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User Guide

edgeGate

Version: EN-042024-1.00

Disclaimer of liability

The information contained in these instructions corresponds to the technical status at the time of printing of it and is passed on with the best of our knowledge. Softing does not warrant that this document is error free. The information in these instructions is in no event a basis for warranty claims or contractual agreements concerning the described products, and may especially not be deemed as warranty concerning the quality and durability pursuant to Sec. 443 German Civil Code. We reserve the right to make any alterations or improvements to these instructions without prior notice. The actual design of products may deviate from the information contained in the instructions if technical alterations and product improvements so require.

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OpenSource

To comply with international software licensing terms, we offer the source files of open source software used in our products. For details see https://opensource.softing.com/

If you are interested in our source modifications and sources used, please contact: info@softing.com

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Scan the QR code to find the latest documentation on the product web page under Downloads.

Table of Contents

1 About this guide

1.1 Read me first

Please read this guide carefully before using the device to ensure safe and proper use. Softing does not assume any liability for damages due to improper installation or operation of this product.

This document is not warranted to be error-free. The information contained in this document is subject to change without prior notice. To obtain the most current version of this guide, visit the product website.

1.2 Target audience

This guide is intended for experienced operation personnel and controller (PLC) specialists, responsible for creating machine connectivity into higher OT layers such as ERP, MES, or Cloud systems.

Before installing and operating the edgeGate, make sure that you have read and fully understood the safety requirements and working instructions in this guide.

1.3 Typographic conventions

The following conventions are used throughout Softing customer documentation:

Keys, buttons, menu items, commands and other elements involving user interaction are set in bold font and menu sequences are separated by an arrow	Open **Start → Control Panel → Programs**
Buttons from the user interface are enclosed in brackets and set to bold typeface	Press **[Start]** to start the application
Coding samples, file extracts and screen output is set in Courier font type	`MaxDlsapAddressSupported=23`
Filenames and directories are written in italic	Device description files are located in *C:\<Application name>\delivery\software\Device Description files*

You find the following levels of information gravity where appropriate:

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in damage or injury.

Note

This symbol is used to call attention to notable information that should be followed during installation, use, or servicing of this device.

Hint

This symbol is used when providing you with helpful user hints.

1.4 Document history

Document version	Changes since last version
1.00	First version

1.5 Related documentation and videos

See the following link for additional and related product information.

1.6 Document feedback

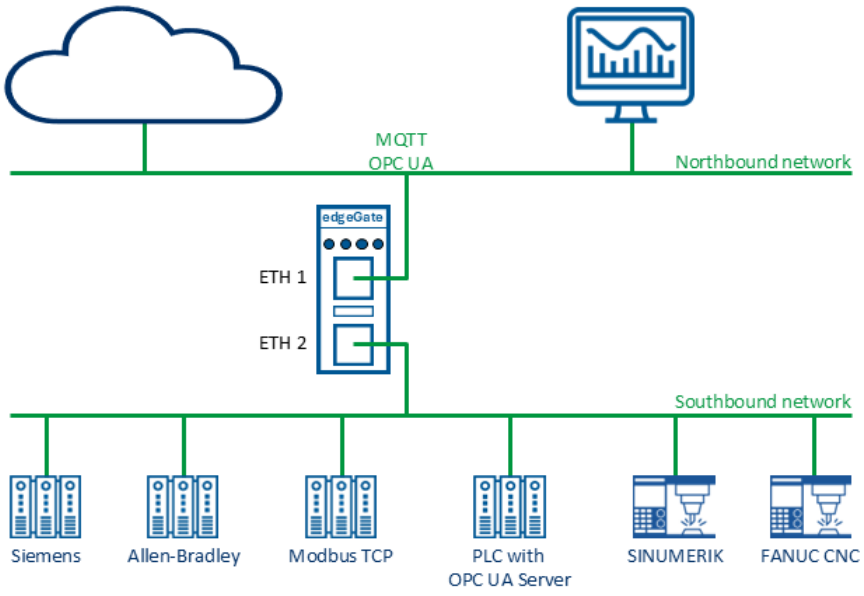
We would like to encourage you to provide feedback and comments to help us improve the documentation. You can write your comments and suggestions to the PDF file using the editing tool in Adobe Reader and email your feedback to support.automation@softing.com.

If you prefer to write your feedback directly as an email, please include the following information with your comments:

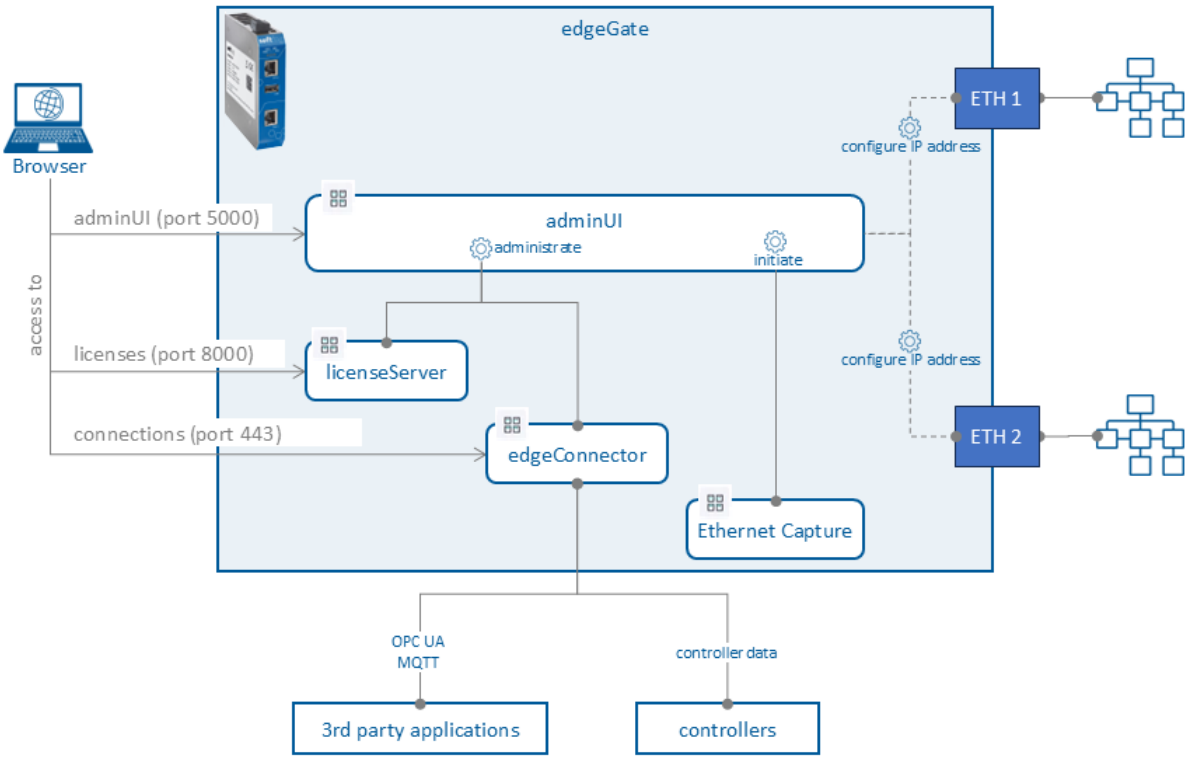
- document name
- document version (as shown on cover page)
- page number

2 About edgeGate

The edgeGate gateway supports the connection of PLC and CNC Controllers. It uses OPC UA and MQTT standards for a simple and secure data integration of new and existing plants in higher-level management systems, such as ERP, MES, SCADA, or cloud systems:



The default configuration of the edgeGate allows for a start-up in only a few minutes. To increase security and prevent disruptions because of unauthorized configuration changes, the device provides separate applications for general settings, license administration, and machine connectivity. All applications are installed and ready to use:



2.1 Safety precautions

CAUTION

During operation, the device's surface will be heated up. Avoid direct contact. When servicing, turn off the power supply and wait until surface has cooled down.

CAUTION

The electronic components of the edgeGate are sensitive to electrostatic discharge. Damage due to electrostatic discharge can lead to premature failure of components or intermittent faults at a later stage. Before installing the edgeGate, divert the electrostatic discharge away from your body and the tools used.

Note

Do not open the housing of the edgeGate. It does not contain any parts that need to be maintained or repaired. In the event of a fault or defect, remove the device and return it to the vendor. Opening the device will void the warranty!

2.2 Declaration of conformity

This device is compliant with EMC directive 2014/30/EU, "Electromagnetic Compatibility" (EMC directive) and meets the following requirements:

- Electromagnetic compatibility (EMC) and Restriction of Hazardous Substances (RoHS)
- EN 61000-6-2 Generic standards – Immunity standard for industrial environments
- EN 61000-6-3 Generic standards – Emission standard for residential, commercial, and light-industrial environments
- EN 61000-6-4 Generic standards – Emission standard for industrial environments
- EN 61326-1 Electrical equipment for measurement, control, and laboratory use
- EN 61131-2 Programmable controllers – zone B
- EN 55011 Industrial, scientific, and medical equipment – Radio-frequency disturbance characteristics – Group 1 Class B
- EN 55032 Electromagnetic compatibility of multimedia equipment – Emission Requirements - Class B
- EN 50581:2012/EN IEC 63000:2018 RoHS, Assessment to the restriction of hazardous substances

Note

To fulfill the EMC requirements, the other components of your installation (DC adapter, Industrial Ethernet devices, etc.) also have to meet the EMC requirements. A shielded cable must be used. In addition, the cable shield must be grounded properly.

CAUTION

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures!

CE

The CE marking indicates conformity with the above standards in a Declaration of Conformity which can be requested from Softing Industrial Automation GmbH.

RoHS

This product complies with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU.

FCC

This equipment has been tested and found to comply with the limits for a Class B digital device, under part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

VCCI

This Class B product conforms to the regulations of Voluntary Control Council for Interference (VCCI) by Information Technology Equipment.

WEEE

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime in compliance with Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. Packaging material and worn components shall be disposed of according to the regulations applicable in the country of installation.

2.3 Intended use

The edgeGate is designed to be used as access from controller and machine data to higher-level management applications via MQTT and OPC UA. Any other use is deemed non-intended use.

CAUTION

Do not use this device in hazardous areas. See chapter Technical Data for permissible ambient conditions.

Note

Installation and operation of the edgeGate must be performed by qualified personnel only.

2.4 Deliveries and downloads

The following components are contained in the product box when shipped:

- edgeGate unit
- power connector
- Product Note booklet

The following components are available for download from the product page:

- latest edgeConnector app version
- latest licenseServer app version
- licenseServer User Guide

2.5 Supported features

edgeGate supports the following features:

- MQTT
  Publisher and subscriber
- OPC UA
  Server and client
- Siemens PLCs
  Access to SIMATIC S7 PLCs including optimized data blocks
- SINUMERIK 840D CNC
  - Access to 840D NCUs (PLC/NCK)
  - Connection for Solution Line via ethernet
  - Power Line via an MPI Adapter
- Modbus TCP
  Access to Modbus PLCs like Wago, Schneider, Phoenix, and more
- FANUC CNC
  Access to FANUC 30i, 0i and PMi CNC controllers
- Allen-Bradley PLC
  Access to ControlLogix and CompactLogix controllers

2.6 System requirements

To configure the connection to the machine controllers through edgeGate, you need to provide the following hardware:

