Cloud Provisioning Guide

# ABB Ability™ Energy and Asset Manager

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# 01
# Purpose of the document

This document is a list of procedures, suggestions and tips that will facilitate the provisioning of the ABB devices to the ABB Ability™ Energy and Asset Manager platform.

This guide brings together our knowledge of our own devices, as well as the experience we have gained when providing provisioning process support throughout the world.

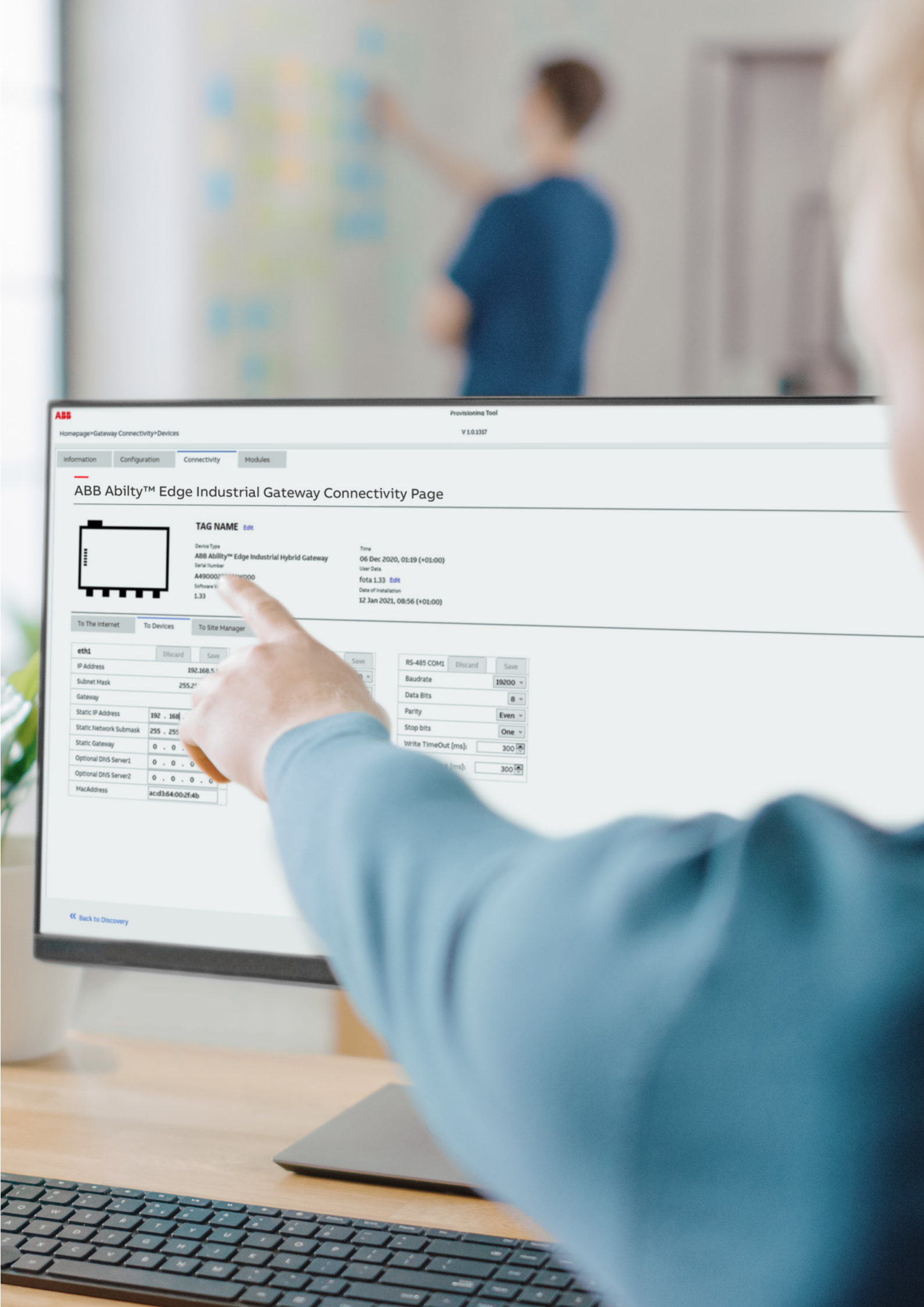
If you feel that something is missing or is not clear, or if you are stuck at any point of the provisioning process, you can always get in touch with us by reaching out to our Operations team at **global-el.operations.digital@abb.com**

## What the icons mean

This document contains information about two different way of working of the ABB Ability Industrial Edge gateway, the local view version and the cloud connected version. we used a laptop icon to specify when a content is referring to the local view version. We used the cloud icon when the information is referring to the cloud connected version.

**Local view version**

**Cloud connected version**

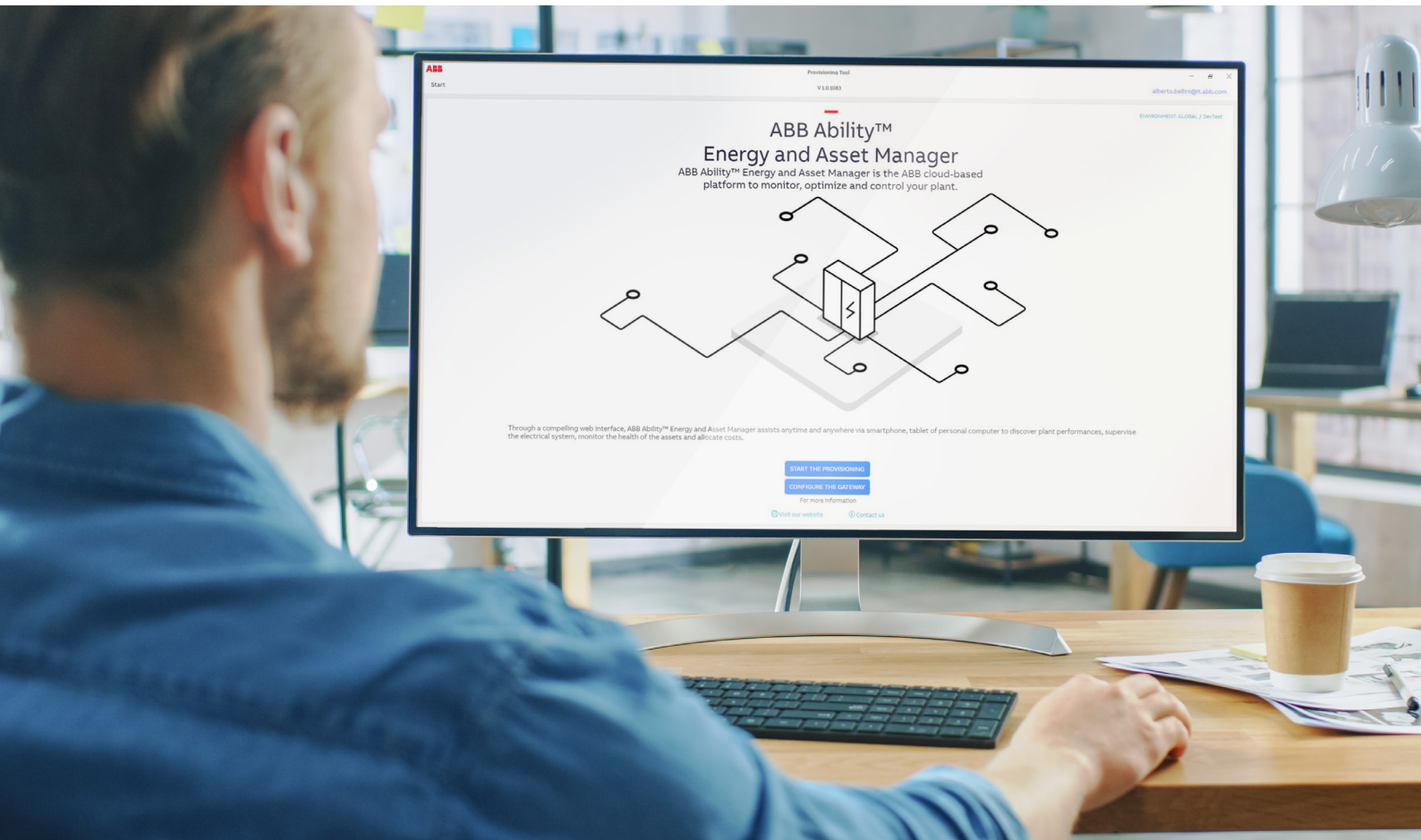

Provisioning Tool
Homepage>Gateway Connectivity>Devices
V 1.0.1317
Information
Configuration
Connectivity
Modules
ABB Abilty™ Edge Industrial Gateway Connectivity Page
TAG NAME Edit
Device Type
ABB Ability™ Edge Industrial Hybrid Gateway
Serial Number
Time
06 Dec 2020, 01:19 (+01:00)
User Data
fota 1.33 Edit
Date of Installation
12 Jan 2021, 08:56 (+01:00)
To The Internet
To Devices
To Site Manager
eth1
Discard
Save
IP Address
Subnet Mask
Gateway
Static IP Address
Static Network Submask
Static Gateway
Optional DNS Server1
Optional DNS Server2
MacAddress
RS-485 COM1
Baudrate
19200
Data Bits
8
Parity
Even
Stop bits
One
Write TimeOut [ms]:
300
Back to Discovery

# 02
# Architectures
## Independent IoT gateway

ABB Ability™ Edge Industrial Gateway is an independent IoT gateway which can gather data from field devices – as well as consumption of water and gas, among others – and connect the system to ABB Ability™ Energy and Asset Manager, our cloud platform. As a result, all downstream field devices can be monitored from the cloud via an Ethernet cable, wi-fi or mobile connectivity

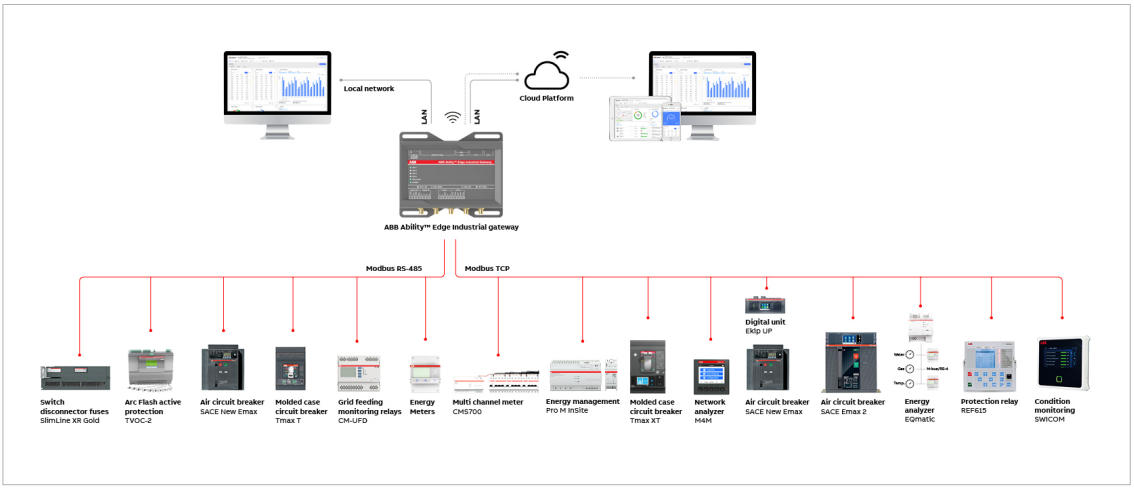
**Here are some examples of architectures and applications:**

- Architecture with an ABB Ability™ Edge Industrial Gateway 01
- Architecture using the Ekip Com Hub internal module 02
- Application 03
- Example of an application with multiple gateway connected in the same site 04
- Example of an industrial site application 05
- Example of a commercial site application" 06



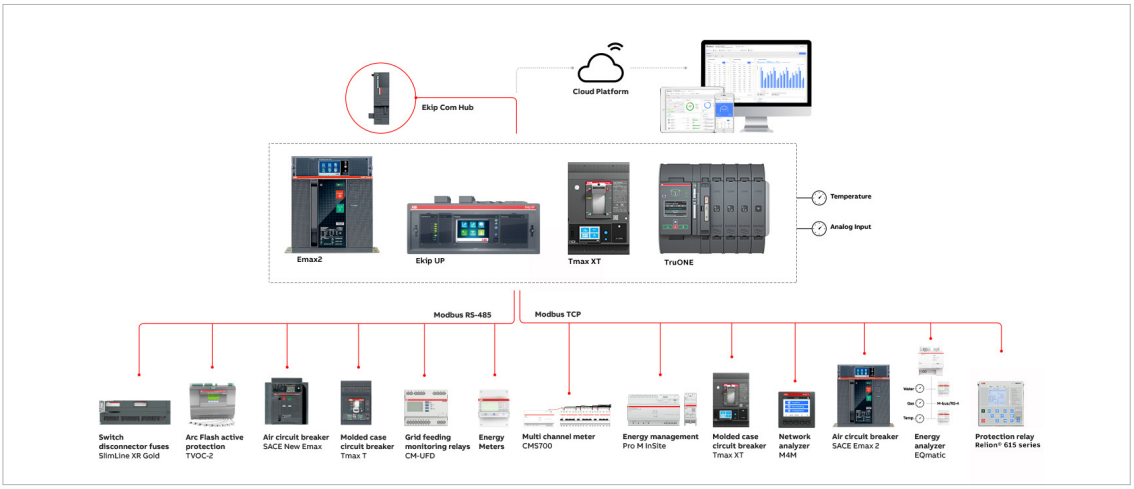
## Architecture with an ABB Ability™ Edge Industrial Gateway

01



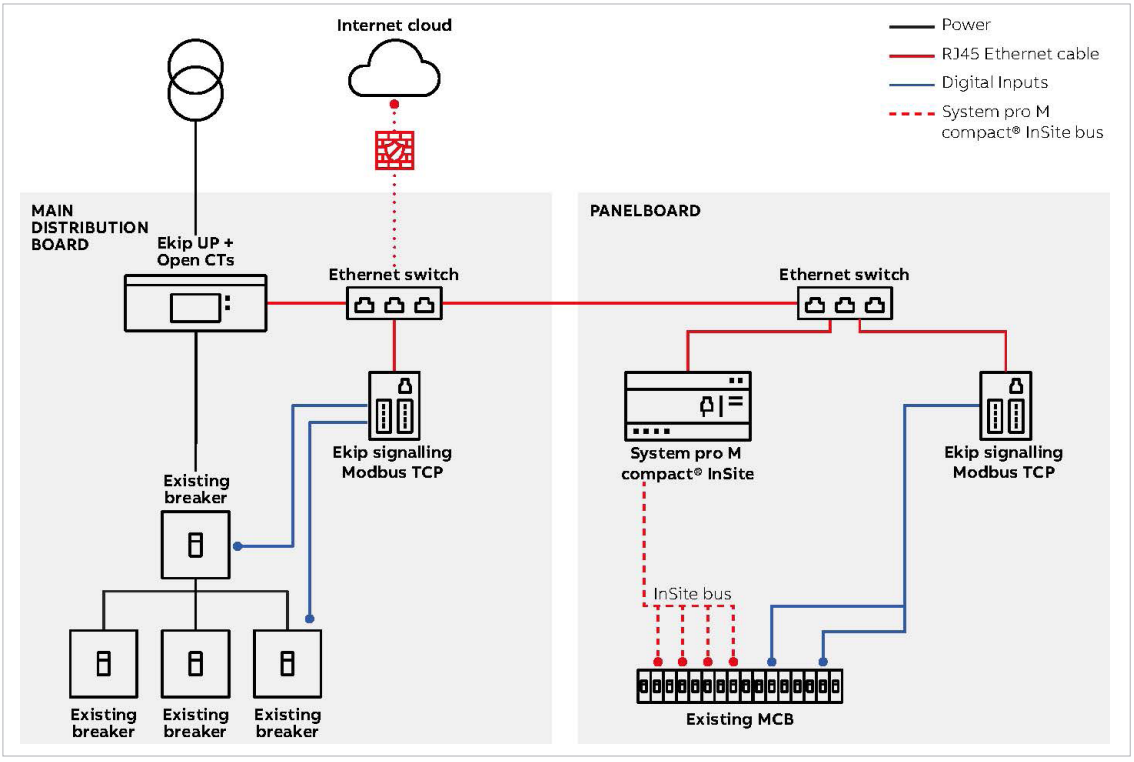

## Architecture using the Ekip Com Hub internal module

02



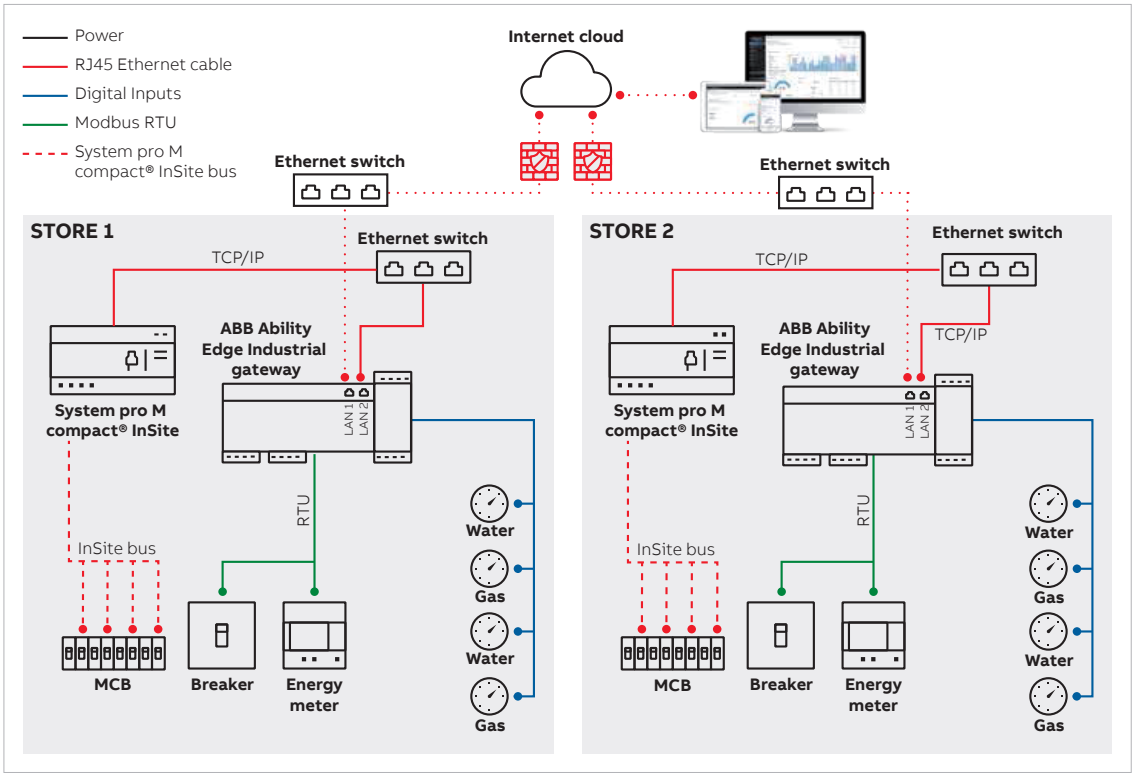

## Application

03



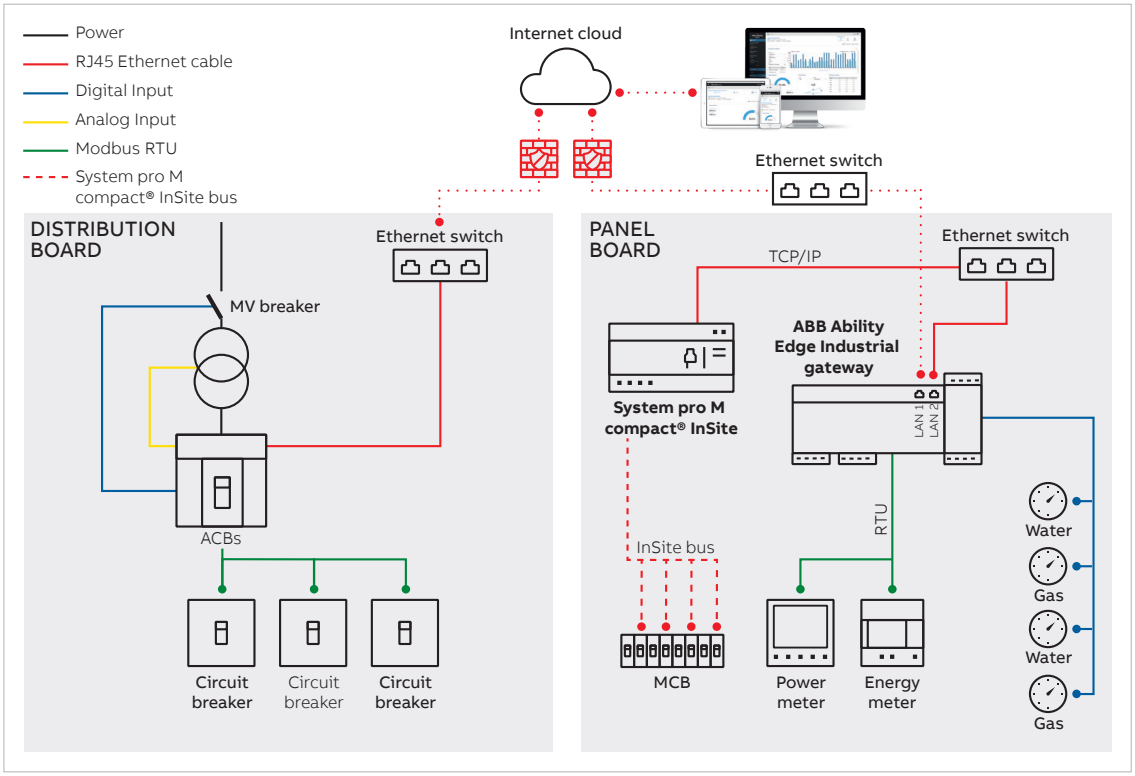
Example of an application with multiple gateway connected in the same site

