Application Software for Industrial Vision Systems

NEURO CHECK

# Documentation of the NeuroCheck Camera IP Configurator Version 6.1.0

For Microsoft® Windows®

**Trademarks and Imprint**

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Version 6.1.0 of May 23, 2016

# Content

# 1. Introduction

The **NeuroCheck Camera IP Configurator** is a small stand alone application that can be used to change the IP configuration of selected cameras. Furthermore the tool can be used to change the name of the cameras.

To identify and integrate a selected GigE camera to the NeuroCheck software a unique and persistent IP address is required. The factory settings of the cameras do not always define a persistent IP address. Therefore a persistent IP address must be assigned to every camera once. This can be done with the **NeuroCheck Camera IP Configurator**.

In the case that two cameras have the same persistent IP addresses and should be used in the same network, the IP address of one of the cameras must be changed. The **NeuroCheck Camera IP Configurator** can be used for that too.

This document is organized as follows:

- The next chapter contains technical information about this tool.
- The third chapter presents a brief introduction in selecting IP addresses.
- The forth chapter presents work instructions for the typical use cases.
- The last chapter provides a reference of the user interface of this tool.

# 2. Technical information

The **NeuroCheck Camera IP Configurator** requires the Microsoft .NET framework 4.5 or later and the Microsoft Visual C++ 2010 Redistributable.

The first time the **NeuroCheck Camera IP Configurator** is started the Windows Firewall might warn that some functions of the program are blocked. Please stop further blocking of the **NeuroCheck Camera IP Configurator**. Otherwise the program cannot work properly.

# 3. Selection of IP address and subnet mask

We recommend configuring the network adapter within the computer and the connected cameras to be in the same subnet. In the case of an existing company or production Ethernet network, we strongly recommend to use different network adapters and different subnets.

The IP addresses in this document are shown as four numbers in the range between 0 to 255 seperated by dot. A typical IP address may look like 192.168.10.3.

If you are not familiar with network configuration we recommend the following rules.

The components of the camera network are the network adapter within the computer that is connected with the camera network, the switches that you possibly use to connect several cameras with the network adapter within the computer and the connected cameras.

We recommend starting every IP address with 192.168.x.y. In the following the x describes the subnet and y describes the device.

We strongly recommend using different subnets for an existing company or production Ethernet network and the camera network. Due to the fact that most subnets use 0 or 1 as identifier, a value of 10 might be a good choice as subnet identifier of the camera subnet in many cases. The IP address of all components of the camera network look like 192.168.10.y in this case. Keep in mind that the subnet identifier must be identical for all components within the camera network.

The last digit of the IP address identifies the individual component. This digit must be unique for every component within the network. We recommend the usage of a value of 100 for the network adapter within the computer that is connected with the camera network and enumerate the and cameras with values starting with 1. The IP address of the first camera is 192.168.10.1. The IP address of the next camera is 192.168.10.2 and so on.

The second part of the IP configuration is the so called subnet mask. The subnet mask defines which part of the IP address identifies the network and which part of the IP address identifies the camera or computer. In other words the subnet mask allows differentiating between the parts of the IP address that all devices have in common and the parts that are unique to one device. In the case that the third digit of the IP address is used for identification of the subnet and the forth digit is used for identification of the camera or computer the subnet mask must be 255.255.255.0.

In the case that the computer NeuroCheck runs on is also connected with another network consult the responsible network administrator about the IP configuration of the subnet.

### Example:

The table below shows one possible IP configuration for five cameras connected with one computer. The example is given exclusive any warranty. The values must be adapted to your system.

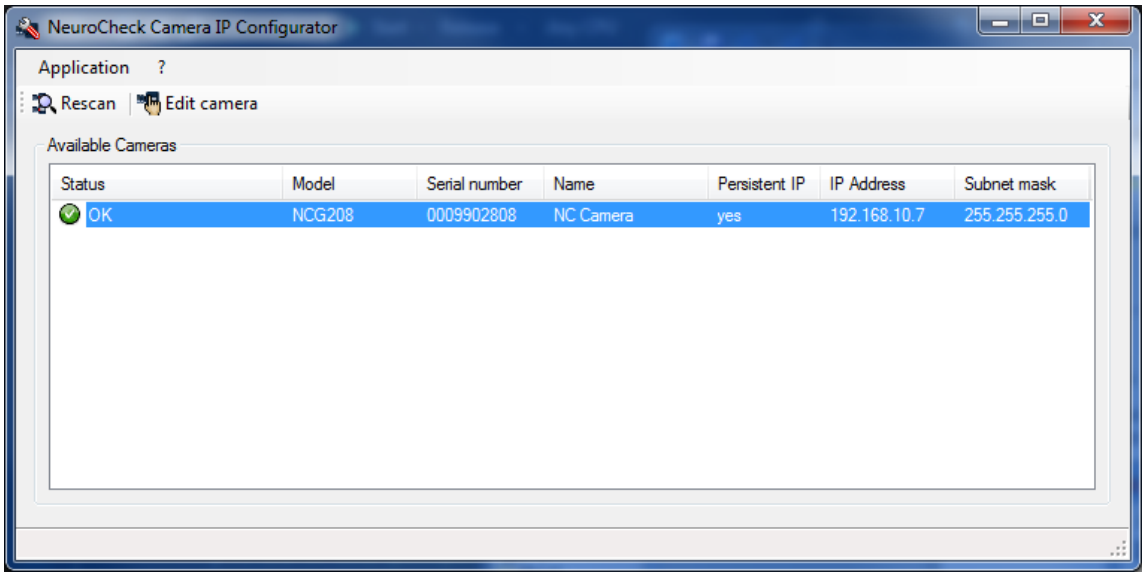
| Device | IP address | Subnet mask |
|---|---|---|
| Network adapter of the computer connected with the camera network | 192.168.10.100 | 255.255.255.0 |
| First camera | 192.168.10.1 | 255.255.255.0 |
| Second camera | 192.168.10.2 | 255.255.255.0 |
| Third camera | 192.168.10.3 | 255.255.255.0 |
| Fourth camera | 192.168.10.4 | 255.255.255.0 |

