Transportation Solutions

TLM-10 Configuration tool

Operating instructions

Version 01

LUTZE TRANSPORTATION

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These operating instructions are an integral part of the device and contain important information on safety and operation. Read the operating instructions before use to exclude possible dangers and to ensure proper use.

These operating instructions and the information contained therein have been compiled with due care. However, Lütze accepts no liability for printing or other errors or for any damage resulting therefrom.

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Content

1 Introduction

This operating manual is a part of the TLM-10 Configuration tool. It contains important information about the safety and operation of the devices.

This manual must be read and understood before installing, operating, maintaining, or disposing of the device. Keep this document for later use.

CAUTION

Risk of injury and damage to property due to non-observance of the operating instructions.

Always read these operating instructions before planning the system in order to avoid or reduce risks and damage.

NOTICE

These operating instructions contain important information on safety, commissioning, operation, maintenance, and disposal of the device.

Always keep the document at hand. This applies until the device is disposed of. Pass on the operating instructions if the device is sold, distributed, or loaned.

You can also find these operating instructions at

www.luetze-transportation.de.

Enter either the product name or the product number in the search field. Select the product in the displayed search result. At the bottom of the respective product page, you will find the documents belonging to the product.

1.1 About this operating manual

This instruction provides information on how to handle the products throughout its entire product life cycle, from delivery to disposal.

Further documents apply in addition to this operating manual.

If you have suggestions for improving this document, please contact Lütze Transportation GmbH. The contact details can be found in chapter *11. Service*.

2 General Information

2.1 Symbol Description

2.1.1 Safety Messages

This document contains several safety messages. Each safety message contains a defined signal word and a color. The color and the word are referring to an alert level. There are 4 levels. The safety messages point out hazardous situations and give information on how to avoid these.

DANGER	**Indicates a hazardous situation, which if not avoided will result in death or serious injury.**
WARNING	**Indicates a hazardous situation, which if not avoided can result in death or serious injury.**
CAUTION	**Indicates a hazardous situation, which if not avoided can result in minor or moderate injury.**
NOTICE	**Indicates a situation which could damage the product or the environment. This notice does not apply to personal injury.**

2.1.2 Handling Notes

Additionally, the following symbols can be found. These refer to important technical information and instructions:

	**Refers to important technical information. This indicates to the user a specific action that must be performed to operate the device safely.**

2.2 Copyright

2.3 Disclaimer

The document was written under consideration of the applied standards, regulations and the current state of technology.

The content is verified of accuracy. Discrepancies are not excluded. For those discrepancies we disclaim liability. Applicable changes and additional information will be in the next version of the document.

The Lütze Transportation GmbH does not assume liability for any damages and accidents of following reasons:

- Nonobservance of the document
- Untrained and unqualified personnel
- Non conventional use
- Non approved reconstructions and functional modifications of the product
- Using non original or non-admitted parts or equipment

2.4 Standards and norms

The product is state of the art and follows the specified safety regulations and European standards (DIN EN50657:2017 according to basic integrity).

NOTICE **The latest versions of the standards and further information about the product can be found in the corresponding data sheets that are valid with this document.**

2.4.1 Observe other applicable documents

When operating the device, please also observe all operating instructions enclosed with other components of your system.

NOTICE **These operating instructions contain important information on safety, commissioning, operation, maintenance and disposal of the unit.**

Always keep the document handy. This applies until the appliance is disposed of. Pass on the operating instructions if the unit is sold, distributed or lent out.

For reasons of clarity, we would like to point out that these operating instructions cannot describe all conceivable problems in connection with the use of this device.

Should you require further information or encounter special problems that are not dealt with in sufficient detail in the operating instructions, you can request the necessary information about service from Lütze Transportation GmbH.
(See also chapter 11. Service)

3 Safety

3.1 Applicable documents

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3.2 Safety information

3.2.1 Contents of the operating instructions

NOTICE **These instructions must be read and understood before installing, operating or maintaining the device.**

These operating instructions must be read and observed before any work is carried out on or with the units. This applies to all persons who come into contact with the devices. Trained personnel and specialists, especially electricians (see also chapter „Electrically qualified persons“) who have already worked with similar equipment should also have read and understood the manual.

3.2.2 Appropriate use

The devices are designed exclusively for railway use. The intended use includes the procedure according to the manual. Proper and safe operation of the product requires proper transport, storage, installation, and assembly as well as careful operation and maintenance.

3.2.3 Addressees

This operating instruction is directed towards planers, project managers and programmers, as well as to staff authorized to commission, operate, and maintain the devices and systems.
A distinction is made between various qualification levels of the staff.

3.2.3.1 Operating Personnel

Only qualified personnel may carry out the following work on the modules:

Working range	Competency
Transport and storage	Trained Employee
Installation, commissioning, decommissioning	Experts
Operation	Trained Employee
Servicing and maintenance	Experts
Troubleshooting	Experts

WARNING **Risk of injury by usage through insufficient qualified operating personnel! Misusage through performed insufficient or qualified personnel can cause property damage and personal injuries.**

- Tasks which apply special procedures should be done by trained and qualified employees or experts, especially electricians.

(according to EN 60204-1)

Trained Employee

The employee was trained by the employer on the task and possible hazardous situations. The employee does not have any technical knowledge.

Experts

The employee has a technical education, knowledge and/or experience in the required field. The employee is capable to perform specific operations on and with the product.

Electrically qualified persons

The employee has a technical education in the required field. The employee is capable to perform special operations on and with the product. The different sections of the document refer to the qualification level of the operating personnel.

According to European Standard EN 50110-1:2008-09-01 Section 3.2.3.

NOTICE The individual sections refer to the qualification level of the personnel.

3.2.4 Responsibility of the operator

NOTICE The customer is subject to an obligation to report back when safety-related errors are discovered.

Since the device is used in a commercial area, the operator of the device is subject to the legal obligations for occupational safety:

- The operator of the device is obliged to instruct the operating personnel and to inform himself about the industrial safety regulations.
- The operator must ensure that safety, accident prevention and environmental protection regulations are observed.
- The operator must make an appropriate risk assessment on the Workplace/location to detect and warn of special hazards.
- The manual must be kept in the immediate vicinity of the device.
- The information in the operating instructions must be followed.
- The device may only be operated in technically perfect condition.

4 Product Overview

4.1 TLM-10 Configuration tool

The configuration tool for the TLM-10 units is designed to enable powerline communication in rail vehicles.

The TLM-10 configuration tool allows the user to configure his TLM-10 devices according to his wishes and to update the firmware and configuration.

NOTICE The ***TLM-10 configuration tool*** is available from our support at: *support.transportation@luetze.de*

4.1.1 The TLM-10 device – short description

The Train Line Modem 10 (TLM-10) is a device for transmitting Ethernet data in rail vehicles via existing and occupied power lines.

The device uses the existing NF cabling for data transmission. A tap-proof data transfer is guaranteed by a 128-bit AES encryption. The bandwidth of the transmission line is constantly determined via a DSP, which ensures an optimal data throughput.

Since the line length changes when vehicles are coupled, this means that the best possible data throughput can always be achieved.

The following types of TLM-10 are currently available:

1. Part no. 806601, type TLM-10 10TE DC 24V-110V PI PB, rack mounting
2. Part no. 806610, type TLM-10 10TE DC 24V-110V FM, flange mounting*
3. Part no. 806611, type TLM-10 10TE DC 24V-110V FM PB, flange mounting
4. Part no. 806710, type TLM-10 10TE FM POE, flange mounting

**Former PICASO item number: 501010100110*

5 Comissioning

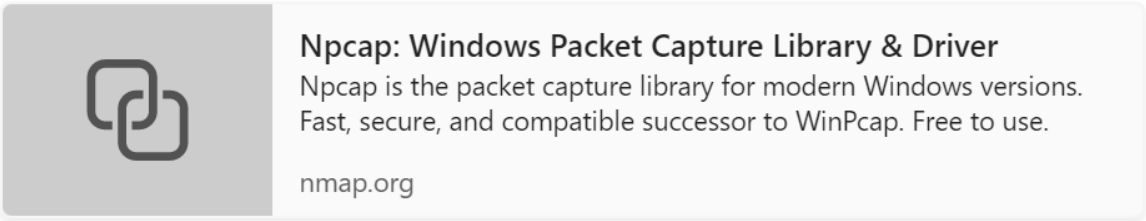
5.1 Installation Npcap

NOTICE **Before using the TLM10 tool, the program Npcap must be installed in version 1.55 or higher.**

NOTICE **The tool can be found here:**

Npcap: Windows Packet Capture Library & Driver (nmap.org).

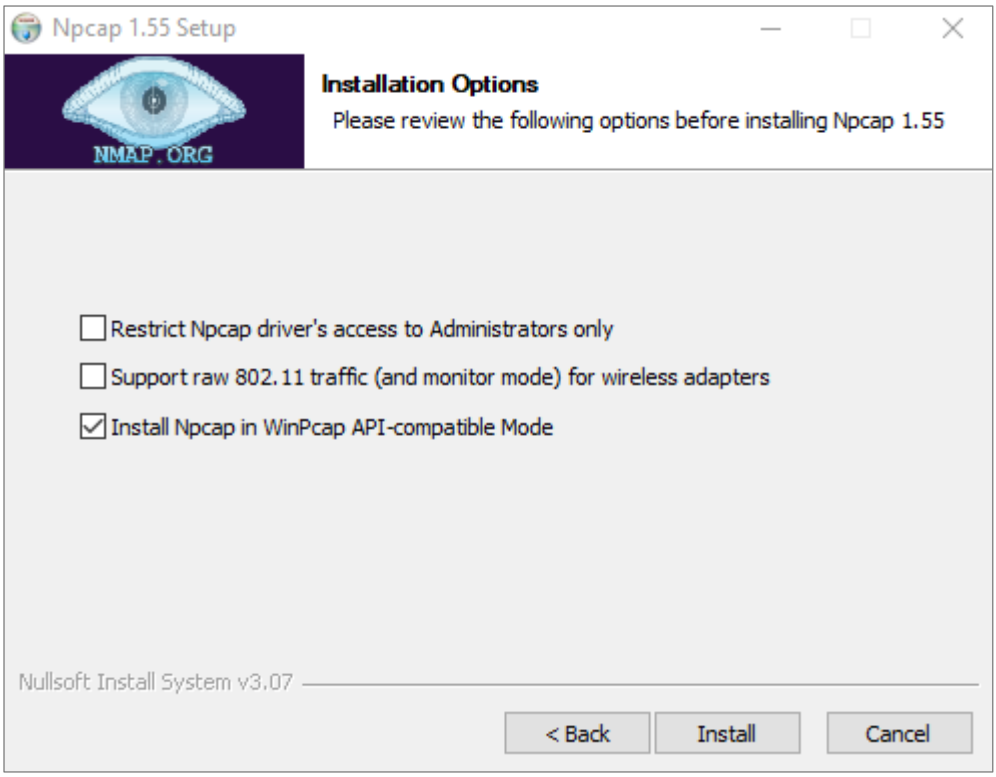
Npcap: Windows Packet Capture Library & Driver



Npcap is the package capture library for modern Windows versions.

*The fast, secure and compatible successor of **WinPcap. Npcap** is free to use.*

The default settings can be kept during installation.



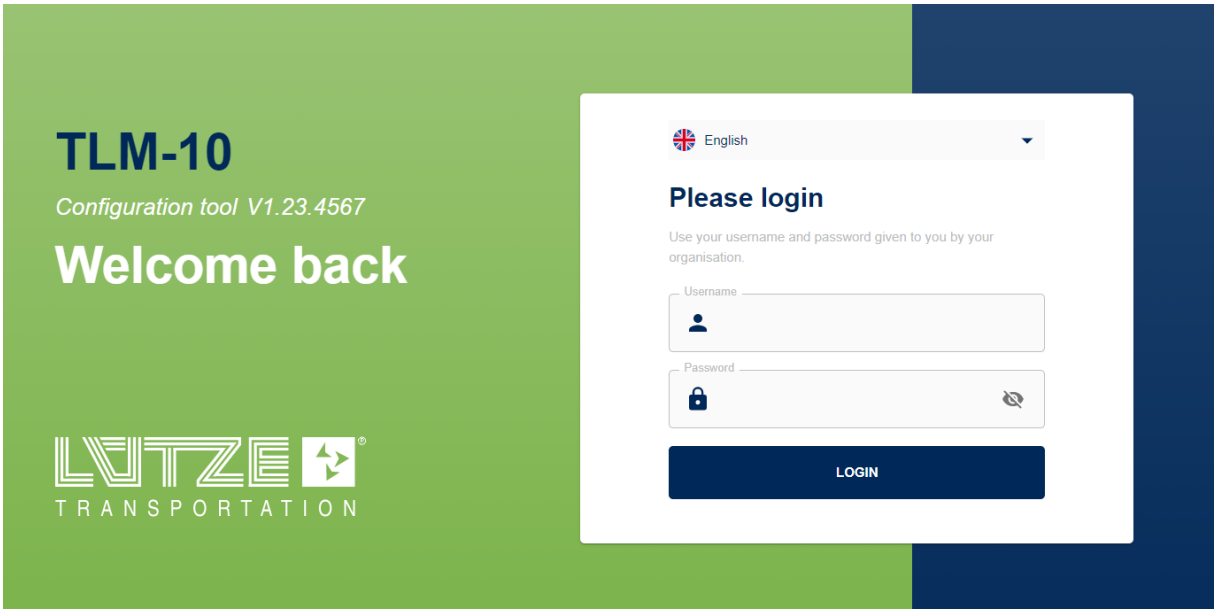
6 User interface

6.1 Log-in

1. Open the configuration tool by double-clicking on the program icon.

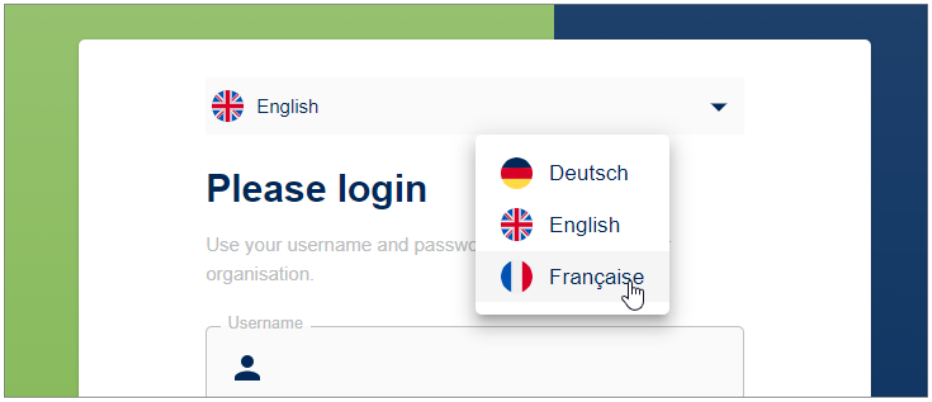
NOTICE **Installation of the program is not required.**

NOTICE ***The login password is available from our support at:***
support.transportation@luetze.de



2. The program starts in the language set in Windows, if this language is English, French, or German. English is the default language if your system is set to another language.

