ThingsPro Proxy User Manual

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www.moxa.com/products



ThingsPro Proxy User Manual

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ThingsPro Proxy (TPP) is a Windows-based provisioning tool for batch configuring Moxa IIoT gateways according to specific provisioning plans (hereinafter referred to as "plans"). The provisioning plans include details such as device configuration, cloud-enrollment information, and security settings. The ThingsPro Proxy plans allow field operators to quickly configure/enroll Moxa devices without requiring domain knowledge and without having to go through complex steps, thereby reducing the cost of operation. The device provisioning tasks can be linked to a plan for quick and effortless provisioning.

ThingsPro Proxy can be download from the Moxa website and installed in a Windows 10 environment. Version 3.0 of this user manual is based on **ThingsPro Proxy v1.3.0**.

ThingsPro Proxy leverages the ThingsPro Edge software installed on Moxa devices to provision the devices. ThingsPro Proxy and ThingsPro Edge together provide your devices with an IIoT gateway solution that includes streamlined data transportation from the endpoint to the cloud. Therefore, to provision Moxa devices via ThingsPro Proxy, you will need to install ThingsPro Edge (TPE) on the devices. In this chapter, we describe how to install the ThingsPro Proxy tool.

Installing ThingsPro Proxy

Prerequisites

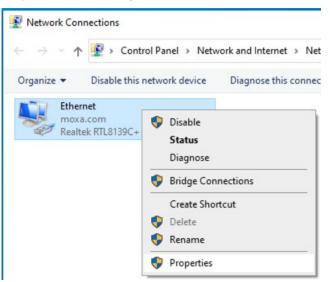
- 1. PC with Windows 10 OS and Google Chrome browser.
 - ➢ Windows 10 version 1809 or later
 - > Google Chrome 86.0.4240.183 (64 bit) or later
- 2. Enable the Link-local IPv6 address on the PC.

To enable the Link-local IPv6 address, do the following:

a. In the Windows Search box, enter **view network connections** and click **Open**.

All Apps Documents Web	More 🔻	₽ …
Best match		
View network connections Control panel		
Settings		View network connections
O View your PC name	>	Control panel
① View RAM info	>	
○ View your Update history	>	C Open
O View processor info	>	
View your product ID	>	
O View pen and touch info	>	
View your network properties	>	
Search the web		
✓ view - See web results	>	
Apps (2)		
,		o 🛱 🤮 🚍 🔒 🐋 🎯 😁

b. Select the network adapter that will be used to discover Moxa devices, right-click the network adapter, and select **Properties**.



c. Select the Internet Protocol Version 6 (TCP/IPv6) option.

etworking			
Connect using:			
🚅 Realtek RTL81	39C+ Fast Ethernet NIC	:	
		Co	onfigure
This connection uses	the following items:		
QoS Packet	Scheduler ocol Version 4 (TCP/IP)	A)	^
	twork Adapter Multiplex	1.1.1	ol
	DP Protocol Driver		
THIOROGON LEL			
🗹 🗖 Internet Proto	ocol Version 6 (TCP/IP)		
 ✓ Internet Proto ✓ Link-Layer To 	col Version 6 (TCP/IP) opology Discovery Res	oonder	river 🗸
 ✓ Internet Proto ✓ Link-Layer To 	ocol Version 6 (TCP/IP)	oonder	river V
 ✓ Internet Proto ✓ Link-Layer To ✓ Link-Layer To 	col Version 6 (TCP/IP) opology Discovery Res	per I/O D	
 ✓ Internet Proto ✓ Link-Layer To ✓ Link-Layer To 	pcol Version 6 (TCP/IP ppology Discovery Resp ppology Discovery Map	per I/O D	>
 ✓ Internet Proto ✓ Link-Layer To ✓ Link-Layer To ✓ Install Description TCP/IP version 6.1 	pcol Version 6 (TCP/IP ppology Discovery Resp ppology Discovery Map	per I/O D Pr Pr	> operties protocol
 ✓ Internet Proto ✓ Link-Layer To ✓ Link-Layer To ✓ Install Description TCP/IP version 6.1 	Decol Version 6 (TCP/IPv oppology Discovery Resp oppology Discovery Map Uninstall The latest version of the	per I/O D Pr Pr	> operties protocol
 ✓ Internet Proto ✓ Link-Layer To ✓ Link-Layer To ✓ Install Description TCP/IP version 6. To that provides comm 	Decol Version 6 (TCP/IPv oppology Discovery Resp oppology Discovery Map Uninstall The latest version of the	per I/O D Pr Pr	> operties protocol

