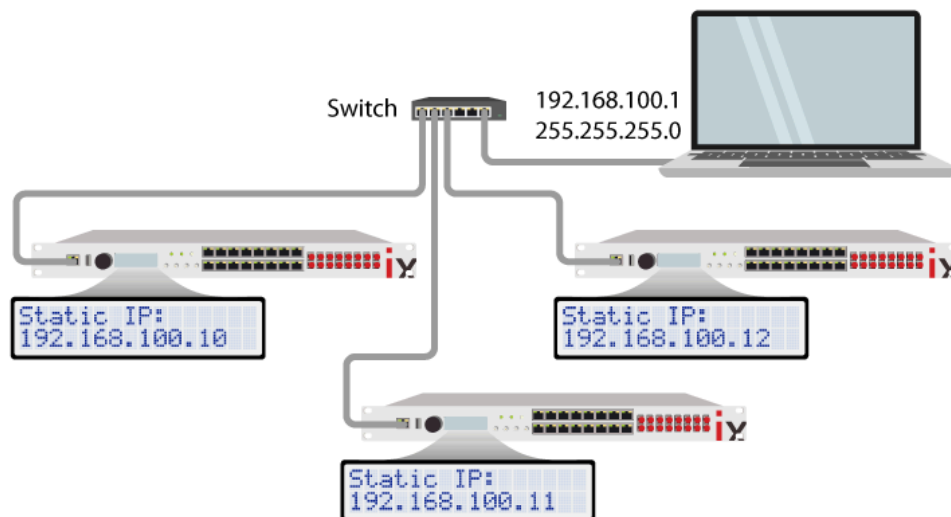
Using multiple Ethernet ports

If multiple Ethernet ports of the same computer are used, each port must be assigned to a **different subnet**. The targets' static IP 2 must be updated to match the subnet of the corresponding Ethernet port. For instance:

Port 1:

- IP address: 192.168.**100**.1
- Subnet mask: 255.255.255.0
- Target IP: 192.168.**100**.x

Port 2:

- IP address: 192.168.**101**.1
- Subnet mask: 255.255.255.0
- Target IP: 192.168.**101**.x