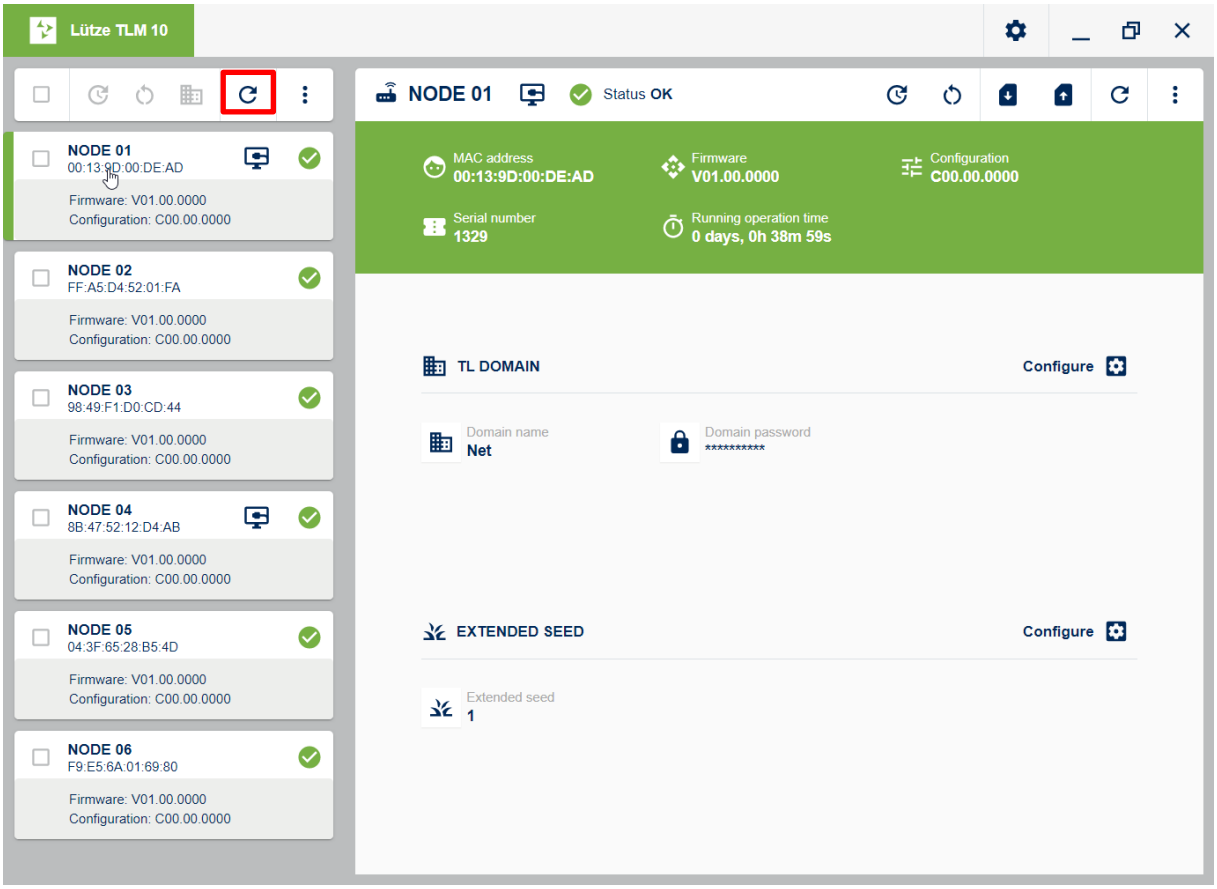
Select the language here.



3. Enter your ***username*** and ***password***.

4. After entering the ***username*** and ***password***
the application starts within a maximum of ***15 seconds***.

5. The *user interface* appears. By clicking the ***Refresh Nodes*** button, all devices on the network are detected and displayed in the list shown on the left.



The *user interface* adapts to the respective screen size of your device. (Responsive Design).

NOTICE **If no nodes are displayed or the program starts but is displayed as a white window, please consult Chapter *9 Troubleshooting / FAQs*.**

6.2 Settings

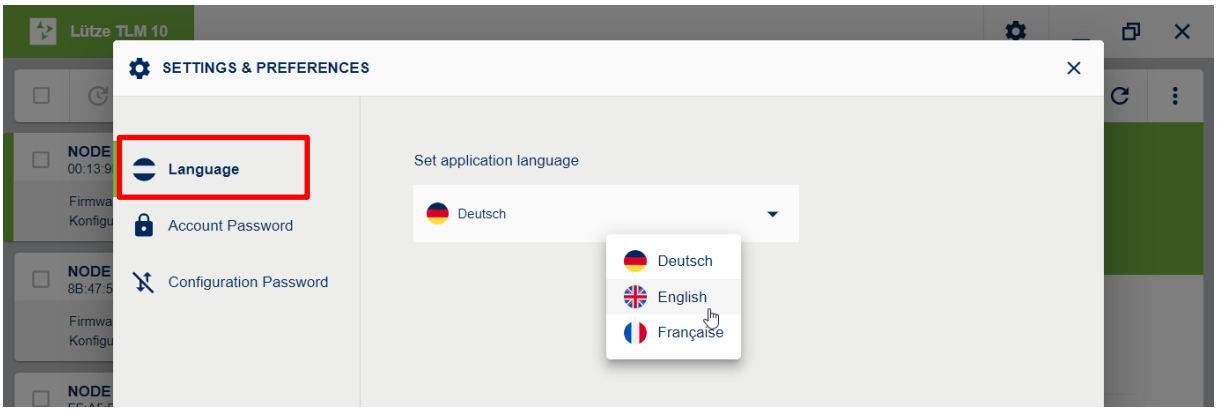
The ***Settings*** symbol is located at the top right.

Basic settings can be made here.

6.2.1 Language

The language can still be set after login.

1. To change the language, click on the ***Settings*** icon in the upper right corner and then on Settings.
2. A new window will open. By clicking on ***Language,*** you can set the language.
3. By selecting a language from the drop-down menu ***Set application language***, the language of the program is changed immediately.



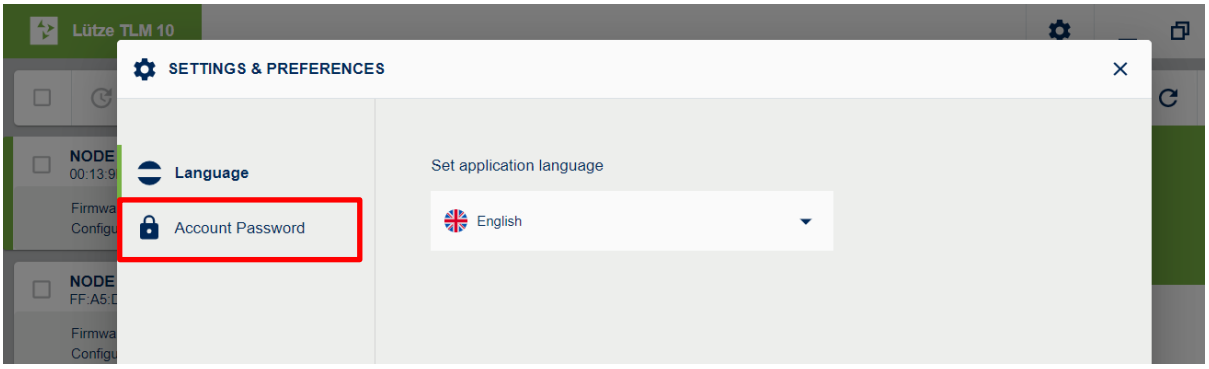
The setting does not need to be confirmed as it is automatically applied.

6.2.2 Changing Account Password

The ***account password*** can be changed.

To change the password, click on the ***Settings*** icon at the top right and then on ***Settings***:

A new window opens. You can set a new password by clicking on ***Account Password***.



1. To do this, first enter your old password in the ***Previous password*** line.
2. Then think of a new password and enter the new password at ***New password***.
3. Confirm your new password by entering it again in the ***Confirm Password*** line.
4. Confirm your entry by pressing ***CHANGE PASSWORD***.
5. Now you have set a new password.

If the user forgets his password, he must download the configuration tool again and log in with the original password.

6.2.3 Log out - Safe exit

Click on ***Log out*** to exit the application.

NOTICE

If you want to exit the application completely, you must click on *Settings / Log out*.

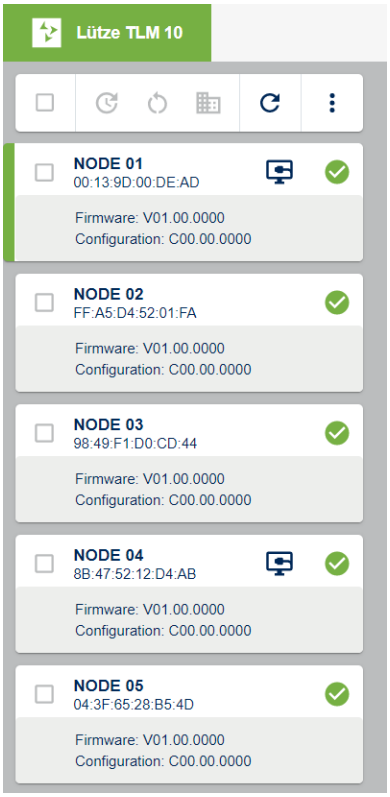
You must log in <u>again</u> when you open the application again. This ensures that no unauthorized person can make changes.

6.3 Overview and information on the nodes (NODES)

6.3.1 Background to the Origin of the NODE List

A NODE (node) refers to a device on the network. (For example, a NODE is the TLM-10 device).

The list of NODES (nodes) is created **automatically** by the tool as soon as it searches for devices on the network. The list of nodes is regenerated each time the program is started, each time all nodes are updated, and each time the firmware of one or more nodes is updated. Depending on which network is identified first, the arrangement of the nodes may vary.



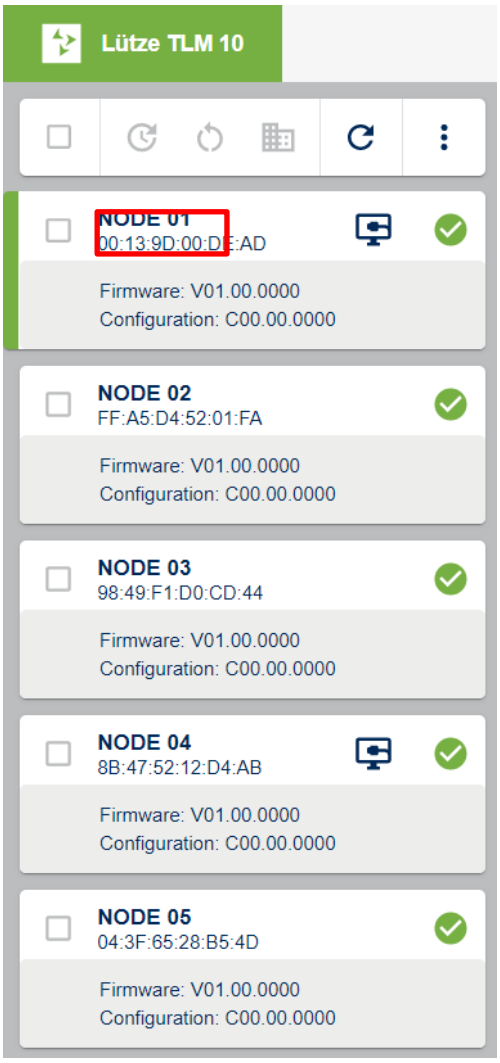
6.3.2 Special Role Locally Connected Device (NODE) ID 01

Each unit is displayed with a human-readable ID, e.g., "01, 02, 03". This is to make it easier for the user to identify the units.

The numbering is done in the order in which the devices are identified in the network.

The device with **ID 01** is one of the nodes that is directly connected to the configuration computer or to a local switch. This is to help the user to identify the local device at any time. All local nodes are marked with the *local node* symbol: .

If several nodes are connected via a switch, for example, all nodes that can be reached via Ethernet are marked with the symbol . All nodes that can be reached indirectly (via another node) do not have this symbol.