# 4. Assignment of IP addresses

1. Make sure that the NeuroCheck software is closed and the installation of the low level driver of the cameras is done according to the guidelines of the driver help. Make sure that the network adapter within the computer that is connected with the camera network is configured with a valid persistent IP address.
2. Connect the cameras with the computer and the power supply unit. Wait until the connections between the computer and the cameras are established. In worst case this may take several minutes.
3. Start the **NeuroCheck Camera IP Configurator**.
4. In the case that the cameras are not listed in **Available Cameras** press **Rescan**. If the list is still empty check the installation of the driver on the computer. Please refer to the appropriate driver help.
5. Select one entry in the **Available Cameras** list that should be changed and open the **Configure camera** dialog by pressing **Edit**.
6. Configure the IP address and subnet mask of the camera. Please refer to chapter 3 if you are not familiar with IP configuration. After configuration close the dialog with OK.
7. Repeat the steps 5 and 6 for each new camera.
8. Close the **NeuroCheck Camera IP Configurator**. The cameras can be used in the NeuroCheck software now. If you changed the IP address of cameras, for example the subnet, then restart the camera by switching its power supply off and on.

# 5. User Interface

The **NeuroCheck Camera IP Configurator** offers an overview of selected cameras that are connected with the computer.




## 5.1 List of Available Cameras

This list provides information about the IP configuration of all detected cameras.

| Column | Content |
|---|---|
| Status | The status of the camera. The icon in front shows whether the camera can be accessed by the NeuroCheck software or not.<br>NeuroCheck can access the camera.<br>NeuroCheck can not access the camera.<br>Possible causes:<br>• No permanent IP address set<br>• Wrong IP subnet<br>• Blocked by another process, e.g. NeuroCheck if it is open |
| Model | The model of the camera |
| Serial number | The serial number of the camera. |
| Name | The user-defined name of the camera. |
| Persistent IP | A flag whether the camera uses a persistent IP address.<br>• Yes: A persistent IP address is used.<br>• No: A persistent IP address is not used. |
| IP Address | The currently configured persistent IP address of the camera. |
| Subnet mask | The currently configured persistent subnet mask of the camera. |

## 5.2 Menus

### 'Application' menu

| Element | Description |
|---|---|
| Settings | Opens a dialog to configure the settings of the application (see chapter 'The settings dialog') |
| Exit | Closes the application. |

### '?' menu

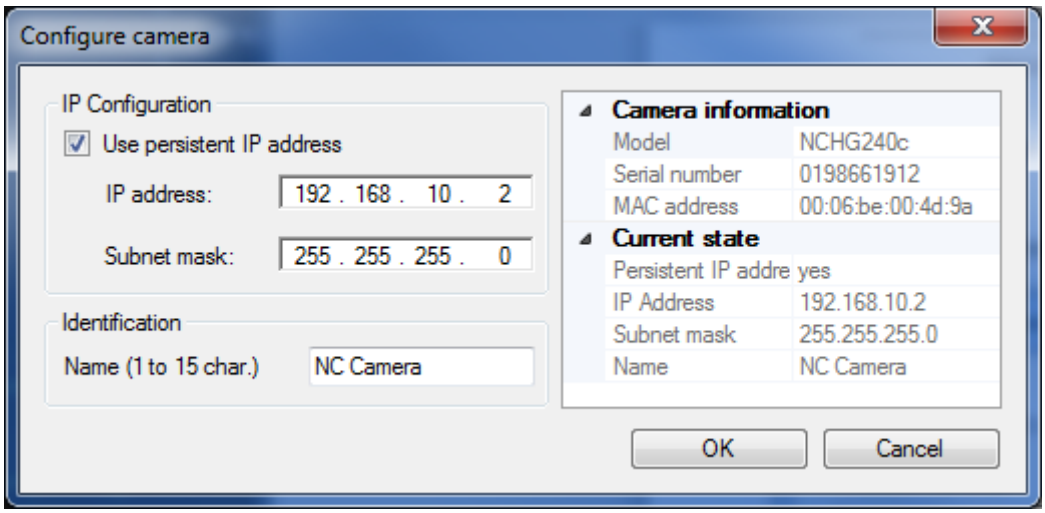
| Element | Description |
|---|---|
| About | Shows a dialog that provides information about the **NeuroCheck Camera IP Configurator**. |
| Help | Opens this PDF document containing the documentation of the **NeuroCheck Camera IP Configurator**. |