- 24V DC ±20% power supply
- PC with web browser
- Ethernet cables

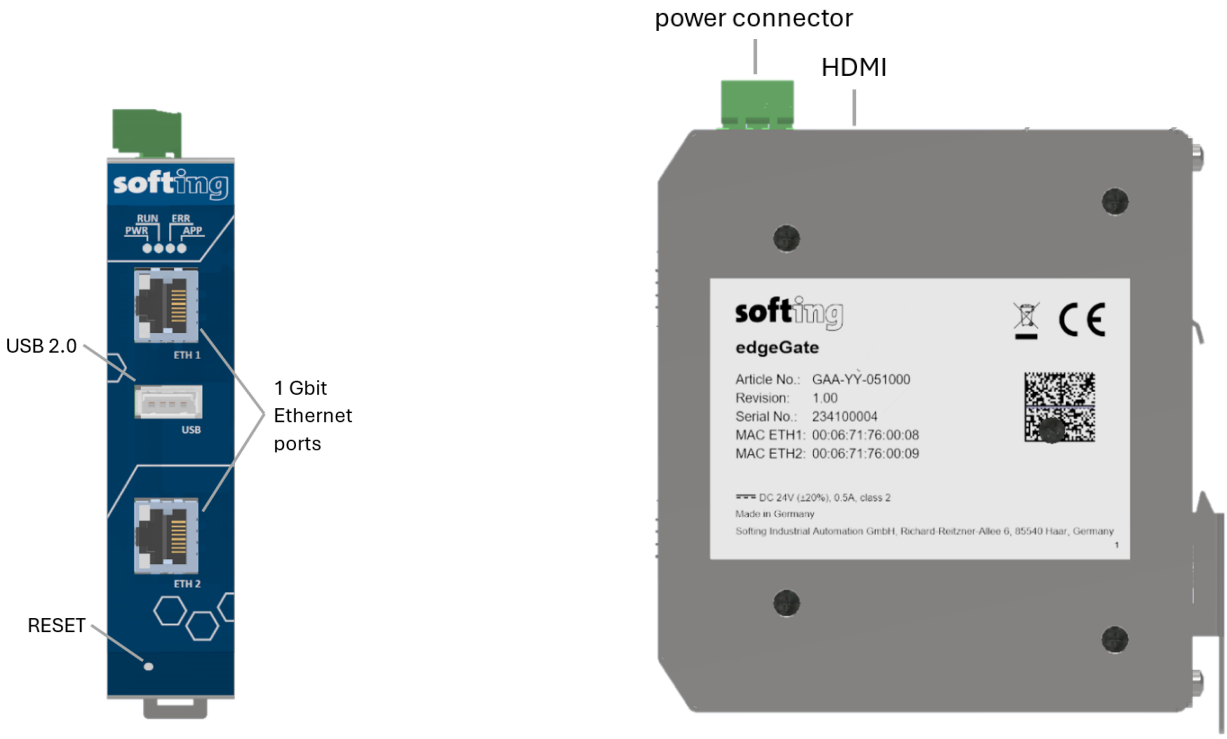
2.7 Technical data

Hardware	**Processor:**	Broadcom BCM2711 quad-core ARM Cortex-A72 (ARM v8) 64-bit SoC @ 1,5 GHz
	Status LEDs:	• PWR (Power Supply) • RUN (Running) • ERR (Error) • APP (Application)
	Real-time clock:	Real-Time clock with buffering, setting the time via browser or by NTP server (buffer time depends on conditions such as ambient temperature and duration of use)
Interfaces	**Ethernet:**	2 x IEEE 802.3 10BASE-T/100BASE-TX/1000BASE-T, Connector: RJ45
	USB:	1 x USB 2.0, Connector: Type A
	HDMI:	1 x HDMI 2.0, Connector: Type A
Supported communication protocols	**Northbound:**	• MQTT V 3.1, V 3.1.1, & V 5 • OPC UA Server
	Southbound:	• OPC UA Client • Modbus TCP • SIMATIC S7, RFC1006, S7-300, S7-400, S7-1200, S7-1500 • EtherNet/IP CIP: Allen-Bradley ControlLogix (CLX) and CompactLogix PLCs • Sinumerik 840D (RFC1006): Sinumerik PL & SL CNCs • FOCAS (Ethernet): FANUC CNCs Series 30i, 31i, 31i-B, 31i-B5, 32i-B, 35i-B, 0i-D, 0i-F, 0i-F Plus, Power Motion i- A, and FANUC NCGuide (Simulator)
Physical properties	**Dimensions (H x W x D):**	120 mm x 28 mm x 110 mm
	Weight:	Approx. 420 g

	Power supply:	24 V DC ± 20%, SELV/PELV supply mandatory, typical input current 500 mA (max. 1 A, considering rush-in current at switch-on)
	Typical power Loss:	9.5 W
	Operating temperature:	-20° C … +60° C
	Storage temperature:	-40° C … +85° C
	Relative humidity:	5% … 95%, non-condensing
	Cooling:	Convection, no fan
	Mounting:	DIN rail 35 mm
	Protection class:	IP20
Conformity/standards	**CE:**	• Electromagnetic compatibility (EMC) and Restriction of Hazardous Substances (RoHS) • EN61000-6-2 Generic standards – Immunity standard for industrial environments • EN61000-6-3 Generic standards – Emission standard for residential, commercial, and light-industrial environments • EN61000-6-4 Generic standards – Emission standard for industrial environments • EN61326-1 Electrical equipment for measurement, control, and laboratory use EN61131-2 Programmable controllers – zone B • EN55011 Industrial, scientific, and medical equipment – Radio-frequency disturbance characteristics – Group 1 Class B • EN55032 Electromagnetic compatibility of multimedia equipment – Emission Requirements - Class B • EN 50581:2012/EN IEC 63000:2018 RoHS, Assessment to the restriction of hazardous substances
	FCC:	FCC 47 CFR Part 15B and ICES-003 – Class B
	VCCI:	Class B Information Technology Equipment (ITE) set forth in the Agreement of Voluntary Control Council for Interference by Information Technology Equipment (VCCI), April 2015

2.8 Hardware interfaces

The following diagram shows the visible interfaces of the edgeGate:



For more information see chapter Technical data.

2.8.1 Ethernet interface

- ETH 1 is commonly used to connect to your IT network.
- ETH 2 is commonly used to connect to your automation plant network.

For more information about the Ethernet interfaces, see chapter Connecting to the network.

2.8.2 Real-time clock

The device has a real-time clock (RTC) integrated which is used to validate licenses. The real-time clock is buffered so that it will continue to run in the event of a temporary power failure. The buffer time is limited. It depends on various parameters (ambient temperature, duration of use, ...) and can range from a few hours to several days. If the power failure exceeds the buffer time, the RTC can be set using adminUI, one of the applications installed on the edgeGate.
In some special scenarios, a problem with the validity of a license may indicate that the real-time clock is not set. We recommend to use a time server in the network (NTP server). This enables the device to automatically fetch the current time (see chapter Setting time and date).

2.8.3 HDMI interface

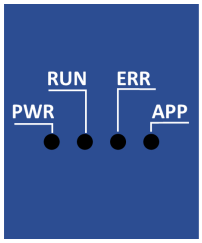
The HDMI interface of the edgeGate currently is used by Softing Support only. No user functionality is covered through the interface.

2.8.4 USB interface

The USB interface of the edgeGate currently is used by Softing Support only. No user functionality is covered through the interface.

2.8.5 LED status indicators

edgeGate has four device status LEDs at the top:



PWR = power supply

RUN = running

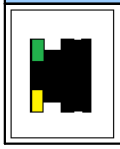
ERR = error

APP = application

The device status LEDs are either permanently on or off or flash. This is represented by the following symbols:

Symbol	Color	Light
	none	off
	red	permanent
	green	permanent
	red	flashing
	green	flashing

The Ethernet port LEDs indicate the following behaviour:

Ethernet port LEDs	Colour	Behaviour
	green	Flashing when there is traffic on the port
	yellow	ON when link is established

Status LEDs during start-up and working phases

The status of the edgeGate is indicated by a unique combination of the four device status LEDs.

The edgeGate LEDs monitor its power supply, the operating system, the runtime environment, and the edgeConnector application. Also, if you have used edgeConnector to configure connections to your edge devices, these connections are monitored by the LEDs as well.

Note

All device status LEDs except for **PWR** are controlled by the edgeGate's operating system. This means that they only provide viable information once the operating system has been fully started.

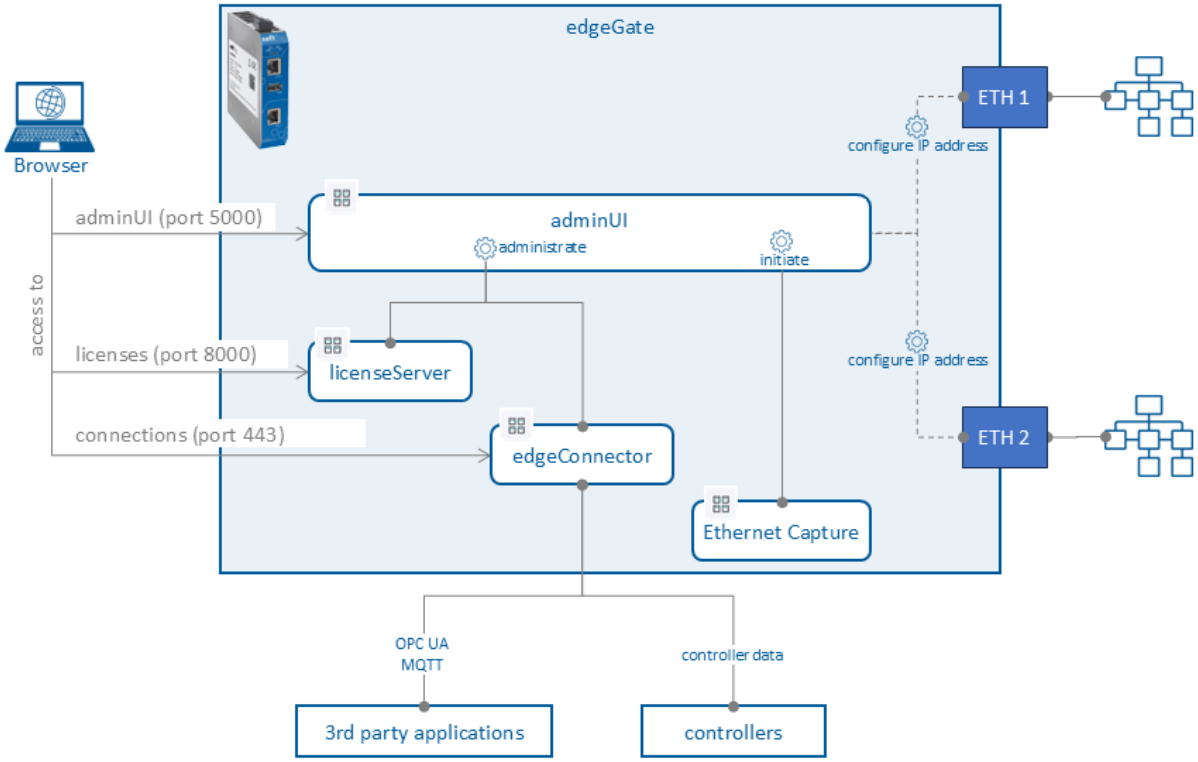
The following table lists the LED combinations and their specific meaning:

PWR	RUN	ERR	APP	Meaning	Your activity
⊗	⊗	⊗	⊗	• power is off	Check power supply.
●	⊗	⊗	⊗	• The initialization phase is in progress • 24V DC power supply is on • Loading of the operating system and runtime environment is still in progress	Wait for the initialization phase to finish.
●	●	⊗	⊗	• 24V DC power supply is on • The operating system is functioning properly • The runtime environment failed to load	Reboot the device (see chapter Rebooting the device).
●	●	⊗	●	• The initialization phase is finished and the device is running in normal mode • The operating system and runtime environment are functioning properly • edgeConnector application is running properly • at least one of the configured edgeConnector connections is not working **Note** This is the default LED status at the first successful start as no connections to machines have been created yet.	Create a new connection or verify the status of the connections and the number of edgeConnection licenses available in the edgeConnector application.

PWR	RUN	ERR	APP	Meaning	Your activity
				• The initialization phase is finished and the device is running in normal mode • The operating system and runtime environment are functioning properly • edgeConnector application is running properly • All configured edgeConnector connections are successfully connected	
				• 24V DC power supply is on • The operating system and runtime environment are functioning properly • The edgeConnector application is not running	Reboot the device (see chapter Rebooting the device).
				• The operating system and runtime environment are functioning properly • The edgeConnector application is running but in halted mode	Manually start the operation of the edgeConnector application.
				• The operating system and runtime environment are functioning properly • Failed to retrieve status from the edgeConnector application	Reboot the device (see chapter Rebooting the device).
 	 	 	 	• You have started resetting the device and are currently pressing the reset button • The device is about to start executing a factory reset • Device executes a factory reset	Keep the reset button pressed until APP LED turns off See chapter Resetting the device to factory default. • Release the reset button • Wait for the factory reset to finish • Re-configure the device

2.9 Software interfaces

The edgeGate consists of various applications, each designed to help you manage specific types of tasks:



- adminUI
  Administrating the device and its software components
- licenseServer
  Maintaining licenses
  You find all relevant information about licenseServer in the User Manual licenseServer (see Softing product page, licenseServer).
- edgeConnector
  Collecting data from industrial machines and controllers
  You find all relevant information about edgeConnector in its online help.
- Ethernet Capture
  Network protocol analyzer used to capture network traffic. You use adminUI to access Ethernet Capture.