04



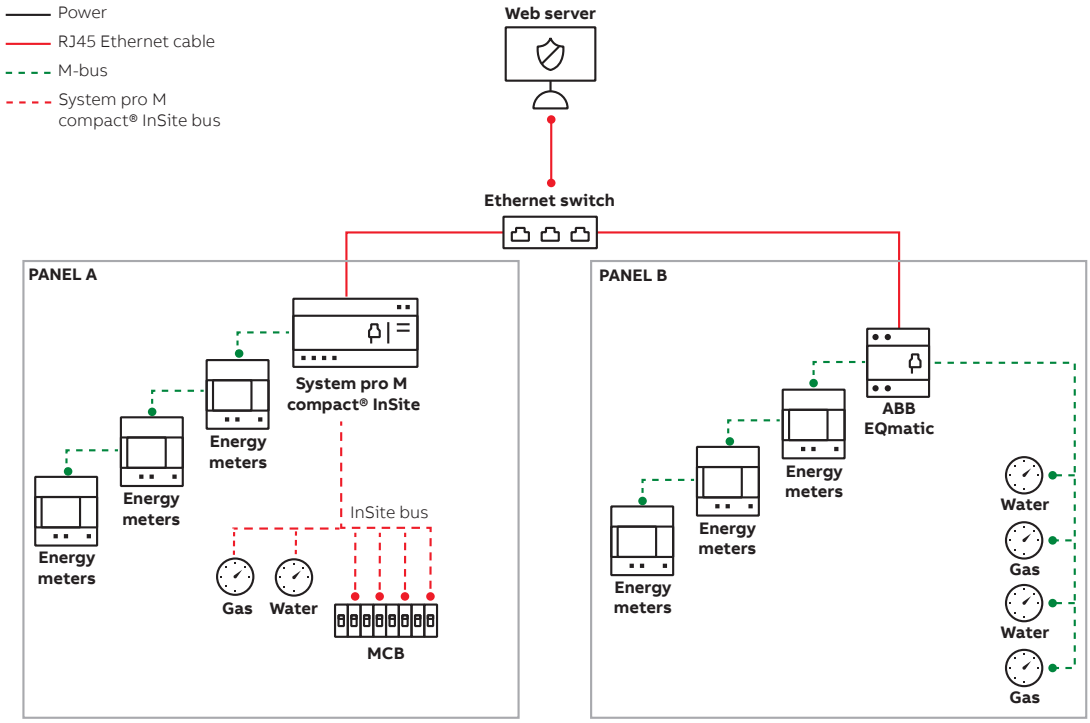

Example of an industrial site application

05



Example of a commercial site application.

06



# 03
# PC minimum requirements

The commissioning tool is a Windows application. In order to complete the provisioning process to ABB Ability™ Energy and Asset Manager, your PC needs to meet the following minimum requirements:

**Minimum OS:**
Windows 10 with Administrator privileges

**Physical ports:**
Minimum 2 network interfaces
- 1 Physical network interface to connect to the device network.
- 1 physical/wireless network with internet connectivity.

**Internet connectivity:**
Mandatory for the Provisioning tool

**Minimum PC specs:**
- 500 MB of free space in the main drive.
- Privileges to re-configure the PC firewall.

**How to check your PC specifications on Windows 10**
how to check your computer full specifications - windows 10

# 04
# Gateway performance

**The ABB Ability™ Edge Industrial Gateway performs as follows:**
- It supports a maximum of 15 ModBus RTU devices.
- It supports a maximum of 45 ModBus TCP devices.

**Note:**
With complex devices that send a large amount of data, performance may decrease. Please get in touch with ABB for more information.

- Polling time is as follows:

**Only for Local** view version
- 1 minute when ≤ 30 devices are connected
- 2 minutes when > 30 devices are connected

**Only for Cloud** connected version
- The polling time is 1 minute

## 04.1
## Analog and digital IO type, number, characteristics and performances

| | |
|---|---|
| Digital Input | 6 x Digital Input Ports Input Range 0-36 V Optoisolation 5kV (2.7kV RMS) Low Level Voltage: 0-1V High Level Voltage: 2-36 V |
| Analog Input | 2 x Current Analog Input Ports Input Range: 4-20 mA<br>2 x Voltage Analog Input Ports Input Range: 0-36 V<br>ADC Conversion: 12-bit Sigma Delta Sampling Frequency: 1 kHz Max Input Protection Circuitry (5 kVDC) |

## 04.2
## Data traffic

- Firmware update (FOTA): 1.5 GB
- Provisioning: 1.5 GB
- Telemetry: 2GB / device / year
- Annual traffic: up to 80 GB / year

# 05
# Pre-requisites before visiting the provisioning site

Before starting the commissioning procedure, and before visiting the provisioning site, please follow the guidelines below.

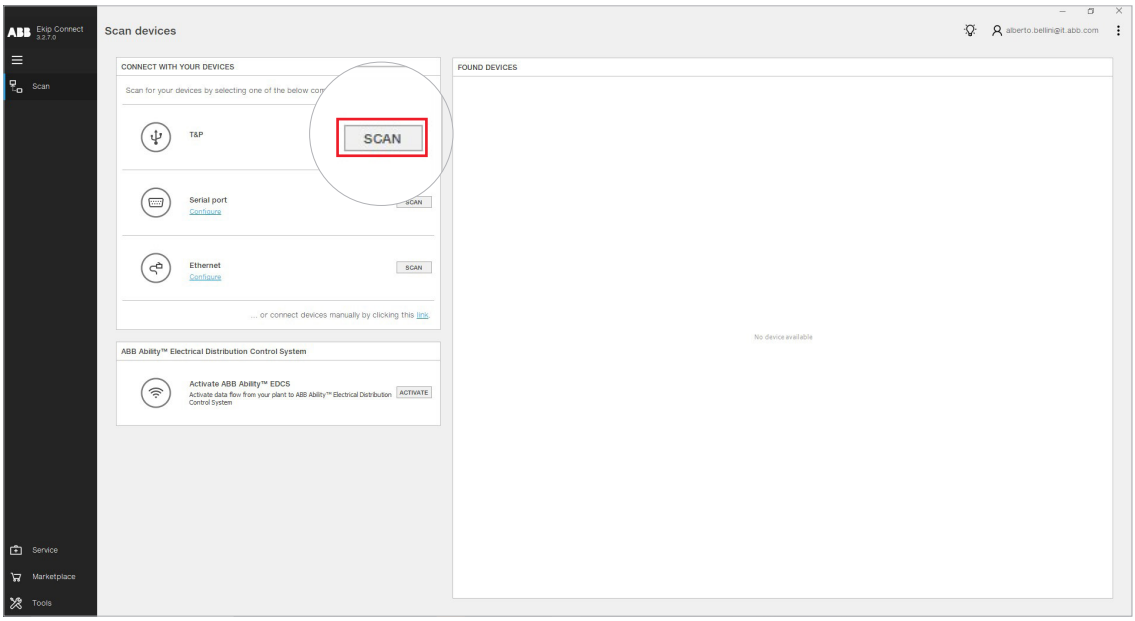
- **Step 1:** Verify that the device firmware is up to date.
- **Step 2:** Verify the Network, Network Profile, and Settings.

## 05.1
## Step 1: Verify that the device firmware is up to date

For each device, please verify that the firmware version is up to date. You can choose among one of the following procedures:

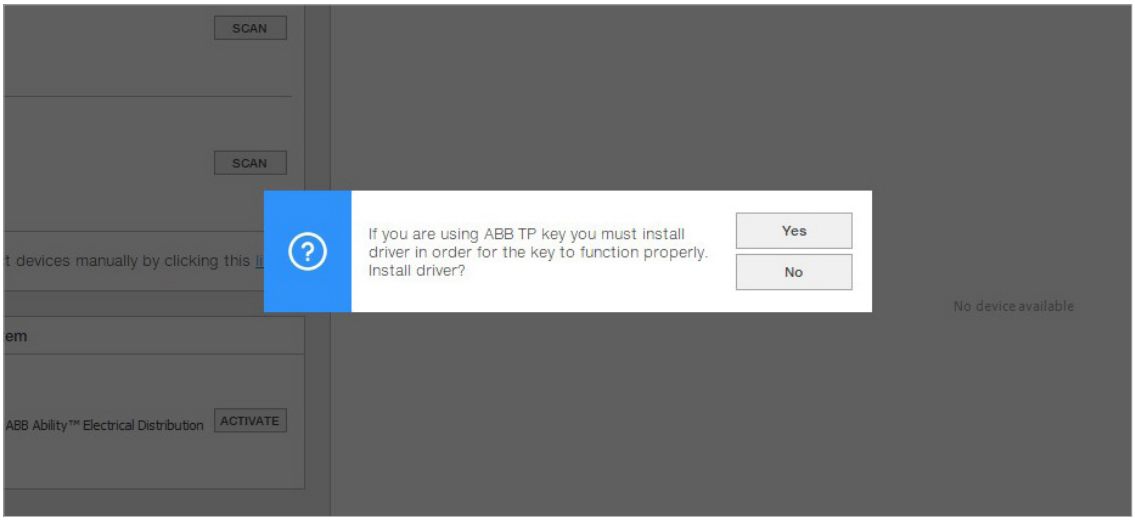
- **Ekip Connect 3 for the Ekip platform (Emax 2, New Tmax XT, Ekip UP) and TruOne:**
  - Open Ekip Connect 3, connect the device to your Personal Computer through the Ekip T&P, and click on the *scan* button. 07

07



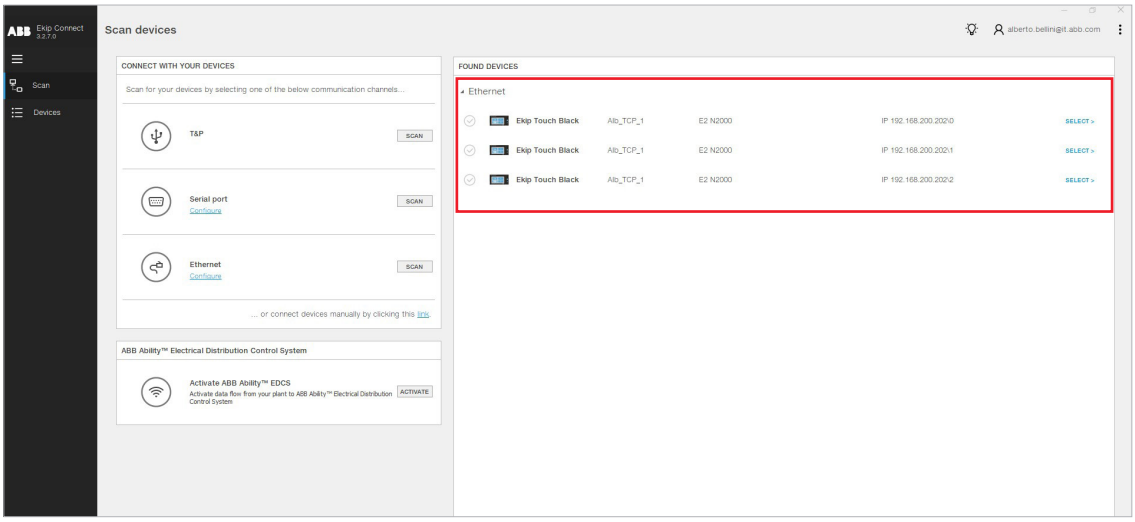
- If the device cannot be found 08, check the cable connection within the Ekip Com Hub module and / or update the T&P device drivers.

08



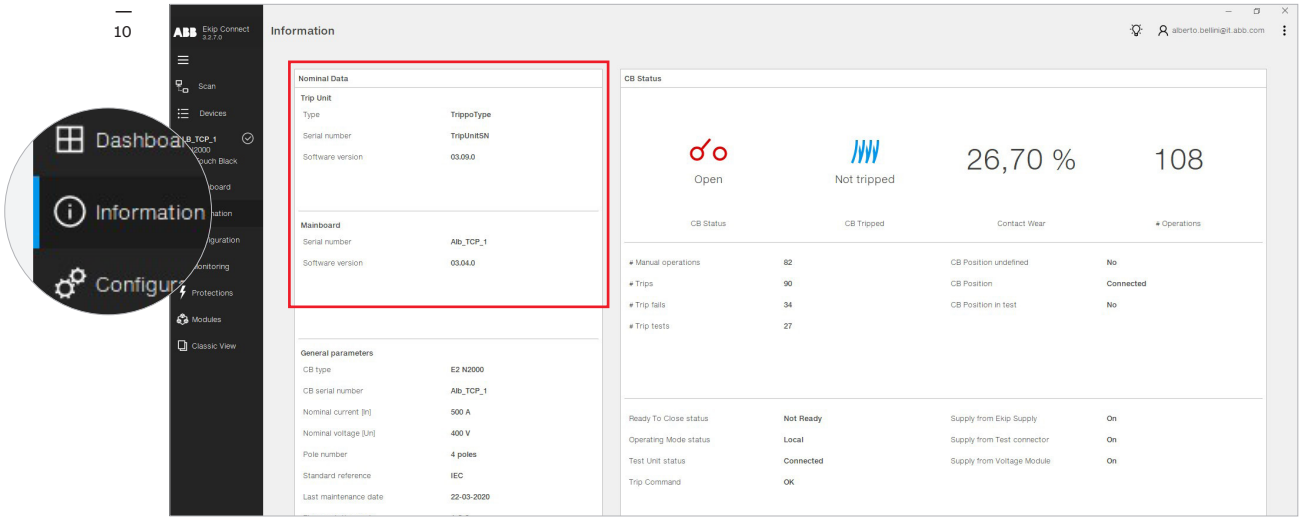

- Once the device is found it will appear on the right side of the tool. 09

09




- Select *Information* from the left-hand side menu. The firmware information (Software version) will appear on the main window. 10

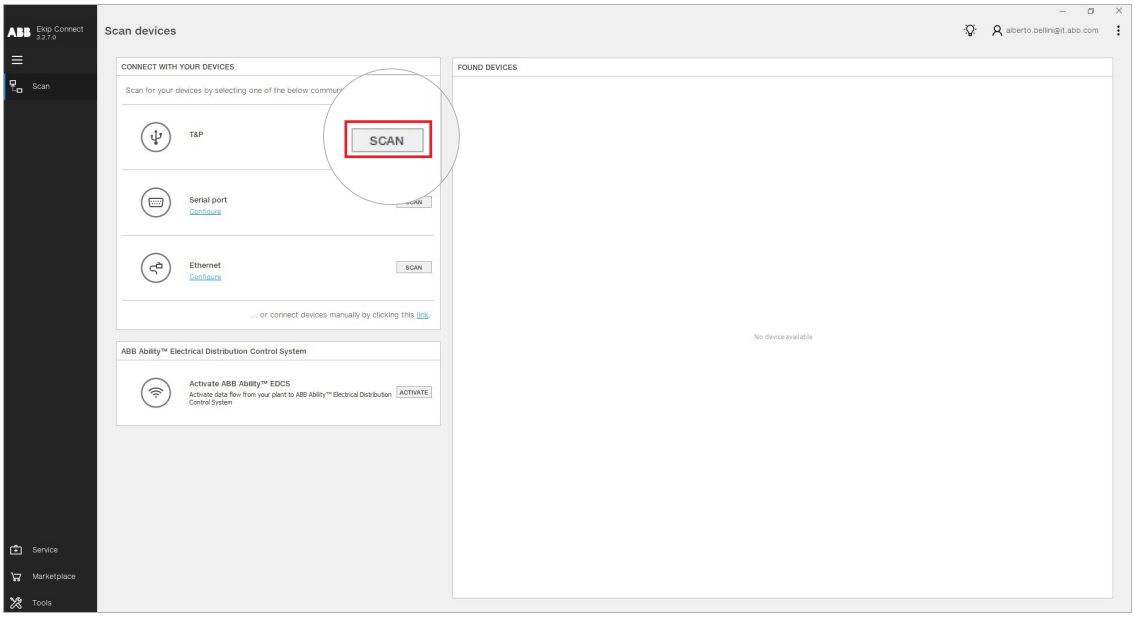
10



- **Ekip Connect 3 for XT:**

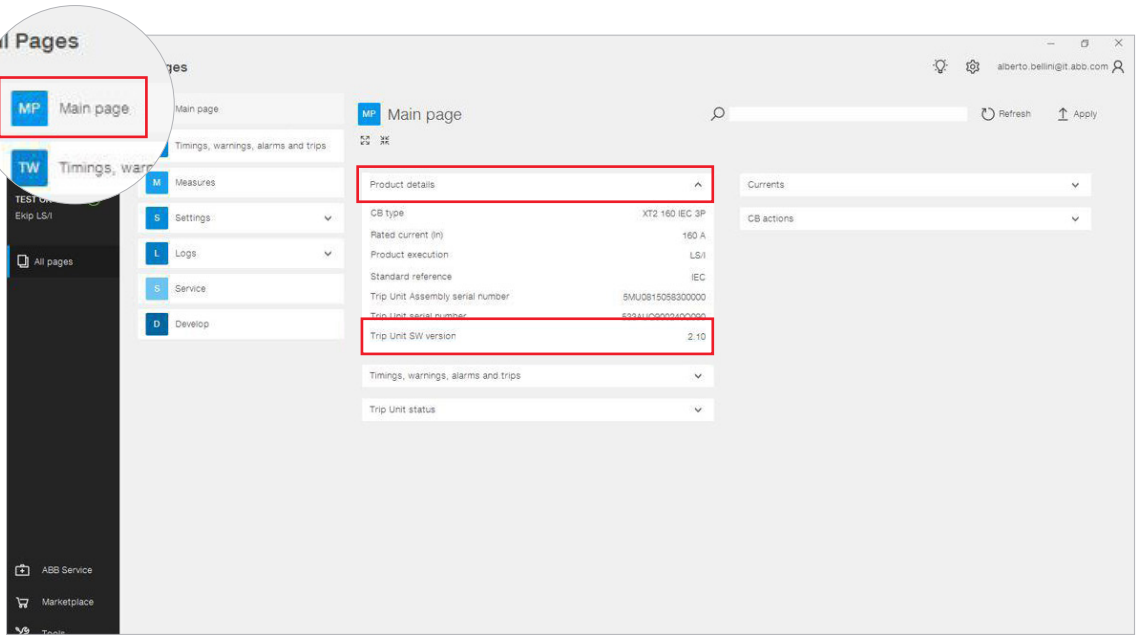
  - Open Ekip Connect 3. Connect the device to your personal computer through the Ekip Programming or Ekip T&P, then click on *Scan* 11

11




  - If the device is not found, check the cable connection within the Ekip Com Hub module and/or update the Ekip Programming/Ekip T&P drivers.
  - Click on *Main Page*, scroll through the *Product Details* page until you see *Trip Unit SW version*. 12

12



- **Front Device for M2M, IM300, EM400**
  - To verify the firmware version of the above-mentioned devices, you need to enter each device from the front panel. In these cases, is not possible to verify the firmware version with Ekip Connect 3.

- **Relion series (615/620/640)**
  - Go to on abb.com and download the relay operation manual
  - To update the firmware of the unit:
    a. Go to protection datacare
    b. Enter your device's serial number in the *Firmware Update* box.
    c. Click on *Proceed.*
    d. Download the firmware package.
    e. Follow the instructions in the package.

- **TVOC:**
  Follow the instructions provided in the document 1SFC170017M0201
  Arc Guard Modbus configuration manual

- **CSU-2:**
  Follow the instructions provided in the document 1SFC170020M0201 CSU-2
  Installation and maintenance guide

- **UFD:**
  Follow the instructions provided in the following documents
  - 1SVC560514M0000
    Installation instructions - CM-UFD.M22M Grid feeding monitoring relay
  - 1SVC560515M0000
    Installation instructions- CM-UFD.M31M Grid feeding monitoring relay
  - 1SVC560516M0000
    Installation instructions - CM-UFD.M33M Grid feeding monitoring relay
  - 1SVC560517M0000
    Instruction Sheet / Manual - CM-UFD.M34M Grid feeding monitoring relay

- **Ekip Signaling Modbus TCP:**
  Follow the instructions provided in the document 1SDH001456R0002
  Ekip Signalling Modbus TCP

- **MDC4:**
  Follow the instructions provided in the document 2NGA000502

- **MDC4-M:**
  Follow the instructions provided in the document 2NGA000503

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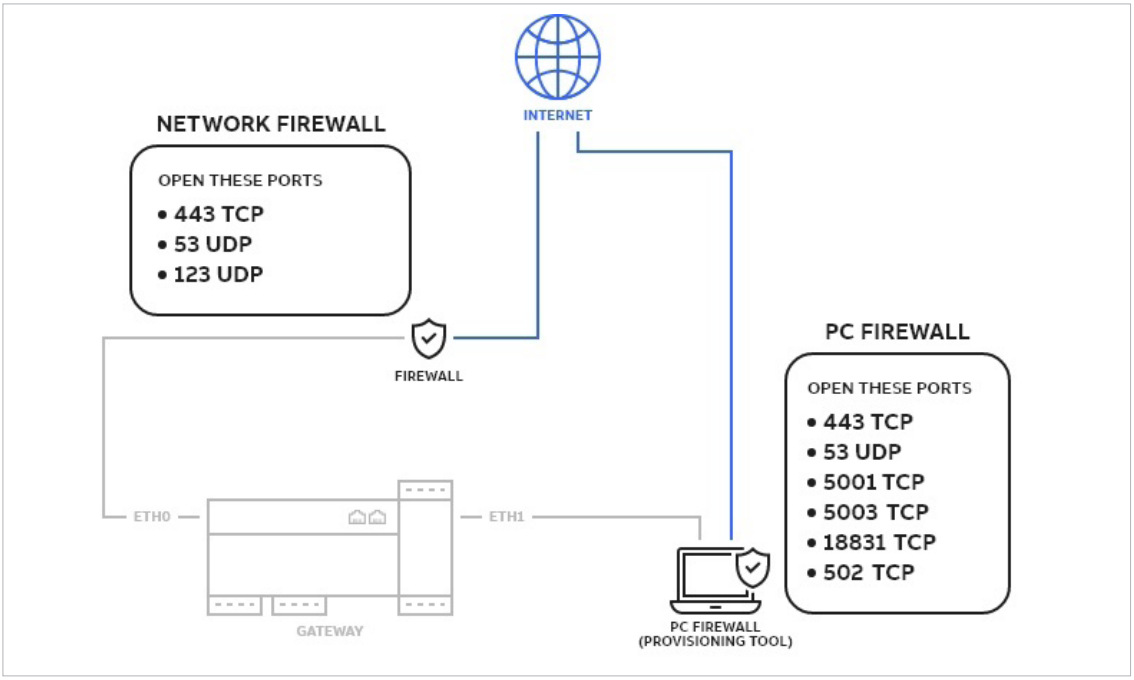
Follow the table at this link to identify the minimum firmware version of each integrated device that is compatible with ABB Ability™ Energy and Asset Manager.

**Note:**
Please verify and, if need be, update the firmware in advance. It could take a while to complete the operation.

## 05.2
## Step 2: Verify the Network and Settings before starting the Commissioning

- Sub-network definition: define enough subnets with the IP range that should be used to connect different devices. We recommend using the 192.168.2.X (from 1 to 254) setting. 13

13




- Open the following ports from the sub-network (for outgoing connections only):
  - 443/TCP: needed for the upload of the data via HTTPS.
  - 53/UDP: needed for public DNS.
  - 123/UDP: if connecting to a public NTP server or to the ABB SNTP server.

**Note:**
If your network requires that Ekip Com Hub have a static IP address, it will automatically set the DNS to 208.67.222.222. This configuration cannot be changed.

- The commissioning tool uses some ports on the sub-network for local (intranet) data communication with the following devices:
  - Port 502 TCP, Modbus TCP Communication
  - Port 69 UDP, TFTP Communication
  - 443 TCP
  - 53 UDP
  - 5001 TCP
  - 5003 TCP
  - 18831 TCP

- The above-mentioned ports need to be opened in the PC firewall, as they are needed to configure field devices (i.e., Ekip Com Hub) via the Cloud Commissioning Tool, as well as to enable data transfer from field devices (i.e., Ekip Com Hub) to the ABB Ability™ Energy and Asset manager.

**Note:**
The ports opened in the PC firewall are for outbound connections only.
No data can be received through these ports.

**Note:**

- Please ensure that the 69 UDP, 502 TCP, 5001 TCP, 5003 TCP, and 18831 TCP ports are open on the sub-network and not preventing local communication between the IP address of the laptop used for commissioning, as well as with the gateways IP address.

- Every connection to the cloud platform should be opened to enable the data transfer between the cloud, commissioning tool, and field devices. The same ports shall also be opened for the laptop used during the commissioning.

- Disable any firewall in each Personal Computer used for commissioning:
  - Register the customer's IT Manager or Plant Manager on MyABB to activate the ABB account a ABB user registration page
  - Create and Send a PDF report, showing that all ports are correctly configured.

- During the commissioning procedure for publishing devices into ABB Ability™ Energy and Asset Manager, please ensure that your firewall is properly configured, and that the requested ports are open. If you have any communication issues, please try to temporarily disable your firewall, and then enabling it again at the end of the commissioning process.

- No appointment should be scheduled with the Client until the report is delivered to the commissioning Team and the Network is properly configured.

- You should have gathered the following information before proceeding to the next steps:
  - Plant Information, e.g., by acquiring the Single Line Diagram.
  - Bill of Materials for the new delivery (see example from *Order Acknowledgment*).
  - Communication Architecture and Master and Slave Devices identification.

- No commissioning should be scheduled with the Client until you have all necessary information regarding the plant, bill of materials, and communication architecture.

# 06
# Pre-requisites at the site of provisioning

## 6.1
## Step 3: Set up the address of each device

**Relion series:**
To change the IP address or slave address of the 610/615/620 series and REX640 relays:
Please refer to the chapter *Communication settings* in the relays 🔗 operation manual

To change the IP address or slave address of REF 542plus relays:
Please refer to the chapter *Network address configuration* in the 🔗 installation manual

**MDC4 and MDC4-M**
Please follow the instructions provided in the following document:
2NGA000491 - Modbus Communication Protocol Manual

**Ekip Signalling ModBus TCP:**
Please follow the instructions provided in the following document:
🔗 1SDH001456R0002

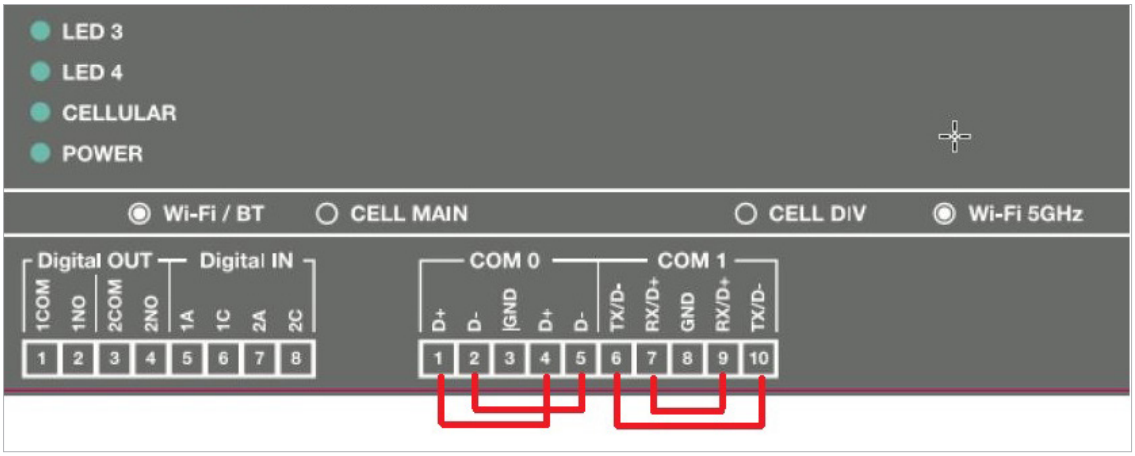
# 07
# Configuration of the ABB Ability™ Edge Industrial Gateway

## 07.1
## Serial port configuration

If serial RTU devices are connected via the RS485 serial interface, the end user shall ensure to link the COM0/1 connector to the front of the device. 14

**Short-circuit the following pins:**
- 1 (D+) to 4 (D+)
- 2 (D-) to 5 (D-)
- 6 (TX/D-) to 10 (TX/D-)
- 7 (RX/D+) to 9 (RX/D+)

14




Based on its factory configuration, COM 0 supports ModBus addresses ranging from 2 to 127.
COM 1 supports ModBus addresses ranging from 128 to 247.
Please refer to the *User manual - ABB Ability™ Edge Industrial* Gateway for further information.

On the homepage, after logging in, you will find the *Configure the gateway* configuration button.
You need to connect to the ETH0 gateway port to configure it. 15

**COM 0:**
Termination resistor: Already present.
Fail-safe resistors: Already present (1.21 kΩ)

**COM 1:**
Termination resistor: If required, to be connected using pins 9 and 10.
Fail-safe resistors: To enable using the dip switch, as written in the manual.

## 07.2
## Discovery of the gateway for configuration

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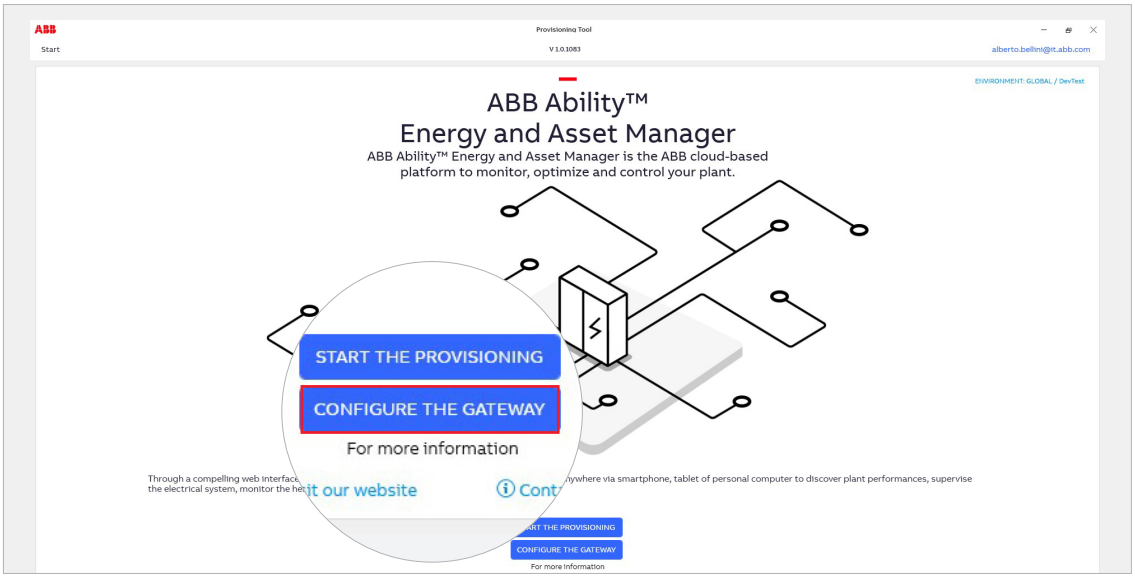
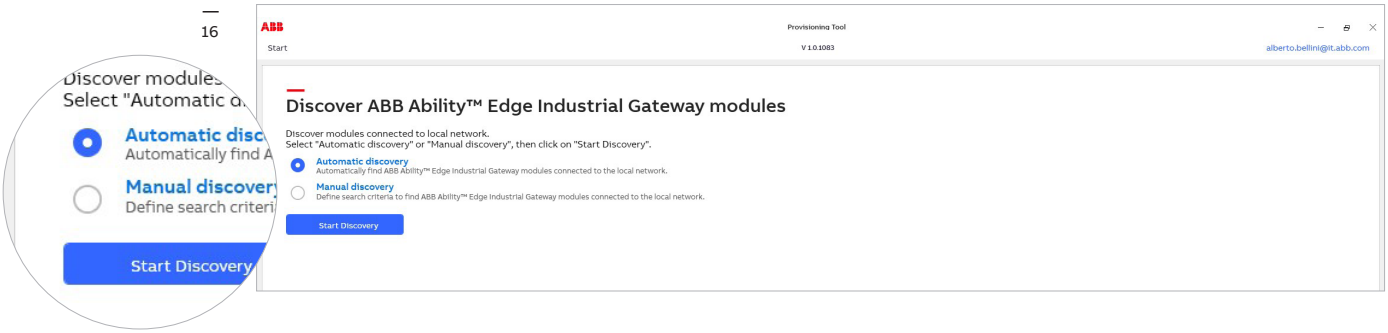



After clicking on *Configure the gateway*, the automatic / manual discovery page opens. 16

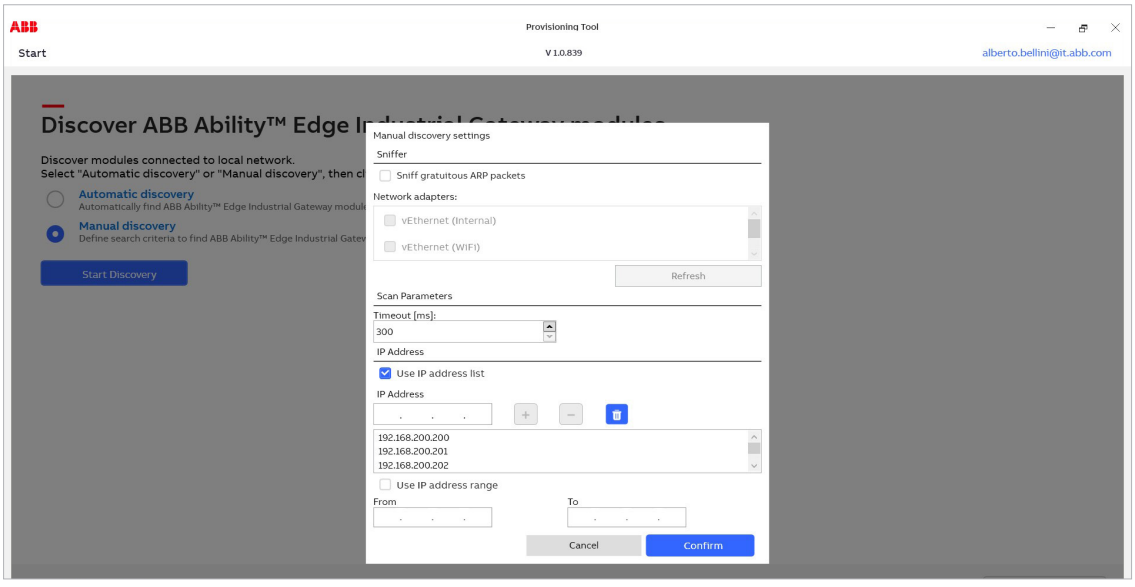
16



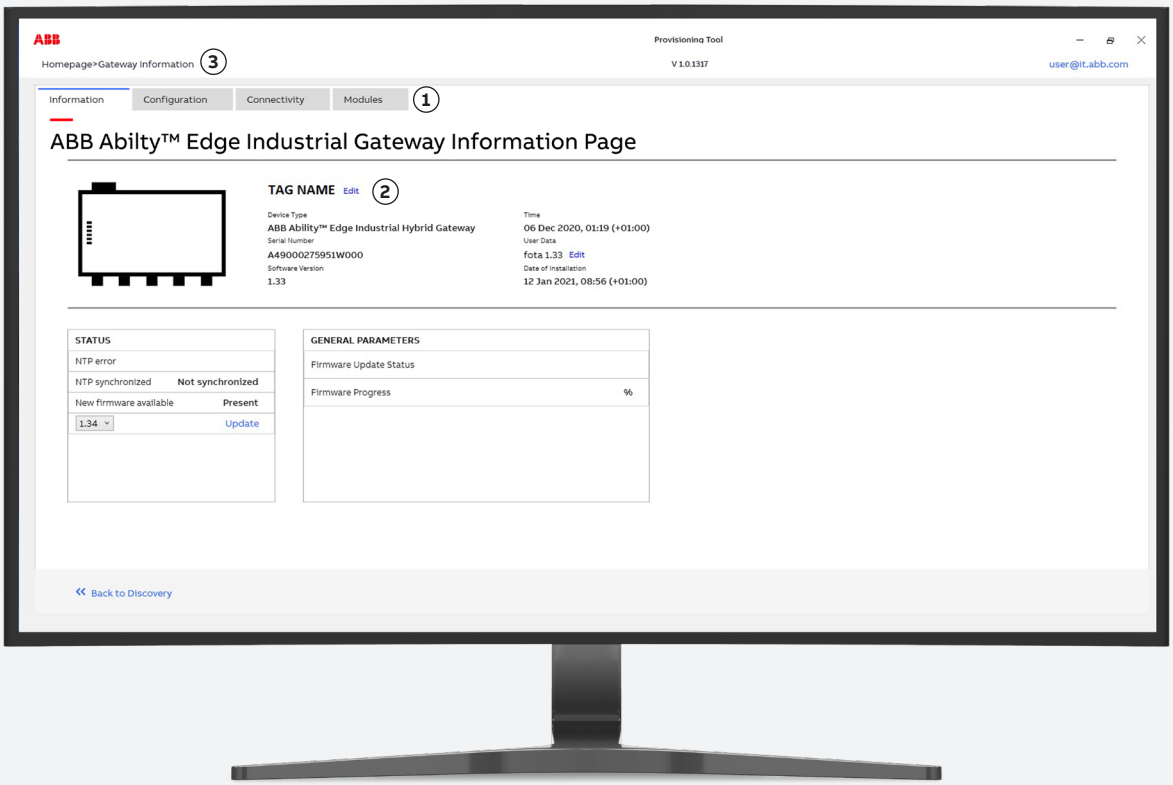

**After clicking on** *Start Discovery:*

- If you have selected *Automatic discovery*, the auto-scan process starts, with a visual feedback on the status of the operation (similar to the gateway discovery for provisioning).
- f you have selected *Manual discovery*, a window with the network scanning options pops up. 17

17

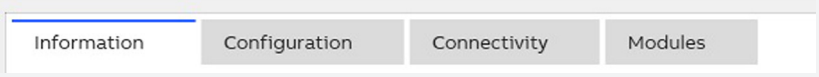


# 07.3
# Navigation of the information and configuration area

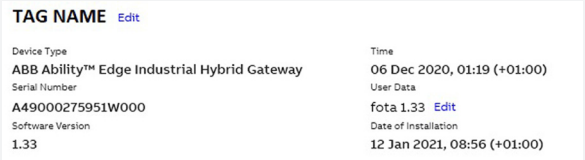



1 **Navigation menu**
This is the main navigation menu, through which you can reach the main section of the gateway functions.

**INFORMATION:** this section contains information on the gateway status and firmware version. From here, you can update the firmware when a new version is available.
**CONFIGURATION:** from this section, you can configure the date and time settings, the NTP parameters, and the gateway ownership.
**CONNECTIVITY:** in this section, you can set-up the connectivity parameters for all devices, Internet, and the webserver.
**MODULES:** this section contains all settings of additional modules that can be installed in the gateway.




2 **Editable fields:**
From this section, you can edit the gateway tag name as well as the optional text field.




3 **Breadcrumb:**
This section gives you a clear idea of where you are

# 07.4
# Configuration section

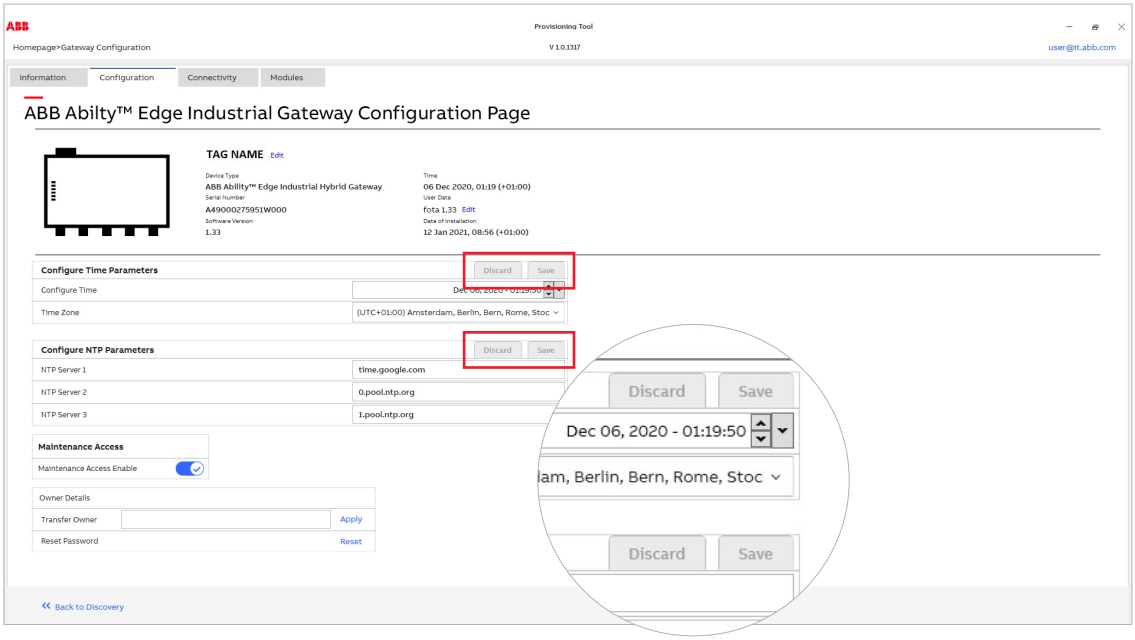
**The configuration section** contains the following elements:

- Set time in the gateway.
- NTP Configuration.
- Time zone.
- NTP Server 1.
- NTP Server 2.
- NTP Server 3.
- Changing owners and resetting the owner password. (Owner details for Local view version of the gateway).

**Only for Local** view version

**How it works:** *Discard* **and** *Save* 18
In each section, you may usually find both the *Discard* and *Save* buttons, which can be used to discard the changes you made or save the changes you made to the gateway.

18

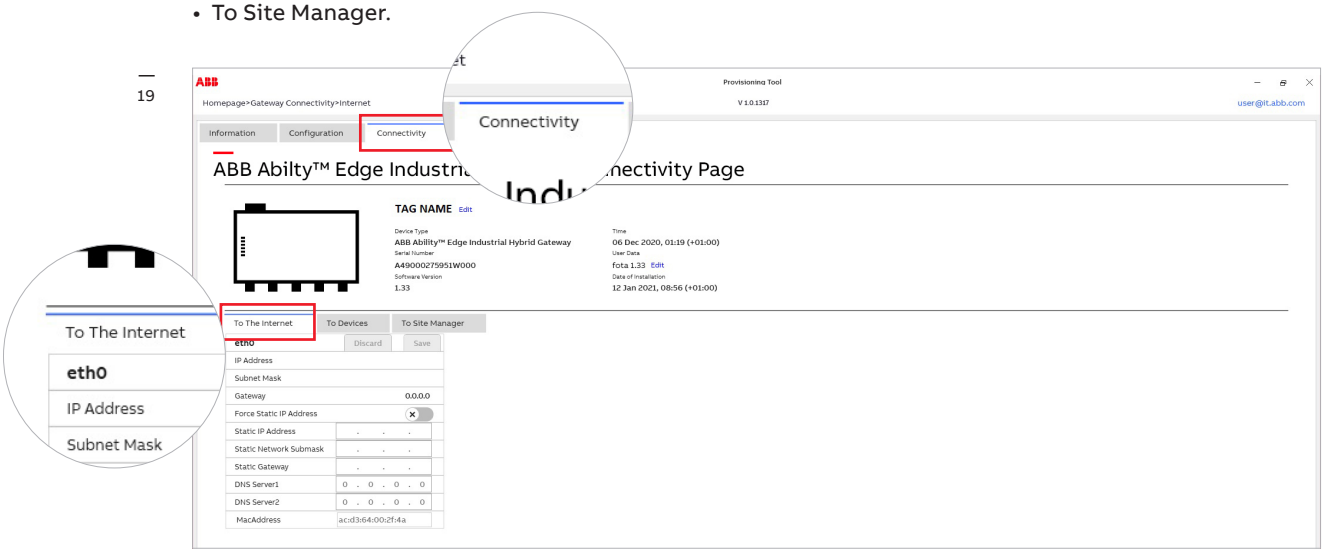


## 07.5
## Connectivity section

**By clicking on the** *Connectivity* **section on top of the page, the program will show up three tabs redirecting you:** 19

- To The Internet (default view).
- To Devices.
- To Site Manager.

19

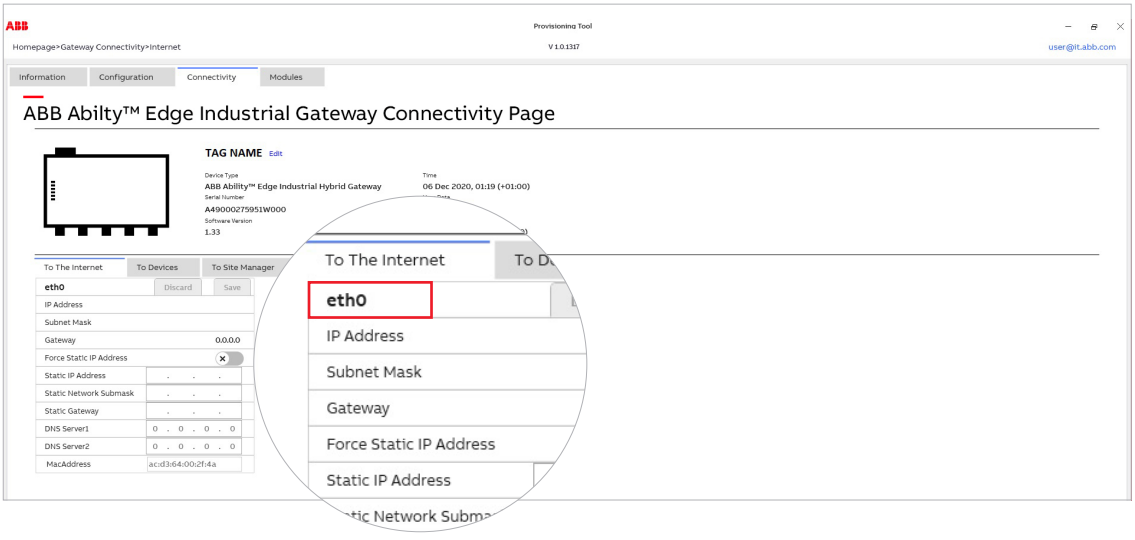



**Only for Local** view version

## 07.5.1
## To The Internet > Ethernet 0

By clicking on the *ETH0* button, the system will open the following view. 20

20



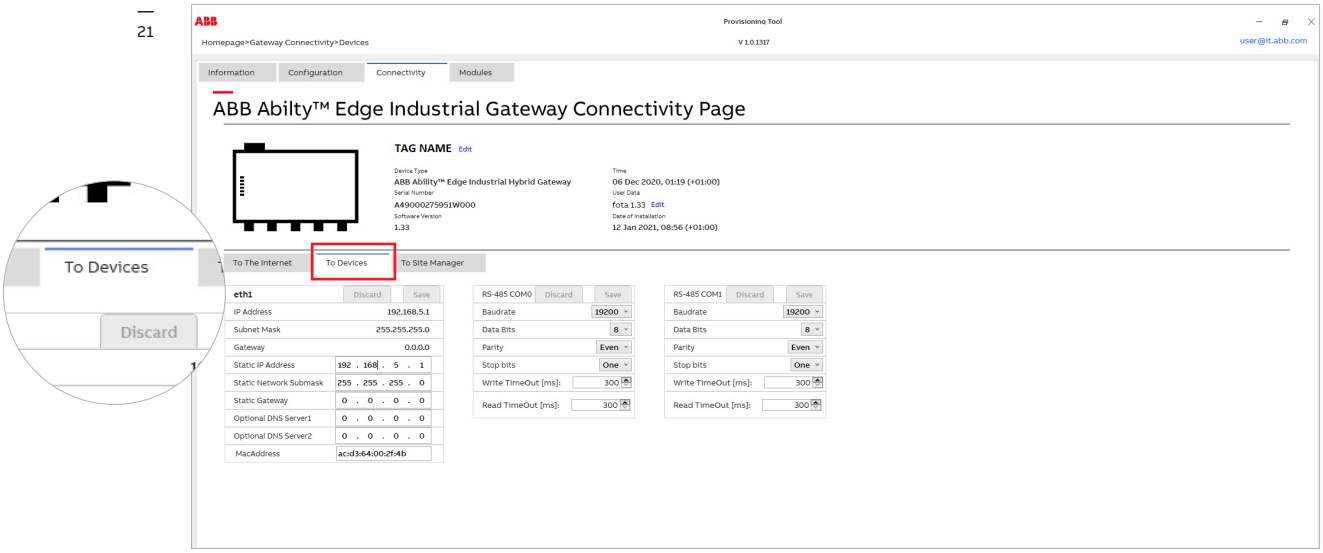

**Visible fields:**
IP Address
Subnet Mask
Gateway

**Editable fields:**
Force Static IP Address [ON/OFF]
Static IP Address
Static Network Mask
Static Gateway
Optional DNS Server 1
Optional DNS Server 2

## 07.5.2
## To Devices

If you click on the *To Devices* tab, the system will open the following settings. 21

21

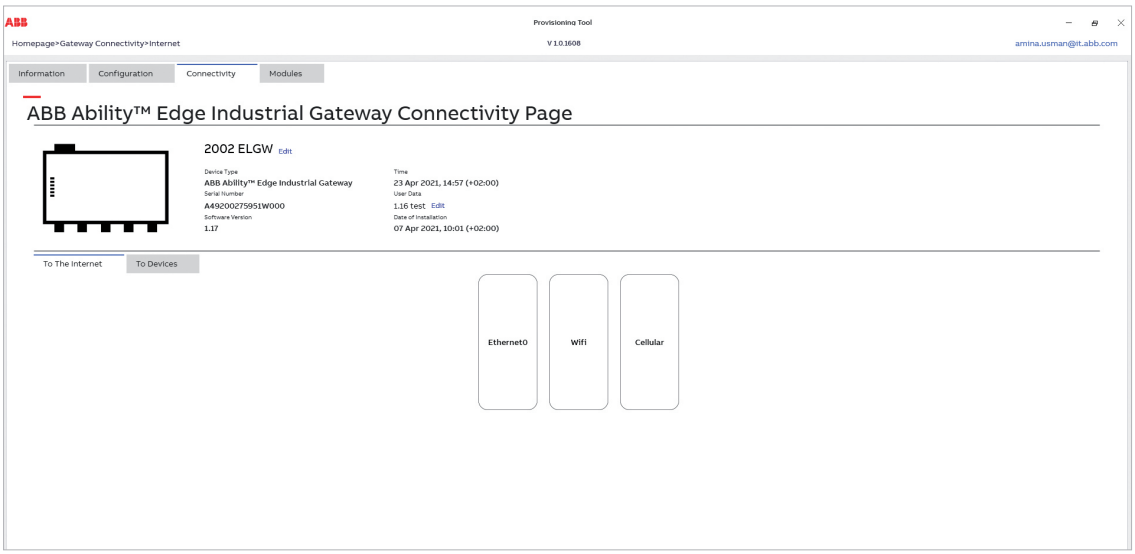



**Only for Cloud** connected version

## 07.6
## Connectivity section
## Only for Cloud Connected version

By clicking on the *Connectivity* section on top of the page the software will show three selectable buttons *Ethernet0, WiFi and Cellular.* 22

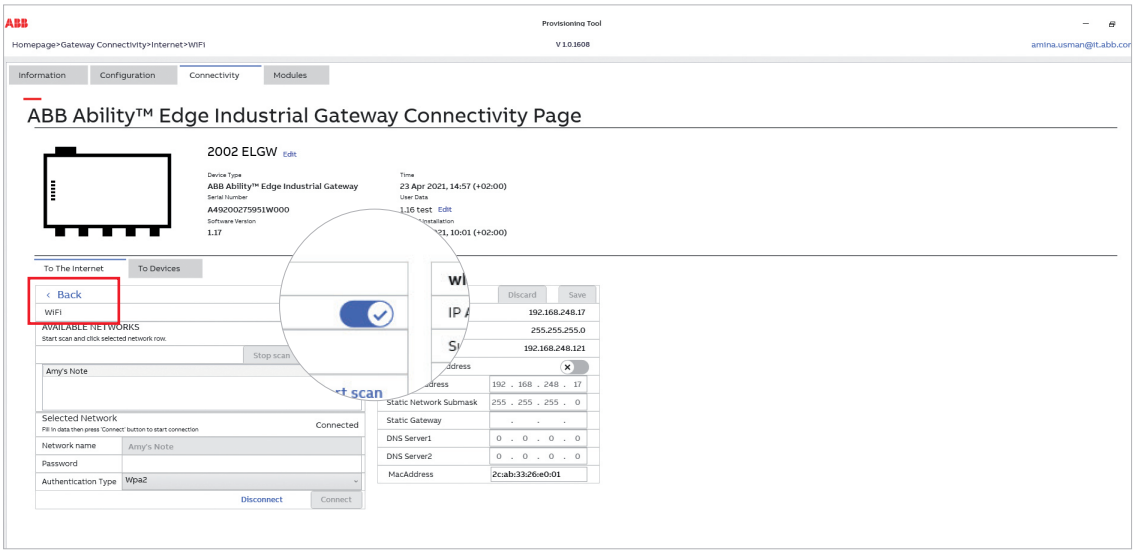
22



## 07.6.1
## To The Internet > WiFi

Selecting *WiFi* you'll be able to change the WiFi settings of the gateway. 23

23



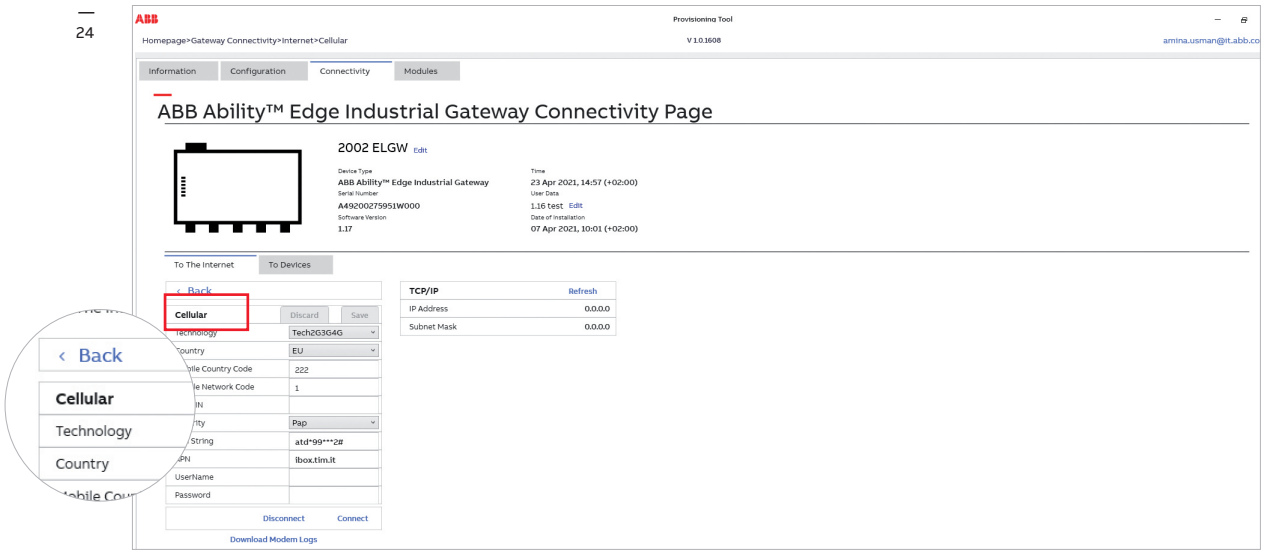

**Visible fields:**
Connected networks
IP Address
Subnet mask
Gateway
Mac Address

**Editable fields:**
Scan for WiFi networs
Force Static IP address
Static subnet mask
Static Gateway
DNS Server1
DNS Server2

## 07.6.2
## To The Internet > Cellular

Selecting *Cellular* you'll be able to change the cellular settings of the gateway. 24

24



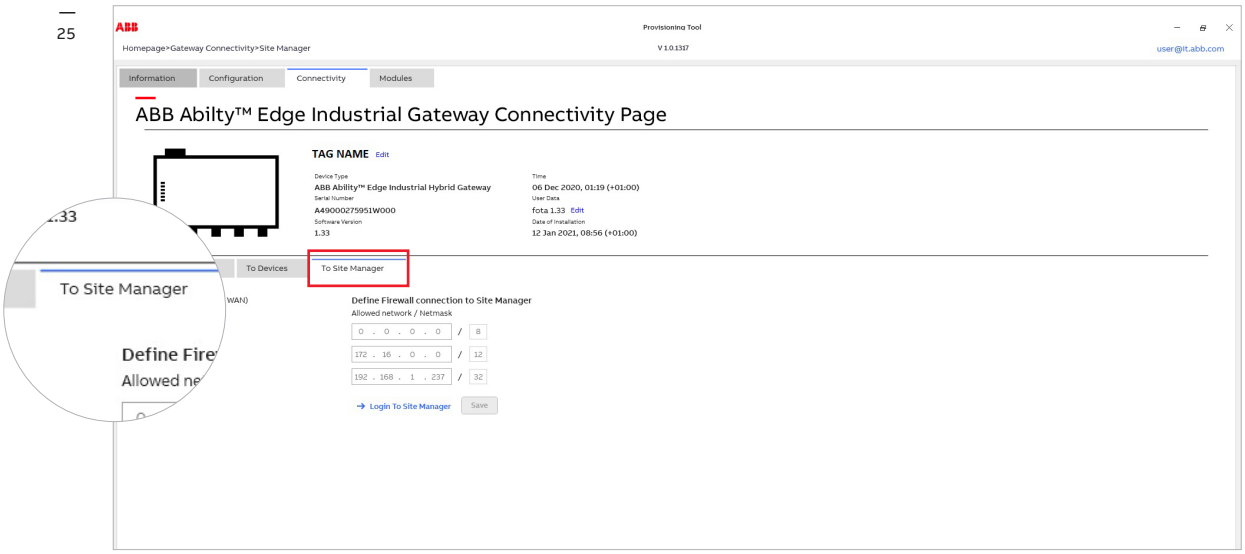
**Visible fields:**
IP address
Subnet Mask

**Editable fields:**
Technology
Country
Mobile country code
Mobile Network code
SIM PIN
Security
Dial String
APN
UserName
Password

## 07.7
## To Site Manager

By clicking on the *To Site Manager* tab, the system will open the following settings. 25

25




**Editable fields:**

- Eth0 (Internet / WAN):
  If you check this box, you will activate outbound communication from the webserver to the ET0 port.

- Define firewall connection to Site Manager, allowed network / Netmask:
  In this section, you can enter up to three networks that can connect to the Site Manager.

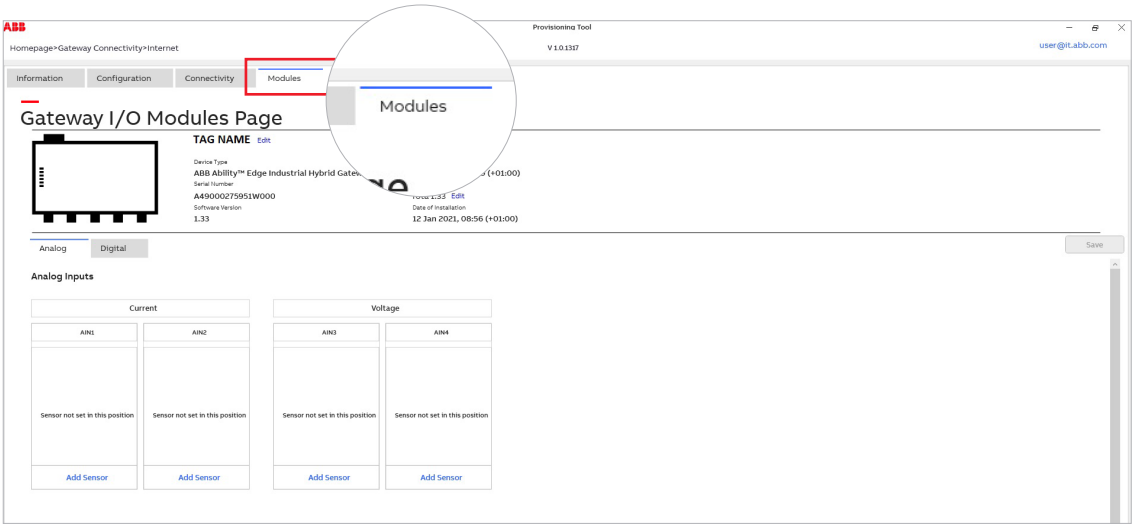
## 07.8
## Gateway modules page

If you click on the *Module* item on the menu, you can access the modules configuration page. 26
By clicking on *Modules* button, the system will bring you directly to the I/O settings.
The ABB Ability™ Edge Industrial Gateway can be accessorized with digital and analog inputs and outputs. The following images show the configuration section of these I/O modules.

### 07.8.1
### Full page with analog I/O

In this section, you can specify a sensor type according to the one you have chosen to connect to the analog input. You can also edit the I/O modules settings to fit the input type and unit to the connected sensor.

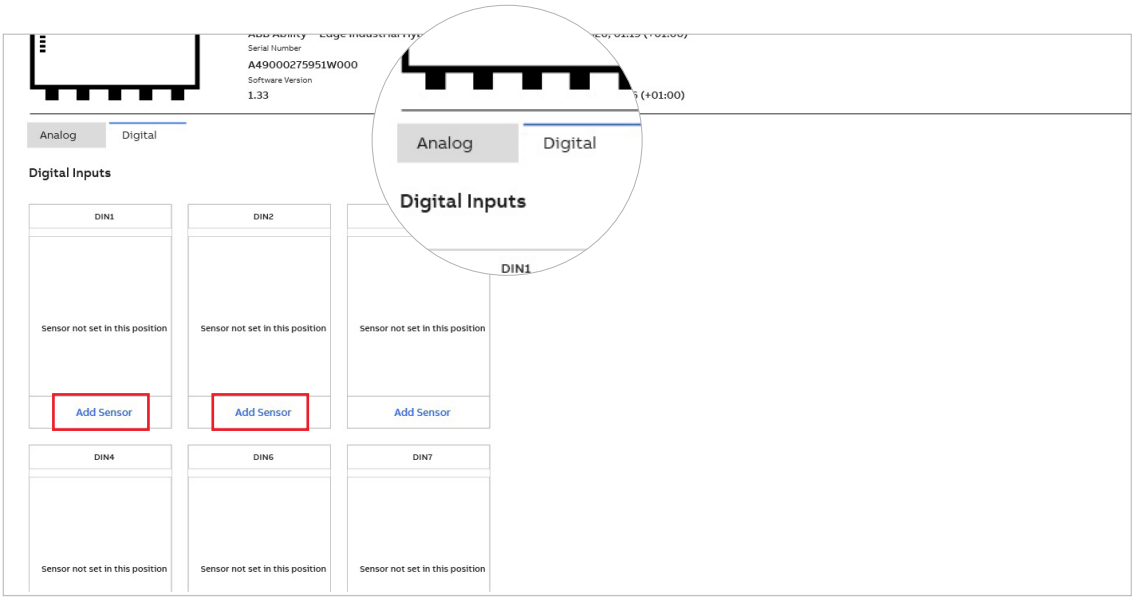
26



## 07.8.2
## Digital I/O section

In this section, you can add digital sensors and edit their name, pulse weight, and unit. 27

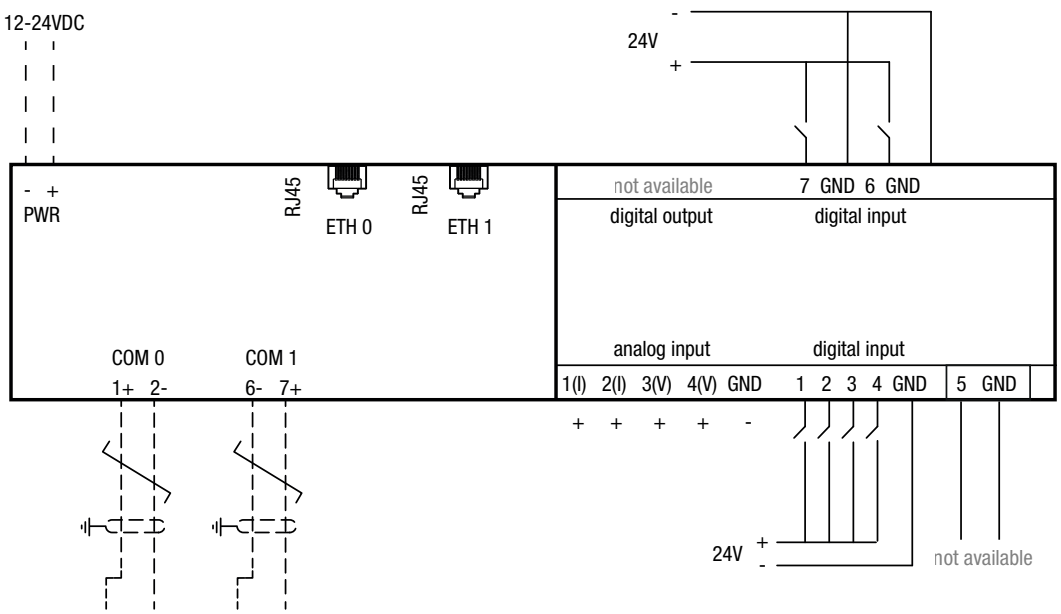
27




## 07.8.3
## I/O contacts wiring

The scheme below shows how to wire the input and output contacts of the gateway. 28

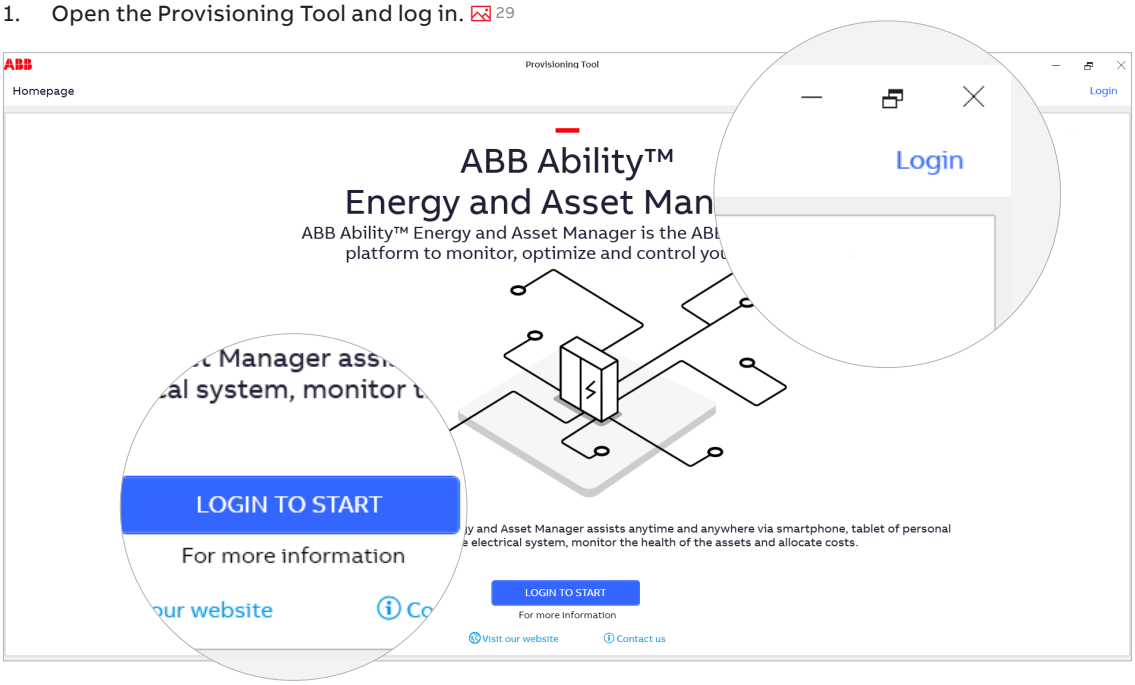
28



# 08
# Step-by-step provisioning guide

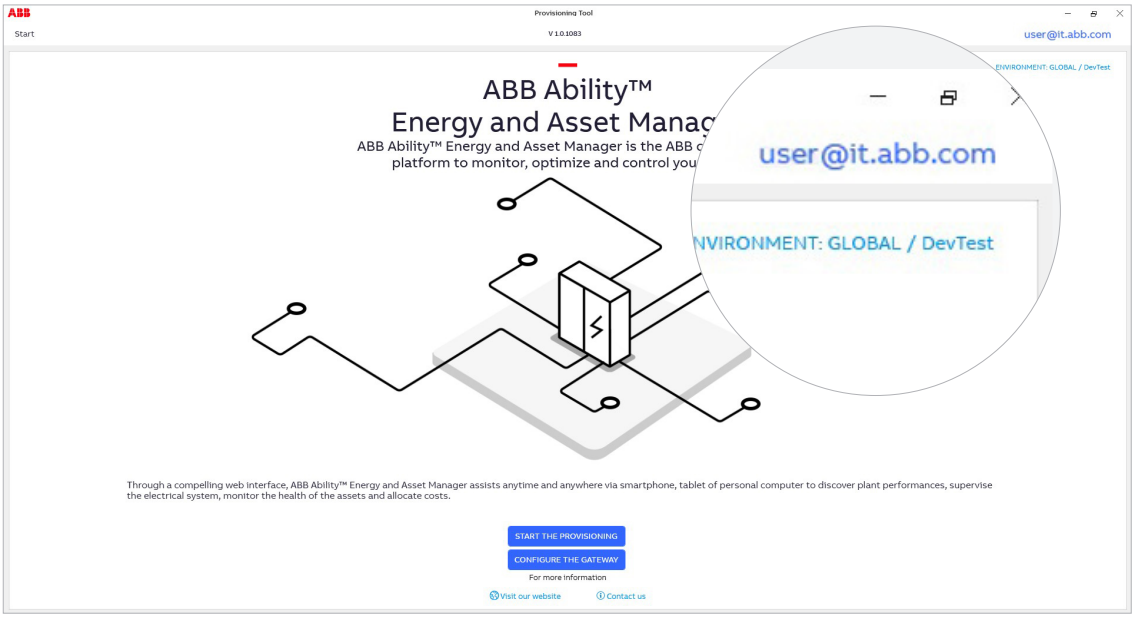
1. Open the Provisioning Tool and log in. 29

29




2. After logging in, you will see the following page. 30

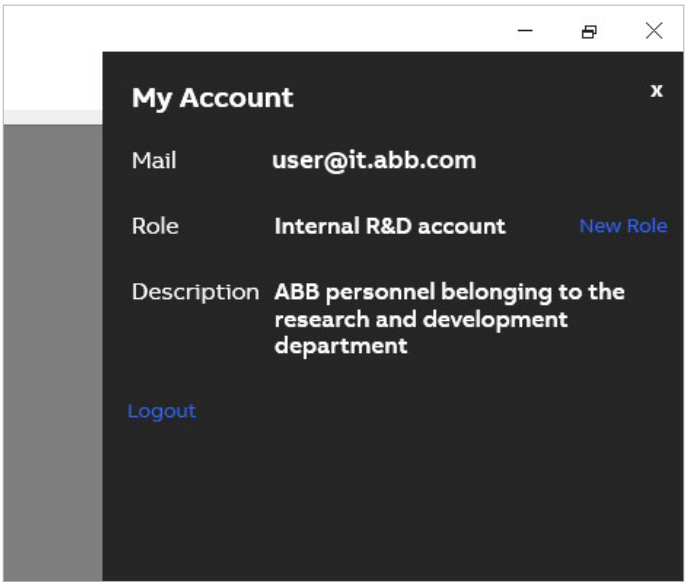
30



By clicking on your username, on the top-right corner of the page, you can manage your account. You can also log out and request a new role.

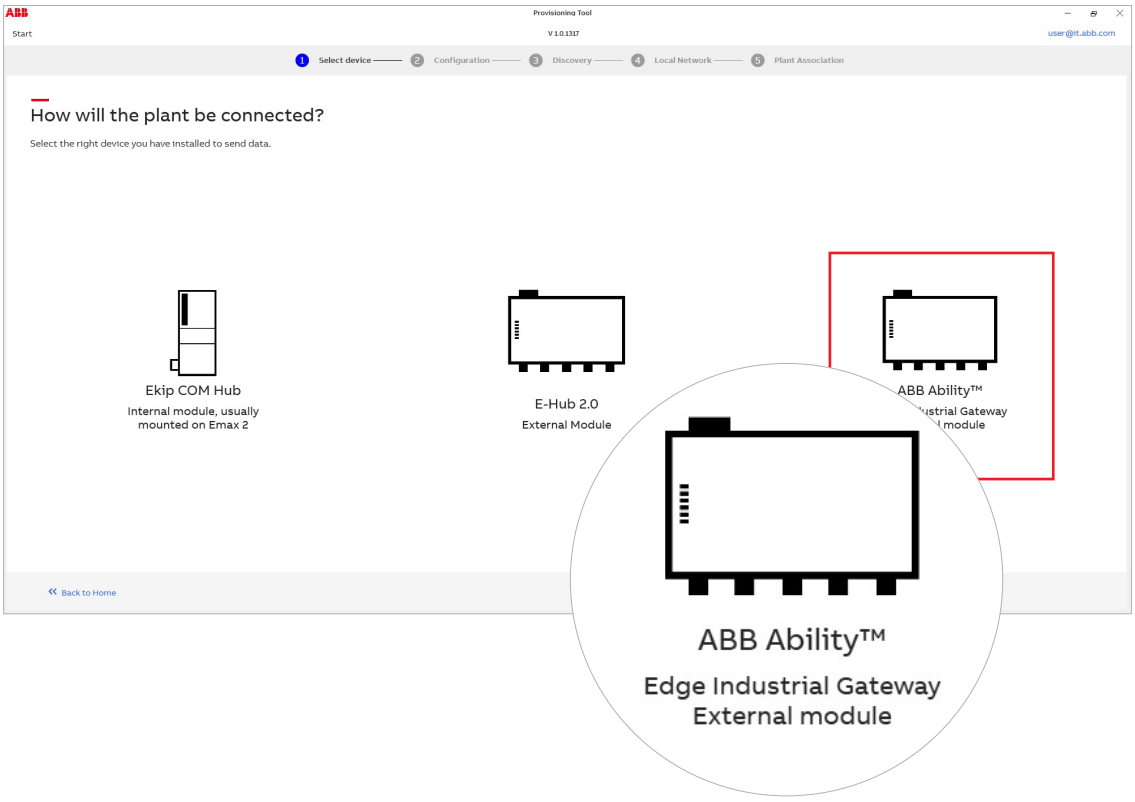
**Account management section** 31

31




3. Click on *Start the provisioning* on the homepage, then click on the *ABB Ability™ Edge Industrial Gateway* tab to start the unit configuration process. 32

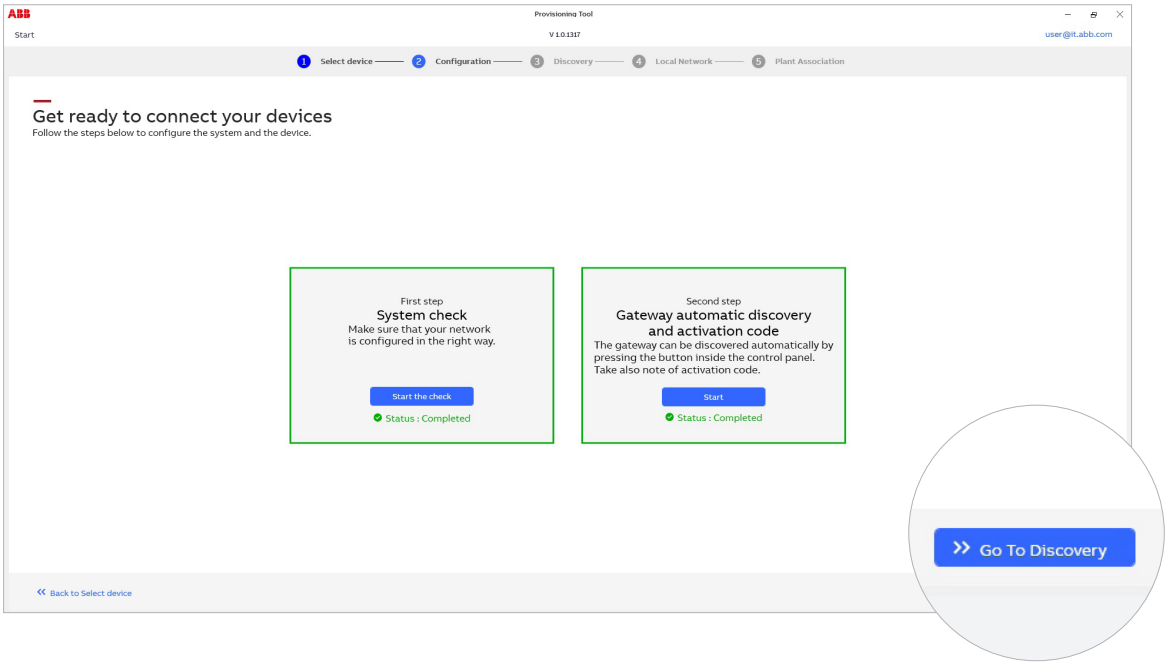
32



4. In order to ensure that ABB Ability™ Energy and Asset Manager will work properly, you must follow these two steps to check whether the system and the device are set correctly:
   - System check
   - Gateway automatic discovery

**Once you have done so, click on** *Go to discovery* 33

33

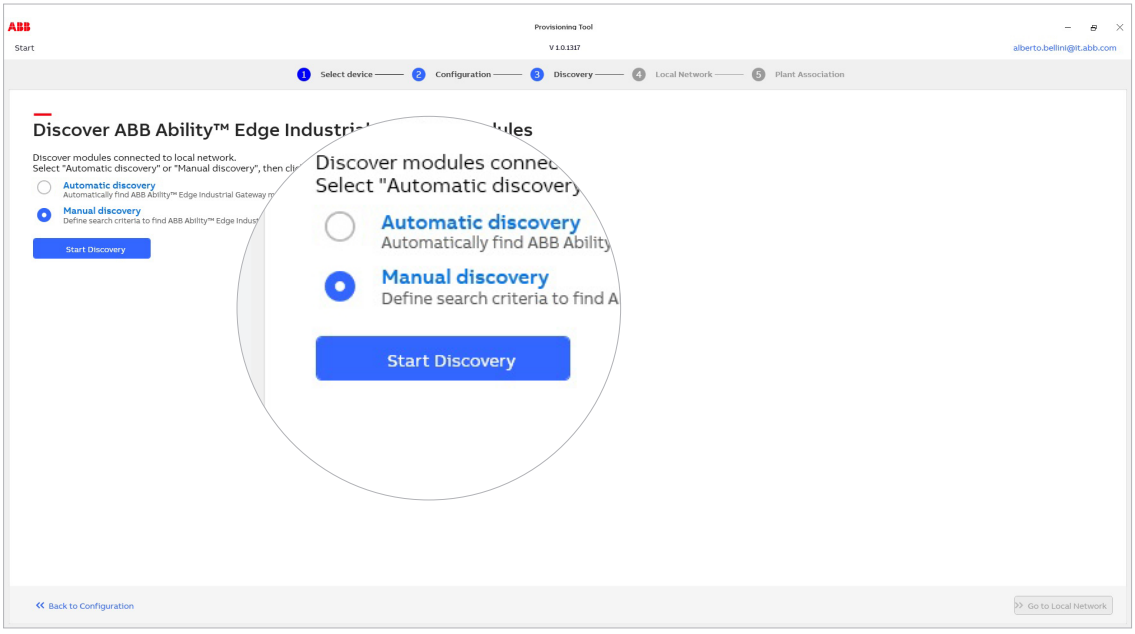



5. **AUTOMATIC DISCOVERY:**
   With Automatic discovery, the provisioning tool will scan the whole ModBus network, looking for devices to provision.

   **MANUAL DISCOVERY (recommended)**
   With Manual discovery, you can either provide the list of specific Modbus RTU or IP addresses or narrow the scan down to a specific range of addresses.

It is recommended to use *Manual Discovery*.
**In the new page, select** *Manual Discovery* 34

34

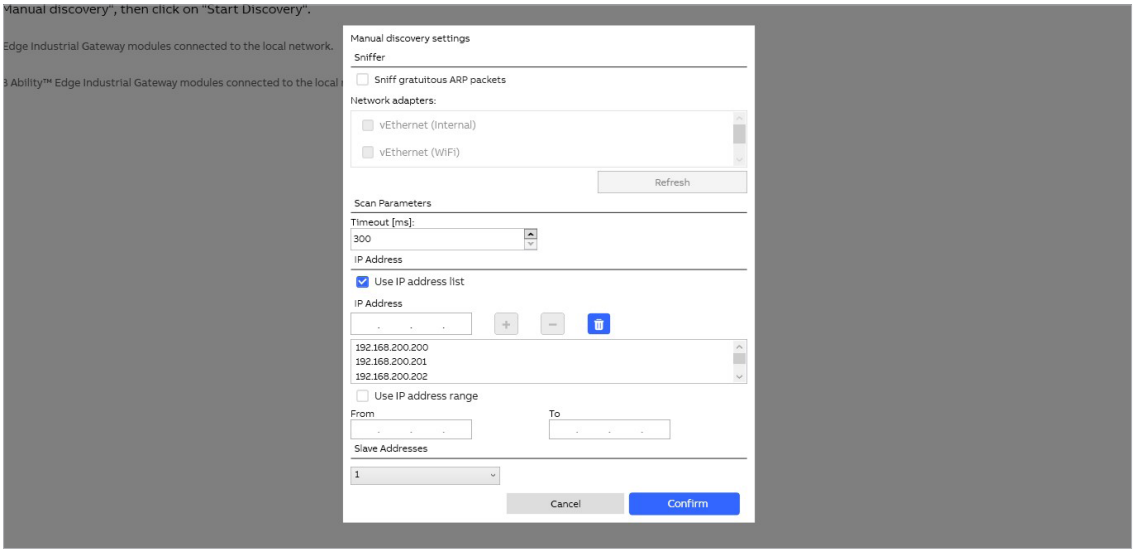


6. Tick the Sniff gratuitous ARP packets box. Enter the ABB Ability™ Edge Industrial gateway module device IP address and click on the plus icon. Enter the device static IP address for each device connected via Modbus TCP and click on plus icon.

   Alternatively, enter the IP address range from which you wish to scan for those devices. In the slave address drop-down menu, you can select the slaves addresses that are connected via the ModBus RTU communication protocol.

**Click on** *Confirm* 35

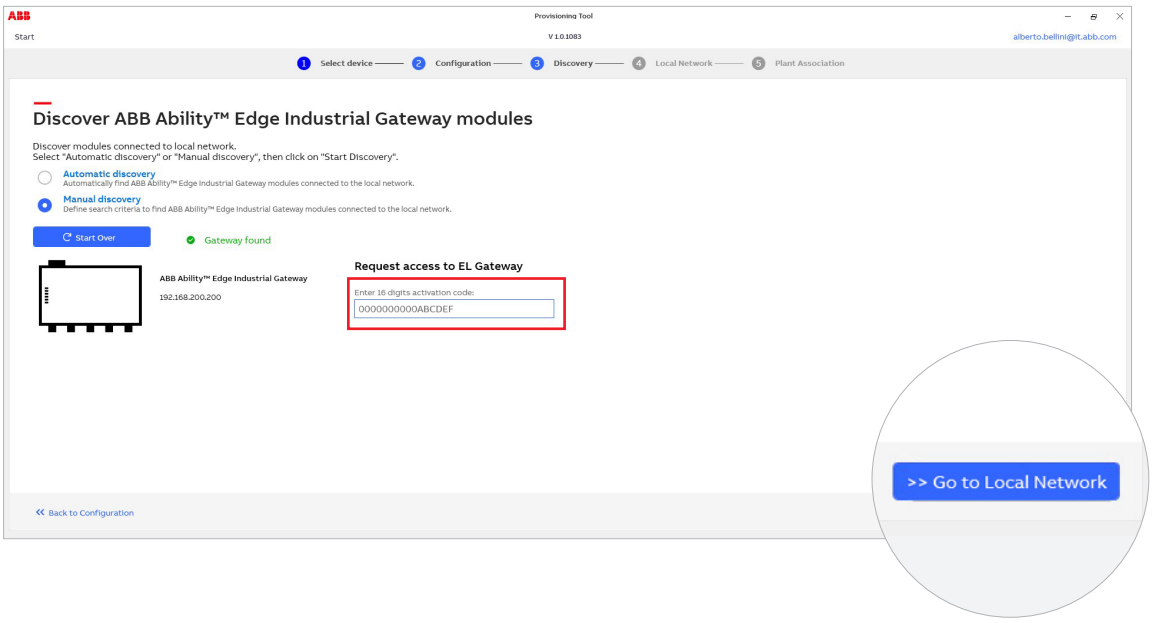
35




7. Once the ABB Ability™ Edge Industrial Gateway module is found, enter the **16-character activation code**, which you can find printed on the left side of the devices. The code will be automatically validated as you enter it. When the code is validated, a green tick will appear and the dedicated button to move on with the process will become available.

**Click on** *Go to Local Network* 36

36



8. You will now be able to see all the devices connected to the same network with the ABB Ability™ Edge Industrial Gateway.

   **For each device, you can:**
   - Set the Tag Name, if not already entered.
   - Set it to be on one of the main feed lines (e.g., an incomer breaker).
   - Set it to be on a generator line (e.g., diesel generator, PV system, turbine…), if it must exchange data with the ABB Ability™ Site Manager.

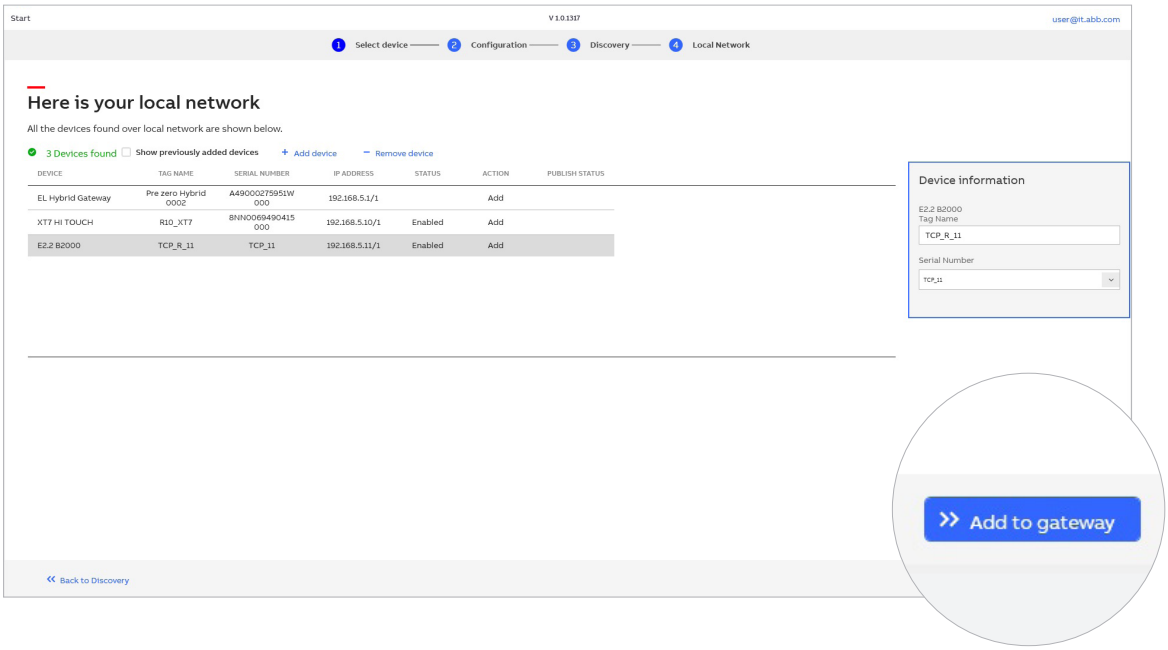
**Note:**
At least one Main or Generator device must be set inside a plant.

**Only for Local** view version

# 08.1
# Step-by-step provisioning guide only for local view version

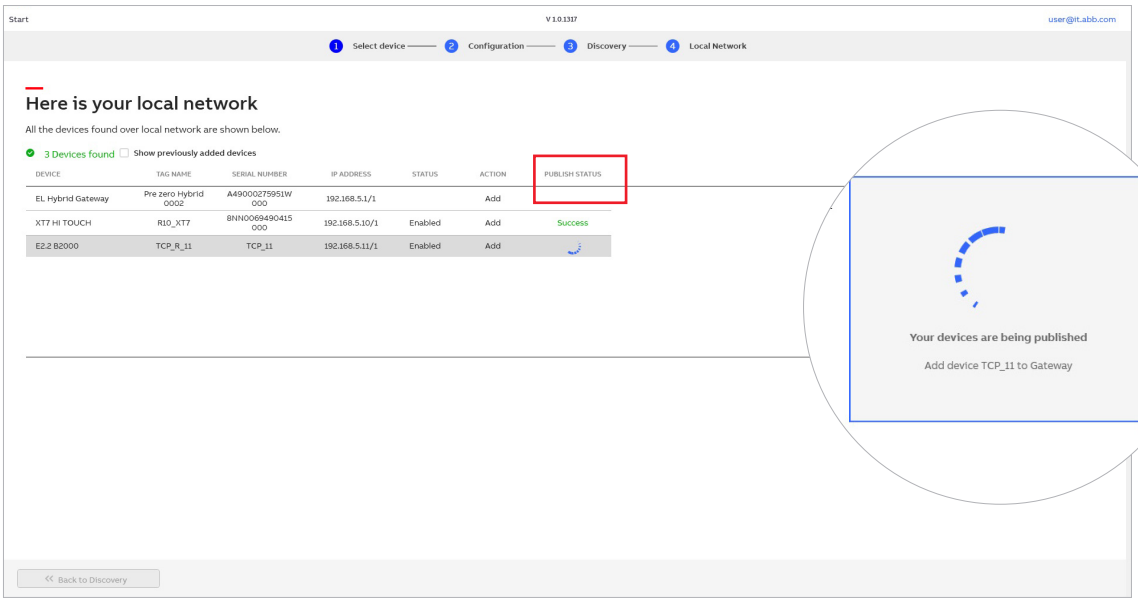
Once all the settings on each device have been completed, **click on** *Add to gateway* 37

37



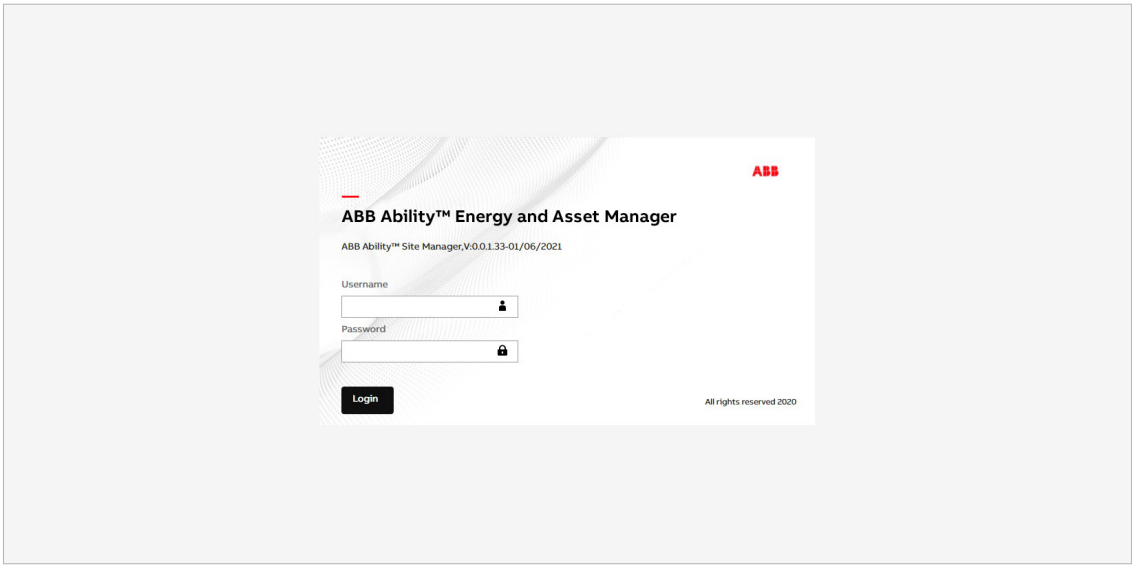
After clicking on Add to gateway, the tool will initiate provisioning to the local gateway. A progress status is available on the right-hand side of the screen. On the *Publish status* column of the device list table, you can see the publishing results. 38

38




After the provisioning process is completed, the commissioning tool will automatically open the default internet browser and access the ABB Ability™ Energy and Asset Manager webserver view. 39

39

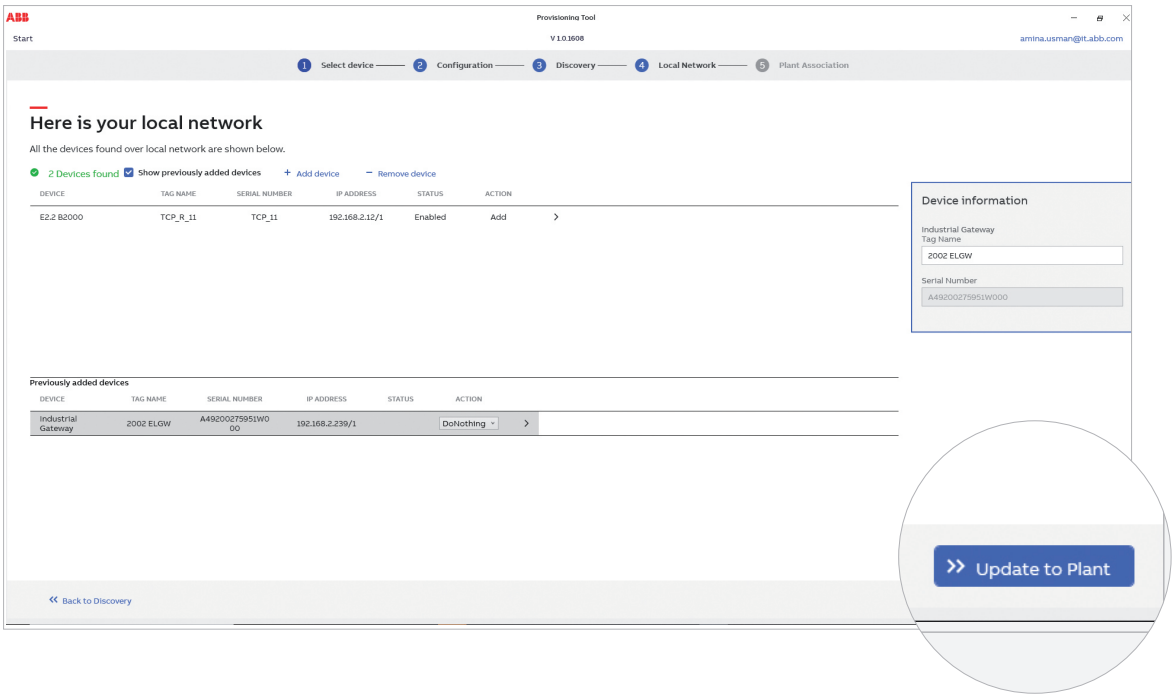


**Only for Cloud**
connected version

# 08.2
# Step-by-step provisioning guide only for Coud connected version

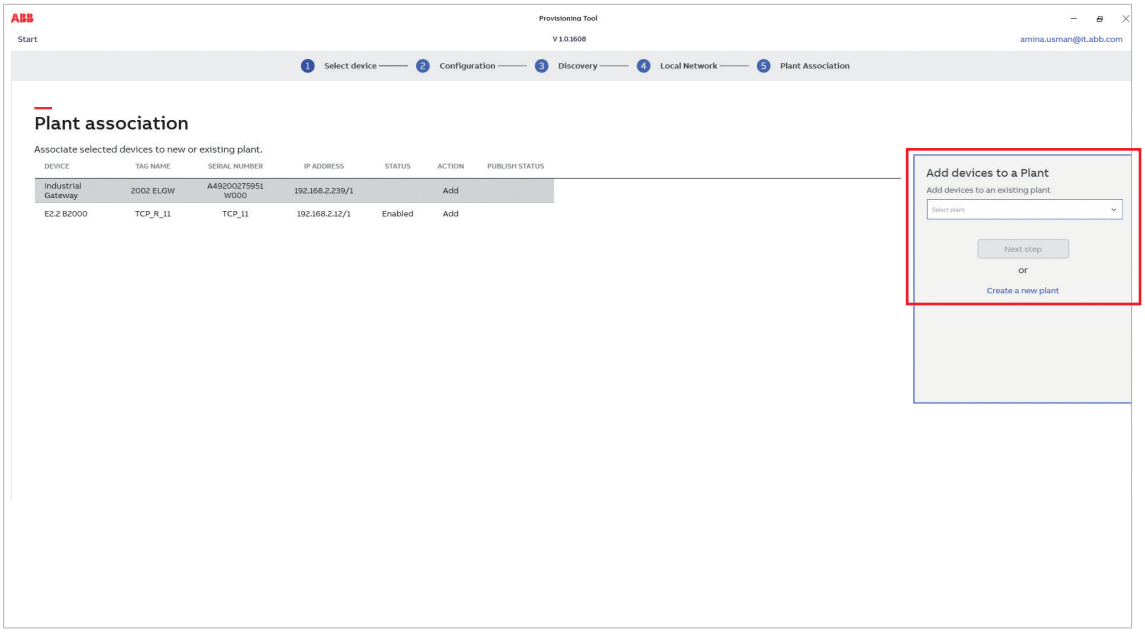
Once all the settings on each device have been completed, **click on** *Add to Plant* (or *Update to Plant* if you are updating a pre-existing plant) 40

40



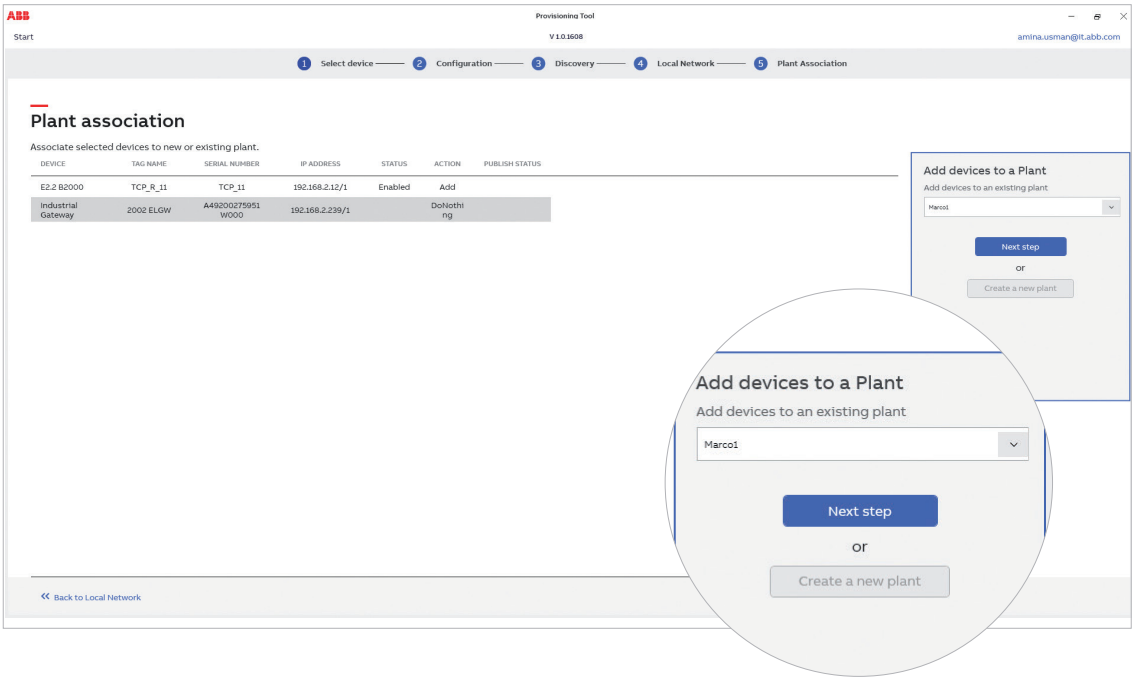

After clicking on Add to plant the tool proceed to step 5, where you can select to **wich plant you can add the devices**. There are two possibilities: you can add the device to an existing plant (Previously provisioned) or you can create a new plant. 41

41



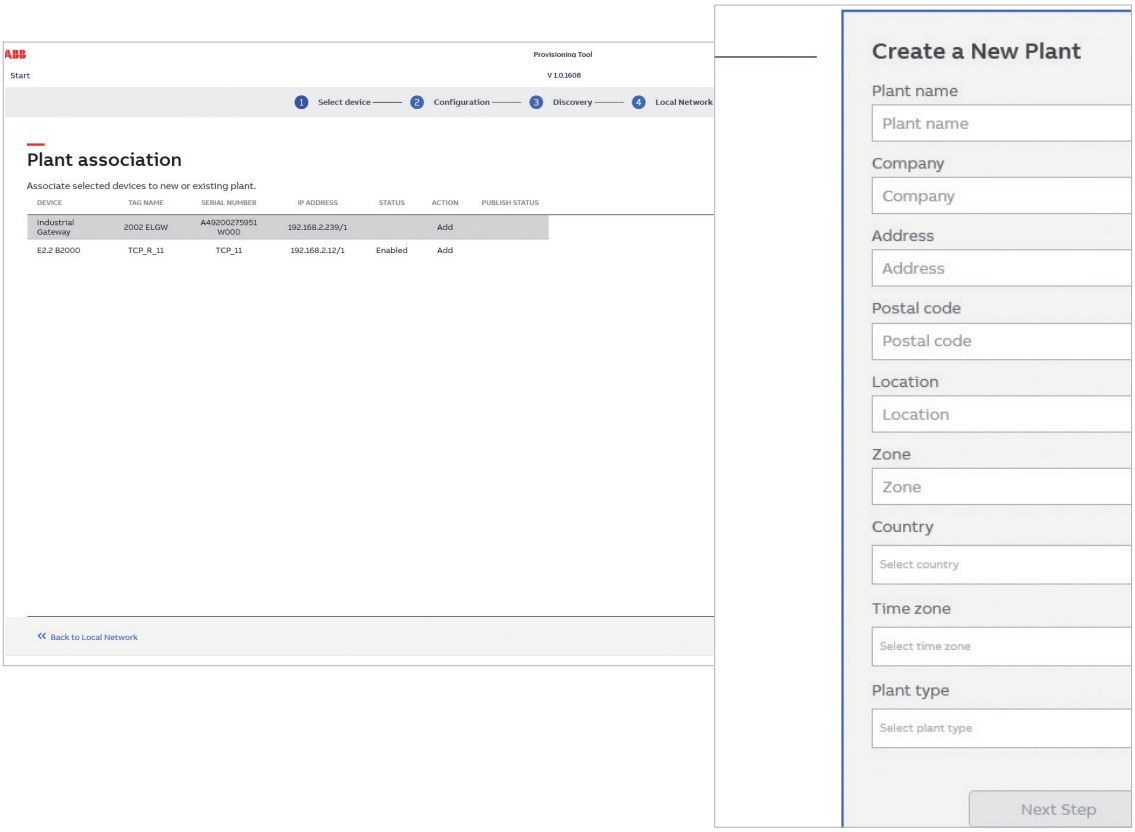
Clicking on the drop-down list you can select one of the plants that are available for your account. You can add devices to a plant if you are Owner, Manager, Staff, Maintainance Resp of that plant. **Click** on *Next step* to proceed and publish the devices. 42

42



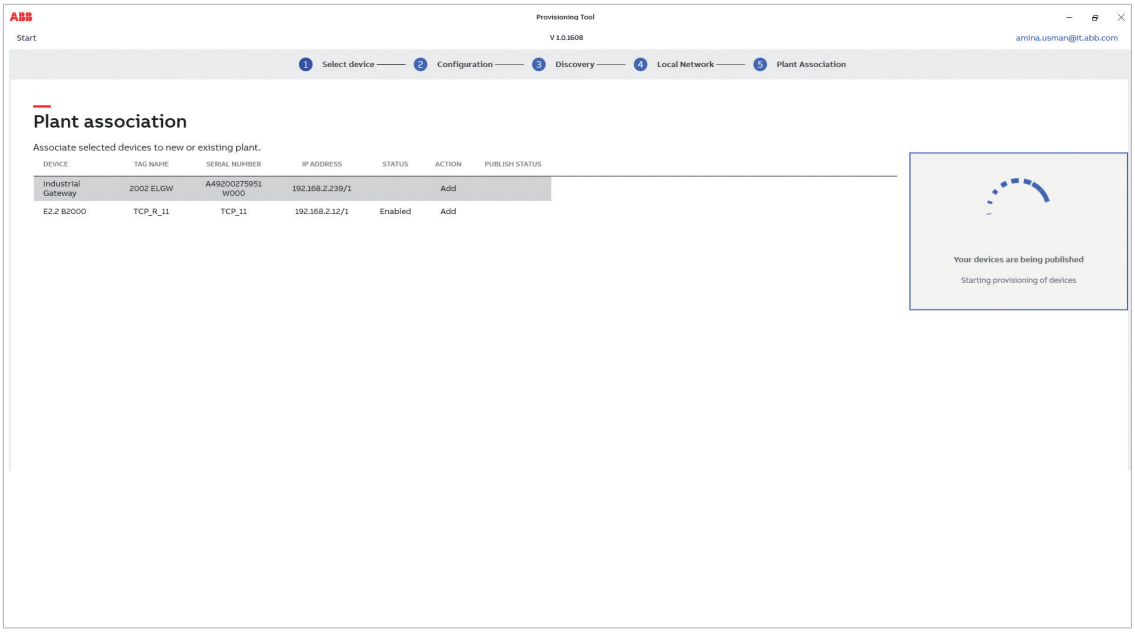

**Selecting** *Create New Plant* will let you specify the details of the site and plant. **Click** on *Next step* to proceed and publish the devices. 43

43



The provisioning tool will show the progress of the cloud publishing. At the end of the process the provisioning tool will authomatically open your default browser and you'll be redirected to the *ABB Ability™ Energy and Asset Manager web platform*. 44

44




Only for Cloud connected version

## 08.3
## Update the device status of an existing plant

It's possible to update the status of the gateway and the field devices of an already provisioned plant, connecting the provisioning tool to to the gateway.

Follow the provisioning guide until you reach the step 4.

You can chose the options in the "Local network" page.
The options will be available if we check the previously added devices from the top in CCT.
The selection will be applied only after you press the "Update to plant" button.

The available options are:

- **Do nothing (default selection):**
  the device will not be updated or modified. Select this option if you want to keep the device in the state it was until now.
- **Update:**
  select this option if you want to change the device-specific information that will be transferred to the platform (e.g. TagName, IP address)
- **Delete:**
  this option will delete the device from the platform. It's possible to re-provision the device in this or in any other plant.

# 09
# Additional features

## 09.1
## Cloud commissioning tool: User access levels

You can request two different user levels 45 with special privileges through the commissioning tool. Aside from the standard level – which does not require any specific requests and is assigned by default when you log in – there are three different user levels:

**User:**
This user level does not entail a specific request.
This access level allows you to perform the following operations:
- Gateways provisioning.
- Standard gateway configuration pages. (Information, Configuration, Connectivity, Modules)
- Marketplace Section.

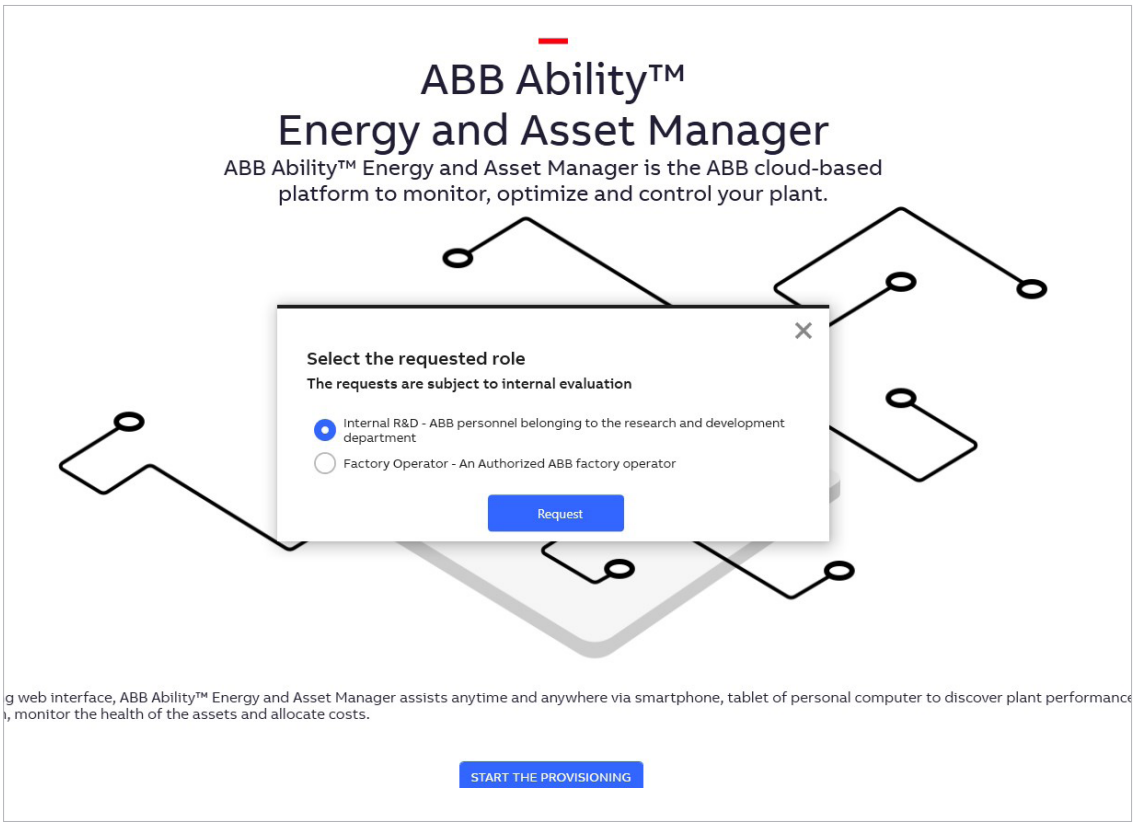
**Internal R&D:**
This user level needs to be enabled with a dedicated request.

It's an ABB Internal R&D access level. Only ABB personnel belonging to the research and development department should request it. The requests are monitored, please don't expect to access this role without the necessary rights.

This access level allows you to perform the following operations:
- See everything and perform every action.
- View tools that are under development / are no longer on the market.
- Access all parameters – including the reserved ones – for the gateway configuration:
  - Information
  - Configuration
  - Connectivity
  - Modules
  - OTA FW versions – full visibility
  - (Gateway Developer View)
- Select the publication environment.
- Access the Marketplace Section.

