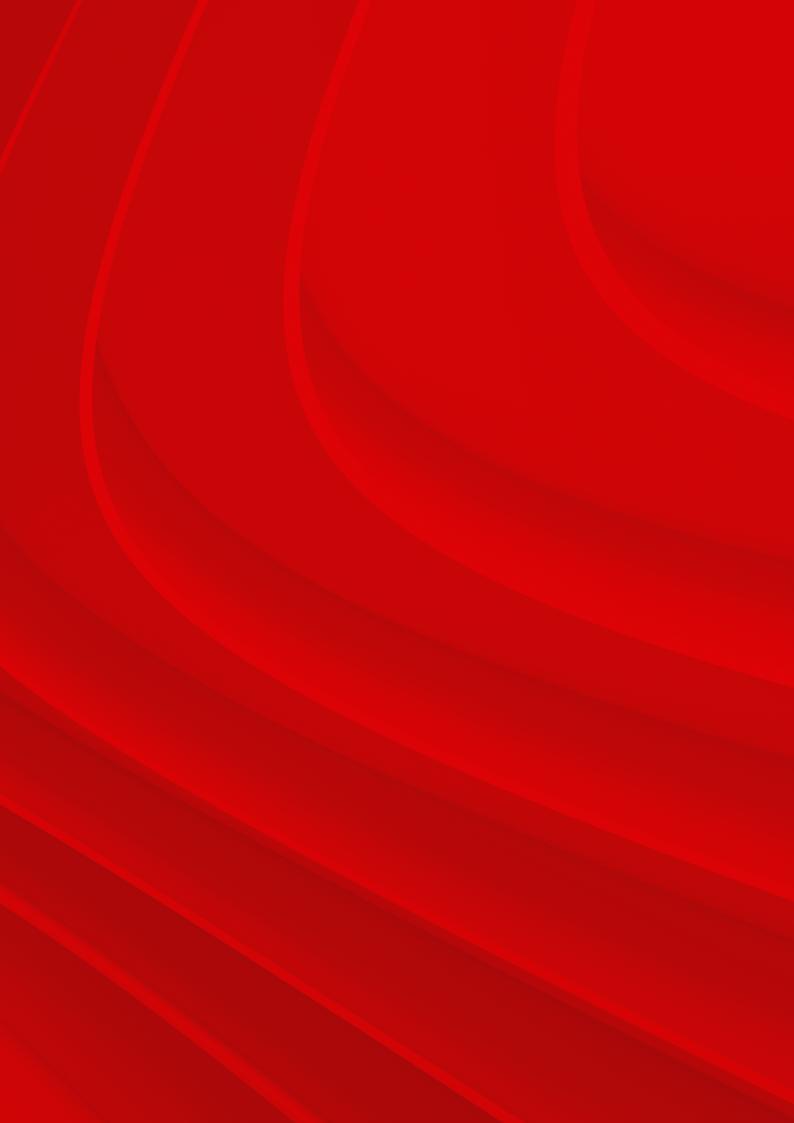




Cloud Provisioning Guide

ABB Ability™ Energy and Asset Manager



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		Clock settings for Local webserver version of the gateway
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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

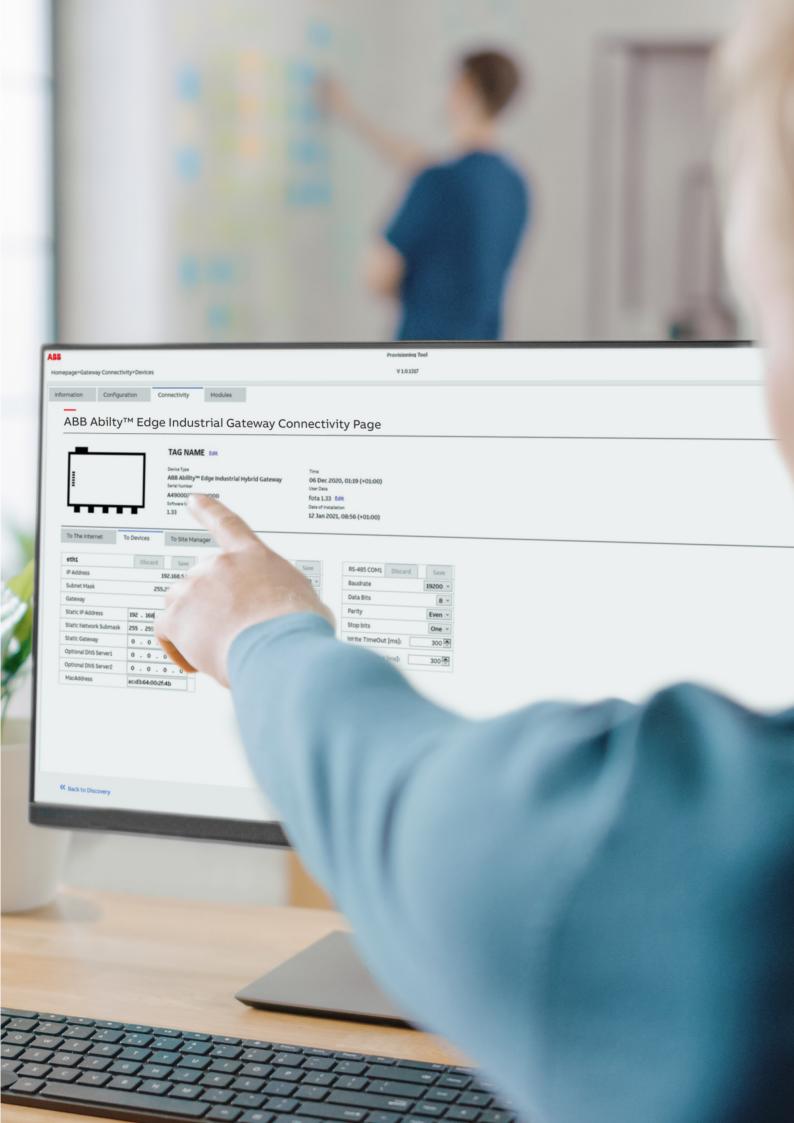
This document contains information about two different way of working of the ABB Ability Industrial Edge gateway, the local view version and the cloud connected version. we used a laptop icon to specify when a content is referring to the local view version. We used the cloud icon when the information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





Local view version

Cloud connected version

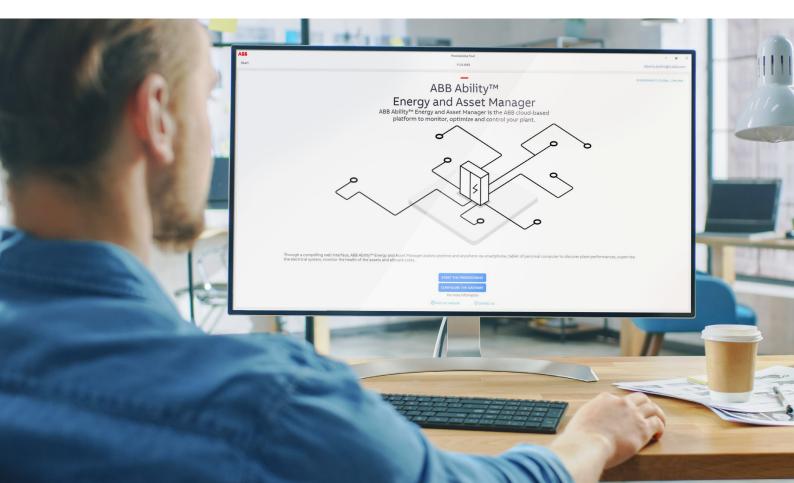


02 Architectures Independent IoT gateway

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

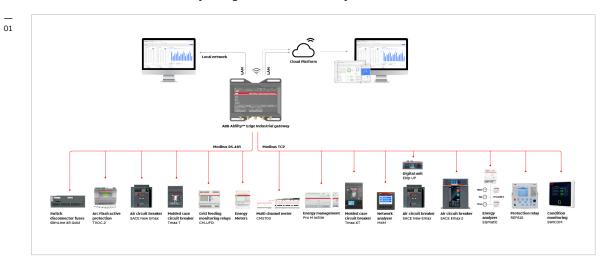
Here are some examples of architectures and applications:

- 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 \mathbf{M} 04
- Example of an industrial site application № 05
- Example of a commercial site application" 🖂 🛛 🕫

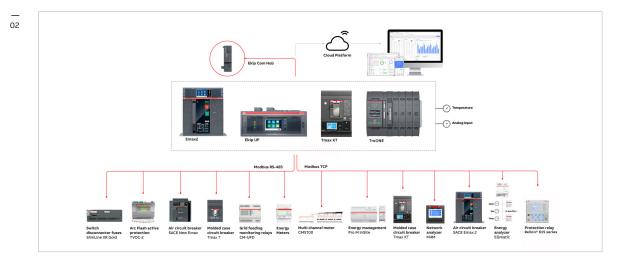




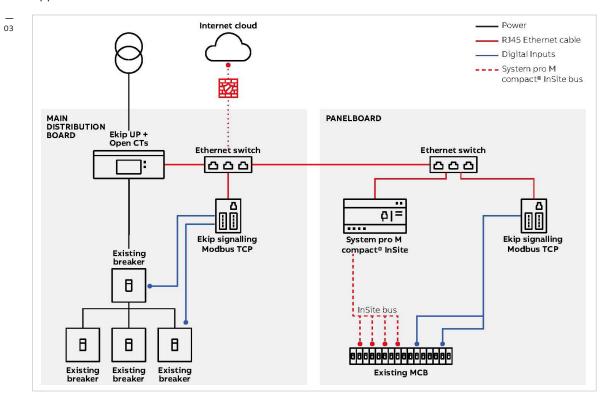
Architecture with an ABB Ability™ Edge Industrial Gateway



Architecture using the Ekip Com Hub internal module

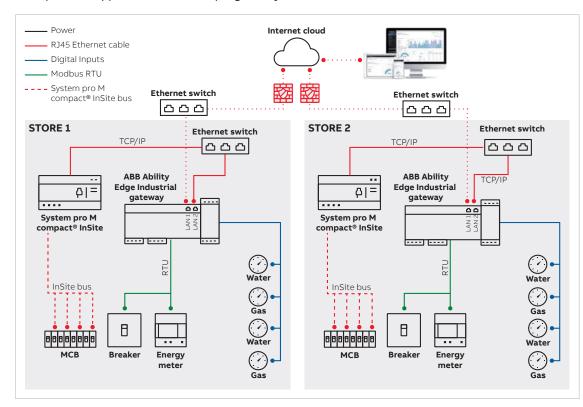


Application

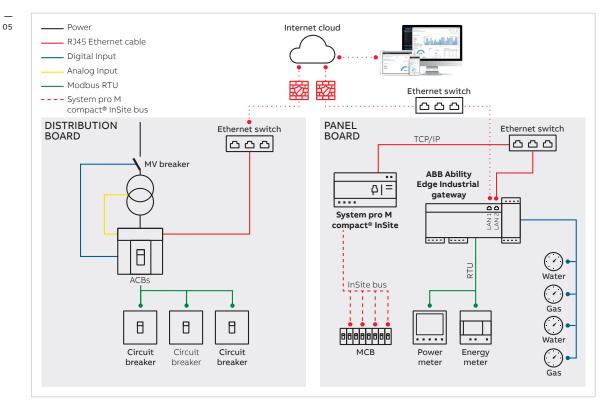




Example of an application with multiple gateway connected in the same site

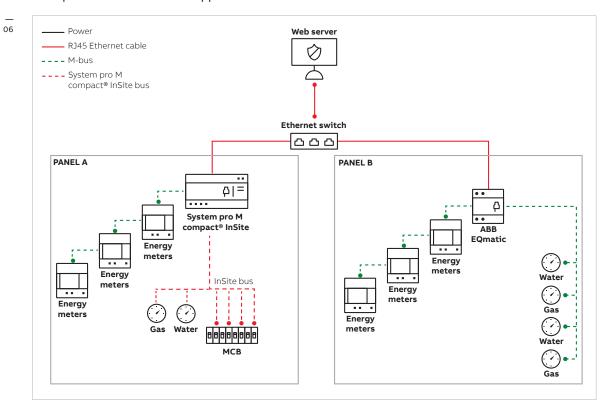


Example of an industrial site application





Example of a commercial site application.



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:



1 minute when ≤ 30 devices are connected
 2 minutes when > 30 devices are connected



- 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 2 x Voltage Analog Input Ports Input Range: 0-36 V 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

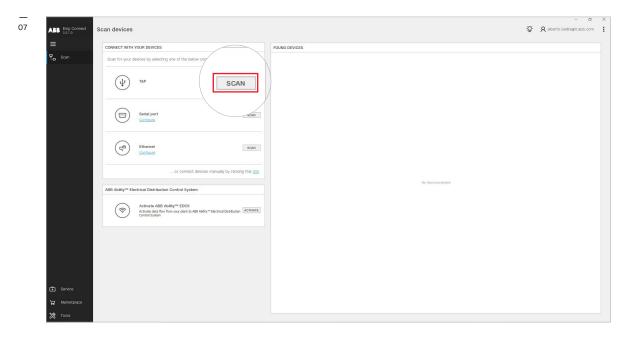
Before starting the commissioning procedure, and before visiting the provisioning site, please follow the guidelines below.

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

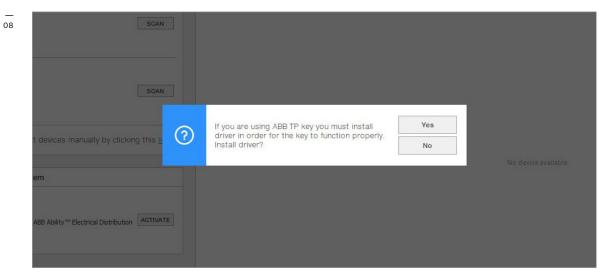
05.1 Step 1: Verify that the device firmware is up to date

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



- 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.