### Menu buttons

| Element | Description |
|---|---|
| Rescan | Rescans the system for cameras. Please use this function if a camera was attached to the system after the start of the tool. |
| Edit camera | Opens the configure camera dialog for editing the IP configuration of the selected camera (see chapter 'The camera configuration dialog'). |

## 5.3 The configure camera dialog

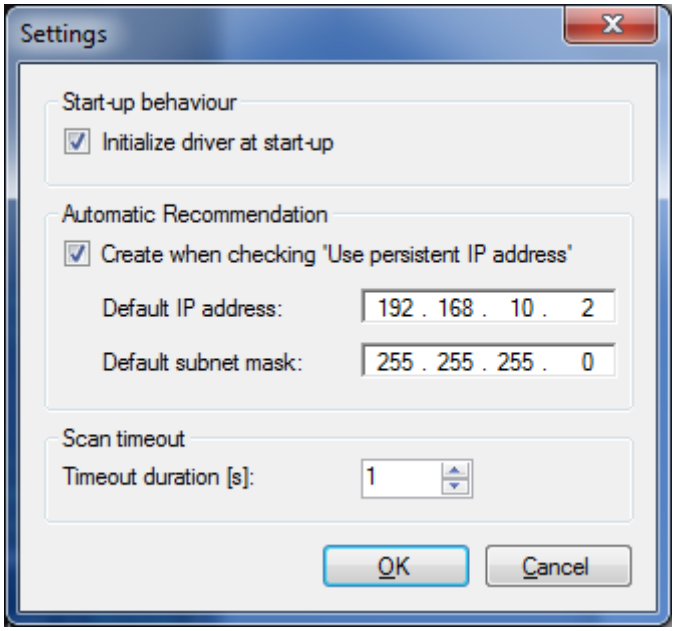
This dialog can be used to change the IP configuration of the selected camera. The dialog opens by pressing the **Edit camera** button or clicking **Edit camera configuration** in the **Camera** menu or by double clicking an entry in the **Connected Cameras** list or by selecting **Edit camera configuration** in the context menu of the camera list entry.



| Element | Description |
|---|---|
| **IP Configuration** | |
| Use persistent IP address | Activates or deactivates the usage of a persistent IP address for the selected camera. |
| IP address | The currently configured IP address of the selected camera. If **Use persistent IP address** is activated the IP address must be valid. A valid IP address contains four numbers each in the range between 0 and 255. |
| Subnet mask | The currently configured subnet mask of the selected camera. If **Use persistent IP address** is activated the subnet mask must be valid. A valid subnet mask contains four numbers each in the range between 0 and 255. |
| **Identification** | |
| Name (1 to 15 char.) | The name that is assigned to the camera. The name can contain from 1 up to 15 characters. |
| **Camera information (read-only)** | |
| Model | The model of the camera. |
| Serial number | The serial number of the camera. |
| MAC address | The MAC address of the Ethernet controller of the camera. |
| **Current state (read-only)** | |
| Persistent IP address | Information about the current usage of a persistent IP address by the camera.<br>• Yes: A persistent IP address is currently used.<br>• No: A persistent IP address is currently not used. |
| IP address | The currently used persistent IP address. Only if a persistent IP address is used. |
| Subnet mask | The currently used persistent subnet mask. Only if a persistent IP address is used. |
| Name | The currently configured camera name. This value is available only in the case of a valid IP configuration. |

## 5.4 The settings dialog

The settings dialog can be used to configure the start-up behaviour of the **NeuroCheck Camera IP Configurator** and the default values for the calculation of IP addresses and subnet masks.




| Element | Description |
|---|---|
| **Start-up behaviour** | |
| Initialize driver at start-up | Activates or deactivates whether the application searches for connected cameras at start-up of the application. Please notice that the scanning process may take some time. |
| **Automatic Recommendation** | |
| Create when checking 'Use persistent IP address' | Activates or deactivates whether a recommendation of an IP address is created in the case that 'Use persistent IP address' is checked in the **Configure camera** dialog by the user. |
| IP address | The IP address that is used as starting point for calculating a recommendation for an IP address. |
| Subnet mask | The subnet mask that is used as starting point for calculating a recommendation for an IP address. |
| **Scan timeout** | |
| Timeout duration [s] | The timeout after which the search for new cameras per network adapter is aborted. |

# 6. License

This software uses the GenICam reference implementation which is distributed under the following license: