

IP Commander User Guide

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Hardware Safety

CAUTION! To avoid possible electric shock, personal injury, or damage to the product and/or devices it is connected to, follow these guidelines:

- Do not use the product if it is damaged.
- Do not operate the product around explosive gas, vapor, dust, or in damp or wet environments.
- Use this product indoors only.
- Do not try to service the product.
- Only use proper cables.
- Only use the power adapter provided with the product or one that meets the power specifications of 27W (5.1V/5A) USB-C.

- Do not connect the product to an active network. Doing so causes unreliable results, might disrupt network operations, and could cause damage to the product. This product is intended to be connected directly to one device at a time.
- Do not connect to device ports that provide PoE (Power Over Ethernet).

FCC (SDoC) This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Overview

IP Commander is a specialized tool for configuring IP addresses on Industrial Ethernet/IP devices, including Rockwell PLCs, VFDs and other EtherNet/IP devices. It can also configure devices that request IP addresses through BootP and DHCP

Key Capabilities

- **Detects IP Addresses** - As well as Gateway and Subnet Mask configurations when used on Ethernet/IP devices
- **Automatic Device Detection** - Detects devices via DHCP, BootP, ARP announcements, and CIP discovery
- **IP Address Configuration** - Assign new IP addresses to devices using DHCP/BootP or direct CIP commands
- **USB File Support** - Load device IP address configurations from .L5X project files or .CSV files
- **Device Web Access** - Open a device's web page for additional configuration
- **CIP Protocol Support** - Read device identity, enable/disable DHCP/BootP, and configure static IPs

Supported Devices

- Allen-Bradley CompactLogix and ControlLogix PLCs
- Allen-Bradley Ethernet/IP communication modules
- Other EtherNet/IP and CIP-compatible industrial devices
- Any device supporting DHCP or BootP configuration (including many non-CIP devices)

Getting Started

Quick Start Guide

1. **Set Switches:** Configure switches on your device to receive a new IP address (see [Switch Settings](#))
2. **Connect Cable:** Connect the Ethernet cable between IP Commander and your device
3. **Power On:** Turn on your device
4. **Wait for Detection:** IP Commander will automatically detect the device

Tip: For Rockwell devices, set the rotary dial or dip switches to the proper setting to enable software IP configuration. 999 is commonly used. For other brands, make sure to reference their product manuals as these settings vary.

First-Time Setup

When you first use IP Commander, you will be asked to accept the End User License Agreement (EULA). You must scroll to the bottom of the agreement and click "I Agree" to proceed. Once accepted, a hardware-bound license is automatically generated for your device, after which you will not be asked to accept on following boot ups.

Main Screen

The main screen displays instructions and monitors for connected devices.

On-Screen Instructions

1. If needed, set dial switches on the device to receive a new IP address. (See Help)
2. Power on the device.
3. Connect Ethernet Cable to Device.
4. Wait for Device to be Detected.

Status Display

The bottom of the screen shows real-time status messages:

- **"Listening for network devices..."** - Link established and listening for devices
- **"No Ethernet Connection"** - Cable disconnected, check your connection
- **"DHCP request detected..."** - Device found and being processed
- **"ARP announcement detected..."** - Device with existing IP detected

Main Screen Buttons

Button	Function
Help	Opens this help guide
Advanced Options	Access diagnostic testing, utilities, and software update
Shutdown	Exit IP Commander and shutdown

Network Status: If you see a "No Ethernet Connection" warning, verify that your Ethernet cable is properly connected at both ends, and the device is powered on.

Device Detection

IP Commander automatically detects devices using multiple methods:

Method	When Used	Description
DHCP/BootP	Device needs IP (0.0.0.0)	Device requests an IP address and the user is prompted to enter an IP address
ARP Announcement	Device has existing IP	Device announces its presence on the network even if not an Ethernet/IP device
CIP Discovery	Manual scan	Discovers industrial EtherNet/IP devices and presents user with info about the device

After Detection

When a device is detected, in the case of BootP/DHCP, IP Commander will prompt the user to enter an IP. In the case of an Ethernet/IP device that already has an IP, IP Commander displays the device's identity information and asks if you want to make changes. For CIP devices, additional information is shown including:

- Vendor name
- Product name and type
- Serial number
- Current IP Address
- Subnet Mask
- Gateway Address

What Happens Next: After confirming you want to configure the device, IP Commander shows the Configuration Method Select screen where you choose how to proceed.