NOTE

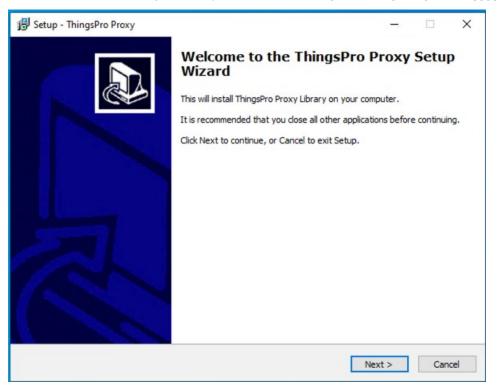
Ensure that the service port 5001 (local host) is available for the ThingsPro Proxy web server.

3. Click **OK** to apply the changes.

Installation

To install the ThingsPro Proxy App, do the following:

1. Download and run the ThingsPro Proxy installation file ThingsProProxySetup-x.x.x-yyyymmdd.



2. Click Next.

3. Select the I accept the agreement option and click Next.

🔀 Setup - ThingsPro Proxy —	×
License Agreement Please read the following important information before continuing.	
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
your acceptance of this Agreement. If you do not agree to this Agreement, you must immediately cease using any part of the Software along with all related documentation, if any, and return them with your receipt to the place you obtained them. Moxa reserves the right to change, modify, add or delete provisions in this Agreement.	^
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I accept the agreement	
< Back Next >	Cancel

4. Specify the folder to install ThingsPro Proxy in and click **Next**.

🔀 Setup - ThingsPro Proxy	-		×
Select Destination Location Where should ThingsPro Proxy be installed?			
Setup will install ThingsPro Proxy into the following folder.			
To continue, click Next. If you would like to select a different folder, click Browse.			
C:\Program Files\Moxa\ThingsPro Proxy	Bro	owse	
At least 64.8 MB of free disk space is required.			
< Back Next	>	Car	ncel

5. Specify the folder to create the ThingsPro Proxy shortcut in and click **Next**.

🕞 Setup - ThingsPro Proxy	-		×
Select Start Menu Folder Where should Setup place the program's shortcuts?		(
Setup will create the program's shortcuts in the following Start Menu folder.			
To continue, click Next. If you would like to select a different folder, click Browse.			
ThingsPro Proxy	Br	owse	
< Back Next	>	Can	cel

6. Click Install.

NOTE

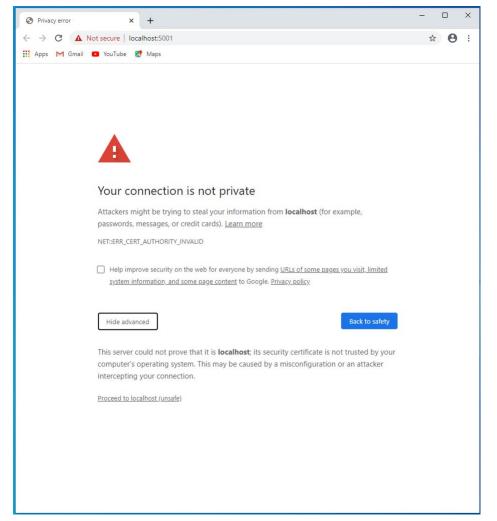
A command line console window (Windows cmd) will open during the installation process. DO NOT close the cmd window.

🔀 Setup - ThingsPro Proxy	-		
Ready to Install Setup is now ready to begin installing ThingsPro Proxy on your computer.		EL I	3
Click Install to continue with the installation, or dick Back if you want to review or change	any setti	ngs.	
Destination location: C:\Program Files\Moxa\ThingsPro Proxy		^	
Start Menu folder: ThingsPro Proxy			
<		>	
< Back Inst	all	Cancel	

7. After the installation process is complete, click **Finish**.

🐻 Setup - ThingsPro Proxy	- 🗆 X
	Completing the ThingsPro Proxy Setup Wizard Setup has finished installing ThingsPro Proxy on your computer. The application may be launched by selecting the installed shortcuts. Click Finish to exit Setup.
	Finish

- Launch the ThingsPro Proxy App.
 A webpage with privacy-related warnings will open.
- 9. Click Advanced.



10. Click Proceed to localhost (unsafe).

	мохл	ThingsPro Proxy		
=	Deshboard	Dashboard		
i.	Provisioning	Could not find any provisioning tasks		
8	Create Provisioning Plan	This page shows the status of your current provisioning tasks Start with one of the options below to create a new provisioning task		
0	About	Targeted Provisioning with Plan Masually select multiple decises from the Tringship Provy scan list and provision them based on their provisioning plans.	On-air Provisioning with plan Contructly provide decise discovered by Thitgship Provide and a specific criteria and according to their processing parameters	
		GO TO PROVISION	GO TO PROVISION	
		Do not have a provisioning plan yet? Create a Provisioning Plan Now!		

NOTE

ThingsPro Proxy utilizes HTTPS to communicate with the web server. The Chrome browser will display a warning because the unsigned certificate used is flagged as a security issue.

This chapter describes how to create a provisioning plan in ThingsPro Proxy and provision devices using the plan.

Configuring ThingsPro Proxy

You will require at least one provisioning plan in ThingsPro Proxy before you can provision devices.

Creating a Provisioning Plan

A wizard will guide you through the process of creating a provisioning plan, which includes software upgrade, configuration import, cloud enrollment, and security settings. You can also view the settings before finalizing the plan.

To create a provisioning plan, do the following:

1. Click on the Create Provisioning Plan link.

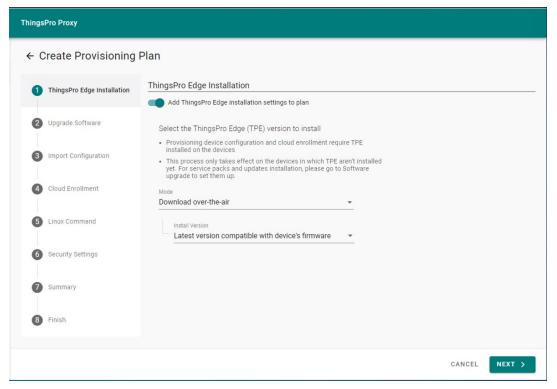
ThingsPro Proxy	
Create Provisioning Plan	
Plan introduction Create a plan to provision devices with tim	ne calibration and pre-defined settings listed below
 ThingsPro Edge installation Software upgrade Configuration import Cloud enrollment Security setting Linux command 	
Select target device model	
Mode Non-Specific Model	•

- 2. Select the target device model and click **START**.
- 3. Specify the ThingsPro Edge (TPE) Installation settings and click NEXT.
 - a. Enable/disable the TPE installation settings using the **Add ThingsPro Edge installation settings to plan** slider.
 - b. Select a mode.
 - i. Download over-the-air: Specify a version of ThingsPro Edge or select the latest version.
 - ii. Upload from my local drive: Upload a ThingsPro Edge file that you want to install.



NOTE

The AIG series devices come with ThingsPro Edge preinstalled. Hence, the installation step is disabled for these models



- 4. Specify the software upgrade settings and click **NEXT**.
 - a. Enable/disable software upgrade using the Add software upgrade pack to plan slider.
 - b. If you have enabled software upgrade, choose a method to upgrade the software pack—Auto or manual—and browse to the folder path or specify a cloud URL.

ThingsPro Proxy				
← Create Provisioning	Plan			
ThingsPro Edge Installation	Software Upgrade			
2 Upgrade Software	Select upgrade pack source			
3 Import Configuration	Auto Check for update The targeted devices will be upgraded to the latest software packages.			
4 Cloud Enrollment	The targeted devices will be upgraded to the latest software packages.			
5 Security Settings				
6 Linux Command				
Summary				
8 Finish				
< BACK	CANCEL NEXT >			

5. To import a configuration file, enable the **Add configuration settings to plan** slider, browse to the file, and specify the associated **Password**. Click **NEXT**.

ThingsPro Proxy					
← Create Provisioning Plan					
ThingsPro Edge Installation	Import Configuration Add configuration settings to plan				
Upgrade Software	Select configuration file to be uploaded configuration File				
3 Import Configuration	BROWSE				
4 Cloud Enrollment	Configuration Password				
5 Security Settings					
6 Linux Command					
2 Summary					
8 Finish					
< BACK	CANCEL	NEXT >			

 (optional) In the Cloud Enrollment page, click Manage and select Edit to change the settings. To add more cloud services, click + Add another.

ThingsPro Proxy		
← Create Provisioning	Plan	
ThingsPro Edge Installation	Cloud Enrollment Add cloud service settings to plan	
Upgrade Software	Enroll on to the cloud server	
Mport Configuration	Not selected cloud server	MANAGE -
4 Cloud Enrollment	+ Add another	
5 Security Settings		
6 Linux Command		
2 Summary		
B Finish		
< BACK		CANCEL NEXT >

a. Azure IoT Device/ Azure IoT Edge

i. Enter the **Connection String** and click **VERIFY & SAVE**.

Add Connection	
Info: Add an IoT Hub connection and verify it	t.
Connection String ②	
	1
<u>.</u>	
CA	NCEL VERIFY & SAVE

ii. If you want to edit the **Connection String**, click **EDIT**.

The Device ID is auto generated by using the serial number of the device and authenticated via a symmetric key.

Enroll on to the cloud server		
Server Type		
Azure IoT Hub Device	•	
Configure an IoT Hub connection		
IoT Hub connection		EDIT
the second se	gspro-IoTHub-newTwin.azure-devices.net;Shared	
Enrollment settings		
Enrollment settings Device Id Ø		
Device Id 💿	•	
-	*	

b. Azure DPS

i. Enter the **Connection String** and click **VERIFY & SAVE**.

and verify it.	
	11
	and verify it.

ii. If you want to edit the Connection String, click **EDIT** and enter the **ID Scope**.

The Device ID is a	uto generated	using the s	serial number	of the	device and	authenticated	via a
symmetric key.							

	ThingsPro Proxy
Dashboard	Enrollment settings Id Scope
Create Provisioning Plan	The value is required Device Id ⑦ Auto-generated by serial number
③ About	Authentication Type Symmetric key IoT Edge Device The provisioning device is an IoT Edge-capable device
	Assign Policy ⑦ Evenly weighted distribution
	The value is required Re-provisioning Policy Re-provision and migrate data
	Initial Device Twin State { "properties": { "desired": {} } }
	< BACK

- iii. (optional) Select The provisioning device is an IoT Edge-capable device.
- iv. Select an **Assign Policy**.
- v. Enter the name of the **IoT Hubs**.
- vi. Select a Re-provisioning policy.
- vii. (optional) Customize the Initial Device Twin State.
- viii. Click NEXT.

c. Moxa DLM Service

- i. Select the service type **Moxa DLM Service**.
- ii. Enter an **Email** (account) and **Password**.

Info: Add a ThingsPro cloud connection and	verify it.
Email	
aaa@moxa.com	
Password	
	8

iii. Select a project name to register devices.

Edit cloud Enrollmer	Setting	
Select server type		
Server Type		
Moxa DLM Service	•	
Configure an Moxa DLM connec	n	
→ Moxa DLM connection		EDIT
Verified		
Email : alfredfh.li@moxa.com Password: ······· &		
Enrollment settings Project Name ThingsPro Edge Project	·•·	
Authentication Type		
X.509		
Connection		
Enable auto-connect		

iv. Click NEXT.

d. AWS IoT Core

i. Enter the Access Key ID and Secret Access Key and click VERIFY & SAVE.

Info: Add an AWS IoT Core connection	and verify it	
	and verify it.	
Access Key ID 🕐		
Secret Access Key 🕐		
ecter Access Rey U		Ø
	CANCEL	VERIFY & SAVE

- ii. If you want to edit the Access Key ID and Secret Access Key, click EDIT.
- iii. The Thing Name is auto generated by using the serial number of the device.

Server Type AWS IoT Core	• 	
Configure an AWS IoT Core connectio		
→ AWS IoT Core connection		EDIT
Access Key ID: AKIATM2PBA27J7E2G Secret Access Key:	M	
Enrollment settings		
Region *		
	▼	
Asia Pacific (Hong Kong)		
Asia Pacific (Hong Kong)		

7. (optional) You can disable a provisioning service to prevent devices from being discovered or modify the current password. Click **NEXT** to apply the changes.

Disable Dravision Carvisa	
Disable Provision Service These devices cannot be four	nd after provision service gets di
nese denese comot de loui	a arter promotori del noe geto di
Change password	
Password	6
	Q.
Confirm Password	
	6

8. (optional) You can upload Linux command scripts and deploy them to targeted devices. The supported file formats include tar.gz, bash, binary, executables, and Python3 package.

ThingsPro Proxy			
← Create Provisioning	Plan		
ThingsPro Edge Installation	Linux Command Add linux command settings to plan		
Upgrade Software	Select linux command file to be uploaded Linux Command File		
Import Configuration	BROWSE		
Cloud Enrollment	Execution Timeout (sec) 600		
Security Settings			
6 Linux Command			
3 Summary			
8 Finish			
< BACK		CANCEL	NEXT >

NOTE

You must include the following command in the Linux command file to request an authentication token for the ThingsPro Edge API.

curl https://127.0.0.1:8443/api/v1/auth



9. Specify a plan name, assign a password, and click **CREATE**.

The password is used to encrypt the plan and then decrypt it before importing the plan.

ThingsPro Proxy	
\leftarrow Create Provisioning	lan
ThingsPro Edge Installation	Linux Command Add linux command settings to plan
Upgrade Software	Select linux command file to be uploaded
Import Configuration	Linux Command File BROWSE
Cloud Enrollment	Execution Timeout (sec) 600
Security Settings	
6 Linux Command	
O Summary	
8 Finish	
< BACK	CANCEL NEXT >

10. Click **DOWNLOAD & FINISH** to download the plan.

The plan will be downloaded as a *.zip file.

ThingsPro Proxy uses plans to provision devices. Plans can be stored in a secure location and used in the different workplaces where ThingsPro Proxy is installed.

Provisioning Devices

NOTE

There are two ways to provision devices: Targeted Provisioning and On-air Provisioning.

TargetedYou can specify a batch of devices for provisioning based on the device model,Provisioningfirmware version, ThingsPro Edge version, and communication interfaces.On-airThingsPro Proxy will automatically scan all compatible devices in LAN and batchProvisioningdeploy the configuration based on the specified plan.

NOTE

ThingsPro Proxy relies on the UDP port 40404 for scanning devices in the same network. Be sure to add UDP port 40404 to the firewall allowed list for proper device discovery.

To provision devices, do the following:

- 1. After you have created a provisioning plan, click on the **Provisioning** link.
- 2. Choose the mode of provisioning: Targeted Provisioning or On-air Provisioning.

	ThingsPro Proxy						
Dashboard	Provisioning						
Provisioning	1 General settings		🖉 s	ettings for actions –			- 3 Confirm
Create Provisioning Plan About	Device Access	On-air Provisioning					EDIT
	User: admin Password:	8				Jaj SCAN	Q SEARCH
	Model Name	Permission	Serial No.	TPE Installed	TPE Version	Firmware Version	
	UC-8100A-ME-T-LX	Ø Granted	TAICB1046775	\otimes	2.2.0-2895	1.5	1
	AIG-301-T-US-AZU-LX	⊘ Granted	TRDSMP000009	\otimes	2.1.0-2412	1.0	١
	UC-8210-T-LX	⊘ Granted	TBZKB1022297	\otimes	2.1.1-2821	1.2	٢
						CANC	EL NEXT >

Devices will be accessed using their default credentials (Account: admin; Password: admin@123).

3. (optional) Edit the default credential to discover your devices.

You can click **EDIT** in the **Device Access** section to change the default credentials so that the devices whose default credentials have been changed can be discovered.

- 4. Select devices to discover or press **SCAN** to re-scan the LAN for devices.
- 5. Click **NEXT**.
- 6. Select the provisioning plan file.
 - > New plan file: Select this option to browse to a file in a local computer.
 - > Recent plan files: Choose from an existing plan and enter the associated password.
- 7. Click UPLOAD.

Prov	visioning	
0	General settings 2 Settings for actions 3 Confirm	
Sel	lect provisioning plan file	
0) New plan file Select a new provisioning plan file from local.	
۲	Recent plan files Select a used plan file in the history list of plans.	
	Plan File	
	MoxaDLMEnroll_0823b424-41b6-4076-9906-d46430f358c2	
>	Plan Password *	
	<u></u>	
	UPLOAD	
	Did not have the plan? Create Provisioning Plan Now !	