2.9.1 adminUI

adminUI supports the following tasks:

- perform version updates for the licenseServer, edgeConnector, Ethernet Capture, operating system, and adminUI itself
- define and change the hostname and network interface settings of the edgeGate
- change the admin password, generate SSL certificates
- reconfigure the default port number for the applications
- configure the device's time settings and define an NTP Server

Note

You need admin rights to login to the adminUI application (see chapter Logging in to adminUI).

2.9.2 licenseServer

The Softing licenseServer hosts and keeps track of a number of available edgeConnection licenses (also known as floating licenses or shared licenses) that are used on the edgeConnector application from the edgeGate.

When you want to create a connection to a controller through the edgeConnector, the application will request a license from the licenseServer. The licenseServer now checks for a spare license. If available, it will allocate the license as requested and allow the edgeConnector to establish a valid connection to the controller. However, if the request exceeds the number of available licenses, the licenseServer will decline the request and the connection with the device will not be established. If there is no connection to a licenseServer, the edgeConnector can run in demo mode for 72 hours.

When a controller connection is disabled or deleted, the license is released from the licenseServer and becomes available once more at the pool of available licenses.

For more details see the user guide for download on the licenseServer product page.

2.9.3 edgeConnector

edgeConnector is a product of the Softing's dataFEED product family. It allows accessing production data in Industry 4.0 and Industrial IoT applications. While the controller connectivity is implemented based on proprietary communication protocols, the standards OPC UA and MQTT are used for upper automation layers integrations.

Once you have logged in to the edgeConnector application, you find the entire edgeConnector user documentation in the edgeConnector online help. For further information about logging in to edgeConnector, see chapter Logging in to edgeConnector.

How many connections are possible?

The device is designed to support connections with up to 20 controllers and machines. However, actual performance may vary based on the combination of protocols used, data types, and the number of variables associated with each connection.

2.9.4 Date & time

The system time of the edgeGate should be synchronized with the network it works in. For this, you can configure an NTP server that ensures that all devices in the network have the same time and date available. If no NTP server is available, you can manually set the time of the edgeGate.

For more information about setting date and time on the edgeGate, see chapter Setting time and date.

2.9.5 Ethernet Capture

The application Ethernet Capture is a network protocol analyzer used to capture network traffic. It is disabled by default. If communication issues with the edgeGate occur, you enable Ethernet Capture, repeat the actions that caused the issue, save the log file, and send it to the Softing support team for analysis. For more information, see chapter Asking for Support.

3 Installation

3.1 Hardware installation

Note

Proper cable positioning is important to avoid overheating because it can affect the performance of the cables and the connected device. If cables are installed in a confined or poorly ventilated location, the ambient temperature may rise and exceed the permissible service temperature (see chapter Technical data).

To ensure that the service temperature of the cables is not exceeded, measure the temperature or use cables sustaining high temperatures of at least 90 °C.

3.1.1 Unpacking and inspecting edgeGate

edgeGate is shipped with the parts listed in chapter Deliveries and downloads.

Prior to use

Before you install and operate edgeGate, check the device carefully to ensue that it is in good condition and is not exposed to the following safety risks:

- external damage to the housing
- damage to insulation of the test leads
- exposure to voltages exceeding the specified parameters
- incorrect storage of the unit
- damage sustained in transit
- incomplete or illegible certificates or labels

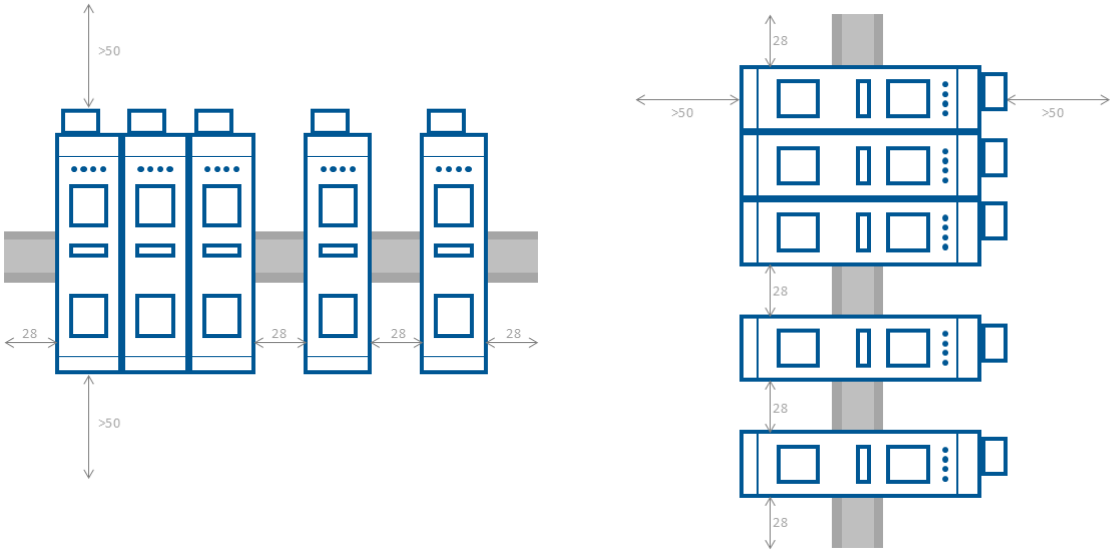
Note

If the device is damaged, contact Softing Support immediately.

3.1.2 Installation positions

The edgeGate can be mounted horizontally and vertically.

Note
Provide a minimum distance of 50 mm to the air inlet and air outlet at the bottom and upper part of the device to ensure natural convection.



Depending on the distance between two mounted devices, the recommended ambient temperature T_a varies:

- With no distance between the devices, the ambient temperature T_a should not exceed 50° C.
- With a distance between the devices of at least 28 mm, the ambient temperature T_a should not exceed 60° C.

These values apply to both horizontal and vertical installation.

3.1.3 Mounting and dismounting

Note
Make sure the edgeGate is mounted in such a way that the power supply can be easily disconnected. Depending on the installation position, the maximum ambient operating temperature may differ. See chapter Installation positions for details.

Installation and inspection

Installation and inspection must be carried out by qualified personnel only (personnel qualified according to the German standard TRBS 1203 - Technical Regulations for Operational Safety). The definition of terms can be found in IEC 60079-17.

Note

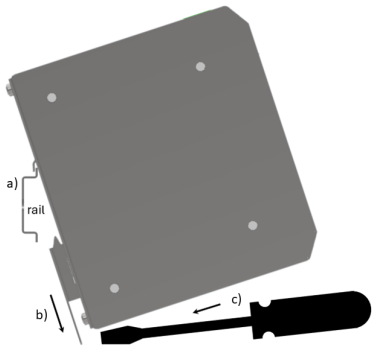
When mounting or dismounting the edgeGate, do not put stress on the system by bending or torsion.

Note

Although it is not strictly required, we recommend mounting or dismounting edgeGate with power supply disconnected.

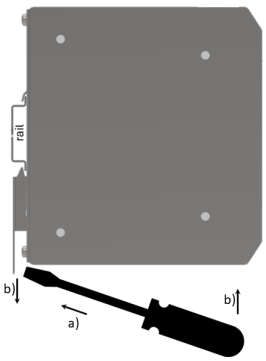
Mounting

1. Disconnect power supply on top of the device if applicable (see chapter Powering up the device).
2. Hook the upper notch of the cut-out on the back of the device into a 35 mm DIN rail (a).
3. Leverage the screwdriver upwards, pull the locking bar downwards and move the edgeGate down towards the rail (b).
4. Press the gateway down towards the rail until it slides into place over the lip of the locking bar (c).



Dismounting

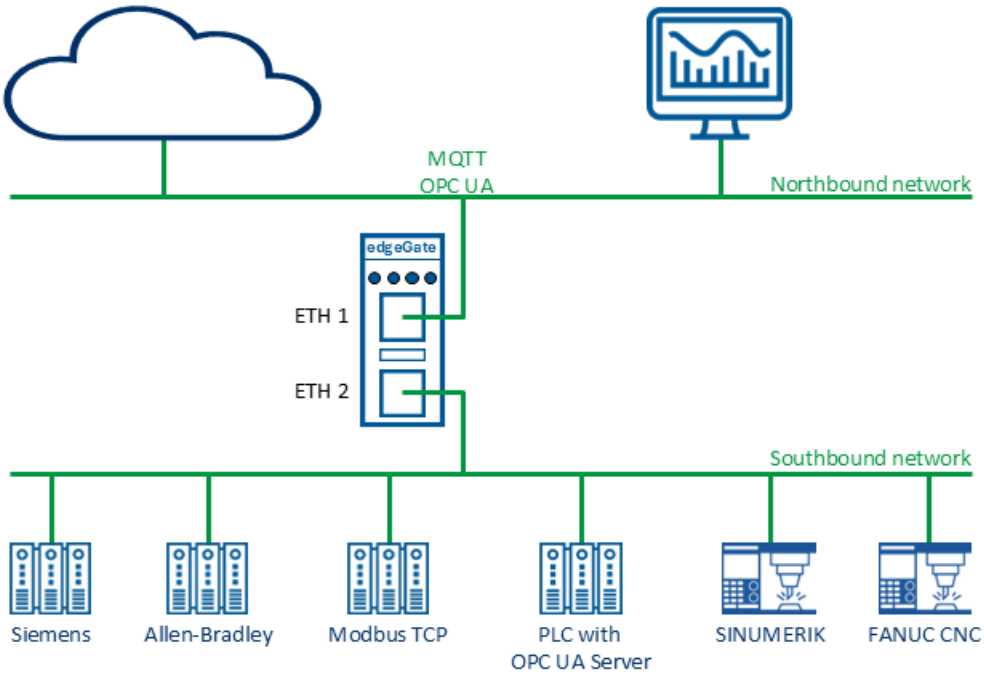
1. Disconnect power supply on top of the device if applicable (see chapter Powering up the device).
2. Slide a screwdriver diagonally under the housing into the locking bar (a).
3. Leverage the screwdriver upwards, pull the locking bar downwards and move the edgeGate upwards off the rail (b).



3.1.4 Connecting to the network

The edgeGate has two Ethernet interfaces, ETH 1 and ETH 2. These interfaces are separated from each other, edgeGate does not provide direct communication capacity between ETH 1 and ETH 2.

Usually, you will connect ETH 1 to the northbound network where the controller information will be exchanged via OPC UA and MQTT, and connect ETH 2 to the southbound network where the controllers can be reached. However, you may also use only one of the Ethernet interfaces to communicate with the required devices from North- and Southbound networks.



Prerequisites

- The device is mounted to the rail.

To connect edgeGate to the network:

1. Connect the ETH 1 interface to the northbound network.
2. Connect the ETH 2 interface to the southbound network.

Next steps: configuring network connectivity, see chapter Configuring Ethernet interfaces.

3.1.5 Powering up the device

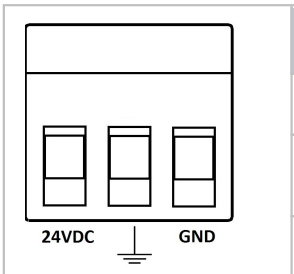
The power connector on top of the device is reserved for the supply voltage. You connect the edgeGate to a 24 V DC power supply.

Note
edgeGate is intended for connection to a SELV/PELV circuitry only.

Power connector

The supply voltage (24Vdc ± 20%) is connected by a 3-pole terminal block.

The power supply is connected to the power connector via flexible wires with a cross section of 0.75 mm² to 1.5 mm². The Earth connection wire must have a cross section of 1.5 mm².



Signal	Description
24VDC	Positive supply voltage
⏚	Functional Earth (FE)
GND	Ground

CAUTION
The Functional Earth (FE) terminal of the device must be connected to the building's equipotential system via a low-impedance bonding conductor.

Powering up the device

To supply power to the device:

1. Verify that the power is within the voltage limits and the Functional Earth is connected to the building's equipotential system (see above).
2. Turn off the power supply.
3. Connect the cables for power supply and functional earth in the power connector.
4. Turn on the power supply.

   The device starts automatically with the +24VDC detection. The boot process will take about 90 seconds. Refer to LED status indicators for a detailed description of the LEDs and their behavior.

3.2 Commissioning

Depending on which task you want to perform during commissioning, you log in to the corresponding application (see chapter Logging in to applications):

- adminUI
  Administrating the device and its software components
- licenseServer
  Maintaining licenses
  You find all relevant information about licenseServer in the User Manual licenseServer (see Softing product page, licenseServer).
- edgeConnector
  Collecting data from industrial machines and controllers
  You find all relevant information about edgeConnector in its online help.
- Ethernet Capture
  Network protocol analyzer used to capture network traffic. You use adminUI to access Ethernet Capture.

Note

The one application that you definitely need during commissioning, is the edgeConnector application. Here is where you can set up the southbound communication with the controllers and the northbound OPC UA and MQTT interfaces.

The edgeGate comes with an integrated web server. You connect to each of the applications by addressing them through a web browser on the connected PC.

Prerequisites

- The edgeGate is mounted and connected to power supply as described in chapter Hardware installation.
- The edgeGate is connected with a PC using an Ethernet cable.
- The PC runs one of the following web browsers: Google Chrome, Microsoft Edge or Mozilla Firefox.
- The web browser supports JavaScript.

3.3 Decommissioning

Before you decommission the edgeGate, we strongly recommend to backup the edgeConnector configuration data. Refer to the edgeConnector online help, chapter **Configuration -> General Settings -> Backup and Restore -> 1. Backup**.

3.3.1 Deleting all user data

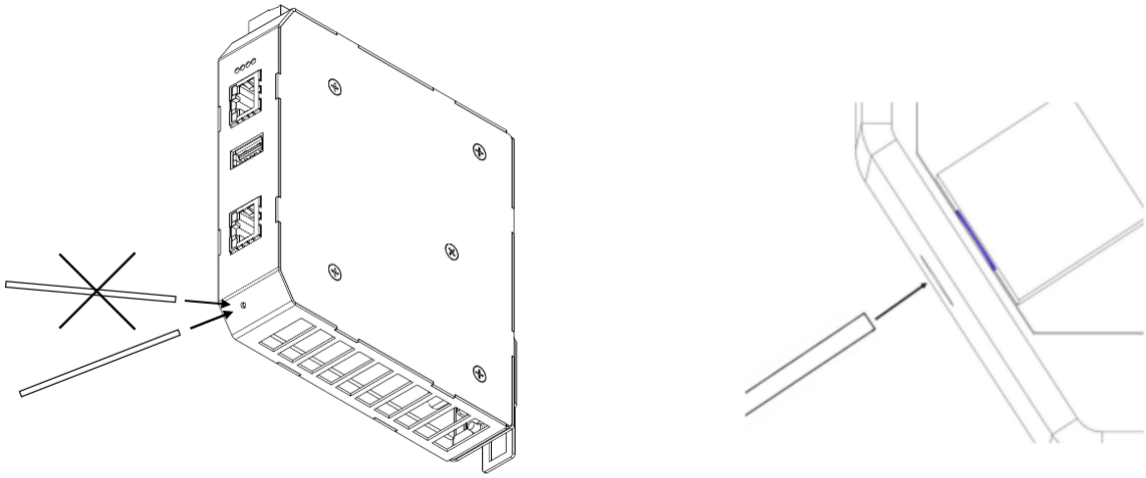
During the factory reset sequence, the device is restored to the original factory configurations. All sensitive data, parameters, and configurations are removed. However, licenses will not be affected by the reset and will remain on the device.

Note

We recommend to reset the device only if you wish to clear all your configuration, if all other troubleshooting methods have failed, or if our support department has recommended it to solve an issue.

The reset button is concealed within a small opening at the bottom of the device housing. To access it, you use a tool such as the tip of a metal pin, a pen, or an unwound paper clip. Ensure you have the tool within reach.

1. Disconnect the power supply from the edgeGate device.
   You will reconnect it in a later step while resetting the device.
2. Insert the tool into the hole of the reset button as shown in the following graphic.



3. Press the reset button very carefully and hold it while simultaneously reconnecting and powering up the device again. Keep the reset button pressed.

   After about 45 seconds, the the RUN, ERR and APP LEDs turn red and are flashing fast.
4. Keep the reset button pressed until the APP LED turns off while the RUN and ERR are still flashing. Release the reset button.

   The edgeGate factory reset starts. Once the reset is complete, the device automatically restarts.

3.3.2 Dismounting the device

For information about dismounting the device, see chapter Mounting and dismounting.

3.3.3 Disposing of the device

WEEE

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime in compliance with Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. Packaging material and worn components shall be disposed of according to the regulations applicable in the country of installation.

4 Security

4.1 Ports and security

The edgeGate has two Ethernet ports. To enhance security, these ports do not have switching capability, preventing communication between networks.

With its two Ethernet ports, it resides in two network segments:

- The upper Ethernet port, ETH 1, is typically used to connect to IT or intranet networks, where higher-level applications such as MES or ERP systems are accessible.
- The lower Ethernet port, ETH 2, is generally used to connect to the plant or automation network, where machines and controllers are accessible

edgeGate upper Ethernet services (ETH1)

Service	Port	Description
OPC UA	4897 | TCP	OPC UA server This is the default port for the already created OPC UA server endpoint. It can be manually adjusted (see chapter Changing port numbers)
HTTP	80 | TCP	HTTP server of integrated web server
HTTPS	443 |TCP	HTTPS server of integrated web server

4.2 Changing port numbers

The edgeGate applications communicate in your network using a set of standard ports. If these port numbers do not comply with your company's rules and regulations, you can change the port numbers accordingly. The following table shows the default port numbers in that can be adjusted to your needs:

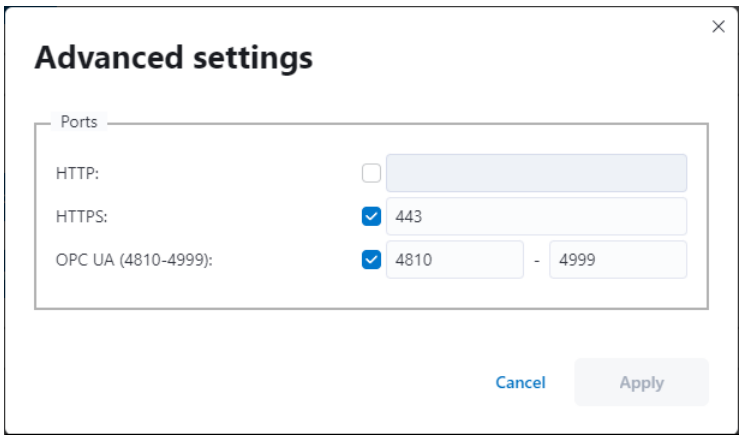
Application interface	edgeConnector	licenseServer
HTTP	--	
HTTPS	443	8000
OPC UA	4810 - 4999	
floating licenses		6200*

*Only exposed internally by default.

To change a port number:

1. In adminUI, navigate to the **Application** page.
2. In the section of the application that you want to modify the port numbers for, click the **[Advanced settings]** button.

   The **Advanced settings** dialog appears (here for edgeConnector):



3. Activate or deactivate the checkboxes of the ports you need for the application.
4. Change the port number according to the requirements of your company.

Note

In case you modify the port number range for OPC UA, make sure that any OPC UA port configuration in the edgeConnector application lies within the range that you configure here.

5. Click the **[Apply]** button.

   The configuration file is being installed to the device.

5 Working with the edgeGate

There are various applications installed on the edgeGate that you may use to configure the device and its connections:

- adminUI
  Administrating the device and its software components
- licenseServer
  Maintaining licenses
  You find all relevant information about licenseServer in the User Manual licenseServer (see Softing product page, licenseServer).
- edgeConnector
  Collecting data from industrial machines and controllers
  You find all relevant information about edgeConnector in its online help.
- Ethernet Capture
  Network protocol analyzer used to capture network traffic. You use adminUI to access Ethernet Capture.

Depending on which task you intend to perform, you log in to the corresponding application. See chapter Logging in to applications for details on how to access the necessary user interface. The following chapters cover how you perform the various tasks with edgeGate.

5.1 Logging in to applications

Depending on which task you intend to perform, you log in to the corresponding application edgeConnector, adminUI or licenseServer. The general log-in procedure is always the same for each application.

Note

Applications should only be used by one user at a time. Also, applications should only be launched one instance at a time. Multiple users or using more than one instance simultaneously may cause unexpected behavior in the web interface.

Quick info ahead: Logging in to applications

The general procedure to logging in to one of the applications is the following:

1. Open the web browser on your computer.
2. Enter the URL of the application you want to log in to (see chapter URLs of the applications).

   A login screen specific to your application is displayed.
3. Enter the credentials as required and click the **[Login]** button.

   The application opens.

5.1.1 URLs of the applications

The URL that you use is specific to the application that you want to log in to. This URL consists of various elements:

- the device's IP address plus a component specific port number, separated by a colon (:)

  or

- the hostname plus a port number specific to the application, separated by a colon (:)

The device's IP address

By default, the upper Ethernet interface ETH 1 is configured for a DHCP network. The connection can be established to the IP address that the DHCP server has assigned to the device. The bottom Ethernet interface ETH 2 has the default IP address `192.168.0.10/24`.

When you configure the edgeGate using adminUI, you may replace the default IP address with an IP address meeting your network requirements (see chapter Configuring Ethernet interfaces).

The default hostname

The device has a default hostname configured, which is a combination of the product name **edgeGate** and the unique serial number of the specific device that you are working with, separated by a hyphen (-):

`edgegate-<serial no>`

You find the serial number of the device on the nameplate at the side of the device:

Hostname example: `edgegate-234100004`

Finding the ports for the applications

To reach any of the applications, you add the port number to the IP address, separated by a colon (:). The following table lists the port numbers for the applications:

application	port	example
edgeConnector	443	https://192.168.0.10:443 (*) or https://edgegate-234100004:443 (*)
adminUI	5000	https://192.168.0.10:5000 or https://edgegate-234100004:5000
licenseServer	8000	https://192.168.0.10:8000 or https://edgegate-234100004:8000

(*) As the port number for the edgeConnector refers to the standard HTTPS connection, you may also write the URL without the port number :443.

Finding the default credentials

When logging in to a application on the edgeGate for the first time, you use default credentials.

Note

Even if the login process does not automatically prompt you to change the password right after the first login, we strongly recommend to change the default password as soon as you have access to the corresponding functionality.

The following table lists the default credentials for the applications:

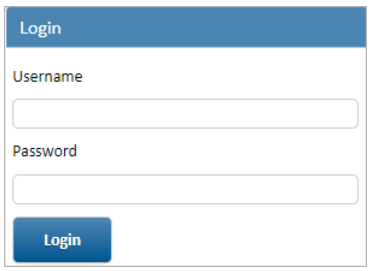
application	default user	default password
edgeConnector	admin	admin
adminUI	--	GAA-YY-051000<serial no> Example: `GAA-YY-051000234100004`
licenseServer	• on first log-in: register a new user with the user name in an email format. Example: `username@domain.com` • on later log-ins: use the registered user email address	• on first log-in: register the user with a password (one uppercase, one digit, at least eight characters) • on later log-ins: use the registered password

5.1.2 Logging in to edgeConnector

To log in to edgeConnector:

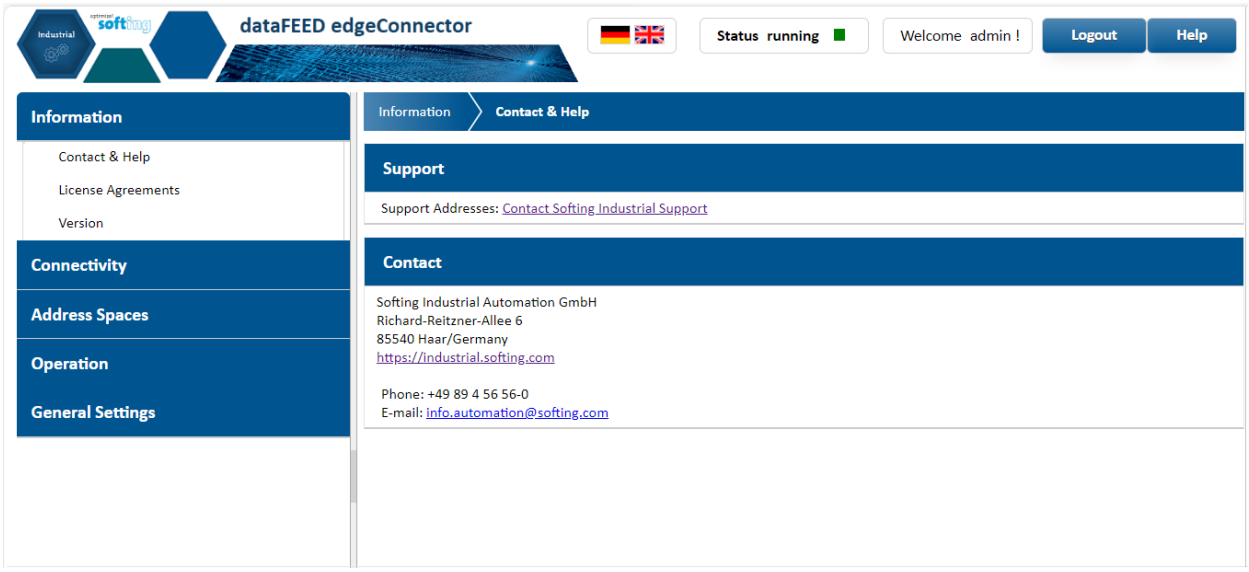
1. Open the web browser on your computer.
2. Enter the URL for edgeConnector.
   Example: `192.168.0.10:443`

   The **Login** dialog is displayed:



3. Enter **admin** as username and enter the admin password.
4. Click the **[Login]** button.

   The edgeConnector page opens.

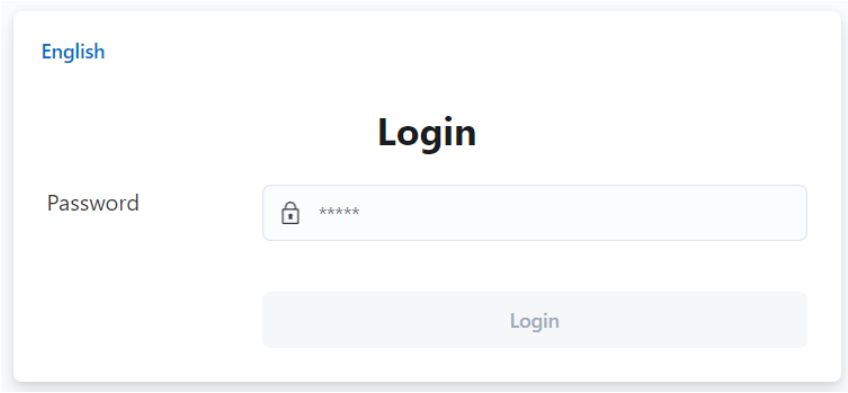


5.1.3 Logging in to adminUI

To log in to adminUI:

1. Open the web browser on your computer.
2. Enter the URL for adminUI.
   Example: `https://192.168.0.10:5000`

   A login screen is displayed:



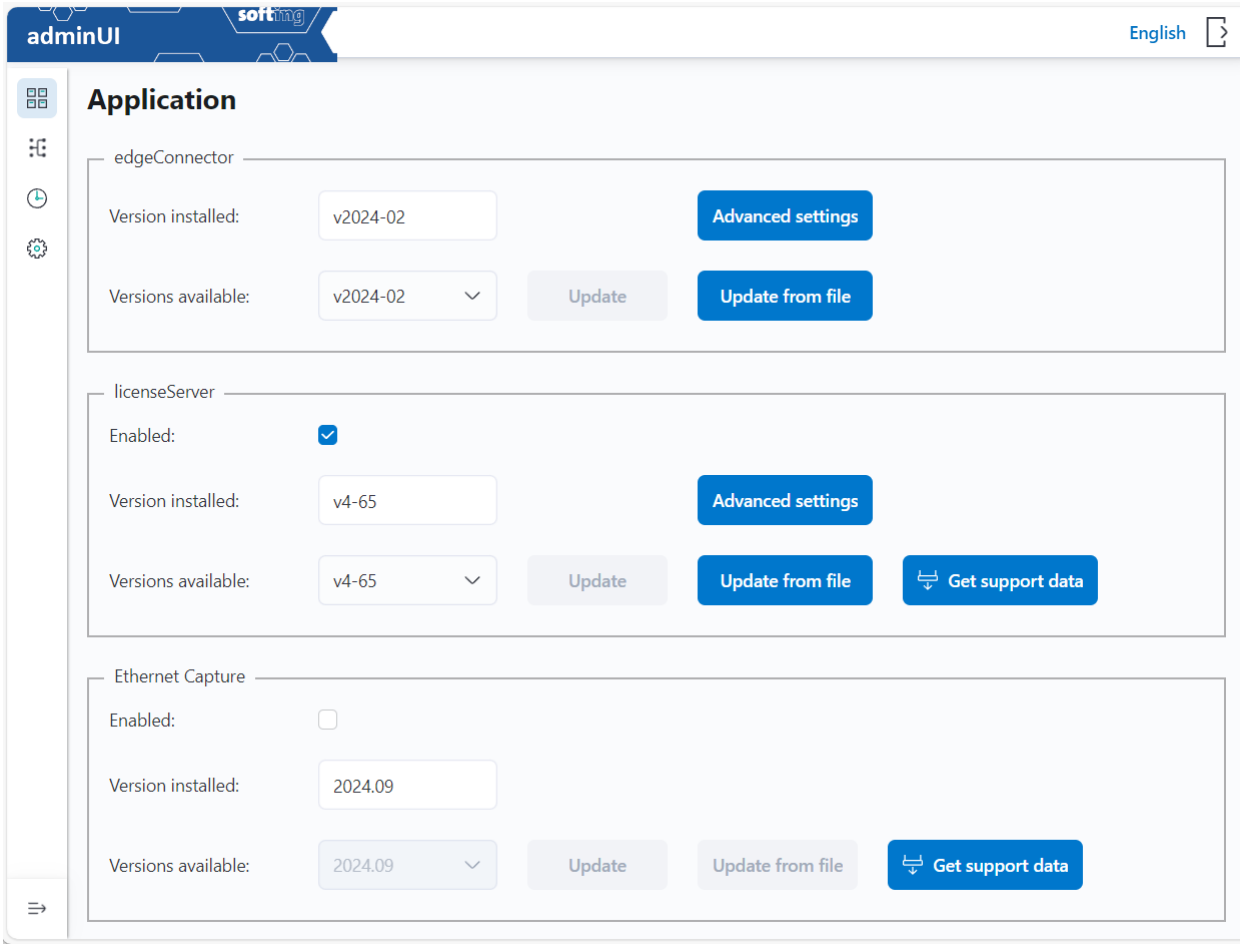
3. Enter the admin password and click the **[Login]** button.

   If you logged in for the first time to adminUI, you are required to change the admin password.

4. Enter a new password and confirm it.

5. Click the **[Save]** button.

   The adminUI page opens.

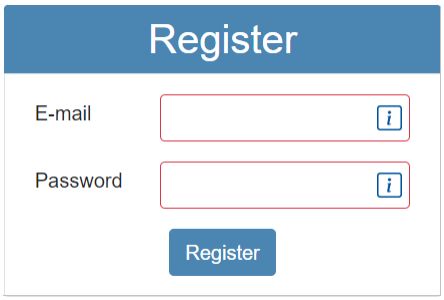


5.1.4 Logging in to licenseServer

To log in to the licenseServer:

1. Open the web browser on your computer.
2. Enter the URL for the licenseServer.
   Example: `https://92.168.0.10:8000`

   If you log in for the first time, the **Register** dialog is shown:

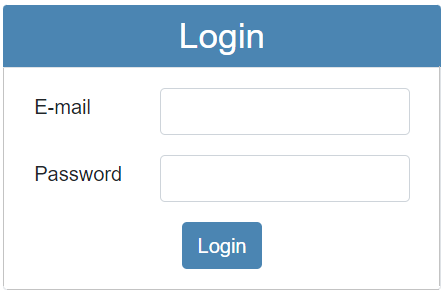


   You register your new user with an email address and a user password.

Note
The email address must meet the format requirements for email addresses
`<local part>@<hostname>.<top-level domain>`

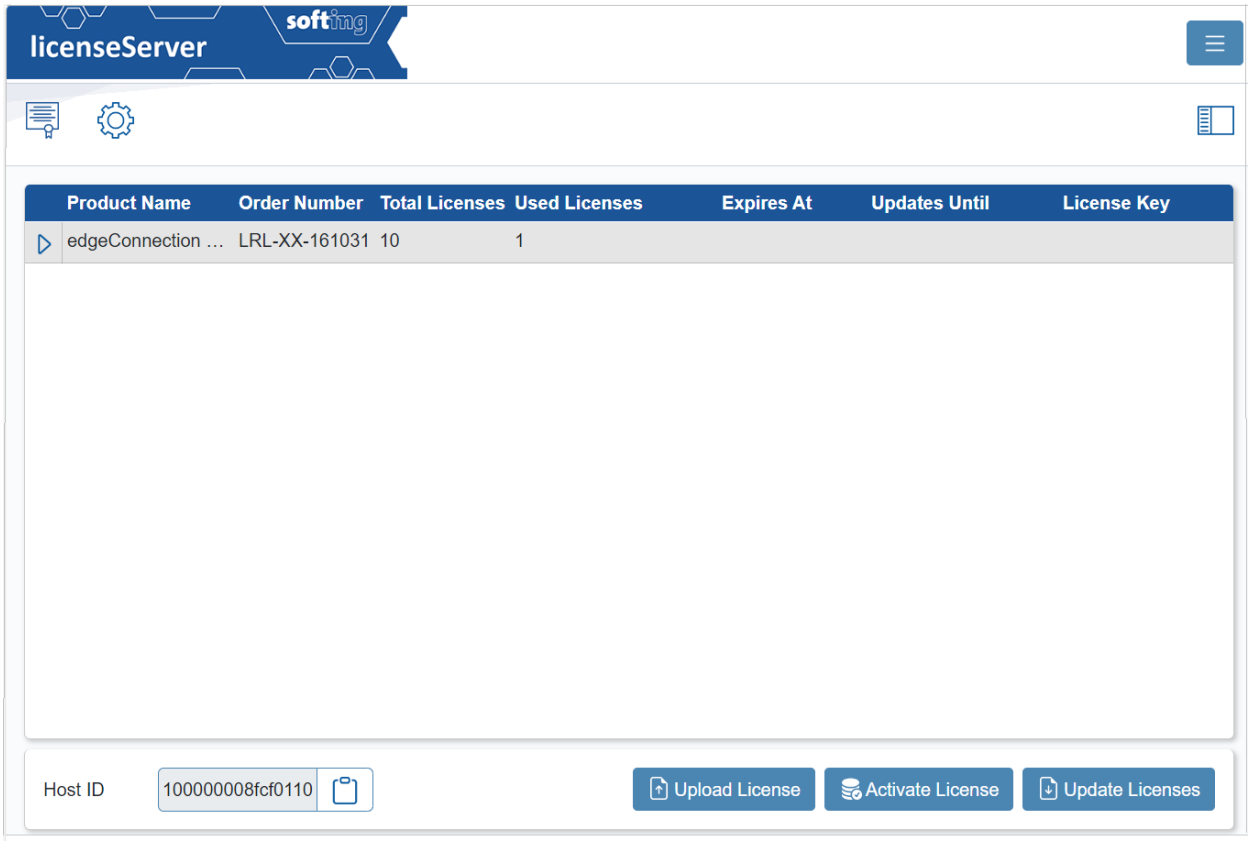
Note
Minimum password requirements: One uppercase, one digit, at least 8 characters

   On later logins, the dialog changes to **Login**:



3. Enter your user's email address and password and click the **[Register]** or **[Login]** button.

   The licenseServer page opens:



5.1.5 Logging out

You can manually log out of all applications.

Note

For edgeConnector and licenseServer, user sessions are terminated automatically after 15 minutes of inactivity. A countdown is shown one minute before the automatic logout.

Logging out of edgeConnector

For information about logging out of edgeConnector, refer to the edgeConnector online help.

Logging out of adminUI

To log out of adminUI:

1. Click the **[Logout]** symbol on the upper right corner of the adminUI window.

   The adminUI user interface is closed, the login screen is displayed.

Logging out of licenseServer

For more details, see the user guide available for download on the licenseServer product page.

5.2 Administrating device and applications

The user interface of the adminUI supports you in the following tasks:

- perform updates to the edgeGate licenseServer and edgeConnector
- define and change the hostname and network interface settings of the edgeGate
- change the admin password, generate SSL certificates, update adminUI and operating system etc.
- define port numbers for licenseServer and edgeConnector

Note

You need admin rights to login to the adminUI application (see chapter Logging in to adminUI).

5.2.1 Changing adminUI credentials

The administrator is the only user with access to adminUI.

To change the adminUI admin password:

1. In adminUI, navigate to the **System** window.
2. In the **New Password** field, enter the new admin password and repeat it in the **Confirm New Password** field.
3. Click the **[Save]** button.

   The new password is saved.

5.2.2 Changing the hostname

To change the hostname:

1. In adminUI, navigate to the **Network** window.

   In the **Hostname** field, the old hostname is displayed.
2. Overwrite the old hostname with the new hostname.
3. Click the **[Apply]** button.

5.2.3 Configuring Ethernet interfaces

You configure the Ethernet interfaces of edgeGate in the adminUI application. Here, each Ethernet interface has its own section. You configure how the IP address of the interface is to be determined. If a gateway is available in the respective network, you enter the IP address of the gateway. Also, you enter the IP address or the DNS names of a name server.

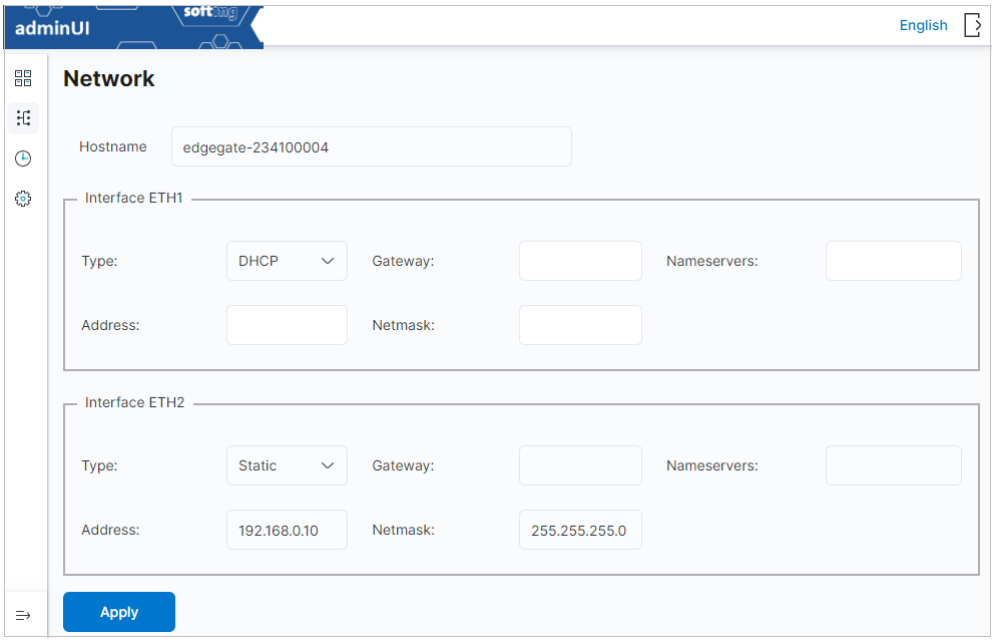
Note

You can only define one gateway address for the edgeGate. The corresponding input field is only available if you define the type of both Ethernet interfaces **ETH 1** and **ETH 2** as **Static**.

To configure the Ethernet interfaces:

1. In adminUI, navigate to the **Network** page.

   There is one section for each edgeGate Ethernet interface:



2. In the section of the interface that you want to configure, use the **Type** field to determine which address type of the interface should be used:
   - select **DHCP** to retrieve the address information from the DHCP server of the network. Do not select this option if you intend to define a gateway address for the edgeGate.
   - select **Static** to enter a specific IP address in the **Address** field. Enter the netmask of the IP address in the **Netmask** field.
3. If a gateway is available in the network, make sure both interfaces **ETH 1** and **ETH 2** are defined as **Static** and enter the gateway's IP address in the **Gateway** field.
4. To configure a DNS server, enter its IP address in the **Nameserver** field. If you have multiple name servers, ensure to separate the corresponding data by a space.
5. Click the **[Apply]** button to confirm the changes.

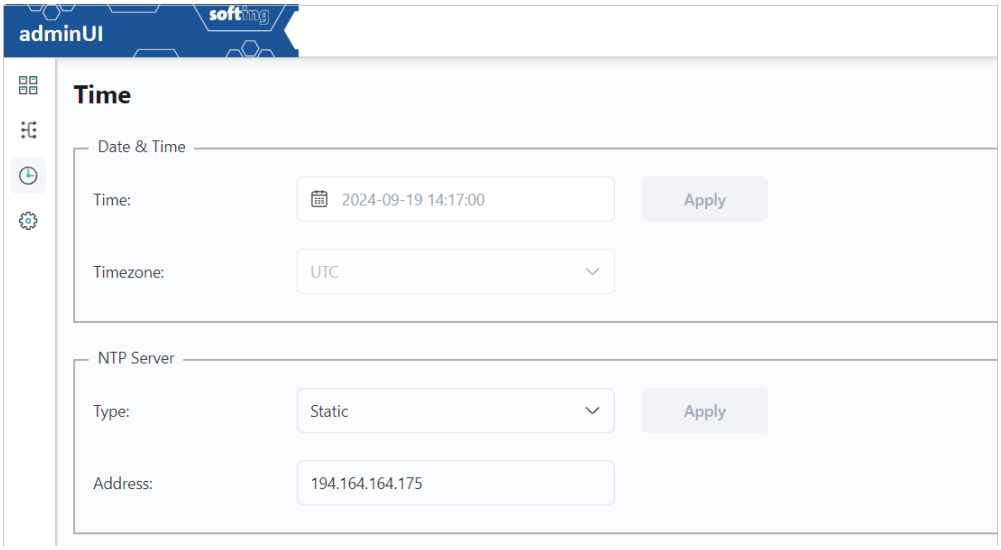
5.2.4 Setting time and date

The system time of the edgeGate should be synchronized with the network it works in. For this, you can configure an NTP server that ensures that all devices in the network have the same time and date available. If no NTP server is available, you can manually set the time of the edgeGate.

Configuring the NTP server

To configure the NTP server:

1. In adminUI, navigate to the **Time** page.



2. In the **NTP Server** section, use the **Type** dropdown list to determine which address type of the IP address should be used:
   - select **Default** to let the system automatically enter the current time server's IP address. You cannot change that IP address.
   - select **Static** to enter a specific IP address in the **Address** field.

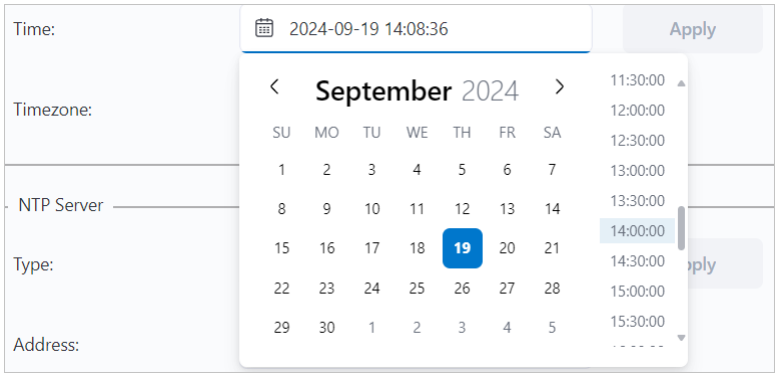
   The **None** option is used when no NTP server is available (see below).
3. Click the **[Apply]** button to confirm the changes.

Entering time and date

If no NTP server is available, you can manually enter the date and time:

1. In adminUI, navigate to the **Time** page.
2. In the **NTP Server** section, in the **Type** dropdown list, select **None**.

   In the **Date & Time** section, the fields become active.
3. Enter the correct date and time, or click the calendar icon and choose from the calendar:



4. In the **Timezone** dropdown list, select the time zone for your network.
5. Click the **[Apply]** button to confirm the changes.

5.3 Configuring an SSL certificate

Each application on the edgeGate comes with a self-signed SSL certificate. This means that you can use all applications on an HTTPS connection from the start.

For adminUI and licenseServer, you can also generate new self-signed certificates, or upload certificate files from your company's PKI infrastructure or a certificate authority. The certificate from adminUI will propagate to the edgeConnector application after restarting the device.

Note

The hostname and IP address information is included in the SSL certificate. Renaming the edgeGate's hostname or IP addresses will automatically generate a new SSL certificate.

Prerequisites

- You have access to the application on the edgeGate as an administrator.

5.3.1 Generating a self-signed SSL certificate for adminUI

adminUI by default is equipped with a self-signed SSL certificate. You can generate a new one or upload a certificate file from your PKI or from a registered certificate authority. The certificate for adminUI will also propagate to edgeConnector.

To access the **HTTPS** section of adminUI:

1. In adminUI, navigate to the **System** window.

   In the **HTTPS** section, all options for configuring your SSL certificate are displayed:

Generating a self-signed certificate

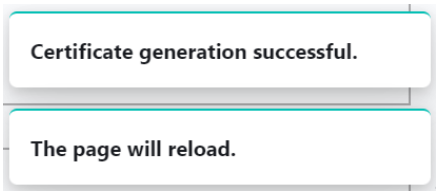
You can generate a new self-signed certificate which overwrites the old one.

Note
After generating the new certificate, adminUI will be automatically closed.

To generate a new self-signed certificate:

1. In the **HTTPS** area, click the **[Generate]** button.

   A new certificate is being generated. This can take a couple of seconds. When done, adminUI notifies you of the successful generation and closes the application.



Applying the certificate to edgeConnector

The adminUI certificate will not automatically extend to edgeConnector. To propagate the adminUI certificate to edgeConnector:

1. Restart the edgeGate (see chapter Rebooting the device).

   The device shuts down and automatically restarts. This process may take a couple of minutes. When done, the adminUI certificate also applies to edgeConnector.

5.3.2 Uploading a certificate file for adminUI

You can upload the SSL certificate file from your company's PKI infrastructure or a registered certificate authority. This certificate also propagates to edgeConnector.

Prerequisites

- The certificate file is available in the *.pem format and you have at least reading access to the certificate file.

To upload an SSL certificate file:

1. In adminUI, navigate to the **System** window.

   In the **HTTPS** section, all options for configuring your SSL certificate are displayed.

2. Click the **[Upload]** button.

   A file selection window appears.

3. Navigate to the certificate file that you want to upload and click the [Open] button.

   The certificate is uploaded and active.

4. To make the certificate available in edgeConnector, reboot the device (see chapter Rebooting the device).

5.3.3 SSL certificate for licenseServer

The licenseServer by default is equipped with a self-signed SSL certificate. You can replace that original certificate. To do so, you generate a new SSL certificate, or upload the certificate file from your company's PKI infrastructure or a registered certificate authority.

For more details, see the user guide available for download on the licenseServer product page.

Note
The certificate for adminUI also propagates to edgeConnector.