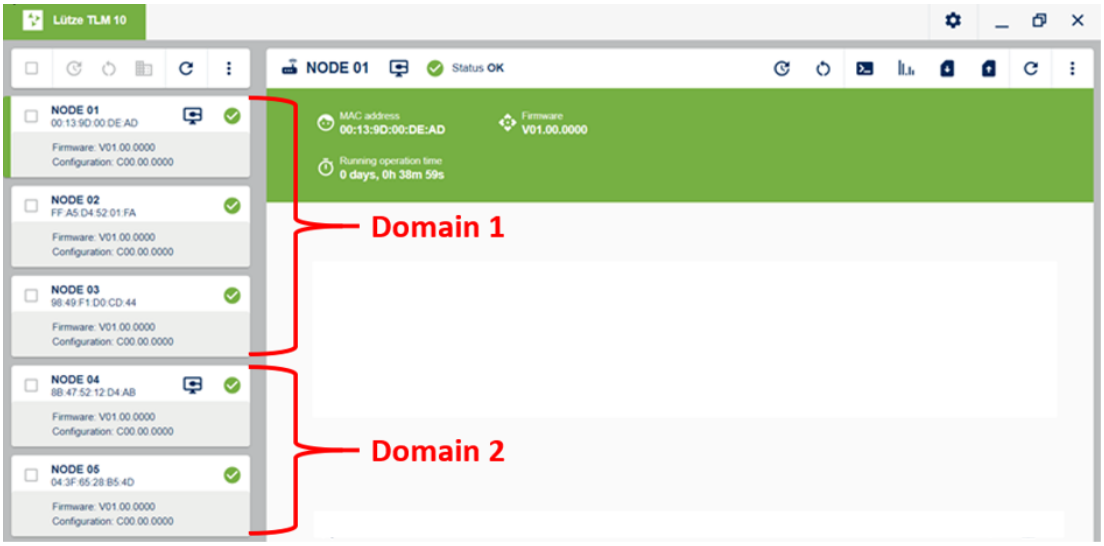
NOTICE

If the computer is disconnected from the device with ID 1 and connected to another device, the directly connected device is marked with ID 1.

The locally connected device is always marked with 01. If several devices are connected to one switch, the devices directly connected to the switch are marked with the ***local node symbol***:

6.3.3 Network Structure

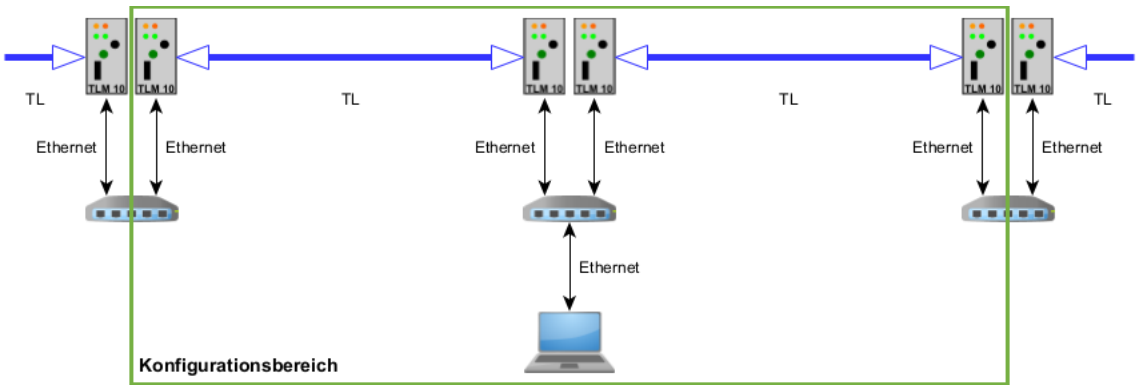
Since there can be multiple TLM10 (TL) networks on an Ethernet network, the UI provides a visual representation of the connected networks. For example, if the computer is connected to a switch, there may be multiple local nodes. Local nodes are marked with the icon. If multiple local nodes exist, all nodes belonging to a domain are displayed under the respective local node. The network section in which two or more nodes communicate is described as a domain.



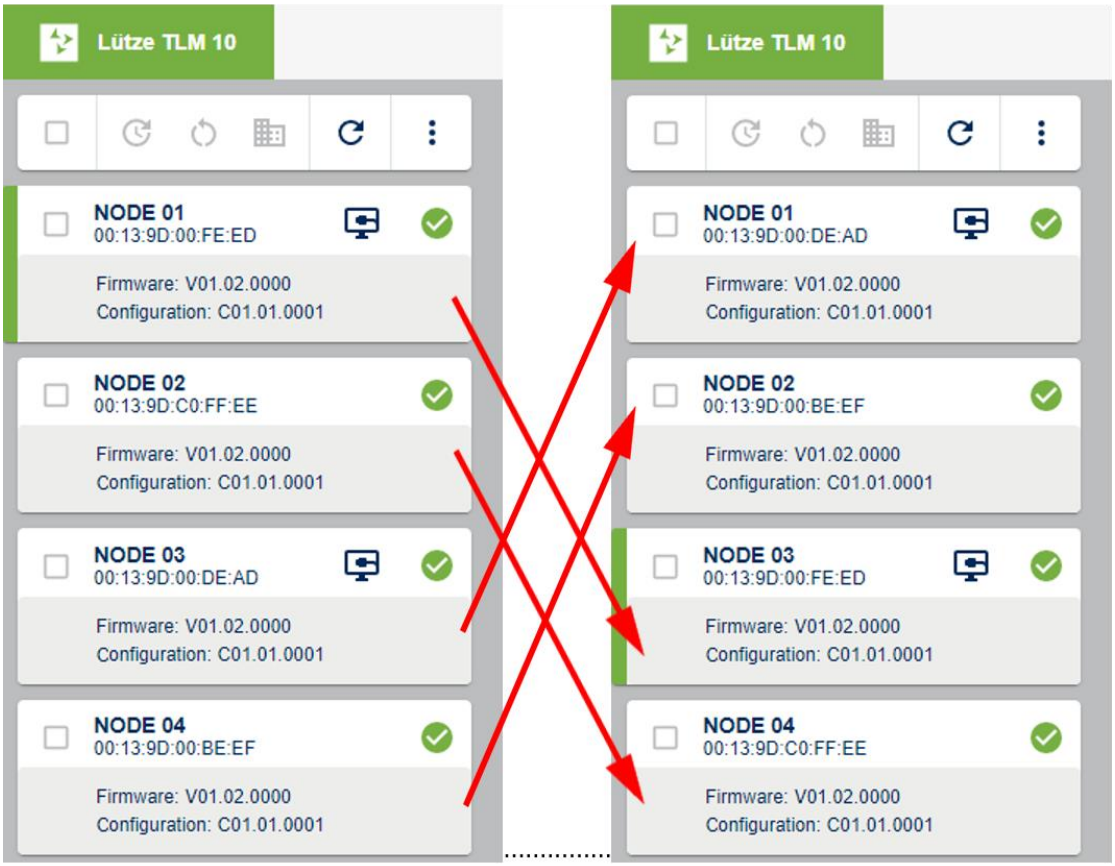
In the example shown here, nodes 01 - 03 belong to network 1 (domain 1) and nodes 04 - 05 belong to network 2 (domain 2).

6.3.4 Reachable devices

The following example is intended to illustrate which nodes in a given network are identifiable and configurable.



In the image above, the configuration tool is executed on the laptop shown. All nodes connected directly via Ethernet are identified by the tool as Local Nodes and marked with the corresponding symbol "". All devices directly connected to these Local Nodes can be identified and configured by means of the tool. All devices that can be configured by the laptop shown are enclosed by the large green rectangle in the graphic above.

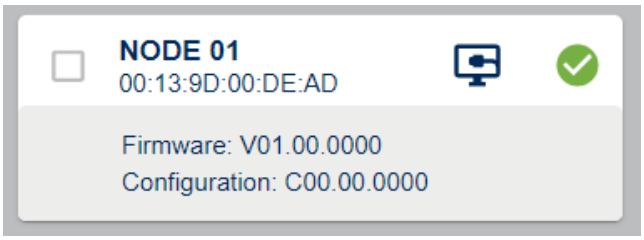


In the above figures the devices (in the case of updating all nodes) are not necessarily assigned the same NODE ID.

This behavior always occurs when the entire network is re-identified. This behavior is triggered by pressing the "***Update nodes***" button of the selective menu bar (*see chapter* *6.4.2 Selective menu bar*).

Furthermore, this behavior can occur after firmware upgrade of several local nodes. If the currently selected node (green bar to the left of the node tile) is identified again after all nodes have been updated, the selection is retained even if the order of the nodes is changed.

6.3.5 Display of the nodes



On the left side below the menu bar, you will see an overview of the created nodes with further information:

1. **Node [number].**
   All nodes in the same network are recognized at the start of the program and uniquely identified by their MAC address.

2. **Firmware [version number]**

   The firmware version of the selected node is displayed.

   Example of a firmware version: VXX.XX.XXXX with X element [0,9]

3. **Configuration [version number]**

   The identification of the TLM's configuration is displayed here.

   Example of a configuration version: CXX.XX.XXXX with X element [0,9]

4. **The green tick indicates the correct operation of the device.**

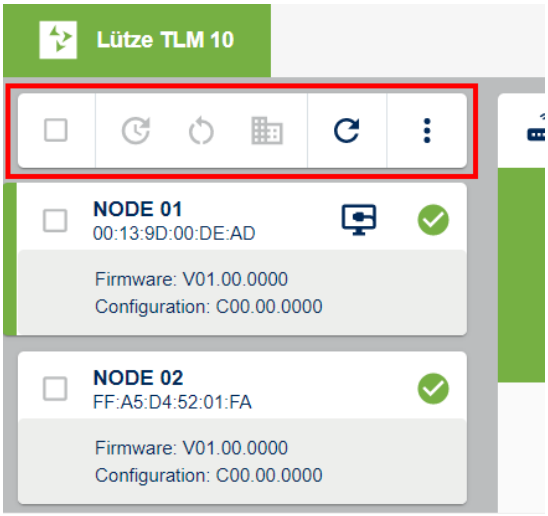
NOTE: See also the following chapter "*6.5 Status query nodes*".

5. **Local node icon**

This icon is displayed if the given node is a local node and is connected to the TLM configuration tool directly or via a switch.

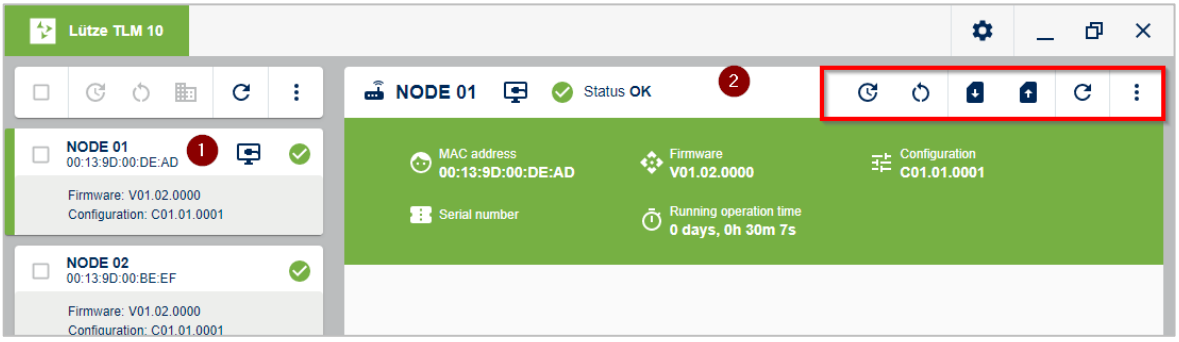
6.4 Overview Quick Menu Bar

When you open the program for the first time or after logging in, you will see the following view. The list of the read and sorted nodes of the network. Above the identified nodes of the network there is a ***selective menu bar***. This menu bar offers the possibility to execute actions or parameter changes on one or more devices at the same time.



Clicking on a NODE button (1) opens the corresponding menu window with the parameter overview (2). Additionally, the currently selected device is marked with a green bar on the left side of the corresponding tile.

At the top right, there is a device-specific ***Quick menu bar*** that allows settings for the currently selected node.



6.4.1 Device-specific menu bar

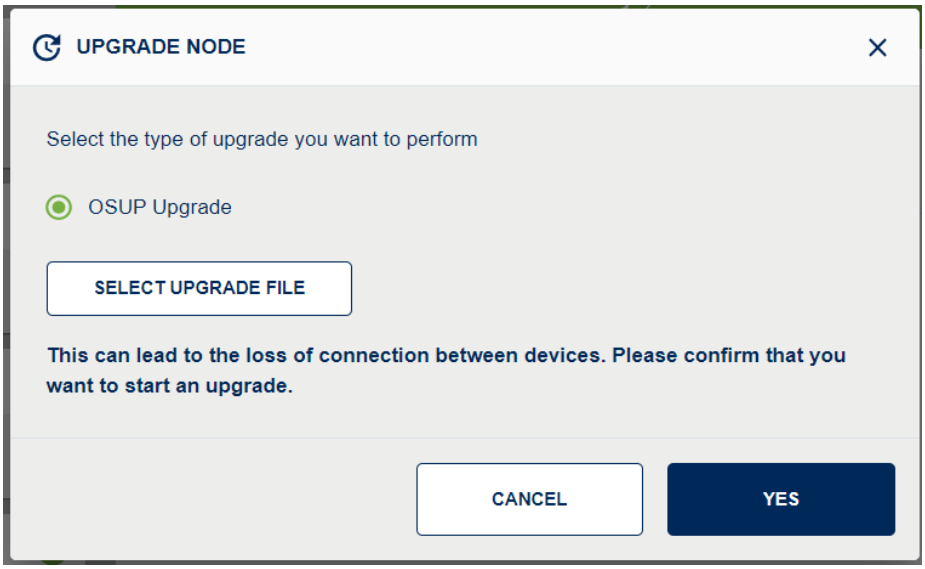
In the following, the device-specific menu functions are described and important notes on their use are explained.