8. Click **NEXT**.

_		
General settings	2 Settings for actions	3 Confirm
elect provisioning plan file to be uploaded		
lan File		
DLMenroll_5518d337-a208-4071-8c14-4b36d9fa36ce.zip	×	
lan Content		
ThingsPro Edge Installation		G₂
Installation Version : -		
Upgrade software		
Configuration		
Configuration File : - Configuration Password : -		
Cloud Enrollment		
Server Type : Moxa DLM Service Email : alfredfh.li@moxa.com		
Email : alfredfh.li@moxa.com Authentication Type : X.509		

9. Click **APPLY**.

Provisioning					
General settings		Settin	ngs for actions		3 Confin
Confirm plan and device list					
DLMenroll TPE Installation: - Software Upgrade: - Configuration Import: -					DETAIL
Eligible Device (1) Ine	eligible Device (0)			ß	
⊘ Device list can be provis	iloned				Q SEARCH
Model Name	Serial No.	TPE Installed	TPE Version	Firmware Version	Message
AIG-301-T-US-AZU-LX	TRDSMP000009	Installed	2.1.0-2412	1.0	-
			Items per page	E <u>10 ▼</u> 1 − 1 of 1	$ \langle \rangle \rangle > $

NOTE

For ThingsPro Proxy to be able to discover devices correctly, the Ethernet interfaces should have a proper IP address, subnet mask, and default gateway configured. We recommended enabling a DHCP server to allocate IP addresses to devices instead of assigning them manually.

NOTE

Before running the provisioning plan, ThingsPro Proxy will synchronize your server time on to the devices.

Checking for Updates

You can configure ThingsPro Proxy to update automatically. To configure auto-update, do the following:

- 1. Go to the About page.
- 2. Click MANAGE and select Check for updates.

	ThingsPro Proxy	
Dashboard	About	
Create Provisioning Plan	Version Support End-user License Agreement Tutorial	
Provisioning		
) About	ThingsPro Proxy Version 1.3.0 (20220218) @	MANAGE -
	Check for updates automatically: Disable Last checked time: Mar 10, 2022 15:59:42	Check for updates
	Copyright © 2022 Moxa Inc. All rights reserved.	Edit update setting

3. If a new version is available, the information will be presented. Click **INSTALL** to install the new version as needed.

	New Version 1.3.1	Tutorial
ľó	A new version of ThingsPro Proxy is available!	MANAGE •
Ŀ	ThingsPro Proxy 1.3.1 is now available (You have 1.3.0). Would you like to download and install it now?	
pyrig	✓ Show release note	
	NEW FEATURES	
	 We have added the Notification item to the toolbar by default and fixed a few potential issues that could occur with notifications 	
	BUG FIXED	
L	 Fixed a couple of toolbar-related bugs that caused items with notification bades to appear clipped or translucemt in some cases. We've also made notification badges easier to read if you are using Sketch in dark mode. 	
	 Fixes a bug that could cause a complex shape layer to disappear if you tried to offset its path a more negative amount than is possible 	
	CANCEL	

4. (optional) Automatic check for updates is disabled by default. You can select the **Edit update setting** option under MANAGE to enable this service.

Abou	t				
	Version	Support	End-user License Agreement	Tutorial	
10	ThingsPro Proxy Version 1.3.0 (2022 Check for updates aud Last checked time: M	20218) 😨 omatically: Disable		_	MANAGE +
Copyri	Edit update	setting			
		dates automatica Pro Proxy updates a			
			CANCEL SAVE		

- 1. ThingsPro Proxy v1.x.x does not support running multiple plans simultaneously.
- 2. A connection failed message is displayed if the Ethernet interfaces are not able to get an IP address assigned after ThingsPro Edge is installed. The LAN1 interface of ThingsPro Edge is DHCP enabled by default and this error results in the ThingsPro Proxy not being able to access ThingsPro Edge.

NOTE

If devices are discovered via Wi-Fi (Client mode), they cannot be provisioned (grayed-out in the search results).

- 3. DO NOT insert SIM cards before the provisioning process is complete.
- ThingsPro Edge has about 15 minutes to provisioning a device after it is powered on.
 Before starting the provisioning process, ensure that the ThingsPro Proxy tool is ready, and the devices are powered on.
- 5. The time taken to install ThingsPro Edge (TPE) is subject to the capacity of the devices. For example, it might take around 30 minutes to install TPE on a UC-8100A-ME-T Series device.
- 6. If the TPP web GUI is disconnected for an extended period and does not reconnect, you can stop and restart the service.

Click on the Windows Start button and select the ThingsPro Proxy folder. Click **Stop ThingsPro Proxy Service** and then **Start ThingsPro Proxy Service** to relaunch the TPP service.

7. Devices newly registered with AWS IoT Core sometimes require a reboot to be available.