**Factory Operator**
This is an internal, specific role, and should be not used unless specifically requested by ABB.

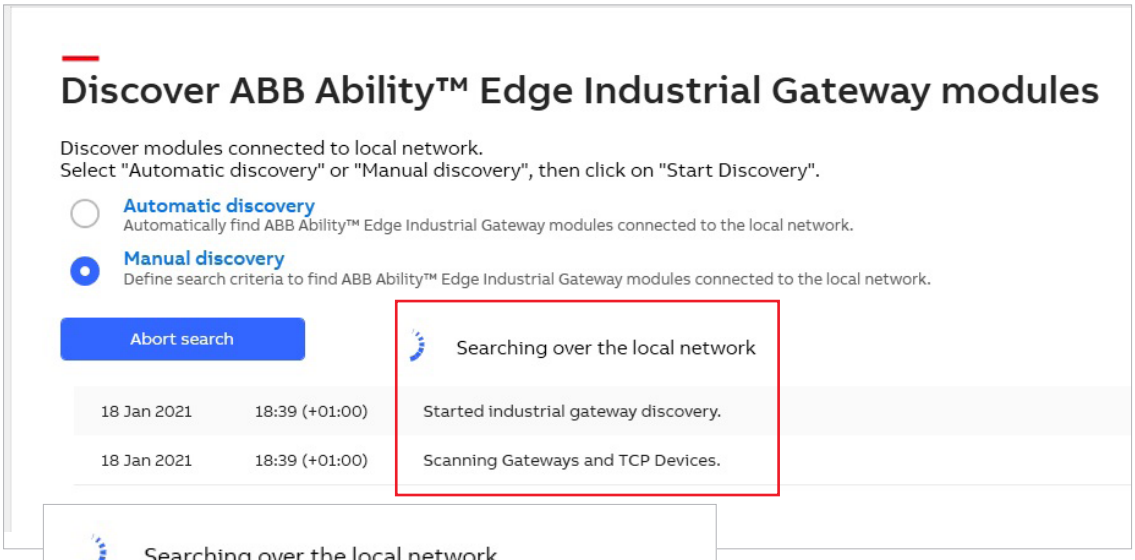
45

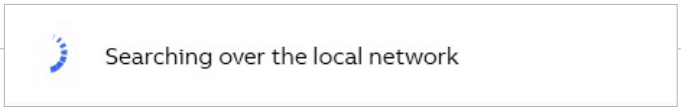



## 09.2
## Provisioning process feedback

Advancement status for Auto-discovery 46

46



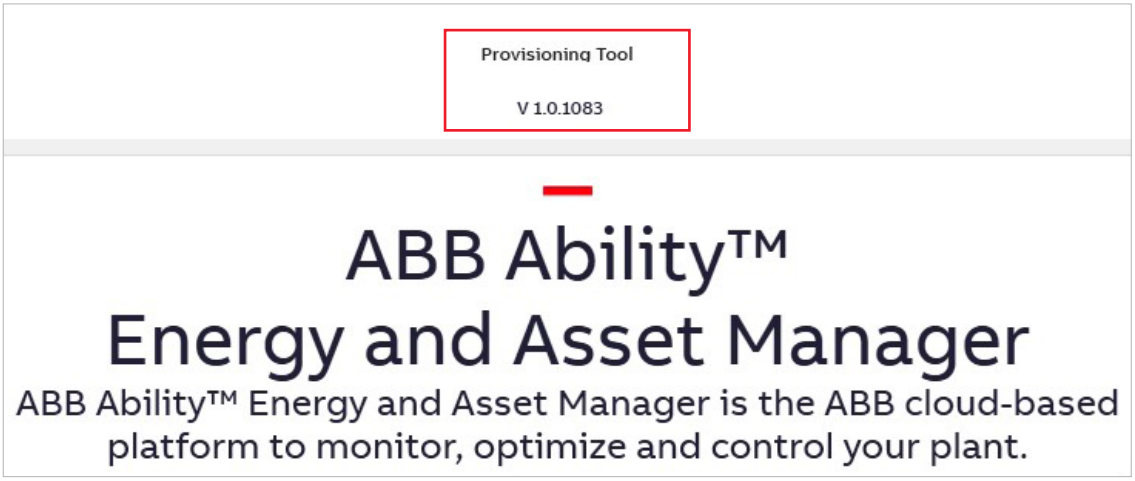

Current status

Activity log

## 09.3
## Viewing your software version

If you want to learn which version of the software you have, you can find this information here, under the name of the tool 47

47



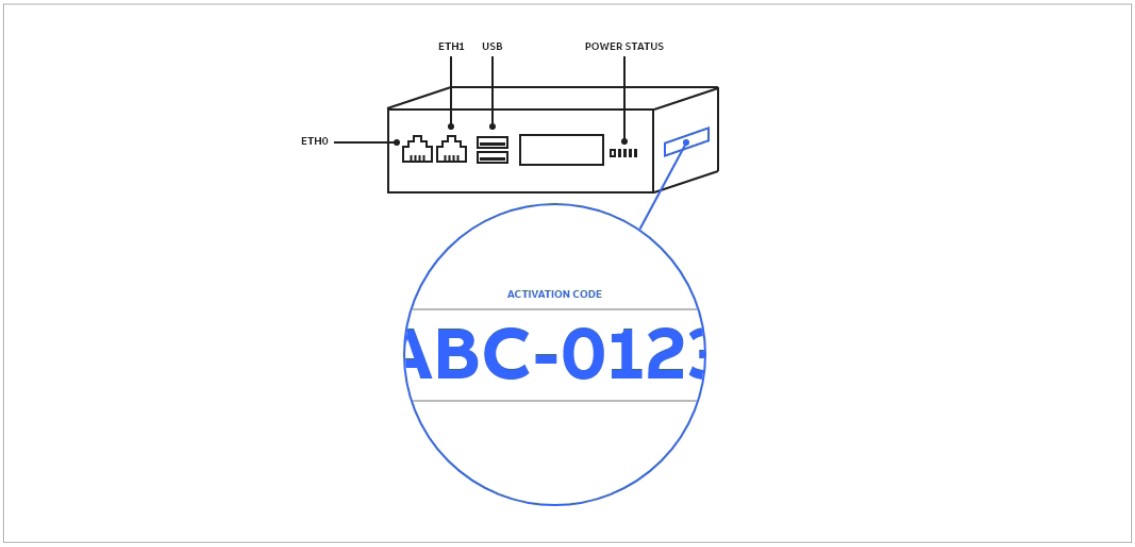
# 10 Troubleshooting

## 10.1 Getting the right activation code

The *Activation Code* is requested during the provisioning process, after the gateway has been discovered.

Each gateway has a different activation code, which can be found on the side of the device: 48

48




## 10.2 Commissioning Tool logs management

The commissioning tool saves a log of its activities and processes into a local folder, located on the PC where the tool is installed.

When trying to solve any issues that might come up during the provisioning process, you may be asked to share the log files. Those files are usually located in the following folder:
**System drive (Might be C: ) > Log**

Log files are organized per day. This means that each file contains the cumulative logs for the same day. Log files are generated automatically, so you do not need to perform any actions on them.

The typical format of a log file generated by the commissioning tool is:
**ElConnect.yyyymmdd.log - e.g., ElConnect.20210513.log**

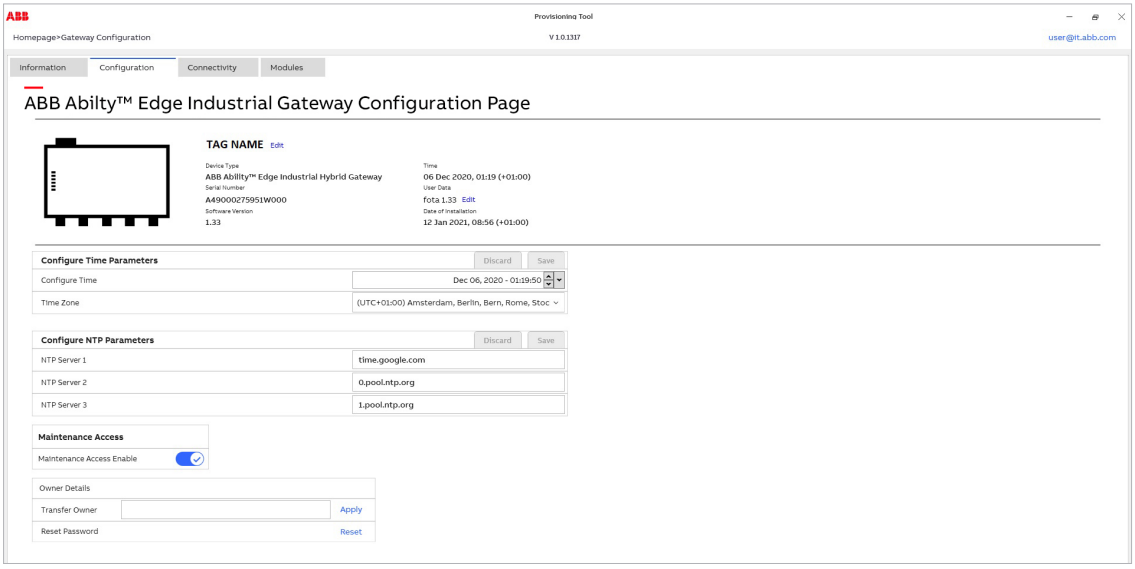
If you need support during the provisioning process, you can send the log files to the ABB operations team at **global-el.operations.digital@abb.com.**

# 10.3
# Local webserver version of the gateway, Owner reset and transfer

**Only for**
**Local view version**

If you need to change the ownership of a gateway, you can use the *Owner Reset* feature of the provisioning tool, under the *Configuration* section: 49

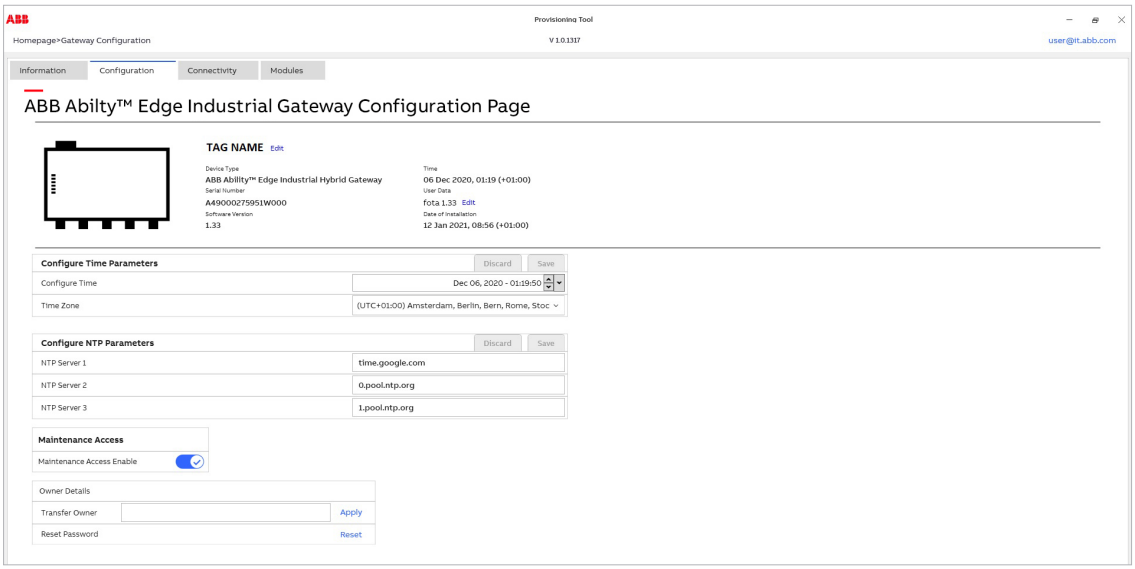
49




Ownership can only be transferred by the current owner themselves, or by the ABB Operations team **global-el.operations.digital@abb.com**

If the owner loses their log in credentials, they can reset the password by following the instructions on the dedicated provisioning tool section, under *Configuration*. 50

50

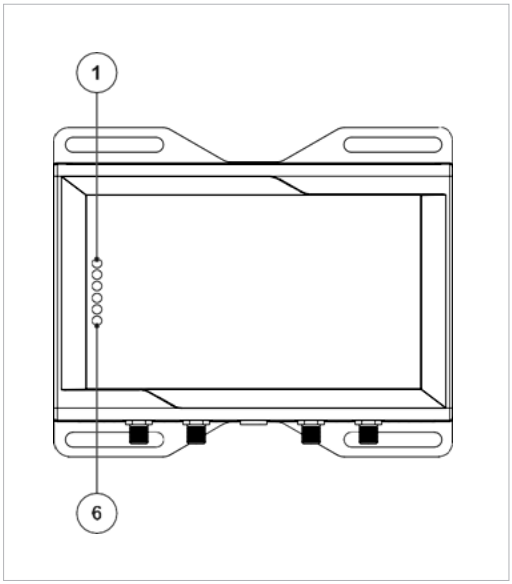



Ownership can only be reset by the current owner themselves, or by the ABB Operations team **global-el.operations.digital@abb.com**

## 10.4
## Checking the LED lights for troubleshooting

LED lights are located as depicted in the image below: 51

51




| LED | | Functionality |
|---|---|---|
| LED 1 | USER 1 | LED is ON when internet (LAN) is connected, and it turns OFF after 3 to 4 min (max) after the Internet cable is removed |
| LED 2 | USER 2 | LED is blinking (500 ms ON 500 ms OFF) while reading the data from other devices |
| LED 3 | USER 3 | LED starts blinking (1 sec ON 2 sec OFF) while a software update is ongoing |
| LED 4 | USER 4 | LED is ON whenever services are stopped (when there is a system error) |
| LED 5 | CELLULAR | LED is ON once all internal services are started and running |
| LED 6 | POWER | LED is ON as soon as input power is turned ON to the gateway |

**Only for Cloud** connected version

**Note:**
LED 1 turns off after 3.3 min since the Internet cable has been removed.

## 10.5
## Trouble shooting of FOTA (Firmware over the air)

When you update the gateway firmware, please make sure to pay attention to the following items:
- Be sure to start the FOTA process only when you have a stable internet connection.
- Check the LEDs status for any malfunctioning (Chap 9.4).
- If you encounter any issues, try rebooting the gateway and check if the firmware has been updated.
- If the FOTA process fails, please get in touch with the ABB Operations at **global-el.operations.digital@abb.com**

## 10.6
## Wrong data or no data in the widgets. Clock settings for Local webserver version of the gateway

If you do not see any data, even if the field devices are connected and showing up in the device page, or if you see wrong data or no updates in the widgets when navigating the local webserver view of your ABB Ability™ Energy and Asset manager, there may be a wrong or mismatching date or time setting, especially if you are running the gateway while disconnected from the Internet.

**To check the date and time of your offline gateway:**
- Open the CCT on your laptop and connect to the Gateway.
- Click on *Configure* the Gateway.
- When the gateway has been discovered go to the Information page.

**To sync the date and time settings of your offline gateway:**
- Open the CCT on your laptop and connect to the Gateway.
- Go to the Configuration page.

**Note:**
We recommend using a local NTP server to sync the time. In this case, you can specify the details of your NTP server in the *Configure NTP Parameters* section.

If you are not using any NTP server, you can still set the time and date manually from the Configure *Time Parameter section*. If so, please regularly check the time settings, to avoid timing errors in the data.

## 10.7
## Cannot discover the gateway in automatic or manual discovery mode

If the gateway does not show up after an automatic or manual discovery, after verifying the physical connection, you can try to ping it using the Windows command console:

### 10.7.1
### Testing basic connectivity

- **Write:** > ping <gateway IP address>
- **Press:** enter.

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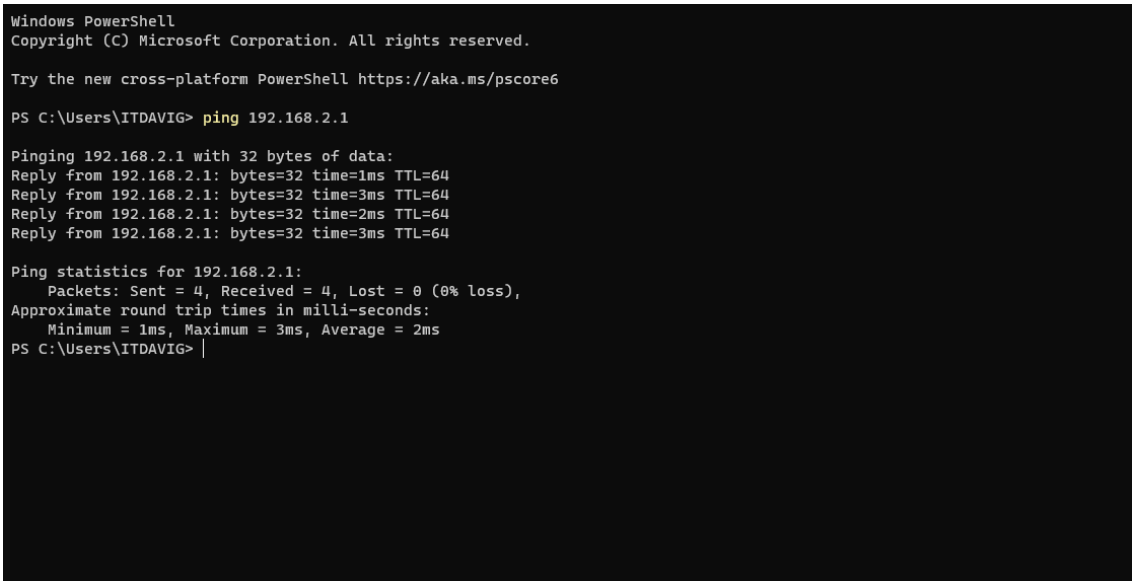


⚠ **Warning:**
Pinging (ICMP protocol) may be blocked by network security policies.
Please check with the Customer Network Administrator

## 10.7.2
## Testing the default DNS server

- **Write:** > nslookup gpr01.abilityplatform.abb
- **Press:** enter.

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```
PS C:\Users\ITDAVIG> nslookup gpr01.abilityplatform.abb
Server:  it-s-eur0007.europe.abb.com
Address:  10.39.1.13

Non-authoritative answer:
Name:    apimgmthsj48rvschtidnpkxith2qi7vrbojqm7oftheitqot.cloudapp.net
Address:  13.81.243.165
Aliases:  gpr01.abilityplatform.abb
          abiapiapmgpr01euwprd.azure-api.net
          apimgmttm1zwyqf5uj0qbkiciqfgimuvt71vdsa0roxg7zsl9o.trafficmanager.net
          abiapiapmgpr01euwprd-westeurope-01.regional.azure-api.net

PS C:\Users\ITDAVIG>
```

## 10.7.3
## Testing HTTPS connectivity

- **Write:** > curl https://sitemanager.ability.abb:443
- **Press:** enter.

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```
PS C:\Users\ITDAVIG> curl https://sitemanager.ability.abb


StatusCode        : 200
StatusDescription : OK
Content           : <!DOCTYPE html>
                    <html lang="en">
                    <head>
                      <meta charset="utf-8" />
                      <meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1" />
                      <title>ABB Ability â
                                          ¢</title>
                      <base href="/" />
                      <met...
RawContent        : HTTP/1.1 200 OK
                    Connection: keep-alive
                    Content-Length: 982
                    Content-Type: text/html
                    Date: Mon, 18 Jan 2021 13:36:05 GMT
                    Set-Cookie: ApplicationGatewayAffinityCORS=417be23e626559b9865738a48182b2ac;...
Forms             : {}
Headers           : {[Connection, keep-alive], [Content-Length, 982], [Content-Type, text/html], [Date, Mon, 18 Jan
                    2021 13:36:05 GMT]...}
Images            : {}
InputFields       : {}
Links             : {}
ParsedHtml        : mshtml.HTMLDocumentClass
RawContentLength  : 982
```

## 10.7.4
## Use of ETH0 and ETH1 ports

ETH1 port is used by local LAN devices that are polled for energy and measurements values.
Every device that can communicate using the Ethernet physical protocol can be connected here, including Ethernet switches. A few examples of devices that can be connected to ETH1: Swicom, Emax 2 breakers, TruOne ATS, and many others.

ETH0 port is used for cloud communication. On Local view version, the cloud connection is needed only to update the gateway firmware.
With cloud-connected version, the data polled from ETH1 is stored in the cloud via the ETH0 port.

In the local view version, the web server can be viewed from both interfaces. By default, the web server is only accessible via ETH1. However it is possible to change this option and make the web server available also from ETH0 with the ABB Cloud Provisioning Tool.

For increased cybersecurity Ethernet interfaces are separated to ETH0 (cloud connections) and ETH1 (local LAN)

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