6.4.1.1 UPGRADE NODE

Here you can perform an ***OSUP upgrade***.

To do this, select an upgrade file located on the local file system. Different upgrade files are available.

After clicking the ***Upgrade Node button***, a window opens that allows to select the upgrade type and the upgrade file.



- **OSUP Upgrade** - One Step Upgrade

  o Secure upgrade. The OSUP file is first uploaded to the device. After the next reboot the necessary changes will be applied by the device.

  o This upgrade is used to upgrade only the software parts that have changed to the current state. This can be the firmware or parameters.

By clicking on ***YES***, the selected node is updated.

NOTICE	**Upgrading nodes may cause loss of TL connection with other nodes if the set values for Domain Name, Domain Password or Extended Seed are different**

NOTICE	**When upgrading a node, all previously made settings will be lost.** If you upgrade a node, please make sure to save the current configuration beforehand. The saving of the configuration parameters is described in *chapter* *6.4.1.3 SAVE CONFIGURATION***.**

NOTICE	**If several nodes in a network are to be upgraded simultaneously, you should ideally use the Selective menu bar.** Using the functions provided here ensures that the remote nodes are upgraded first, followed by the local nodes. This ensures that the connection to the local node is not lost.

6.4.1.2 Restart Node

1. Clicking on or ***Restart Node*** restarts the selected device.

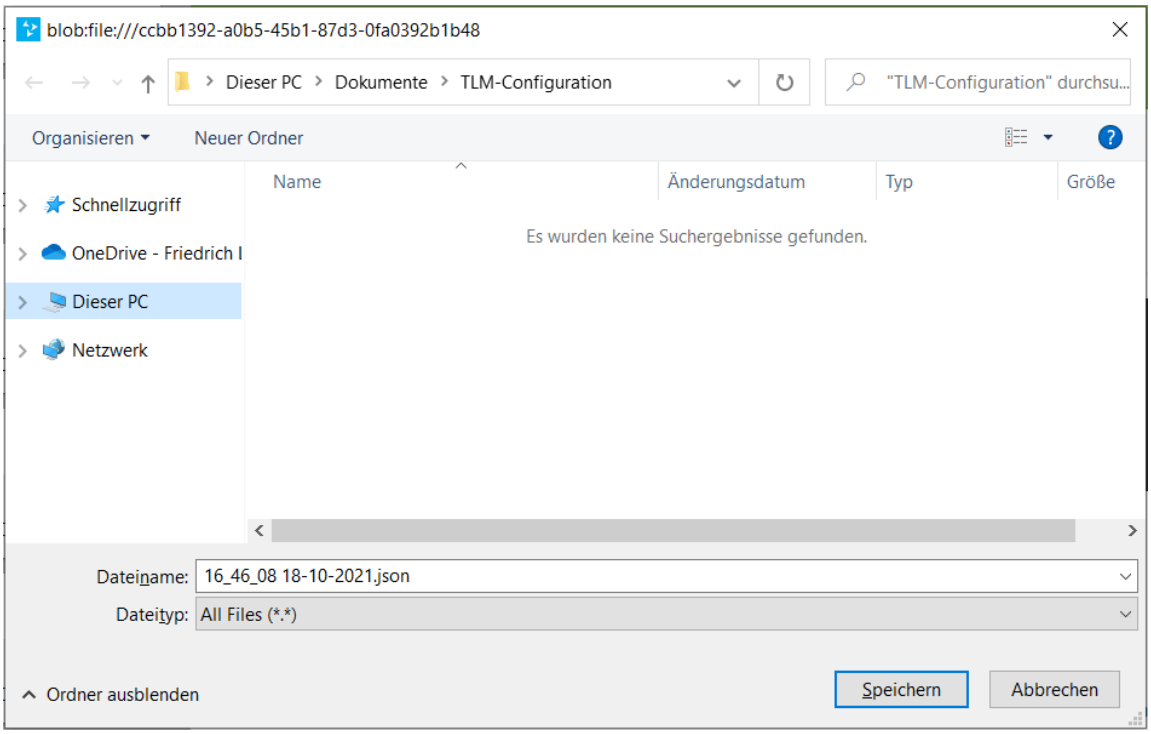
Before triggering the restart, a *pop-up window* appears in which you must confirm the *restart* with ***YES***.

NOTICE

If several nodes in a network are to be upgraded simultaneously, you should ideally use the Selective menu bar.
Using the functions provided here ensures that the remote nodes are upgraded first, followed by the local nodes.

6.4.1.3 SAVE CONFIGURATION

If you click on ***Save Configuration*** , a file explorer window opens in which you can save the current configuration file.



A *file explorer window* opens in which you can navigate to the desired storage location.

The TLM-10 configuration tool automatically generates a file name, which is composed of the current time and current date.

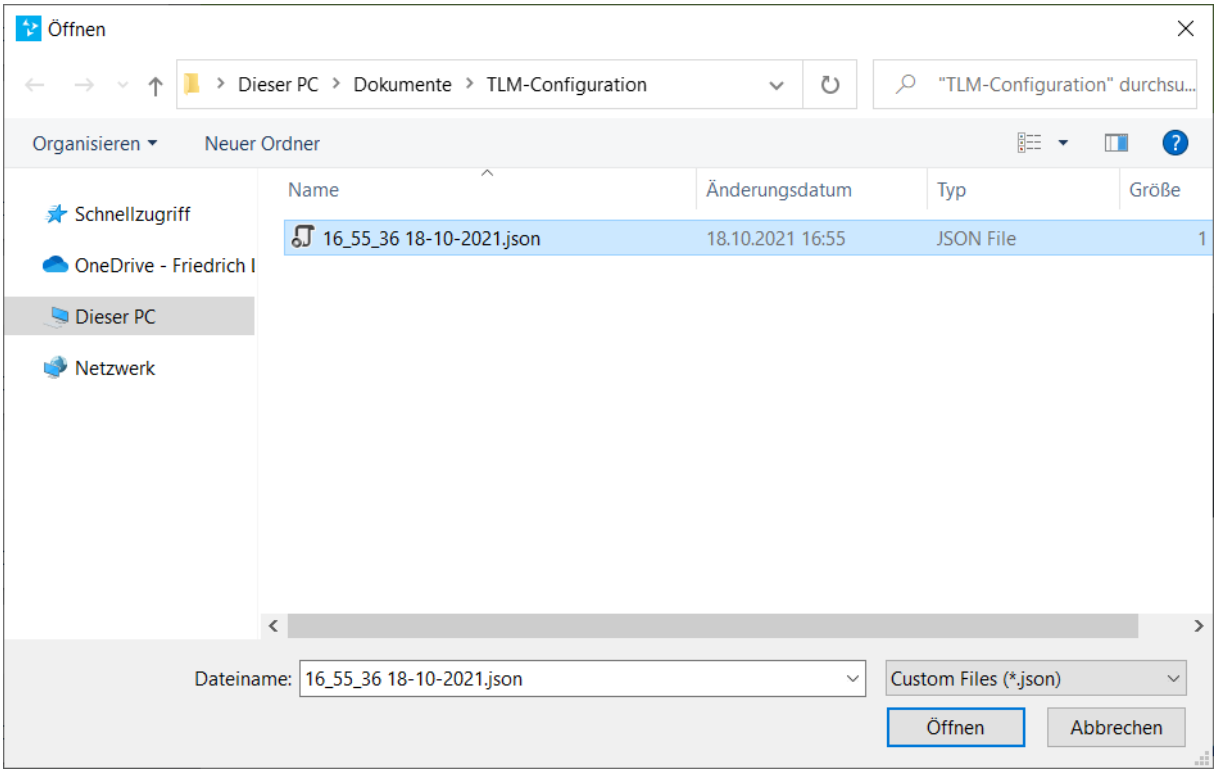
The configuration file contains the following metadata:

1. Date of creation
2. Name of the file when it was generated
3. Version of the tool which created this file
4. Type of the device to which this configuration belongs
   a. Currently only type TLM-10 is supported here
5. Checksum of the configuration data

NOTICE **The domain password is not saved because it is not possible to read it from the device. The password must therefore be added manually when the configuration is loaded.**

6.4.1.4 LOAD CONFIGURATION

If you click on the ***Load Configuration*** symbol - icon, a file window opens in which you can choose the desired configuration file.

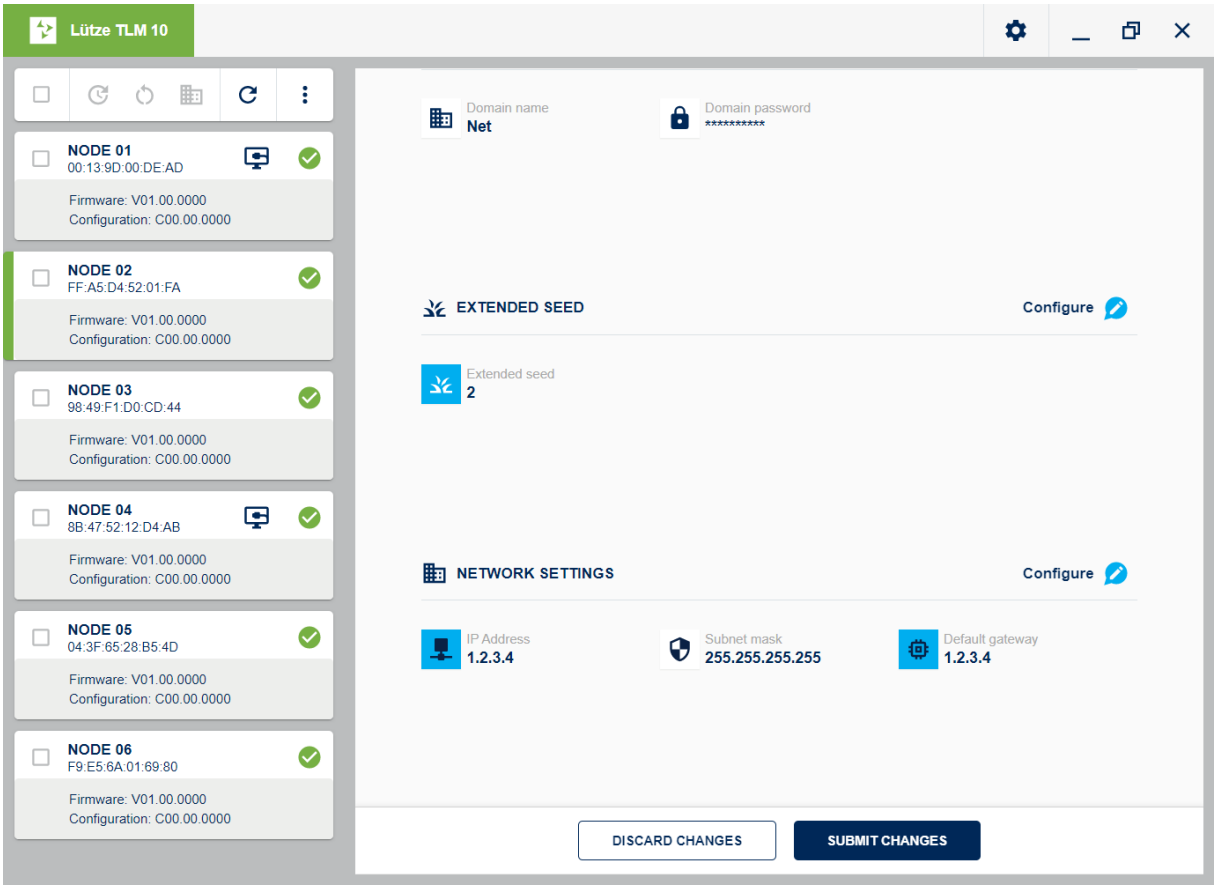


Each configuration contains a checksum, which is checked before the configuration is applied to the device. If an error is detected in a configuration, an error notification is issued to the user and the configuration is not applied.

6.4.1.4.1 Display of configuration changes

If the selected configuration changes individual parameters, these are highlighted in color.

Subsequently, the loaded configurations can be adopted by the ***SUBMIT CHANGES*** button.



The acceptance of the loaded configuration can be cancelled by the ***DISCARD CHANGES*** button.

NOTICE

The domain password is not stored in configuration files because it is not possible to read it from the device. The password must therefore be added manually when the configuration is loaded.

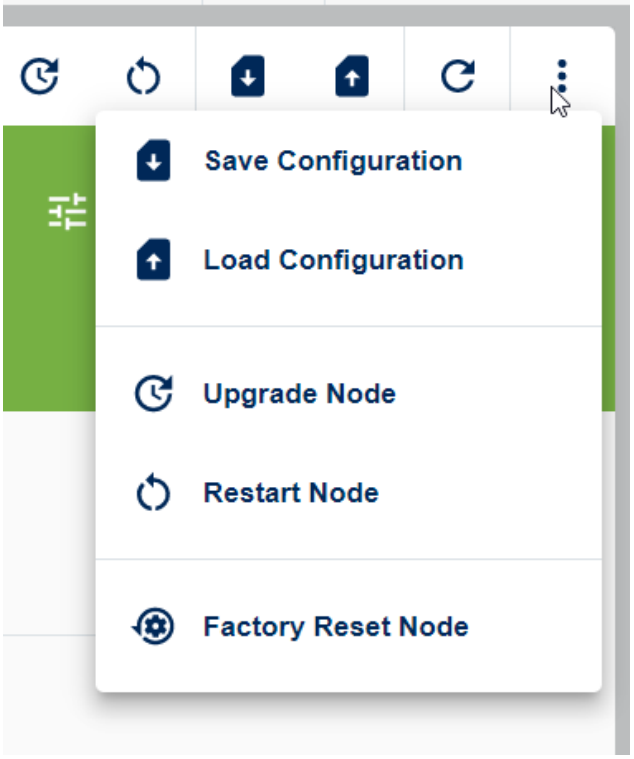
6.4.1.5 REFRESH NODE

When clicked, the displayed parameters of the node are updated.