- Once the device is found it will appear on the right side of the tool. \mathbf{M} 09

—											
09	ABB Ekip Connect 3.2.7.0	Scan devices	3						Q.	A alberto.bellini@it.abb.com	:
	≡	CONNECT WITH	HYOUR DEVICES		FOUND	DEVICES					
	₽ <mark>.</mark> Scan	Scan for your	devices by selecting one of the be	low communication channels	✓ Ethe	ernet					
	E Devices	(4)	T&P	SCAN	\odot	Ekip Touch Black	Alb_TCP_1	E2 N2000	IP 192.168.200.202\0	SELECT>	
		3			\odot	Ekip Touch Black	Alb_TCP_1	E2 N2000	IP 192.168.200.202\1	SELECT >	
			Serial port	SCAN	0	Ekip Touch Black	Alb_TCP_1	E2 N2000	IP 192.168.200.20212	SELECT >	
		(c^b)	Ethernet Configure	SCAN							
			or connec	t devices manually by clicking this link.							
		ABB Ability™ E	lectrical Distribution Control Syst	em							
		(Activate ABB Ability ^{the} EDCS Activate data flow from your plant to Control System	ABB Ability TM Electrical Distribution ACTIVATE							

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

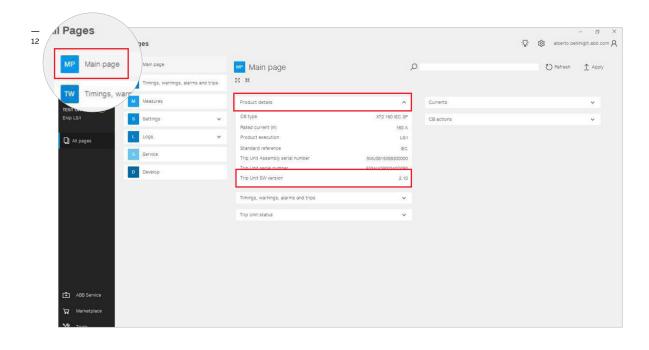
10 ABB Exip Connect II	nformation					Q: A alberto.bellini@it.abb.com
₽_ Scan	Nominal Data		CB Status			
Lo Scan	Trip Unit					
E Devices	Type	ТгірроТуре				
	Serial number Software version	TripUnitSN 03.09.0	60	IW	26,70 %	108
(i) Information			Open	Not tripped	,	
\sim	Mainboard		CB Status	CB Tripped	Contact Wear	+ Operations
Juration	Serial number	Alb_TCP_1				
	Software version	03.04.0	# Manual operations	82	CB Position undefined	No
Configure Protections			# Trips	90	CB Position	Connected
			# Trip fails	34	CB Position in test	No
🚱 Modules			# Trip tests	27		
Classic View	General parameters					
	CB type	E2 N2000				
	CB serial number	Alb_TCP_1				
	Nominal current [in]	500 A	Ready To Close status	Not Ready	Supply from Ekip Supply	On
	Nominal voltage [Un]	400 V	Operating Mode status	Local	Supply from Test connector	On
	Pole number	4 poles	Test Unit status	Connected	Supply from Voltage Module	On
	Standard reference	IEC		OK	onlyby non-wortage woodie	on .
	Last maintenance date	22-03-2020	Trip Command	UK		

• 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

_					- 0	×
11	ABB Ekip Connect 3.2.7.0	Scan devices		Q:	A alberto.bellini@it.abb.com	:
	=	CONNECT WITH YOUR DEVICES FOUND DEVICES				
	P. San	Ecen for your devices by selecting one of the balance comment				
		or connect devices manually by clicking this link.				
		ABB Ability ¹⁴ Electrical Distribution Control System	No device available			
		Activate ABB Ability ¹⁴⁷ EDC5 Actuate data free free your plant to ABB Ability ¹⁴⁸ Electrical Derebudor: Activate Central System				
	Service					
	Marketplace					
	X Tools					

- 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



• 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 \mathscr{P} 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 P 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
 P 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

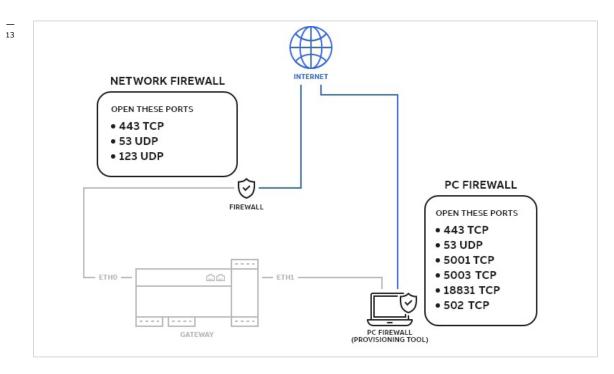
Follow the table at this \mathscr{P} link to identify the minimum firmware version of each integrated device that is compatible with ABB AbilityTM Energy and Asset Manager.

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



- 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.

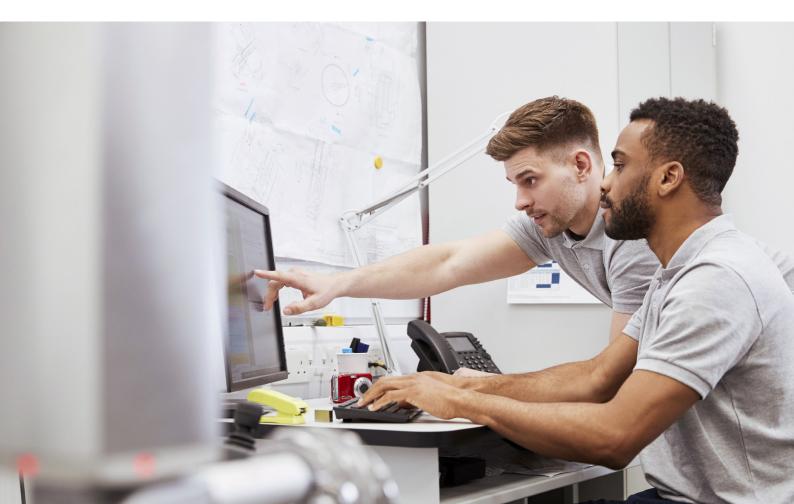
Note:

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:

 - 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 \mathscr{P} 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: *Please follow* 15DH001456R0002

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. \mathbf{K}^{14}

Short-circuit the following pins:

- 1 (D+) to 4 (D+)
- 2 (D-) to 5 (D-)

14

- 6 (TX/D-) to 10 (TX/D-)
- 7 (RX/D+) to 9 (RX/D+)

 LED 3 LED 4 		
CELLULARPOWER		- -
● Wi-Fi / BT 〇 CELL MAIN		🔘 Wi-Fi 5GHz
Digital OUT Digital IN N N	1	

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 ETHO gateway port to configure it. \mathbb{R}^{15}

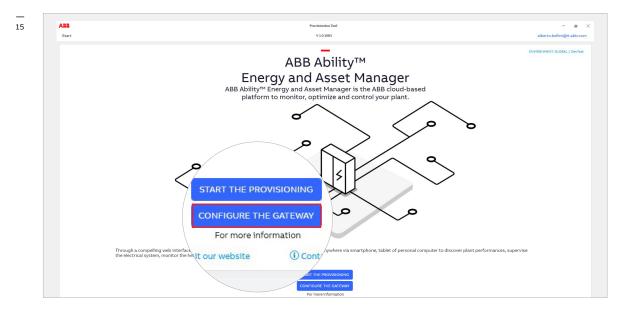
COM 0:

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.





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

ABB	Provisioning Tool	- &
Start	V 1.0.839	alberto.bellini@it.abb.com
Biscourse Cables Connected to local network. Biscourse modulus connected to local network. Letwick discovery' or "Manual discovery", or here of the industrial Cables of the industri	Sniffer	

07.3 Navigation of the information and configuration area

_	nectivity Modules 1 dustrial Gateway Info TAG NAME Edit 2 Devis Tpi ABB Ability* Edge Industrial Hybrid Gateway Serei Indus Magooo279551W000 Software Version 1.33		Provisioning Teol V1.0.1317	– S user@it.abb.co
STATUS NTP error NTP synchronized Not synchronized New firmware available Present 1.34 × Update	GENERAL PARAMETERS Firmware Update Status Firmware Progress	96		
K Back to Discovery		T		

(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.

Information	Configuration	Connectivity	Modules
-------------	---------------	--------------	---------

(2) Editable fields:

From this section, you can edit the gateway tag name as well as the optional text field.

TAG NAME Edit	
Device Type	Time
ABB Ability™ Edge Industrial Hybrid Gateway	06 Dec 2020, 01:19 (+01:00)
Serial Number	User Data
A49000275951W000	fota 1.33 Edit
Software Version	Date of Installation
1.33	12 Jan 2021, 08:56 (+01:00)

(3) Breadcrumb:

This section gives you a clear idea of where you are

ABB	
Homepage>Gateway Information	

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.

Only for Local view version

18

Changing owners and resetting the owner password.
 (Owner details for Local view version of the gateway).

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.

ormation Configuration	Connectivity Modules		
	Industrial Gateway (Configuration Page	
		5 5	
	TAG NAME Edit		
	Device Type ABB Ability™ Edge Industrial Hybrid Gate	Time way 06 Dec 2020, 01:19 (+01:00)	
	Serial Number A49000275951W000	User Data fota 1.33 Edit	
	Software Version	Date of installation	
	1.33	12 Jan 2021, 08:56 (+01:00)	
Configure Time Parameters		Discard Save	
Configure Time		De <mark>c 06, 2020 - 011390 🕤</mark>	
Time Zone	(L	TC+01:00) Amsterdam, Berlin, Bern, Rome, Stoc \vee	
Configure NTP Parameters		Discard Save	
NTP Server 1	ti	ne.google.com	
NTP Server 2	0	pool.ntp.org Discard Save	
NTP Server 3	1.	sool.ntp.org	
Maintenance Access		Dec 06, 2020 - 01:19:50 🔷 🗸	
	\bigcirc		
		lam, Berlin, Bern, Rome, Stoc 🗸	
Owner Details			
Transfer Owner	Apply		
Reset Password	Reset	Discard	
		Discald Save	

23 🏠

07.5 Connectivity section

By clicking on the Connectivity section on top of the page, the program will show up three tabs redirecting you: \mathbf{M}^{19}

• To The Internet (default view).

- To Devices.
- To Site Manager.

			4			
	10	BB Homepage>Gateway Connectivity	Pinternet		Provisioning Tool V 1.0.1317	– & X user@it.abb.com
		Information Configuration		Connectivity		
		ABB Adiity	Edge Industri	Inde	nectivity Page	
		_		it states		
				Industrial Hybrid Gateway	Time 06 Dec 2020, 01:19 (+01:00)	
/		ľ	Serial Number A49000275951W00 Software Version	00	User Data fota 1.33 Edit Data of installation	
/ _					12 Jan 2021, 08:56 (+01:00)	
=	To The Internet	To The Internet To	Devices To Site Manager			
	to the internet	etho	Discard Save			
	eth0	IP Address Subnet Mask				
-		Gateway	0.0.0.0			
	IP Address	Force Static IP Address	×			
		Static IP Address				
1	Subnet Mask	Static Network Submask				
		Static Gateway				
		DNS Server1	0.0.0.0			
		DNS Server2	0.0.0.0			
		MacAddress	ac:d3:64:00:2f:4a			



Only for Local view version

07.5.1

To The Internet > Ethernet 0

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

ABB		Provisioning Tool	-
Homepage>Gateway Connectivity>Inte	rnet	V 1.0.1317	user@
ABB Abilty TM EC	Connectivity Modu	es Gateway Connectivity Page	
	TAG NAME Edit Device Type ABB Ability ¹⁹⁴ Edge Ind Serial Number A49000275951W000 Softwave Version	Instrial Hybrid Gateway 06 Dec 2020, 01:19 (+01.00)	
To The Internet To Dev eth0 IP Address	1.33 ices To Site Manager Discard Save	To The Internet To D	
Subnet Mask Gateway	0.0.0.0	IP Address	
Force Static IP Address Static IP Address		Subnet Mask	
Static Network Submask Static Gateway	· · ·	Gateway	
	. 0 . 0 . 0	Force Static IP Address	
MacAddress ac:	l3:64:00:2f:4a	Static IP Address	
MacAddress ac:	13:64:00:2f:4a	Static IP Address	

Visible fields: IP Address Subnet Mask Gateway

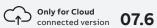
Editable fields:

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	ABB				Provisioning To	ol	 	- s ×
	Homepage>Gateway Connectivi				V 1.0.1317			user@it.abb.com
	Information Configura	tion Connectivity	Modules					
	ABB Abilty™	'Edge Industi	rial Gateway C	Connect	ivity Page			
	_	TAG NAME	Edit					
		Device Type		Time				
		Serial Number	lge Industrial Hybrid Gateway	User Data	20, 01:19 (+01:00)			
	╲╷ <mark>╷</mark>	A49000275951 Software Version 1.33	w000	fota 1.33 Date of install 12 Jan 203				
/				il suites	1,00.30(101.00)			
To Devices	To The Internet	To Devices To Site Manag	jer					
	eth1	Discard Save	RS-485 COM0 Discard	Save	RS-485 COM1 Discard	Save		
	IP Address	192.168.5.1	Baudrate	19200 ~	Baudrate	19200 ~		
Discard	Subnet Mask	255.255.255.0	Data Bits	8 ~ Even ~	Data Bits Parity	8 ~ Even ~		
	Gateway Static IP Address	192 . 168 . 5 . 1	Parity Stop bits	One ~	Stop bits	One ~		
	Static Network Submask	255 . 255 . 255 . 0	Write TimeOut [ms]:	300 💭	Write TimeOut [ms]:	300 🗢		
	Static Gateway	0.0.0.0	Read TimeOut [ms]:	300 🔿	Read TimeOut [ms]:	300 🗇		
	Optional DNS Server1	0.0.0.0	Read TimeOut (Ths):	300 0	Read TimeOut (ms):	300 (9)		
	Optional DNS Server2	0.0.0.0						
	MacAddress	ac:d3:64:00:2f:4b						



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 EthernetO, WiFi and Cellular. 🖂 22

ABB Ability™	Edge Industrial Gatew	ay Connectivity Page	
_	2002 ELGW Edit		
	Device Type ABB Ability™ Edge Industrial Gateway Serial Number	Time 23 Apr 2021, 14:57 (+02:00) User Data	
-	A49200275951W000 Software Vention	User Usia 1.16 fest Edit Dire of Installation	
	1.17	07 Apr 2021, 10:01 (+02:00)	
To The Internet To I	Devices		
		EthernetO Wifi Cellular	

07.6.1 To The Internet > WiFi

Selecting WiFi you'll be able to change the WiFi settings of the gateway. \mathbf{M} 23

2	3

В				Provisioning To	Tool		- 8
omepage>Gateway Connec	ctivity>Internet>WIFi			V 1.0.1608			amina.usman@it.abb.co
_	y™ Edge Industr		Connect	ivity Page			
	2002 ELGW Device Type ABB Ablitty th Edge Serial Number A49200275951W00 Software Vention 1.17	Industrial Gateway	Time 23 Apr 2021, 14:57 (+0 User Data 1.16 test Edit 1.16 test Edit 21, 10:01 (+0				
To The Internet	To Devices	7	w	Discard Save			
WIFI AVAILABLE NETWOR Start scan and click selected		m	SI	192.168.248.17 255.255.255.0 192.168.248.121			
Amy's Note		et scan sta	ddress dress tic Network Submask	× 192 . 168 . 248 . 17 255 . 255 . 255 . 0			
Selected Network Fill in data then press 'Connect'	' button to start connection	Connected	tic Gateway				
Network name	Amy's Note		S Server1 S Server2	0.0.0.0			
Password Authentication Type	Wpa2		s server2 icAddress	2c:ab:33:26:e0:01			
Authentication Type	Disconnect	Connect					

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

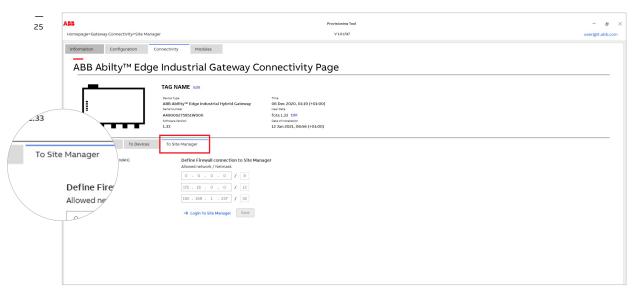
Selecting Cellular you'll be able to change the cellular settings of the gateway. 🖂 24

 24	ABB Homepage>Gateway Connectivity	y>Internet>Cellular		Provisioning Tool V 1.0.1608	 – <i>B</i> amina.usman@it.abb.cc
	ABB Ability		Modules	nectivity Page	
		2002 ELC Device Type ABB Ability ^{ter} Seria Number Ad920027595 Software Version 1.17	Edge Industrial Gateway Time 23 Apr 202: User Data 1W000 1.16 test E Date of Installs Date of Installs		
	To The Internet	o Devices			
	Cellular	Discard Save	TCP/IP R IP Address Subnet Mask	efresh 0.0.0.0 0.0.0.0	
< Back	Tountry Toutry Code	EU ~			
Cellular	le Network Code	1			
Technology	String	Pap ~ atd*99***2#			
Country	PN UserName	ibox.tim.it			
hile Cou					
	Dis Download M	Kodem Logs			

Visible fields:	Mobile Network code
IP address	SIM PIN
Subnet Mask	Security
	Dial String
Editable fields:	APN
Technology	UserName
Country	Password
Mobile country code	

07.7 To Site Manager

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



Editable fields:

• Eth0 (Internet / WAN):

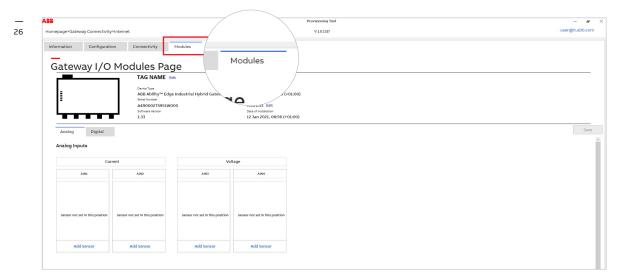
- If you check this box, you will activate outbound communication from the webserver to the ETO port.
- Define firewall connection to Site Manager, allowed network / Netmask: In this section, you can enter up to three networks that can connect to the Site Manager.

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.

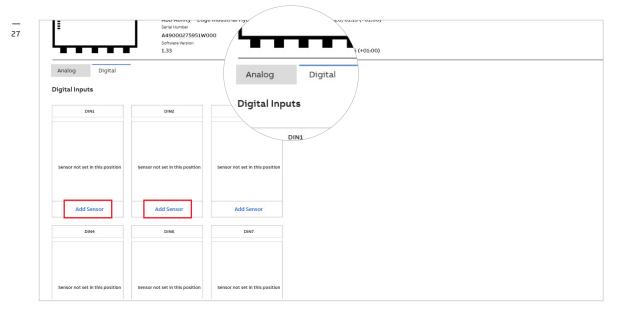
07.8.1 Full page with analog I/O

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.



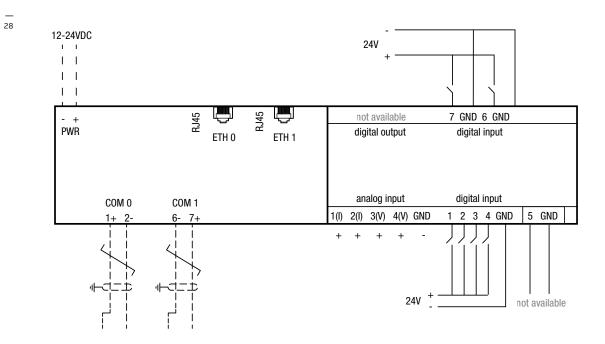
07.8.2 Digital I/O section

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



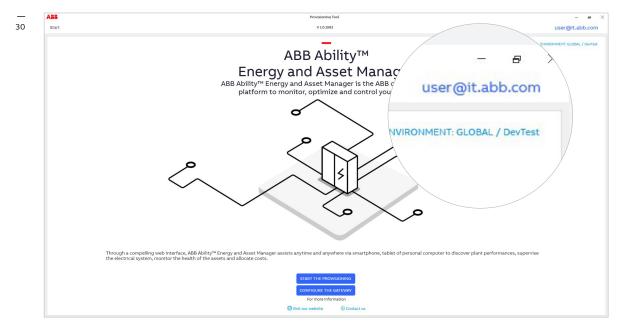
07.8.3 I/O contacts wiring

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



BB Homepage		Provisioning Tool	- 8	- a
		ABB Ability™	Le	ogin
	Energy ABB Ability™ Energ	y and Asset Man gy and Asset Manager is the AB nonitor, optimize and control yo		
	nager ass, m, monitor t			
			~ ,	
	e information	y and Asset Manager assists anytime and any a electrical system, monitor the health of the a		ersonal
our websit	e i Co	LOGIN TO START For more information		

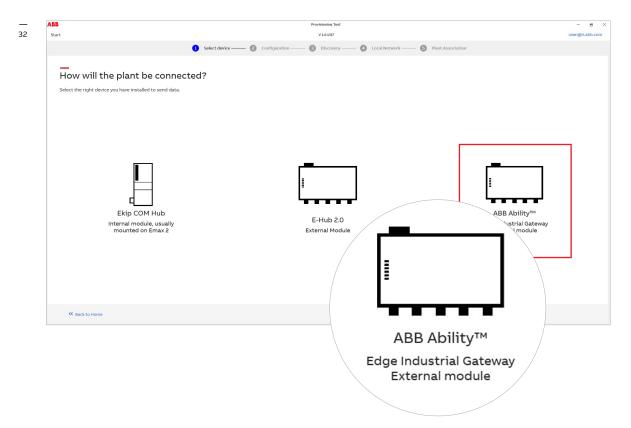
2. After logging in, you will see the following page. 🖂 30



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 \bowtie 31

		1	8	\times
My Accou	nt			x
Mail	user@it.abb.com			
Role	Internal R&D account	£		
Description	ABB personnel belon research and develoj department			



31

- 俞
- 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

set to the steps below to configure the system and the device.	
Event steps below to configure the system and the device.	user@it.abb.com
Follow the steps below to configure the system and the device. First step System check Make sure that your network is configured in the right way. First step Second step Gateway automatic discovery and activation code The gateway can be discovered automatically by pressing the buttom inside the control panel.	
Start the check Start • Status : Completed • Status : Completed	>> Go To Discovery

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

Start	V 10.1317	alberto.bellini@i
	Select device — 2 Configuration — 3 Discovery _ 4 Local Network — 6 Plant Association	
Bracover addes adde	dustria Discover modules connec Select "Automatic discovery Automatically find ABB Ability Manual discovery Define search criteria to find A Start Discovery	

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

- Mar	nual discovery", then click on "Start Discovery".		
5	e Industrial Gateway modules connected to the local network.	Manual discovery settings	
Eage	e industrial Gateway modules connected to the local network.	Sniffer	
3 Ab	nility™ Edge Industrial Gateway modules connected to the local i	Sniff gratuitous ARP packets	
		Network adapters:	
		VEthernet (Internal)	-
		vEthernet (WiFi)	
			Refresh
		Scan Parameters	
		Timeout [ms]:	
		IP Address	
		Use IP address list	
		IP Address	
		<u> </u>	Ū
		192.168.200.200 192.168.200.201	^
		192.168.200.201	
		Use IP address range	
		From To	
		Slave Addresses	
		1 ~	
		Cancel	Confirm

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

ABB		Provisioning Tool	- B
Start		V10.1083	alberto.bellini@it.abb.com
	Se	ect device — 2 Configuration — 3 Discovery — 🔕 Local Network — 6 Plant Associa	tion
Discover A	BB Ability™ Edge Indus	trial Gateway modules	
Discover modules cor Select "Automatic dis	nnected to local network. scovery" or "Manual discovery", then click on "S	art Discoverv"	
	covery d ABB Ability™ Edge Industrial Gateway modules connect		
 Manual discov 			
C ^e Start Over	 Gateway found 		
-		Request access to EL Gateway	
1	ABB Ability™ Edge Industrial Gateway 192.168.200.200	Enter 16 digits activation code:	
		00000000ABCDEF	
	-		
			>> Go to Local Network
K Back to Configuration Con			
w back to compliant			

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

ⁿ 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

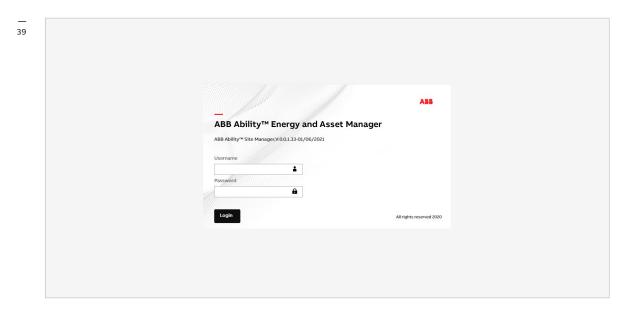
Start						V 1.0.1317				user@it.
			1 Select de	rice — 😕	Configuratio	n —— 🚯 Disc	wery — 🧿 Loca	l Network		
_										
Here is you	r local net	work								
All the devices found o	ver local network ar	e shown below.								
3 Devices found	Show previously add	led devices + Add	device = Rem	ove device						
DEVICE	TAG NAME	SERIAL NUMBER	IP ADDRESS	STATUS	ACTION	PUBLISH STATUS			Device info	ormation
EL Hybrid Gateway	Pre zero Hybrid 0002	A49000275951W 000	192.168.5.1/1		Add				E2.2 B2000	
XT7 HI TOUCH	R10_XT7	8NN0069490415 000	192.168.5.10/1	Enabled	Add				Tag Name	
E2.2 B2000	TCP_R_11	TCP_11	192.168.5.11/1	Enabled	Add				TCP_R_11	
									Serial Number	
									TCP_31	
									/	
										add to gate
K Back to Discovery										

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



ll the devices found o	r local net							
3 Devices found	TAG NAME	SERIAL NUMBER	IP ADDRESS	STATUS	ACTION	PUBLISH STATUS	(
EL Hybrid Gateway	Pre zero Hybrid 0002 R10_XT7	A49000275951W 000 8NN0069490415 000	192.168.5.1/1 192.168.5.10/1	Enabled	Add	Success	-	
E22 82000	TCP_R_LI	TCP_11	192168.5.11/1	Enabled	Add			Your devices are being published Add device TCP_11 to Gateway

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



35 🏠



08.2

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

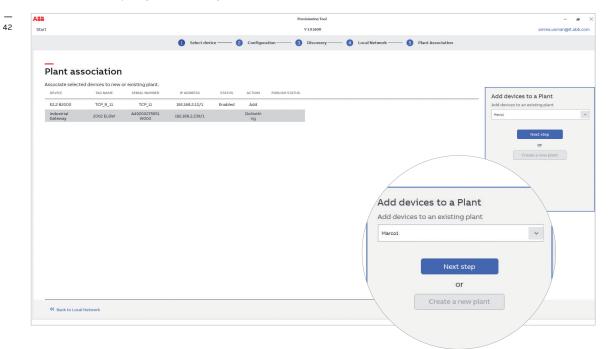
Once all the settings on each device have been completed, click on Add to Plant (or Update to Plant if you are updating a pre-existing plant) 🖂 40

	V L0.1608	amina.usman@it.ab
	1 Select device — 2 Configuration — 3 Discovery — 4 Local Network — 5 Plant Association	m
_		
Here is you	ur local network	
All the devices found	l over local network are shown below.	
2 Devices found	Show previously added devices + Add device = Remove device	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	Device information
E2.2 B2000	TCP_R_11 TCP_11 192.168.212/1 Enabled Add >	Industrial Gateway Tag Name
		2002 ELGW
		Serial Number
		A49200275951W000
Previously added device		
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE		
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	
DEVICE	TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTION	>> Update to Plan
DEVICE	14G MAME SERUA NUMBER IP-ADQRESS STATUS ACTION 2002 ELGW A42000275951W0 192-168-2-239/1 DoHotHing = > DO	>> Update to Plan

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

Start U USU Configuration O Discovery O Local Network O Plant Association	Select device Configuration Solution Configuration Solution Solution	ABB						Prov	istoning Tool				-
Associate selected devices to new or edisting plant. PADDRESS STATUS ACTION PUBLISH STATUS DEVICE: Table mail SEDAL AUMERIX PLADDRESS STATUS ACTION PUBLISH STATUS E22.82000 TCP_R_LI TCP_R_LI SEDALBRE.22/1 Enabled Add	Associate selected devices to new or existing plant. DEVICE: Table Add devices to new or existing plant. Industrial 2002 ELGW 40200275951 102.1682.239/1 Add	Start						0	1.0.1608				amina.usman@it.
Associate selected devices to new or wisting plant. VICE VICE New Add devices to a Plant Industrial 2002 ELCW 40200275951 192168.2239/1 Add Add Add devices to a existing plant. E22 B2000 TCP_IR_11 TCP_IL 192368.212/1 Enabled Add Add	Associate selected devices to new or existing plant. IPAGORISS STATUS ACTION PURUSHISTATUS Industrial Galewaye 2002 ELCOW 4280075951 182.186.2.239/1 Add E22 B000 TCP_R_LI TCP_LI 192.166.2.12/1 Enabled Add Heat step or				 Select dev 	ice —— 😢	Configu	ration —— 3	Discovery ——	4 Local Network	vork — 🦉	Plant Association	
DECKCE YAG MAKE SEBAL MARKER IP ADDRESS STATUS ACTION PUBLISH STATUS Industrial Catewood 2002 ELGNO M2020075951 192.106.2239/L Add E22 B2000 TCP_R_11 TCP_J12 192.106.212/L Enabled Add Add Add Image: Status Add	DDVACE TAG NAME SERIAL NUMBER IP ADDRESS STATUS ACTOM PUBLIENTIATUS Industrial Gateway 2002 ELCW ASS00075951 192.168.2230/1 Add Add Add devices to an existing plant. Add devices to an existing plant. Add devices to an existing plant. Immunol.		ociation										
Industrial Gateway 2002 ELOW A49200275951 W000 192.168.2.239/1 Add Add Add devices to a Plant Add device	Industrial Gateway 2002 ELOW A48200275951 W000 192.168.2.239/1 Add Add Add devices to a Plant Add devices to a Plant E2.2 82000 TCP_R_11 TCP_11 192.168.2.12/1 Enabled Add Add devices to a Plant Add devices to a Plant Mid devices to a Plant Mid devices to a Plant Add devices to a Plant Add devices to a Plant Mid devices	Associate selecte	d devices to new o	or existing plant.									
Industrial Gateway 2002 ELGW M4200279951 W0000 192.168.2.239/1 Add Add devices to an existing plant E2.2 82000 TCP_R_LI TCP_LI 192.368.2.12/1 Enabled Add Ident plant Hert stop or Or Or Or Or Or	Industrial Gateway 2002 ELGW M4200279991 192.168.2.239/1 Add Add devices to an existing plant. E2.2 B2000 TCP_R_LI TCP_LI 192.368.2.12/1 Enabled Add Sector plant. Sector plant. Heat step or Intercomplexity Intercomplexity Intercomplexity Sector plant. Sector plant. Sector plant.	DEVICE	TAG NAME	SERIAL NUMBER	IP ADDRESS	STATUS	ACTION	PUBLISH STATUS					Add devices to a Plant
		Industrial Gateway	2002 ELGW	A49200275951 W000	192.168.2.239/1		Add						Add devices to an existing plant
		E22 82000	ice _r a	10-11	192-100-2-12/1	Enabled	Add						or

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. \mathbb{R}^{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. \mathbb{M}^{43}

			 Select device — 	— 😢 a	onfiguration ——	Discovery — 🦉	Local Network	Plant name
_								Plant name
	sociation							Company
Associate selec DEVICE	ed devices to new TAG NAME	or existing plant. SERIAL NUMBER	IP ADDRESS ST	ITUS AC	CTION PUBLISH STATU			Company
Industrial Gateway	2002 ELGW	A49200275951 W000	192.168.2.239/1	A	Add			Address
E2.2 B2000	TCP_R_11	TCP_11	192.168.2.12/1 Eng	bled A	Add			Address
								Postal code
								Postal code
								Location
								Location
								Zone
								Zone
								Country
								Select country
								Time zone
K Back to Loc	l Network							Select time zone
								Plant type
								Select plant type

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

Surt V1000 annouscanged and annouscanged annouscanged and annouscanged and annouscanged ann	ABB						Provisioning	ool			-
Select device Configuration Solicovery Solicovery Configuration Solicovery Solicov											
Plant association Associate selected devices to new or existing plant. DEVICE Not Name SIGNAL RUNNER P ADDRESS SIGNAL RUNNER P ADDRESS Tod wave SIGNAL RUNNER E22 B000 TCP,R_11 TCP,R_11 TCP_11 192,168,212/1 Enabled Add				Salact davi	ica 6	Configur	ation O Disco	0	Local Natwork	- B Plant Association	
Associate selected devices to new or existing plant. PADRESS SIAU Action PURLISH STATUS Device TAG NAVE SERIAL HAVERER IP ADDRESS STATUS Action PURLISH STATUS Industrial acteriory 2002 ELGW Add200275951 192.198.2239/1 Add Add E22 82000 TCP_R_11 TCP_11 192.198.212/1 Enabled Add				•			•	•		•	
Associate selected devices to new or existing plant. PADRESS SIAU Action PURLISH STATUS Device TAG NAVE SERIAL HAVERER IP ADDRESS STATUS Action PURLISH STATUS Industrial acteriory 2002 ELGW Add200275951 192.198.2239/1 Add Add E22 82000 TCP_R_11 TCP_11 192.198.212/1 Enabled Add	_										
DEVICE TAG NAME SERIAL INJHERE IP ADDRESS STATUS ACTION PURLISH STATUS Industrial (acteory) 2002 ELGW Add200275951 192.108.2239/1 Add Add E2.2 82000 TCP_R_11 TCP_11 192.108.212/1 Enabled Add	Plant ass	ociation									
Industrial Gatewiny 2002 ELGW A4200073951 W000 192.168.2.239/.1 Add E2.2 8000 TCP_R_11 TCP_11 192.168.2.12/.1 Enabled Add											
Gateway ZOGE ELW W000 INCL IDS Z.459/1 Add EZ.2 82000 TCP_R_11 TCP_11 192.168.2.12/1 Enabled Add Vour devices are being published		TAG NAME		IP ADDRESS	STATUS	ACTION	PUBLISH STATUS				
Your devices are being published		2002 ELGW	A49200275951 W000	192.168.2.239/1		Add					
	E2.2 B2000	TCP_R_11	TCP_11	192.168.2.12/1	Enabled	Add					and a second second
Starting provisioning of devices											Your devices are being published
											Starting provisioning of devices

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.

09.1

Cloud commissioning tool: User access levels

You can request two different user levels \boxtimes 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.

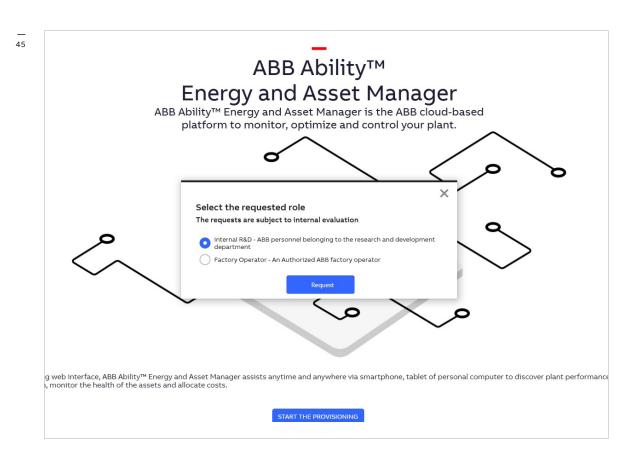
It's an ABB Internal R&D access level. Only ABB personnel belonging to the research and development department should request it. The requests are monitored, please don't expect to access this role without the necessary rights.

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.