Configuration Methods

IP Commander handles two different detection scenarios, each with its own configuration options:

Scenario 1: BootP/DHCP Request Detected

When a device without an IP address (0.0.0.0) sends a BootP or DHCP request, IP Commander immediately prompts you to assign an IP address.

1. IP Commander detects the BootP/DHCP request and displays a prompt
2. Enter the desired IP Address, Subnet Mask, and Gateway
3. Optionally, click **Select From File** to load settings from a USB configuration file
4. Click **Serve** to send the IP configuration to the device
5. IP Commander serves the IP to the device and performs a ping test to confirm the device accepted the new configuration
6. BootP/DHCP is automatically disabled in the device, locking in the new static IP address

Scenario 2: Device With Existing IP Detected

When a device that already has an IP address is detected, IP Commander displays information about the device and asks if you want to make changes. If you choose to proceed, you have the following options:

Change Device's IP

Use this to assign a new IP address to the device.

1. Click **Change Device's IP**
2. Enter the new IP Address, Subnet Mask, and Gateway
3. Optionally, click **Select From File** to load settings from a USB configuration file
4. Click **Set** to apply the new configuration using CIP protocol

Enable DHCP/BootP In Device

Use this to switch a device from static IP mode to dynamic addressing mode.

1. Click **Enable DHCP/BootP In Device**
2. IP Commander sends CIP commands to enable dynamic addressing
3. Depending on the brand of device, it will re-initialize its network interface and begin requesting an IP address via BootP/DHCP. Some brands will require a reboot before they start requesting an IP address via BootP/DHCP

Use Device's Webpage

Use this to access the device's built-in web interface for additional configuration options.

1. Click **Use Device's Webpage**
2. IP Commander adjusts its network settings to match the device's subnet
3. A web browser opens to the device's IP address

Tip: The webpage option can be useful for non-Ethernet/IP devices that have a web interface but don't support CIP configuration commands.

Select From File (USB Configuration)

When entering an IP address in either scenario, you can load device configurations from a USB drive:

1. Insert a USB drive containing configuration files (see [USB Configuration Files](#))
2. Click **Select From File**
3. Choose your configuration file (.L5X or .CSV)
4. Select the device from the list

5. The IP address, subnet mask, and gateway are automatically populated

IP Address Validation

IP Commander validates all IP entries:

- **IP Address:** Last octet must be 1-254 (not 0 or 255)
- **Subnet Mask:** All octets 0-255
- **Gateway:** All octets 0-255

USB Configuration Files

IP Commander can read device configurations from USB flash drives. Files must be placed in a folder named `L5X_CSV` on the USB drive.

.L5X Files (Logix/Studio 5000 Project Exports)

What are .L5X Files?

.L5X files are XML-based project export files created by Rockwell Automation's programming software:

- **Logix 5000** (RSLogix 5000)
- **Studio 5000 Logix Designer**

How to Create .L5X Files

1. Open your PLC project in Logix 5000 or Studio 5000
2. Go to **File > Save As**
3. Change the file type to **L5X**
4. Save the file to your USB drive in the `L5X_CSV` folder

What IP Commander Extracts

IP Commander automatically scans the .L5X file and extracts Ethernet/IP device information, including:

- Device/Module names
- Configured IP addresses

This allows you to quickly configure field devices to match your PLC project settings.

Note: L5X files do not include gateway or subnet mask settings. Make sure to change the default gateway and subnet settings on the IP Address entry screen if needed.

.CSV Files (Simple Text Format)

What are .CSV Files?

.CSV (Comma-Separated Values) files are simple text files that you can create and edit easily. Each line contains a device name, IP address, gateway, and subnet mask.

How to Create .CSV Files

You can create .CSV files using:

- **Text Editor** - Notepad, Notepad++, or any plain text editor
- **Microsoft Excel** - Save as "CSV (Comma delimited)"
- **Google Sheets** - Download as .CSV

File Format

Each line contains: Device Name, IP Address, Gateway, Subnet Mask

```
Conveyor_Drive,192.168.1.10,192.168.1.1,255.255.255.0
Packaging_PLC,192.168.1.20,192.168.1.1,255.255.255.0
Vision_Camera,192.168.1.30,192.168.1.1,255.255.255.0
Robot_Controller,192.168.1.40,192.168.1.1,255.255.255.0
```

Format Rules

- One device per line
- Device name first, followed by a comma
- IP address after the comma
- Gateway after the comma

- Subnet Mask after the comma
- No spaces around the comma
- No header row required

Getting Started: An example .CSV file is provided on the USB flash drive that comes with IP Commander. You can use this as a template for creating your own device lists. You will find it in the folder named "L5X_CSV".

USB Drive Setup

1. Create a folder named `L5X_CSV` on your USB drive
2. Place your .L5X and/or .CSV files in this folder
3. Insert the USB drive into IP Commander
4. Click **Select From File** to browse files when prompted

Important: The folder must be named exactly `L5X_CSV` (case-sensitive on some systems). IP Commander will not find files in other folders.

Advanced Options

Click **Advanced Options** on the main screen to access diagnostic and testing tools.

Important: Network listening is paused while Advanced Options are open. Close Advanced Options to resume normal device detection.

IP Display

When Advanced Options are open, you'll see:

- **Top-Left:** App IP - IP Commander's current IP address and Mac Address
- **Top-Right:** Last Device - Most recently detected device IP and its Mac Address

Advanced Tools

Tool	Purpose	When to Use
Re-Initiate Interface	Resets network interface to default (1.2.3.4)	After configuration errors or to start fresh
DHCP/BootP Server	Opens DHCP/BootP Server without needing DHCP/BootP Detection	To manually serve an IP address to a requesting device
Read DHCP/BootP Status	Checks if device is Static/BootP/DHCP	To verify device's IP configuration mode
Enable DHCP/BootP	Enables dynamic addressing on device	To allow device to request IP from a DHCP/BootP server
Disable DHCP/BootP	Sets device to Static IP mode	To lock device to its current IP address
Open Device's Webpage	Opens web browser to last detected device	To access device's built-in web interface, if available
Update Software	Updates IP Commander from USB drive	To install a newer version of the software

Button Behavior

Some CIP-related buttons are disabled when IP Commander's IP is 1.2.3.4 (default state). These buttons require IP Commander to be on the same subnet as the target device. Detection of a device will enable all buttons.

Switch Settings

Most industrial Ethernet/IP devices have switches or dials that control how they receive their IP address. These must be set correctly for IP Commander to configure the device. Sometimes these settings are labeled on the device, if not then reference the device's product manual.

Rockwell Automation / Allen-Bradley Devices

Most Rockwell devices use rotary dial switches (thumbwheels) for network configuration:

Switch Position	Mode	Use With IP Commander
999	Software Configuration	Recommended - Allows IP Commander to configure the device
Other values (001-254)	Static IP from switches	Not compatible - IP is set by switch positions

Recommended Setting: Set switches to 999 for maximum flexibility. This allows the device to accept IP configuration via software while retaining the IP after power cycles.

Other Industrial Devices

Configuration varies by manufacturer. Common settings include:

- **DIP Switches:** Look for a switch labeled "DHCP", "BootP", or "Set by Software" - set to ON
- **Software Mode:** Some devices have a "Software Configuration" mode in their web interface

General Rule: To use IP Commander, set device switches to enable DHCP/BootP or Software Configuration mode. Consult your device's manual for specific switch positions.

Troubleshooting

"No Ethernet Connection" Warning

- Check that the Ethernet cable is properly connected at both ends
- Verify the cable is not damaged
- Try a different Ethernet cable
- Ensure the device is powered on

CIP Device Not Detected

- Try **Re-Initiate Interface** in advanced options to reset the network interface
- Power cycle the device and wait for it to boot completely

Ping Failed After IP Configuration

- Click **Retry** - device may need time to apply settings
- Return to the main screen, cycle power to the device, and try again

DHCP/BootP Timeout (90 seconds)

- Device may not be requesting an IP - check switch settings
- Power cycle the device and try again
- Verify device supports DHCP/BootP configuration

USB Drive Not Found

- Verify USB drive is fully inserted
- Ensure the folder is named exactly `L5X_CSV`
- Check that folder contains `.L5X` or `.CSV` files
- Click **Retry** after inserting or fixing USB drive
- Try a different USB drive if problems persist

.L5X File Not Showing Devices

- Verify the file was exported correctly from Logix/Studio 5000
- Check that the project contains Ethernet/IP modules
- Re-export the file and ensure it's a complete export (not partial)

.CSV File Not Working

- Verify format: `DeviceName,IPAddress,Gateway,Subnet Mask` (no spaces around comma)
- Check for hidden characters if edited in Word or rich text editor
- Save as plain text (`.csv`) not `.xlsx` or other formats
- Ensure each entry is on its own line

Additional Support

For device-specific switch settings and configuration details, consult your device's user manual or contact the manufacturer's technical support.

IP Commander

Industrial Ethernet/IP Device Configuration Tool

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