5.4 Updating applications

The edgeGate is shipped ready to be used. No installation is required. However, you may need to update the following applications and software components to a newer version from time to time:

- adminUI
- licenseServer
- edgeConnector
- Ethernet Capture
- The operating system due to some security updates
- edgeGate configuration

The latest version is provided on the edgeGate product page.

Note

Some subscription licenses may be subject to updates as well. This, however, is not referred to as software update.

For more details, see the user guide available for download on the licenseServer product page.

The following chapters cover the steps you take to configure changes in software versions.

Prerequisites

- To download the update installation file, you need an active Softing customer account. You can register for the Softing Customer Portal during the download process.
- You have access to the adminUI application (see chapter Logging in to adminUI).

5.4.1 Downloading the update file

Whenever a new version of one of the applications or other data is available, a link to the corresponding installation file is provided for download on the Softing product website.

- If the network with your edgeGate has access to the Internet, you can directly download the most current version and have it installed. You skip the instructions in this chapter.
- If the network with your edgeGate has no access to the Internet, you use your PC to download the most current version as described in this chapter, and then update the application from this local *.tar.gz* file.

Note

The applications are based on container technology. The supplier of that technology also provides storage space for the software installation files in the corresponding Softing repositories. All versions of the edgeGate applications are listed in these repositories.

Prerequisites

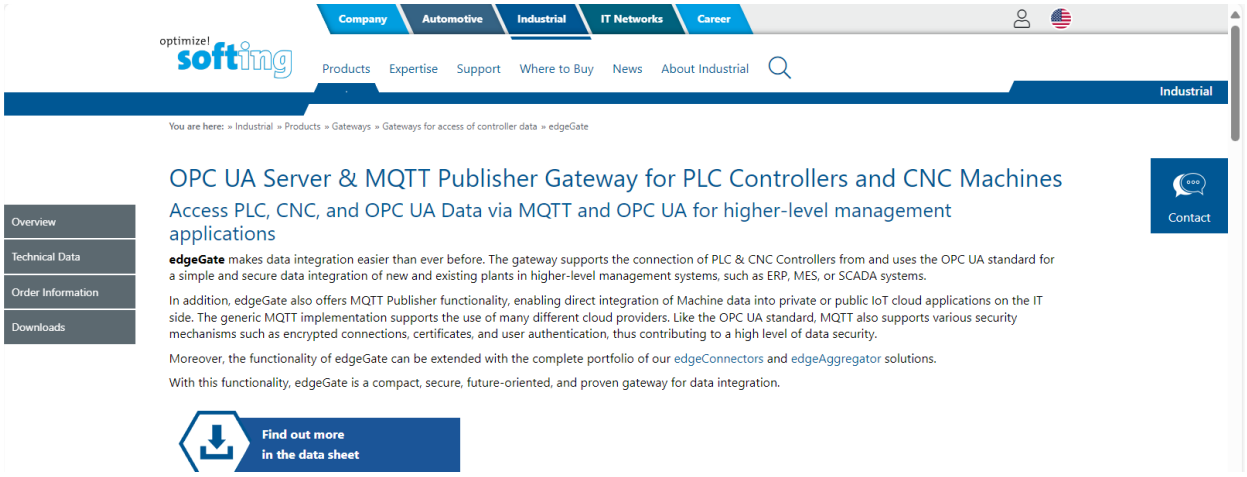
- You have an active Softing customer account. You can register for the Softing Customer Portal during the download process.

Checking current and available versions

1. In adminUI, navigate to the page showing the currently installed version:
   - for adminUI updates, navigate to the **System** page and look for the **adminUI application** section
   - for edgeConnector or licenseServer updates, navigate to the **Application** page and look for the corresponding section

   You find the currently installed version of the application mentioned in the **Version** or **Version installed** field. In the **Versions available** dropdown list, all versions of the application that are currently available are listed.

2. To get access to the required update files, go to the edgeGate product website.



   On the left of the screen, a list of links is displayed.

3. In the link list, click **Downloads**.

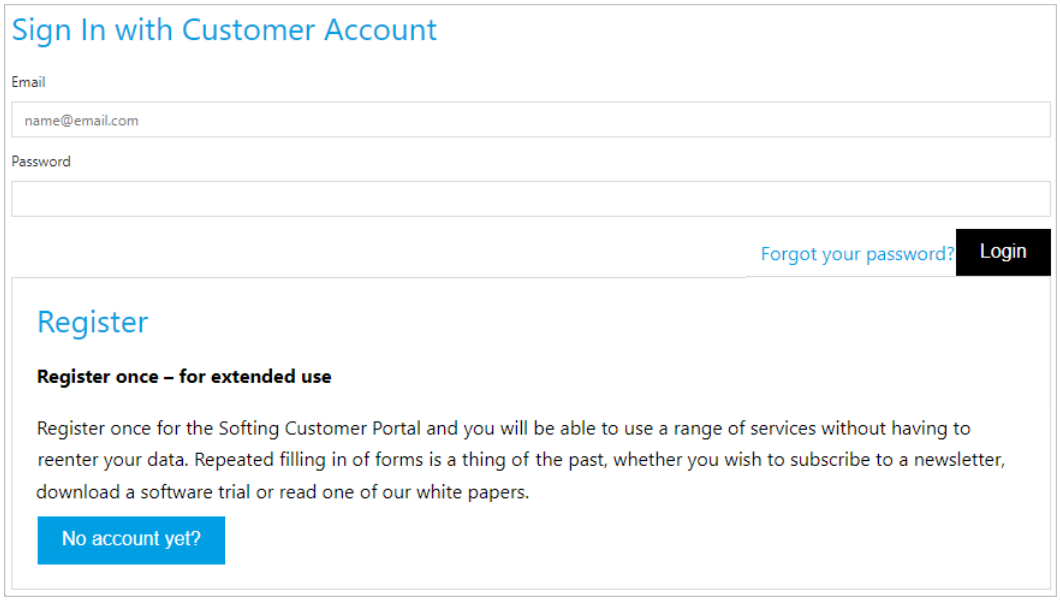
   Under **Drivers and Software**, all available software installation files are listed.

4. Find out whether a newer version of one of your applications is available.

Signing in as customer

1. Click the installation file of the application you want to update.

   The **Sign In with Customer Account** dialog appears:



2. Enter your customer credentials in the corresponding fields and click the **[Login]** button.
3. Follow the instructions for the download procedure.

Registering for customer account

1. In the **Sign In with Customer Account** dialog, click the **[No account yet?]** button.
2. The **[My Softing account]** dialog appears.
3. Enter all required information and check the **consent to the processing of personal data** checkbox.
4. Click the **[Create Account]** button and follow all further instructions for the download procedure.

5.4.2 Updating adminUI

adminUI is one of the edgeGate applications that may need updating from time to time.

Prerequisites

- You have downloaded the most recent version of the adminUI application (see chapter Downloading the update file).

To update adminUI:

1. In adminUI, navigate to the **System** ⚙ page.
2. In the **adminUI application** section, click the **[Update Application]** button.

   A file selection window appears.
3. Navigate to the installation file that you have downloaded from the Softing product page, and click the **[Open]** button.
4. Wait until the compressed installation file has been installed to the device.

5.4.3 Updating other components

The applications edgeConnector, licenseServer, and Ethernet Capture may need updating at some point. Depending on whether or not the network that your edgeGate works in has access to the Internet, you either let adminUI automatically download the file to the device and install it, or you need to manually download the update file from the Softing product page and, in a second step, install it on the device. This chapter covers how you update the application. Refer to chapter Downloading the update file for information on how to download the update file.

Prerequisites

- If Internet is available in the network: You have an active Softing customer account. You can register for the Softing Customer Portal during the download process.
- If no Internet is available in the network: You have downloaded the most recent version of the application.

Choosing the version

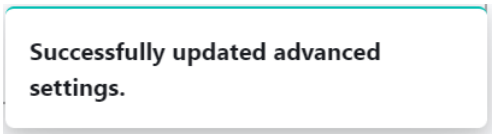
1. In adminUI, navigate to the **Application** page.
2. In the **Versions available** dropdown list of the corresponding section, choose the version to which you want to update the application.

Updating with access to the Internet

If the network with your edgeGate has access to the Internet, you directly update the application:

1. In the corresponding section of the **Application** page, click the **[Update]** button.

   The system automatically downloads the required installation file and installs the software on the device. This may take a couple of minutes. When done, adminUI notifies you of the successful installation:

Updating with no access to the Internet

If the network with your edgeGate has no access to the Internet, you use your PC:

1. In the corresponding section of the **Application** page, click the **[Update from file]** button.

   A file selection window appears.

2. Navigate to the installation file that you have downloaded from the Softing product page, and click the **[Open]** button.

   The compressed installation file is being installed to the device. This may take a couple of minutes. When done, adminUI notifies you of the successful installation (see above).

5.4.4 Updating the operating system

The operating system (OS) on the edgeGate is Debian linux. You only update the OS when Debian publishes new security features or other important fixes.

To update edgeGate OS:

1. In adminUI, navigate to the **System** page.
2. In the **OS Updates** section in the **APT Update Repository** field, enter the path of the required APT mirror.
3. Click the **[Apply]** button.

   The system will use that path to find the respective updates.

5.4.5 Updating application configuration

The heart of adminUI is its configuration. All details that you define within adminUI are stored in the configuration. Whenever there are major changes to the adminUI configuration structure, Softing provides a new configuration for your adminUI. This may e.g. contain new parameters or changes to basic architectural requirements. You can update the adminUI configuration.

Note
Only update the configuration file if you have been instructed by the Softing support team.

Prerequisites

- The Softing support team has provided you with the most current adminUI configuration file.

To update the adminUI configuration:

1. In adminUI, navigate to the **System** page.
2. In the **adminUI application** section, click the **[Update Configuration]** button.

   A file selection window appears.
3. Navigate to the installation file, and click the **[Open]** button.

   The configuration file is being installed to the device.

5.5 Maintaining licenses

One of the applications on your device is the licenseServer.

The Softing licenseServer hosts and keeps track of a number of available edgeConnection licenses (also known as floating licenses or shared licenses) that are used on the edgeConnector application from the edgeGate.

When you want to create a connection to a controller through the edgeConnector, the application will request a license from the licenseServer. The licenseServer now checks for a spare license. If available, it will allocate the license as requested and allow the edgeConnector to establish a valid connection to the controller. However, if the request exceeds the number of available licenses, the licenseServer will decline the request and the connection with the device will not be established. If there is no connection to a licenseServer, the edgeConnector can run in demo mode for 72 hours.

When a controller connection is disabled or deleted, the license is released from the licenseServer and becomes available once more at the pool of available licenses.

For more details see the user guide for download on the licenseServer product page.
When you first start your device, all licenses are already pre-installed, there is no need for you to do any of the activities described in the licenseServer User Guide. However, if you wish to increase the number of licenses on your device or a subscription license needs updating, the chapters may become relevant for your proceedings.

Prerequisites

- You have access to the licenseServer application on your device (see chapter Logging in to licenseServer).

5.6 Connecting to industrial controllers

edgeConnector is a product of the Softing's dataFEED product family. It allows accessing production data in Industry 4.0 and Industrial IoT applications. While the controller connectivity is implemented based on proprietary communication protocols, the standards OPC UA and MQTT are used for upper automation layers integrations.

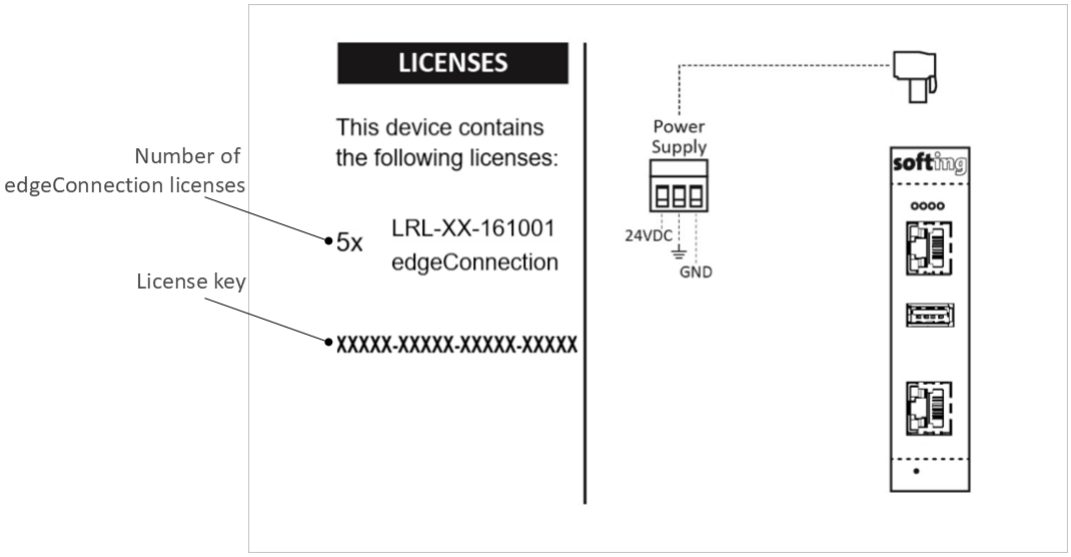
Once you have logged in to the edgeConnector application, you find the entire edgeConnector user documentation in the edgeConnector online help. For further information about logging in to edgeConnector, see chapter Logging in to edgeConnector.