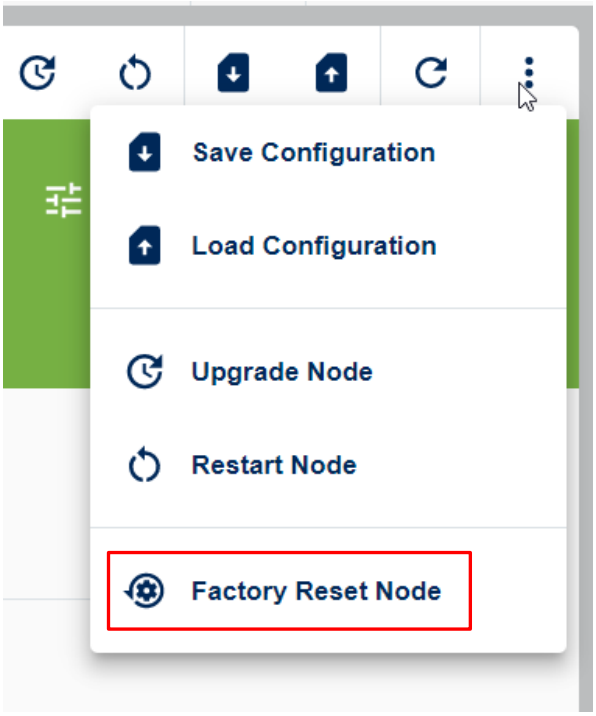
6.4.1.6 OPTIONS

Clicking opens a submenu:

The menu items correspond to the quick menu bar, except for the lowest item, the ***Factory Reset Node***.



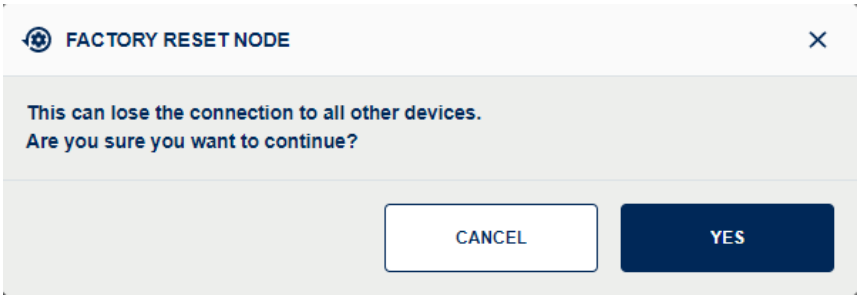
6.4.1.7 FACTORY RESET NODE



Each node can be reset by pressing a button.

By clicking on ***Factory Reset Node*** (or *Reset Node to Factory Settings*), you can reset the respective node to the factory settings.

A warning window appears beforehand, which you must confirm with ***YES***:

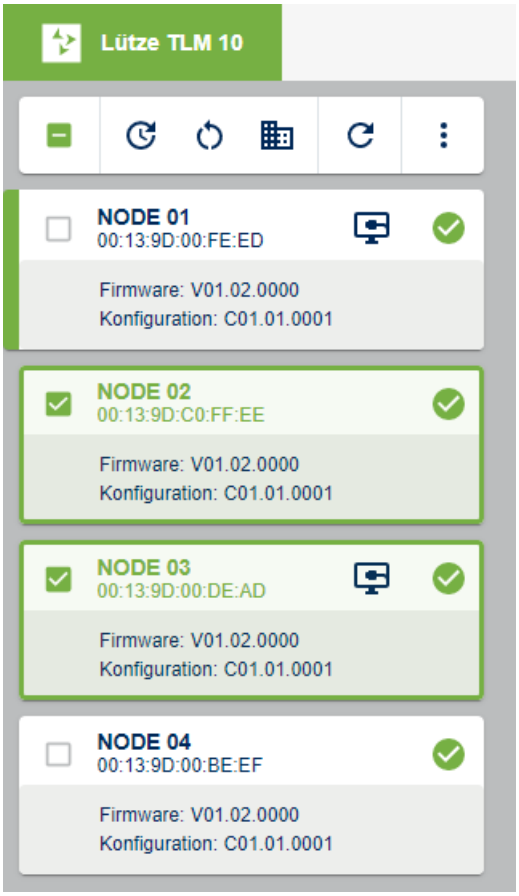


The Factory Reset resets all settings made by the user to the factory settings.

NOTICE **If you have any questions about this, please contact our *service department*.**

6.4.2 Selective menu bar

The selective menu bar is used if several devices are to be configured simultaneously with the functions available in this menu bar. The selection of the devices to be configured is realized via the checkboxes ☐ available in each device-specific tile.



In the figure above, the nodes "02" and "03" have been selected by clicking on the corresponding checkbox. The selection of the nodes to be configured is visualized in the corresponding tile by a checkmark ☑. The checkbox in the selective menu bar itself indicates the selection of some, but not all, nodes by a minus icon ⊟. If all devices are to be selected in a partial selection, this can be achieved by clicking on the minus icon. After clicking on the minus icon, the checkbox of the selective menu bar is displayed with a check mark ☑, just like the checkboxes of all nodes. If all nodes are to be deselected at once, all nodes can be deselected by clicking the checkbox in the selective toolbar again. In this case, all checkboxes will be displayed empty ☐ again.

If one of the actions available in the selective toolbar is executed, this action only affects the nodes selected with a check mark ☑.

NOTICE

If the parameters of several nodes in a network are to be changed simultaneously, you should ideally use the Selective menu bar.
Using the functions provided here ensures that the remote nodes receive new parameters first and then the local nodes. This ensures that the connection to the local node is not lost.

The functions of the available icons are explained below.

6.4.2.1 Upgrade nodes

The ***Upgrade Node button*** is used to apply upgrades to one or more nodes simultaneously.

The procedure is analogous to the device-specific toolbar. For a detailed description see chapter *6.4.1.1 UPGRADE NODE*.

NOTICE

If several nodes in a network are to be upgraded at the same time, you should ideally use the Selective menu bar.

Using the functions provided here ensures that the remote nodes receive the upgrade first, followed by the local nodes. This ensures that the connection to the remote node is not interrupted before the upgrade could be performed.

NOTICE

Because an upgrade overwrites all the settings of a device, the partial upgrade of a network can lead to connection interruptions.

This can be prevented by always upgrading all devices of a TL network at the same time.

6.4.2.2 Restart Nodes

The "***Restart Nodes***" button is used to restart one or more devices.

Before the restart, the user is shown a dialog with a list of the node ID and the MAC addresses of all selected nodes. This dialog can be confirmed with "***YES***" or canceled with "***CANCEL***".

NOTICE

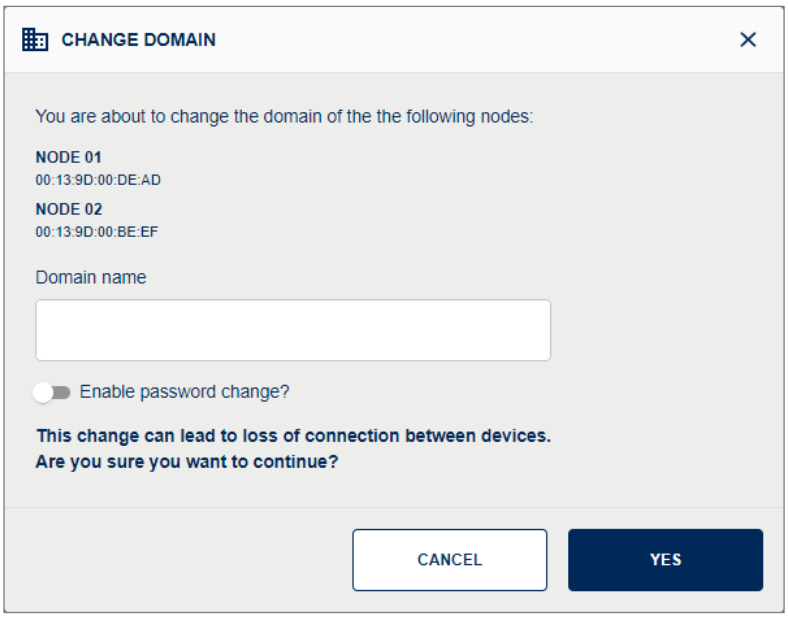
If several nodes in a network are to be restarted simultaneously, you should ideally use the selective menu bar.

Using the functions provided here ensures that the remote nodes are restarted first, followed by the local nodes. This ensures that the connection to the remote node is not interrupted before the restart is requested.

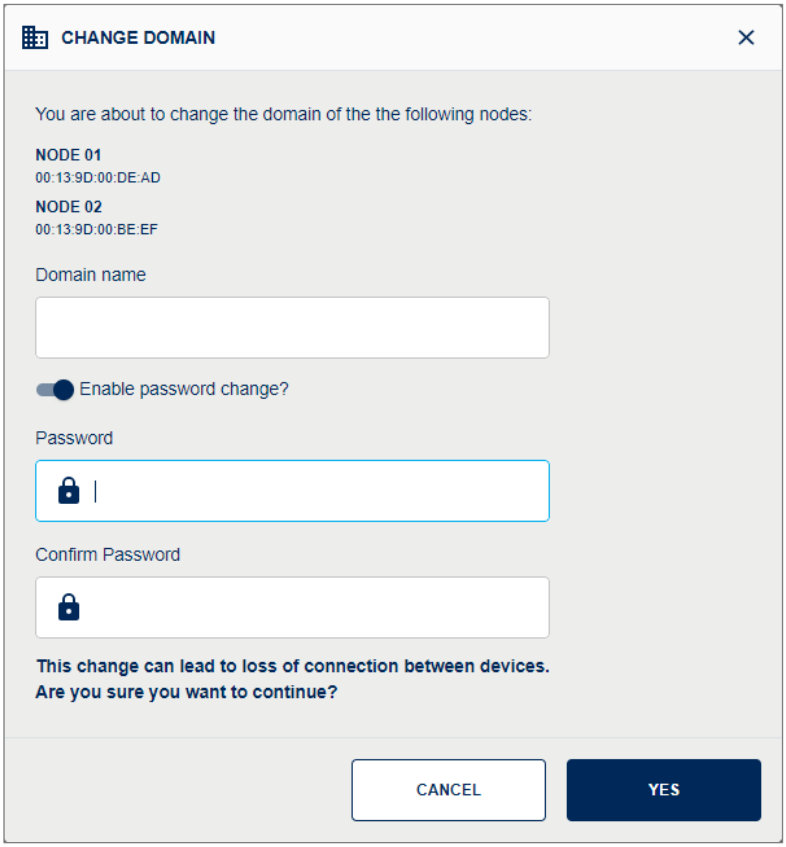
6.4.2.3 Change Domain

For a description of a domain please see chapter *6.3.3 "Network structure"*. The domain is the name of the network where the communication takes place.

The "***Change Domain***" function is used to change the domain information of one or more nodes simultaneously. By using of this function, both the domain name and the domain password of several nodes can be adjusted. During the configuration of the domain parameters, the ID's as well as the MAC addresses of all devices to be configured are displayed to the user.



By clicking on the slider "***Enable password change?***" the input mask for password setting is displayed.



The domain password must fulfill the conditions shown in red. A detailed description of the requirements can be found in chapter *8.2 "TL DOMAIN"*.

The password must be entered a second time to prevent spelling errors.

NOTICE

Always make sure to write down the domain password securely in a suitable place, as it cannot be read out once it has been entered and transmitted to the device.

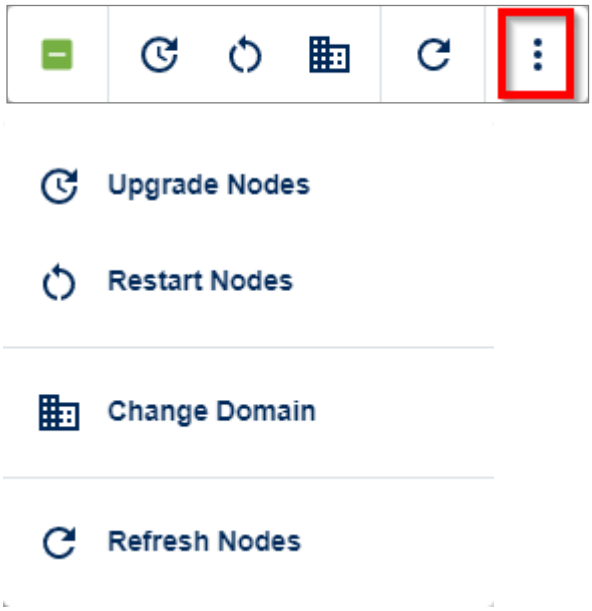
NOTICE

If the parameters of several nodes in a network are to be changed simultaneously, you should ideally use the Selective menu bar.
Using the functions provided here ensures that the remote nodes receive new parameters first and then the local nodes. This ensures that the connection to the remote node is not lost.

6.4.2.4 Refresh Nodes

The "***Refresh Nodes***" function can be used to identify the network again. If changes are still pending in one of the identified nodes, which have not yet been transmitted to the device, this information is stored temporarily during the refresh process. If the same devices are identified again during this refresh process, the pending changes can be adopted by clicking on "***SUBMIT CHANGES***".

6.4.2.5 Options Dropdown

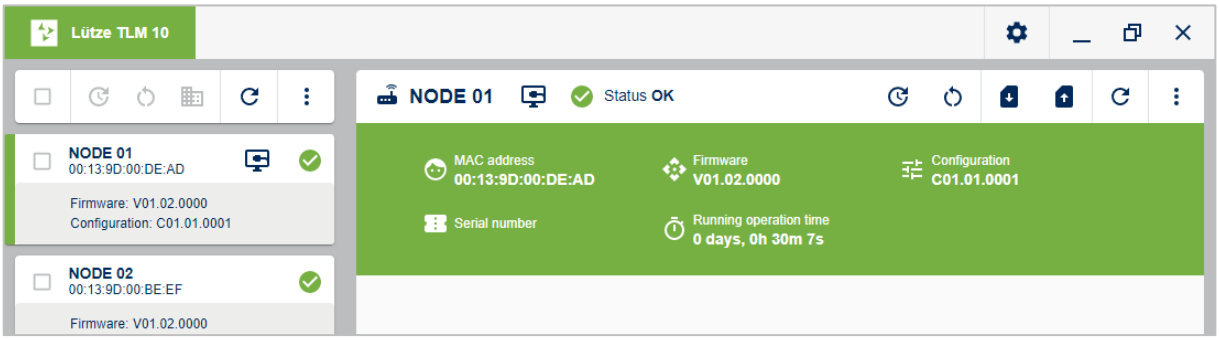


The "***Options Dropdown***" menu provides all the functions of the selective menu bar once again. In this menu, the name of the function is displayed next to the icon. A description of the individual functions can be found in the previous chapters.

6.5 Status query nodes

The green field in the start interface in the example contains an overview of the following information:

- MAC address
- firmware
- Configuration
- Serial number
- Operating time in hours/minutes/seconds



NOTICE

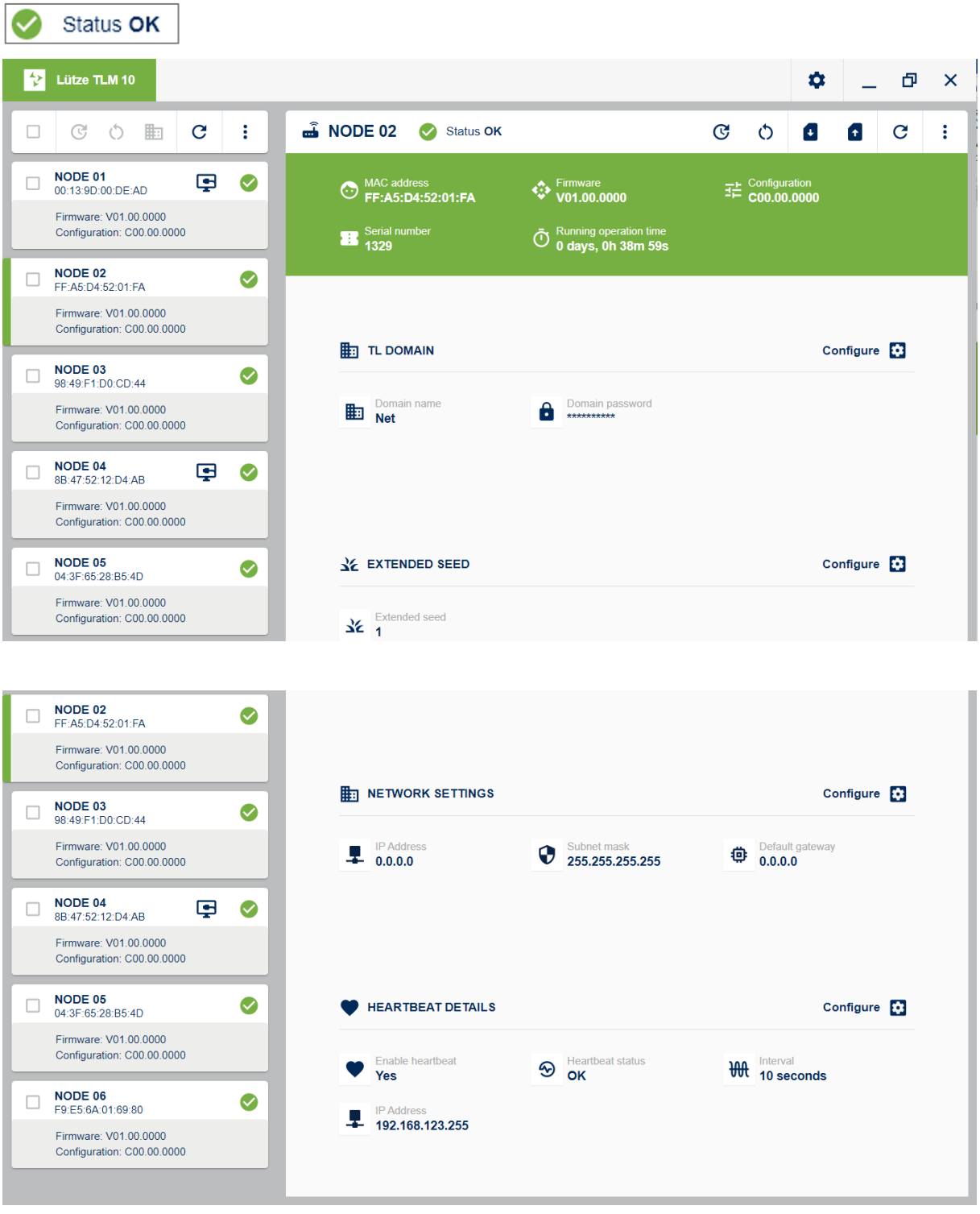
The bar appears ***green*** when all entered parameters are within their specified tolerances.

The status of the TLM-10 unit is then OK.

The bar appears *red* if one or more parameters deviate from the specified tolerance values.

The status of the TLM-10 unit is then NOK (Not Okay).

6.5.1.1 Status OK – Device's screen

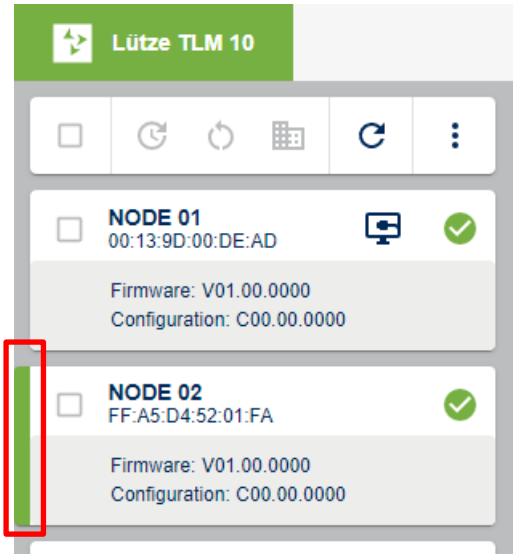


7 Configurations

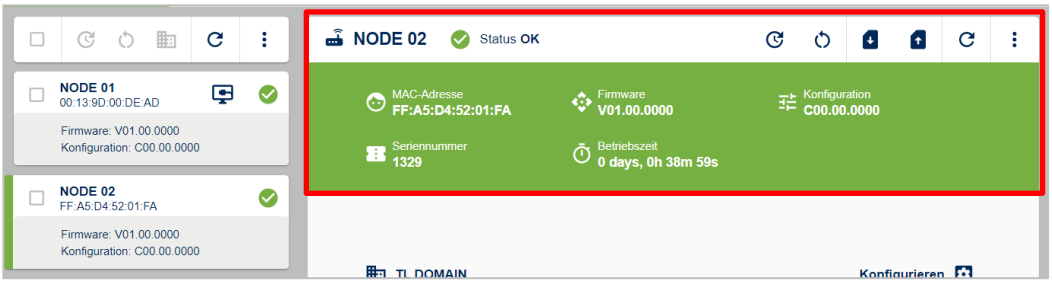
7.1 Configuration of a Node

The following chapters show how the individual parameters are changed and saved for each node.

1. To do this, first select the node that is to be configured. To do this, click once on the relevant node. The active node is marked by a green stripe on the left side of the respective tile.



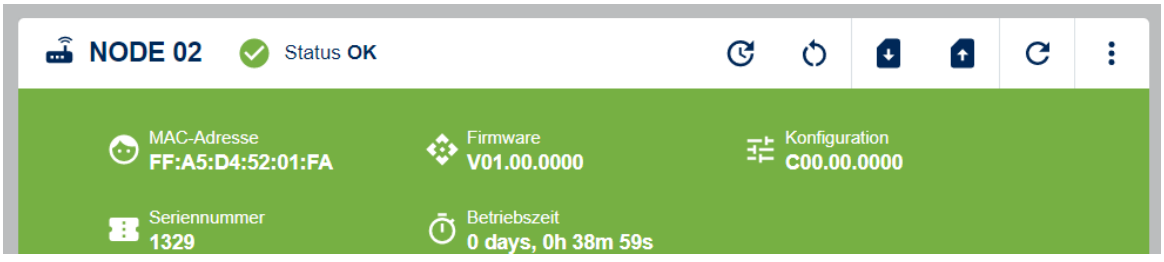
2. The parameter overview of this node appears on the right.



3. An overview of the stored parameters of the selected node is displayed on the right-hand side.

- TL Domain
- Extended Seed
- Network Settings
- Heartbeat Details

4. The most important data are highlighted in green in the top right-hand corner:



7.1.1 TL-Domain

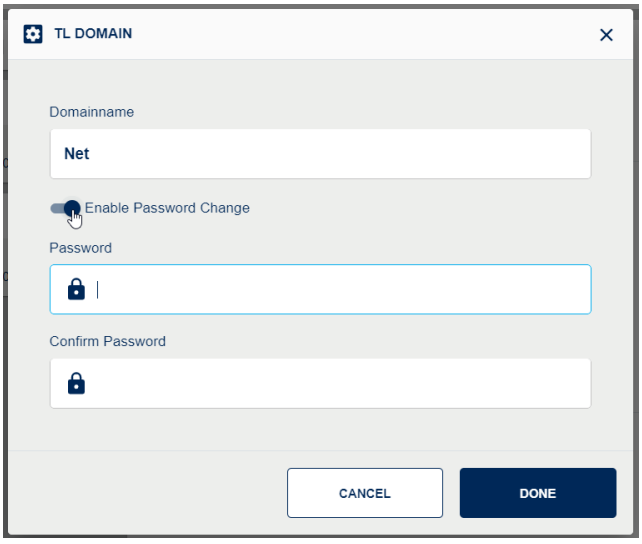
TL Domain is the identification of the network in which the participants (devices) communicate with each other. To ensure that only devices that are authorized to communicate in the domain, all devices in the same domain must have the same password.

To communicate with each other, the nodes must have the same domain name (TL domain) and the same password set.

NOTICE

If the parameters of several nodes in a network are to be changed simultaneously, you should ideally use the selective menu bar. Using the functions provided here ensures that the remote nodes receive new parameters first and then the local nodes. This ensures that the connection to the local node is not lost.

The TL domain and the password can be set via the "***Configure***" button.



Clicking on ***"Enable Password Change"*** opens the password entry screen. In this dialog the password can be defined. In addition, the password must be entered a second time to ensure that there was no incorrect entry. The parameter limitations to be applied can be found in chapter: *8.1 General*.

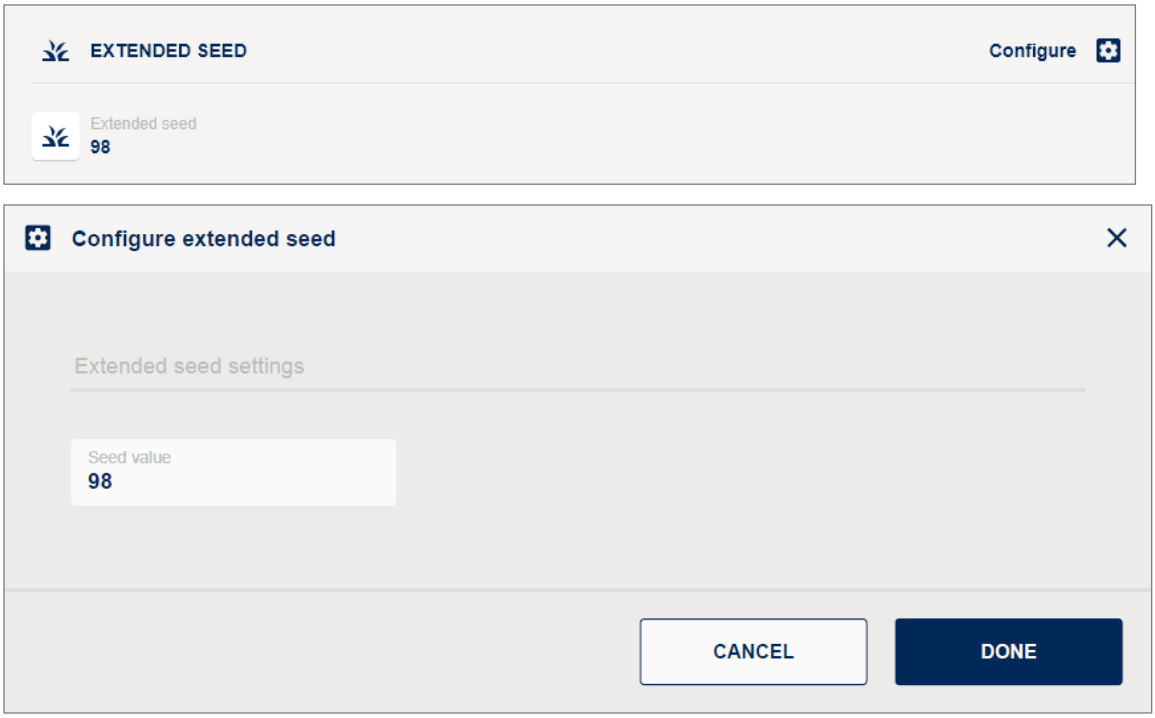
NOTICE

Always make sure to write down the domain password in a suitable place, as it cannot be read out once it has been entered and transmitted to the device.

7.1.2 Extended Seed

The extended seed of the selected node is displayed here. The extended seed can be used to avoid possible crosstalk between neighboring nets.

This parameter can be changed by clicking on "***Configure***".



Devices that are to communicate in the same network (domain) must have the same seed.

NOTICE

The change of the Extended Seed takes effect only after a restart of the device.
Always make sure to restart the remote nodes first to avoid any connection losses. Ideally, use the ***Restart button*** in the ***Selective menu bar*** for this purpose.

NOTICE

Changes can be made either immediately per chapter or after all changes have been made, by clicking on **SUBMIT CHANGES** at once.

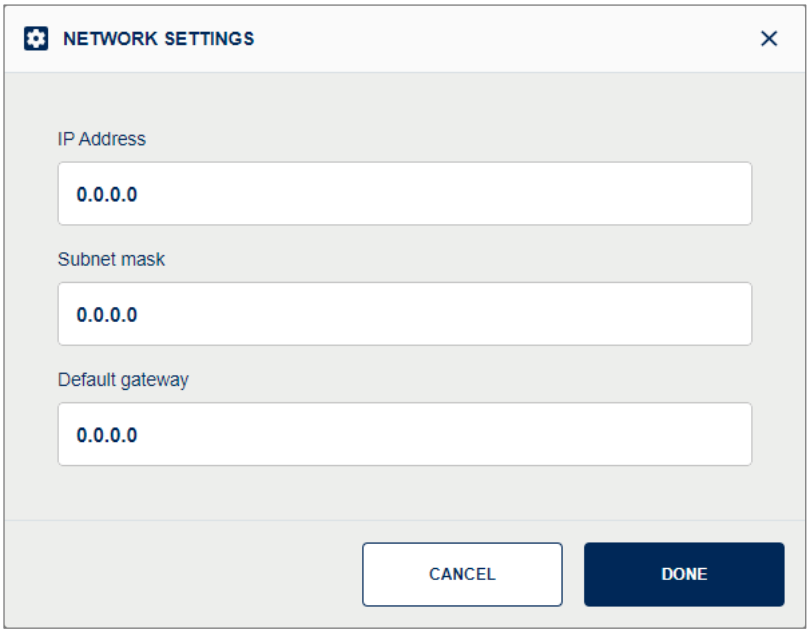
Changes can be made either immediately per chapter or after all changes have been made, by clicking on **DISCARD CHANGES** can be discarded at once.

7.1.3 Network settings

The network settings are displayed here.

By clicking on Configure the following values can be set:

- IP address
- Subnet mask
- Default gateway



NOTICE **When values are changed, the respective symbol is highlighted in blue.**

NOTICE

Changes can be made either immediately per chapter or after all changes have been made, by clicking on **SUBMIT CHANGES** at once.

Changes can be made either immediately per chapter or after all changes have been made, by clicking on **DISCARD CHANGES** can be discarded at once.

NOTICE **The values set here are only applied after the unit has been restarted.**

7.1.4 Heartbeat Details

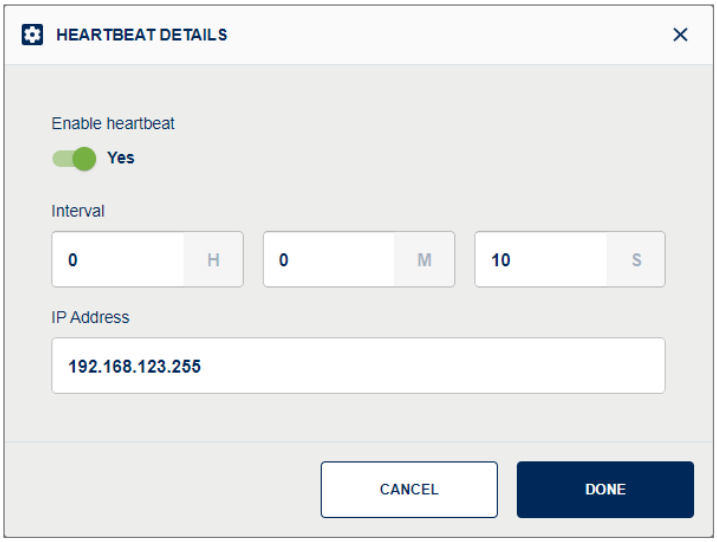
All TLM10 devices with firmware version V01.01.0000 and newer have a ***heartbeat*** function. By means of this function the device sends a heartbeat at the specified interval to the specified IP address. The heartbeat contains among other things information about the current data throughput of the device as well as the transmission rates.

NOTICE **For a detailed description of the heartbeat and the structure of the sent message, please refer to the currently valid manual of the device used.**

The Heartbeat Status field shows the current status of the device. If the device is working without errors, ***OK*** is displayed here. If an error is detected, ***NOK*** is displayed here.

The heartbeat is configured via the ***HEARTBEAT DETAILS*** section.

By clicking on "***Configure***", the heartbeat can be activated and deactivated. In addition, the time interval at which the heartbeat is to be sent can be defined. The ***IP Address field*** must be configured in such a way that it contains the IP address to which the heartbeat is to be sent.



If the settings made are to be accepted, the ***DONE*** button must be pressed. If the settings are to be discarded, the ***CANCEL*** button is available.

If the changes have been accepted, they must then be transferred to the device using the ***SUBMIT CHANGES*** button.

NOTICE **The interval may only be selected between 10 seconds and 24 hours.**

NOTICE **When values are changed, the respective symbol is highlighted in blue.**

NOTICE

Changes can be made either immediately per chapter or after all changes have been made, by clicking on **SUBMIT CHANGES** at once.

Changes can be made either immediately per chapter or after all changes have been made, by clicking on **DISCARD CHANGES** can be discarded at once.

NOTICE

The values set here are only applied after the unit has been restarted.

NOTICE

Make sure that the device is in the corresponding subnet and that the settings in the NETWORK SETTINGS section are correct (chapter *7.1.3 Network settings*).
This means that the device needs an IP address and must be in the same subnet.

NOTICE

The device must be in the same subnet to send the heartbeat messages.

7.2 Configuration of multiple devices (nodes)

Below the ***green Lütze TLM 10 field*** is a menu bar. Its functions are used to configure the nodes. You can configure only one device, a selection of several devices or all devices.

NOTICE

If one of the following functions is triggered, a network identification must be carried out again.

This ensures that the user is only shown those units that are still accessible.

This note applies to the following functions:

- Upgrade of multiple nodes
- Restarting all nodes in the network
- Changing the domain name in all nodes
- Changing the domain password in all nodes

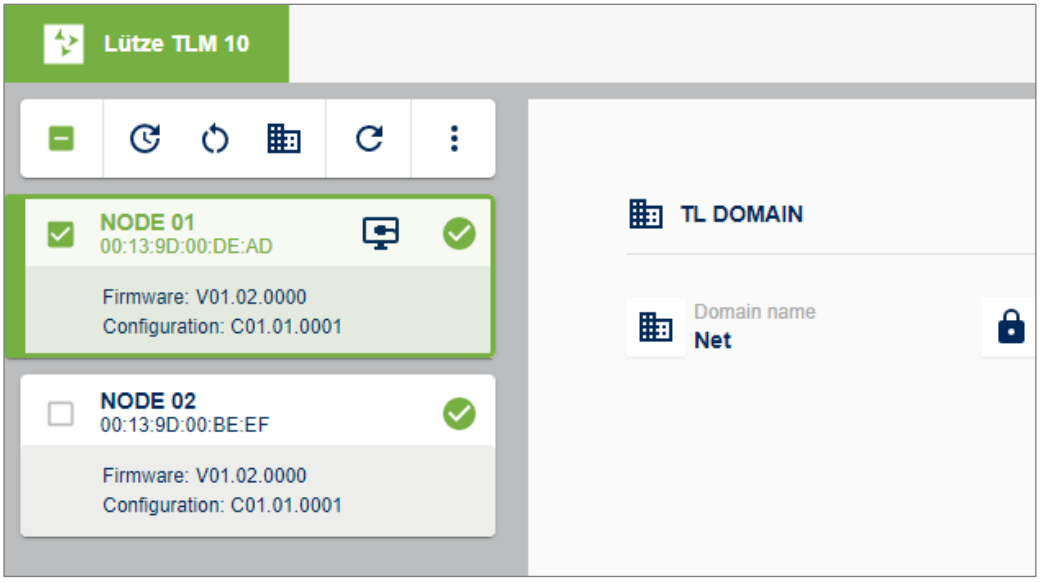
NOTICE

If you want to reconfigure several units in a network to the same values, you should ideally use these functions.

With the help of these functions, the program configures the devices in such a way that no connection loss (e.g., when changing the domain name) can occur.

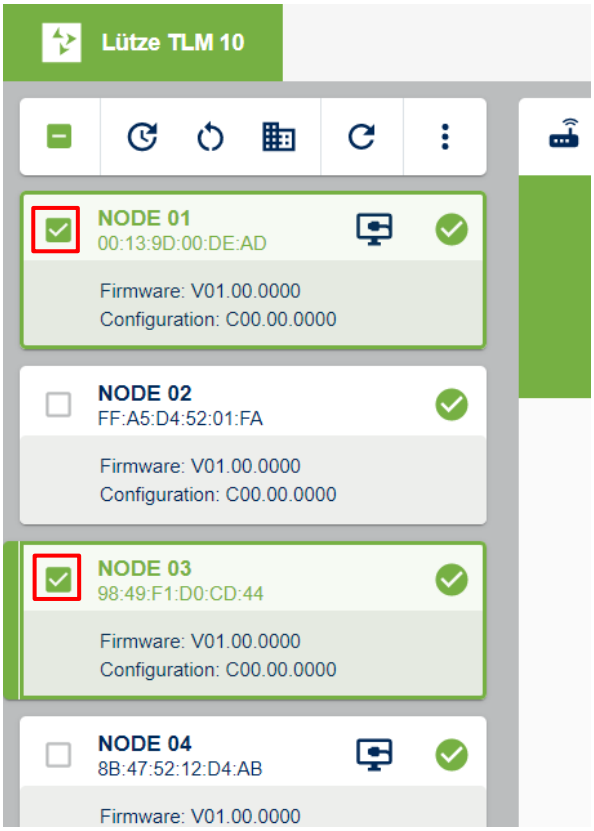
7.2.1 Marking individual nodes

Individual nodes can be selected by clicking on the white box.

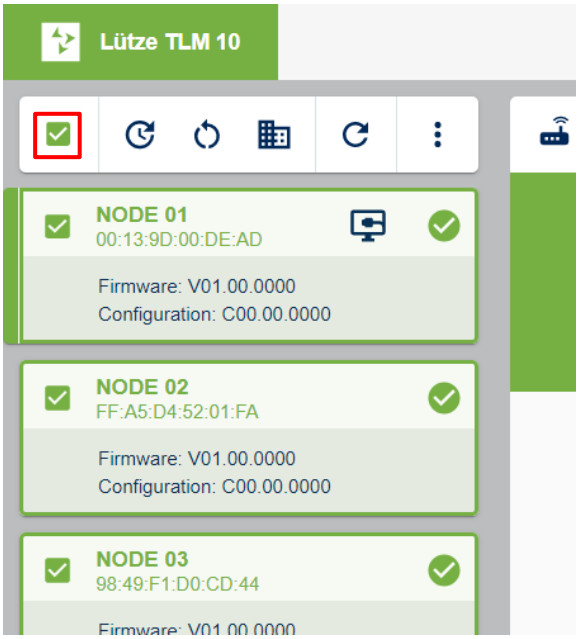


7.2.2 Marking several nodes

If you want to select several units at the same time, tick the box of the corresponding units in the list.

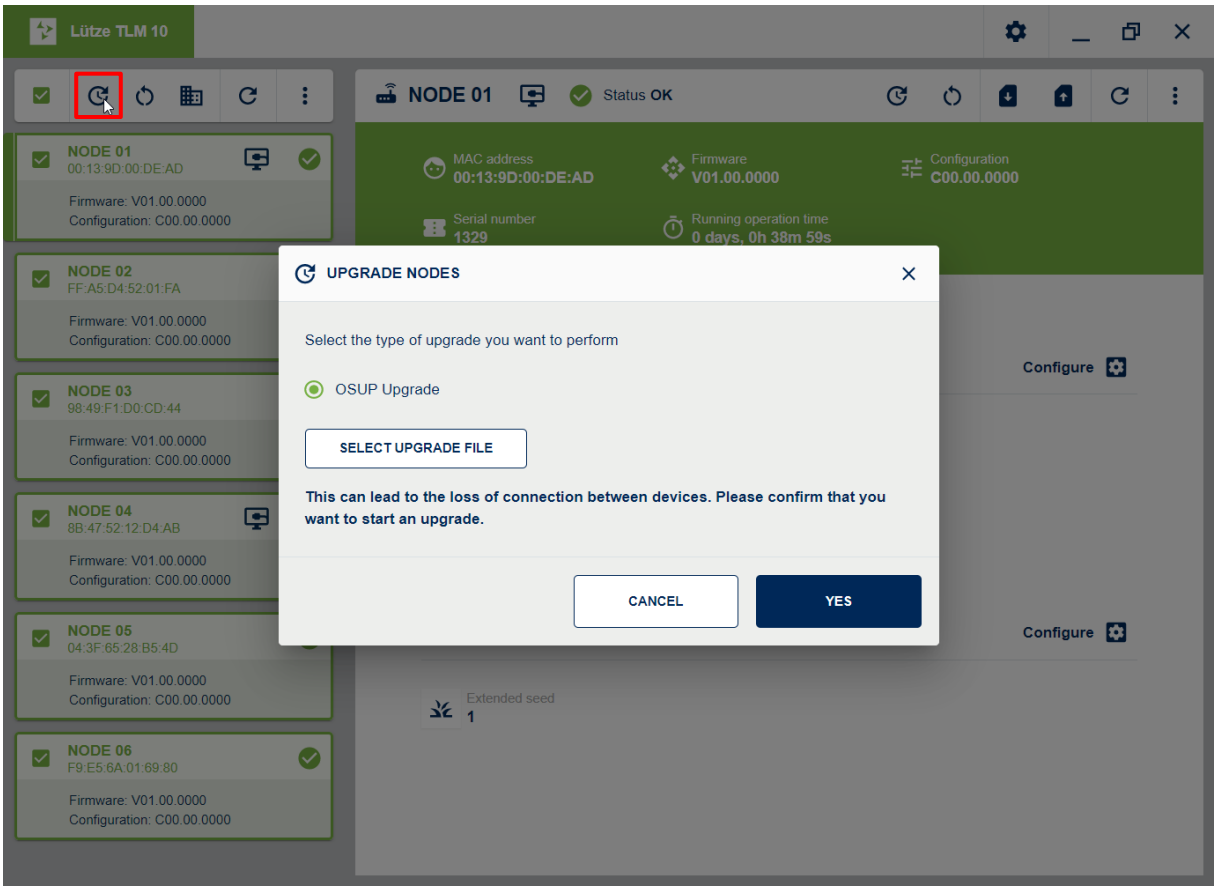


Marking all created nodes



By clicking on the left box in the menu bar, you select all created units.
Click again to deselect all units.

7.2.3 Upgrade Nodes



By clicking on or **UPGRADE** you can update one or more selected nodes. The procedure is described in chapter *6.4.1.1 UPGRADE NODE*

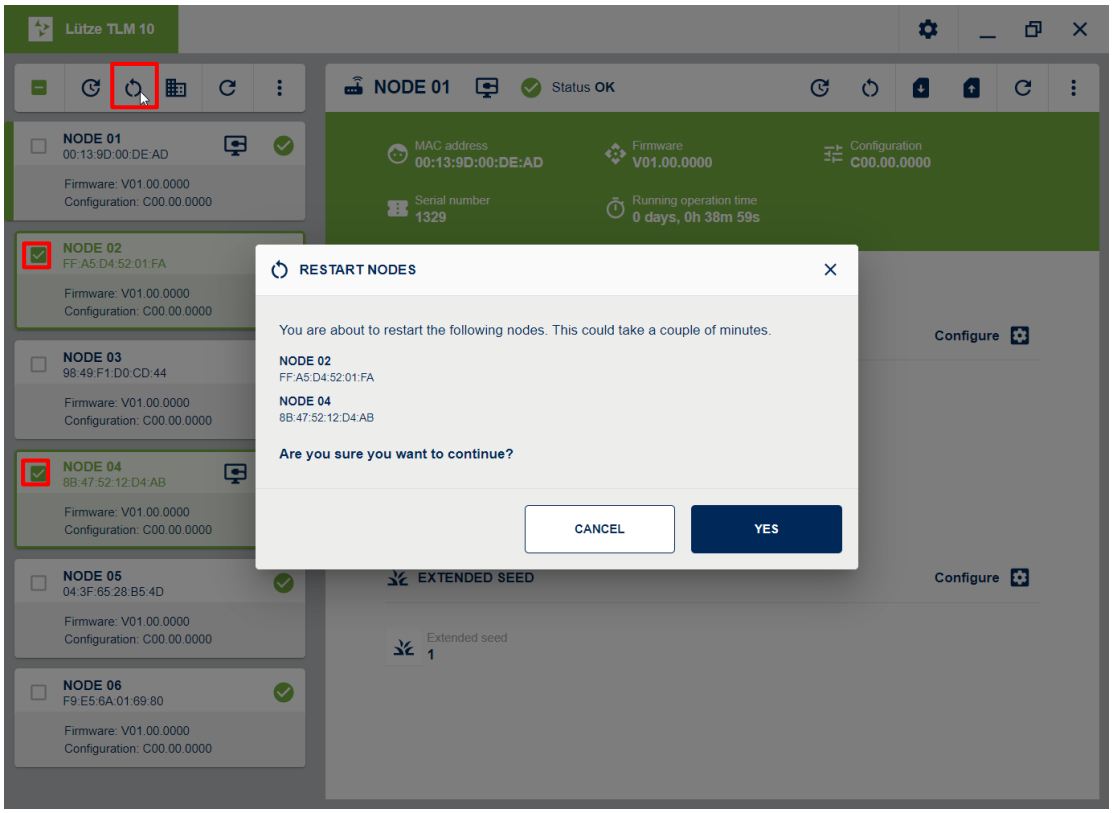
1. **OSUP Upgrade**

This upgrade lets the user load the selected OSUP file as a configuration on the selected node.

7.2.4 Restarting of selected nodes

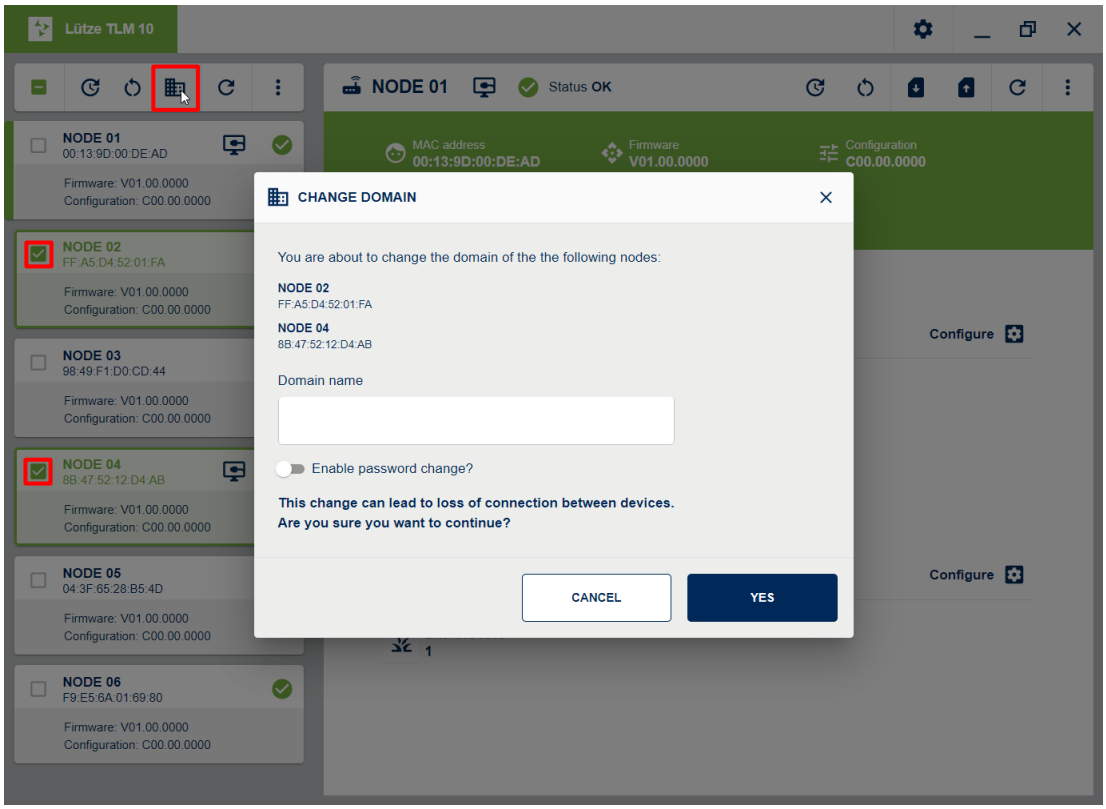
1. Clicking on or "***Restart nodes***" will restart the selected nodes.

2. Before restarting, a pop-up window will appear asking you to confirm the restart.

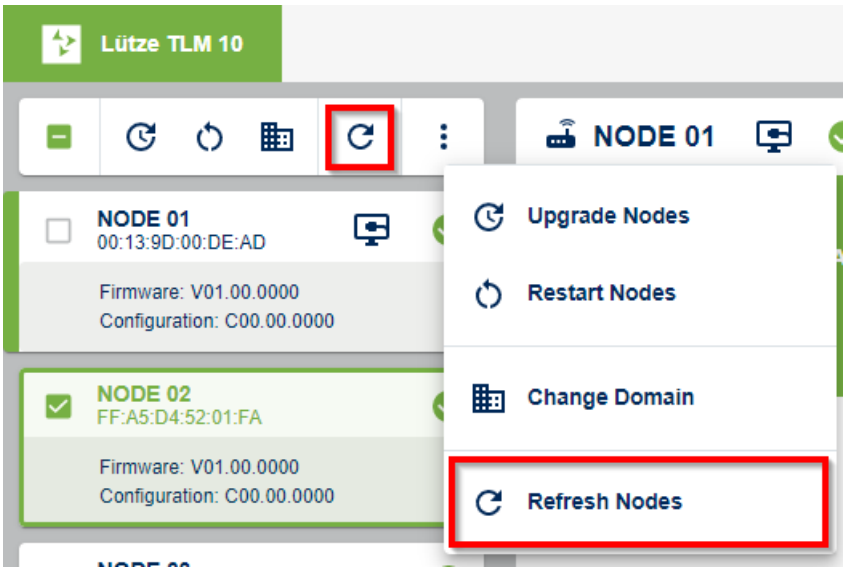


7.2.5 Change Domain Password

1. Click on  or ***Change Domain*** to change the domain password.
2. Before changing the password, a pop-up window appears in which you must confirm the password change.



7.2.6 Updating the data of all nodes



By clicking on ↻ or selecting the command "***Refresh Nodes***", all information of the selected nodes is queried again.

8 Overview of parameter limitations

8.1 General

- IP addresses 000.000.000.000 - 255.255.255.255

8.2 TL DOMAIN

- Domain Name 33 letters, numbers, special characters
- Domain Password 10 - 13 letters, special characters and numbers.

  The password must contain upper / lower case letters, special characters and numbers.

8.3 EXTENDED SEED

- Extended Seed 0 - 299

8.4 HEARTBEAT DETAILS

- Interval 0 H 0M 5S - 23H 59M 59S

9 Troubleshooting / FAQs

Here is an overview of possible errors and questions and their solutions.

9.1 The tool starts and finds no nodes despite correct connection / the window remains white

If the tool starts and remains white when the connection is established, the user must ensure that he has installed the NPCAP program correctly. This is described in chapter *5.1 Installation Npcap.*

9.2 I have changed a parameter, but the behavior of the device has not changed accordingly.

Please make sure that the device has been restarted after the configuration. Whether a restart of the device is necessary for the correct execution of the configuration change is described in the respective chapter.

9.3 After changing the parameters of a device, one or more devices no longer appear in the node list.

When changing parameters of individual nodes (Extended Seed, Domain Name, Domain Password) or when upgrading individual nodes, the connection between the devices may be lost. If possible, always use the Selective menu bar to configure several nodes simultaneously.

Possible solutions:

- Click on the ***Refresh Nodes*** icon in the Selective menu bar to check if the devices are actually unreachable.
- Make sure that the locally connected device has the correct settings (Extended Seed, Domain Name, Domain Password).
- Connect your PC via Ethernet directly to one of the disconnected nodes to check the settings for correctness.
- If you cannot find an error, either install a firmware upgrade on the affected nodes or use the factory reset function.

9.4 One or more nodes display N/A instead of the parameters.

If one or more nodes in a domain display N/A instead of the corresponding parameters, the domain passwords of the respective nodes do not match.

- If in a domain with more than two nodes only the local node displays all parameters correctly, the domain password in the local node has been assigned incorrectly. Correct the domain password of the local node.
- If in a domain with more than two nodes only some of the nodes show this problem, the domain password in these devices has been configured incorrectly. Connect your PC via Ethernet directly to these devices and correct the password.
- If in a domain with two nodes the remote node shows this problem, the domain password in the remote node is configured incorrectly. Connect your PC via Ethernet directly to this device and correct the domain password.

If you want to change the domain information of several nodes at the same time, you should ideally always use the selective menu bar.

10 More information

10.1 EULA TLM-10 Configuration Framework

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As at: February 2022

11 Service

For general questions about the product please contact us:

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12 Revision history

Version	Revision	Date
00	New document	07/13/2021
	Publication / Release	04/29/2022
01	Chapter 4.1 "About the TLM-10 configuration tool" new *Notice*; Chapter 6.1 "Log-in" new *Notice*; Chapter 6.1.1 "Password" removed	06/05/2023

Subject to technical changes. This operating manual must be kept for further use!