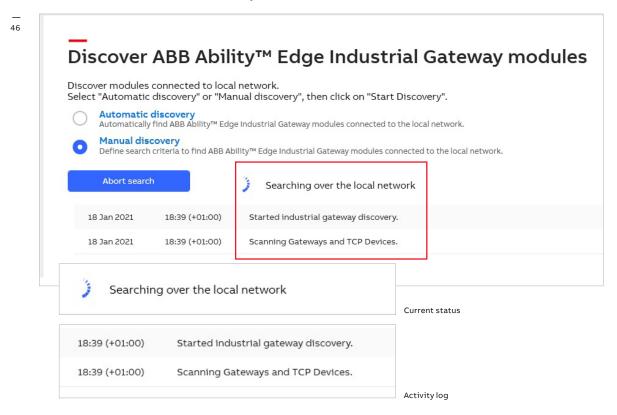
Factory Operator

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



09.2 Provisioning process feedback

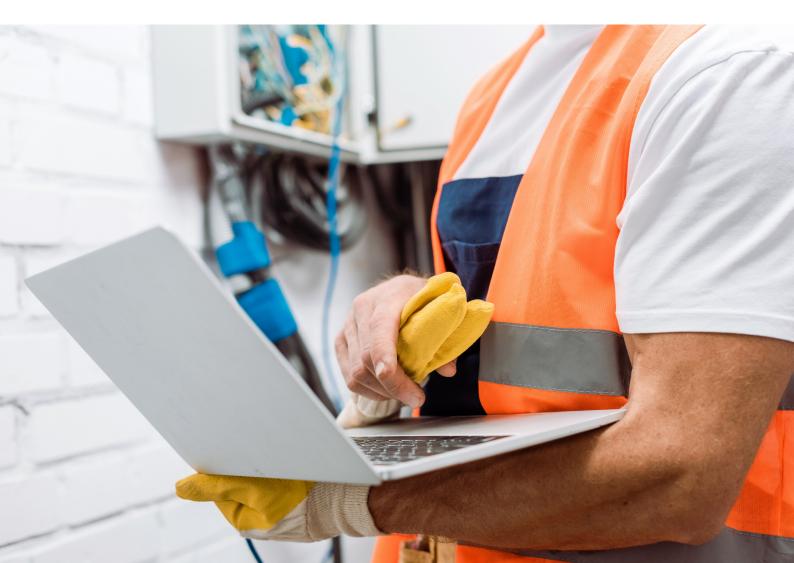
Advancement status for Auto-discovery 🖂 46



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 \boxtimes 47



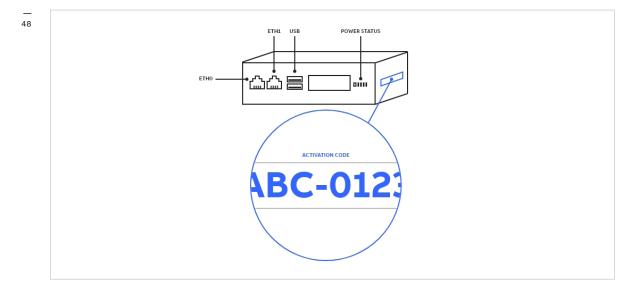


10 Troubleshooting

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



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



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: \mathbb{M}^{49}

_	
	~
4	9

		Provisioning Tool	-
bage>Gateway Configuration		V 1.0.1317	user@it.ab
BB Abilty™ Edge	Connectivity Modules	Configuration Page	
	TAG NAME Edit Device Type ABB ADBIIty ^M Edge Industrial Hybrid Seria humber A49000275951W000 Softwar Vitelon 1.33	Tom 66 Dec 2020, 01:19 (+ 01:00) yum 20a fota 1:33 Edit 20a et restantino 12 Jan 2021, 08:56 (+01:00)	
Configure Time Parameters		Discard Save	
Configure Time		Dec 06, 2020 - 01:19:50 😴 🗸	
Time Zone		(UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stoc v	
Configure NTP Parameters		Discard Save	
NTP Server 1		time.google.com	
NTP Server 2		0.pool.ntp.org	
NTP Server 3		1.pool.ntp.org	
Maintenance Access			
Owner Details			
Transfer Owner	Ap	ky	

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

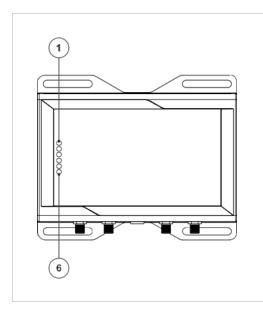
If the owner loses their log in credentials, they can reset the password by following the instructions on the dedicated provisioning tool section, under *Configuration*. \mathbf{M} ⁵⁰

88				ioning Tool
omepage>Gateway Configuration			v	10.1317 Use
ABB Abilty TM Edg	Connectivity Modules	ay Configurati	on Page	
	TAG NAME Edit Devia Tipe A88 Ability* Edge industrial Hyb Serie Numer A49000275951W000 Softwar Vireno 1.33	User Data fota 1.33 Date of Insta		
Configure Time Parameters			Discard Save	
Configure Time		D	ec 06, 2020 - 01:19:50 🔹	-
Time Zone		(UTC+01:00) Amsterdam,	Berlin, Bern, Rome, Stoc	
Configure NTP Parameters			Discard Save	
NTP Server 1		time.google.com		
NTP Server 2		0.pool.ntp.org		
NTP Server 3		1.pool.ntp.org		
Maintenance Access				
Maintenance Access Enable				
Owner Details				
Transfer Owner		Apply		

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: ${\ensuremath{\boxtimes}\,}^{51}$



			Fun stiens liter
	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)
on	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

Cnly for Cloud connected version

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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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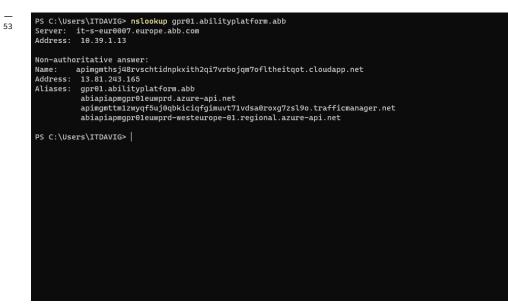
Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6 PS C:\Users\ITDAVIG> ping 192.168.2.1 Pinging 192.168.2.1 with 32 bytes of data: Reply from 192.168.2.1: bytes=32 time=1ms TTL=64 Reply from 192.168.2.1: bytes=32 time=3ms TTL=64 Reply from 192.168.2.1: bytes=32 time=3ms TTL=64 Reply from 192.168.2.1: bytes=32 time=3ms TTL=64 Ping statistics for 192.168.2.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 1ms, Maximum = 3ms, Average = 2ms PS C:\Users\ITDAVIG> |

▲ Warning:

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

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



10.7.3 Testing HTTPS connectivity

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



```
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=equi="X-UA-Compatible" content="IE=edge,chrome=1" />
<title>ABB Ability â
                                                                ¢</title>
                                  <base href="/" />
                                  <met.
                            <met...
: HTTP/1.1 200 OK
Connection: keep-alive
 RawContent
                               Content-Length: 982
                              Content-Length: 982
Content-Type: text/html
Date: Mon, 18 Jan 2021 13:36:05 GMT
Set-Cookie: ApplicationGatewayAffinityCORS=417be23e626559b9865738a48182b2ac;...
{}
[Connection, keep-alive], [Content-Length, 982], [Content-Type, text/html], [Date, Mon, 18 Jan
2021 13:36:05 GMT]...}
Forms
 Headers
                            : {}
: {}
: {}
 Images
InputFields
Links
ParsedHtml
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.

ETHO 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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