How many connections are possible?

The device is designed to support connections with up to 20 controllers and machines. However, actual performance may vary based on the combination of protocols used, data types, and the number of variables associated with each connection.

How many connections are available on shipping?

The number of connections actually available depends on the number of edgeConnection licenses that you have purchased for the device. Both the number of edgeConnection licenses available when the device is shipped and the license key for the device are shown on the label on the side of the device:



Note

If you have purchased additional edgeConnection licenses after buying the device, the number on the label deviates from the actual number of licenses. For more details, see the user guide available for download on the licenseServer product page.

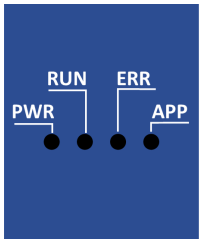
How many connections are configured?

The number of connections that you can configure using the edgeConnector application is limited by the number of licenses available. You log in to the edgeConnector (see chapter Logging in to edgeConnector) and check for active connections. For details about configuring connections, see the edgeConnector online help.

6 Troubleshooting

6.1 LEDs indicating trouble

edgeGate has four device status LEDs at the top:



PWR = power supply

RUN = running

ERR = error

APP = application

The device status LEDs are either permanently on or off or flash. This is represented by the following symbols:

Symbol	Color	Light
	none	off
	red	permanent
	green	permanent
	red	flashing
	green	flashing

The Ethernet port LEDs indicate the following behaviour:

Ethernet port LEDs	Colour	Behaviour
	green	Flashing when there is traffic on the port
	yellow	ON when link is established

Status LEDs during start-up and working phases

The status of the edgeGate is indicated by a unique combination of the four device status LEDs.

The edgeGate LEDs monitor its power supply, the operating system, the runtime environment, and the edgeConnector application. Also, if you have used edgeConnector to configure connections to your edge devices, these connections are monitored by the LEDs as well.

Note

All device status LEDs except for **PWR** are controlled by the edgeGate's operating system. This means that they only provide viable information once the operating system has been fully started.

The following table lists the LED combinations and their specific meaning:

PWR	RUN	ERR	APP	Meaning	Your activity
⊗	⊗	⊗	⊗	• power is off	Check power supply.
●	⊗	⊗	⊗	• The initialization phase is in progress • 24V DC power supply is on • Loading of the operating system and runtime environment is still in progress	Wait for the initialization phase to finish.
●	●	⊗	⊗	• 24V DC power supply is on • The operating system is functioning properly • The runtime environment failed to load	Reboot the device (see chapter Rebooting the device).
●	●	⊗	●	• The initialization phase is finished and the device is running in normal mode • The operating system and runtime environment are functioning properly • edgeConnector application is running properly • at least one of the configured edgeConnector connections is not working **Note** This is the default LED status at the first successful start as no connections to machines have been created yet.	Create a new connection or verify the status of the connections and the number of edgeConnection licenses available in the edgeConnector application.
●	●	⊗	●	• The initialization phase is finished and the device is running in normal mode • The operating system and runtime environment are functioning properly • edgeConnector application is running properly • All configured edgeConnector connections are successfully connected	
●	●	●	⊗	• 24V DC power supply is on • The operating system and runtime environment are functioning properly • The edgeConnector application is not running	Reboot the device (see chapter Rebooting the device).

PWR	RUN	ERR	APP	Meaning	Your activity
				• The operating system and runtime environment are functioning properly • The edgeConnector application is running but in halted mode	Manually start the operation of the edgeConnector application.
				• The operating system and runtime environment are functioning properly • Failed to retrieve status from the edgeConnector application	Reboot the device (see chapter Rebooting the device).
 	 	 	 	• You have started resetting the device and are currently pressing the reset button • The device is about to start executing a factory reset • Device executes a factory reset	Keep the reset button pressed until APP LED turns off See chapter Resetting the device to factory default. • Release the reset button • Wait for the factory reset to finish • Re-configure the device

6.2 Asking for support

If any of the applications on the edgeGate gives you reason for asking Softing for support, we are happy to oblige. In order for the support team to quickly find the cause of the issue, you create a file containing all relevant system information and logs from the application, and send the file to the support team for analysis.

- Firstly, you choose for which part of edgeGate you need support:
  - edgeConnector
  - adminUI
  - licenseServer
  - communication between edgeGate components
- Secondly, you create the file that contains the corresponding data for analysis
- Thirdly, you send the file to the Softing support team

Note

The following instructions cover the procedure for issues with adminUI, licenseServer, and communication between components. For issues with edgeConnector, refer to the edgeConnector online help (chapter **Configuration -> General Settings -> Logging & Metrics**)

Choosing the application

To determine which application you need help with:

1. Login to adminUI (see chapter Logging in to adminUI.
2. For issues with licenseServer, navigate to the **Application** page and find the **licenseServer** section;
   for issues with adminUI, navigate to the **System** page and find the **Support data** section;
   for issues with the communication between edgeGate components, navigate to the **Application** page and find the **Ethernet Capture** section.

Creating file for adminUI or licenseServer analysis

To create the file for adminUI or licenseServer for support analysis:

1. In the respective software section, click the **[Get support data]** button.

   The system creates a zip file containing all relevant data and log files, and downloads that file to your PC in the configured download folder.

Creating file for Ethernet Capture analysis

To create the file for for Ethernet Capture for support analysis:

1. In the **Ethernet Capture** section, activate the **Enabled** checkbox.

   The Ethernet Capture program starts and logs any activity that you perform from now on.
2. Once more, perform every activity that you performed before encountering the communication issue.
3. When finished, deactivate the Enabled checkbox in the Ethernet Capture section of adminUI.
4. Click the **[Get support data]** button.

   The system creates a zip file containing the Ethernet Capture files, and downloads that file to your PC in the configured download folder.

Sending zip-file to Softing Support team

1. Contact Softing Support and attach the support data file to the email.

6.3 Rebooting the device

There might be situations when the edgeGate applications do not react any more or when unexpected behavior does interrupt normal functioning. In these cases, a reboot of the device might be worth a try.

Note

Rebooting the edgeGate automatically closes and restarts all software components.

For information about physically shutting down the device, refer to chapter Shutting down and restarting the device.

To reboot the device:

1. In adminUI, navigate to the **System** page.
2. In the **Status** section, click the **[Restart]** button.

   All applications are closed and the device is shut down. After that, it automatically restarts and you can log in to the required application again.

6.4 Shutting down and restarting the device

You can shut down the edgeGate, e.g. if you need to dismount it and send it in to support for repair.

Note

Once you shut down the edgeGate, you cannot restart it through any of your software components. The device must be restarted manually by physically un-plugging and re-plugging the power connector.

For information about automatically rebooting the device through software, refer to chapter Rebooting the device.

Shutting down the device

1. In adminUI, navigate to the **System** page.
2. In the **Status** section, click the **[Shutdown]** button.

   All applications are closed and the device is shut down.
3. Unplug the power connector.

Restarting the device

If you want to restart the edgeGate after shutdown, you may need to mount the device before powering it up. For mounting the device, see chapter Mounting and dismounting. To restart the device:

1. Plug in the power connector.

   The device boots and all software is started. This may take a couple of minutes. Refer to LED status indicators for a detailed description of the LEDs and their behavior.

6.5 Resetting the device to factory default

If your edgeGate is not responding, is malfunctioning, or you simply cannot log on to the device because you could not restore your log-in credentials, you can perform a factory reset.

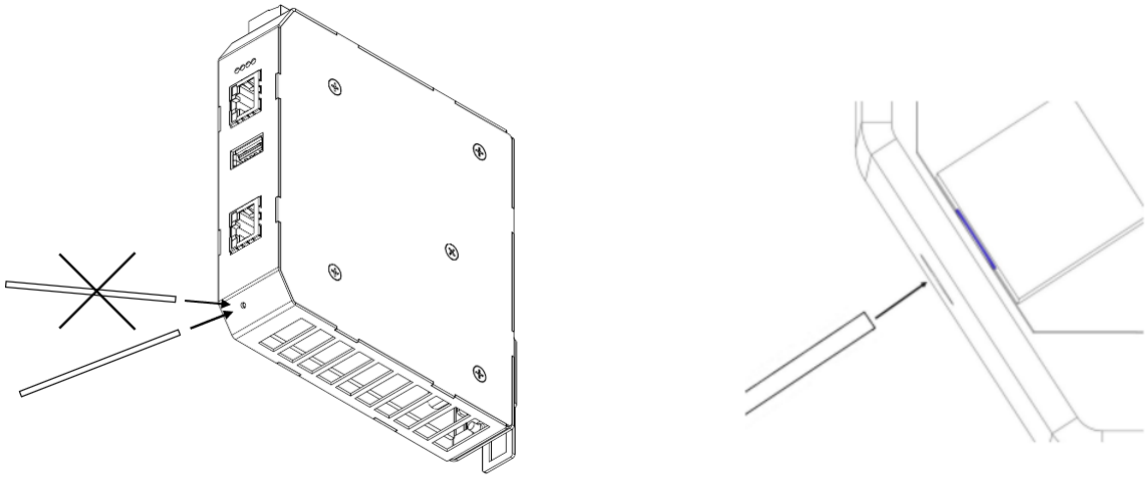
During the factory reset sequence, the device is restored to the original factory configurations. All sensitive data, parameters, and configurations are removed. However, licenses will not be affected by the reset and will remain on the device.

Note

We recommend to reset the device only if you wish to clear all your configuration, if all other troubleshooting methods have failed, or if our support department has recommended it to solve an issue.

The reset button is concealed within a small opening at the bottom of the device housing. To access it, you use a tool such as the tip of a metal pin, a pen, or an unwound paper clip. Ensure you have the tool within reach.

1. Disconnect the power supply from the edgeGate device.
   You will reconnect it in a later step while resetting the device.
2. Insert the tool into the hole of the reset button as shown in the following graphic.



3. Press the reset button very carefully and hold it while simultaneously reconnecting and powering up the device again. Keep the reset button pressed.

   After about 45 seconds, the the RUN, ERR and APP LEDs turn red and are flashing fast.
4. Keep the reset button pressed until the APP LED turns off while the RUN and ERR are still flashing. Release the reset button.

   The edgeGate factory reset starts. Once the reset is complete, the device automatically restarts.

7 Glossary

Abbreviations	Definition
CA	Certificate Authority
CSR	Certificate Signing Request
DHCP	Dynamic Host Configuration Protocol
DIN	Deutsches Institut für Normung
DNS	Domain Name Server
DP	Decentralised Peripherals
ERP	Enterprise Resource Planning
ETH	Ethernet
Ex	Explosion protection
FDI	Field Device Integration
GND	Ground
HTTPS	Hypertext Transfer Protocol Secure
I/O	Input/Output
IP	Internet Protocol
LED	Light-Emitting Diode
MES	Manufacturing Execution System
NTP	Network Protocol Time
OPC UA	Open Platform Communications Unified Architecture
OT	Operational Technology
PA	Process Automation
PKI	Public Key Infrastructure
PLC	Programmable Logic Controller
PN	PROFINET
pnGate	Softing PROFINET Gateway
RIO	Remote Input / Output
RTC	real-time clock
T	Temperature
T_a	Ambient temperature

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