

ThingsPro Proxy User's Manual

Version 4.0, March 2022

www.moxa.com/product



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ThingsPro Proxy User's Manual

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Introduction

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's 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.

Installation Guide

In this chapter, we describe how to install the ThingsPro Proxy tool.

The following topics are covered in this chapter:

▣ **Installing ThingsPro Proxy**

- Prerequisites
- Installation

Installing ThingsPro Proxy

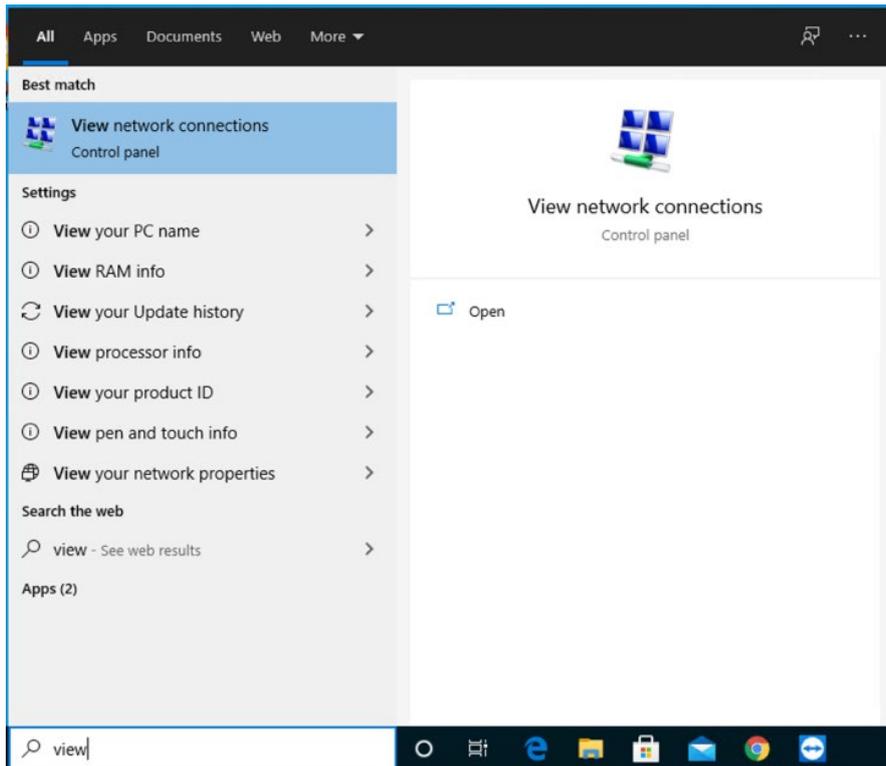
Prerequisites

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

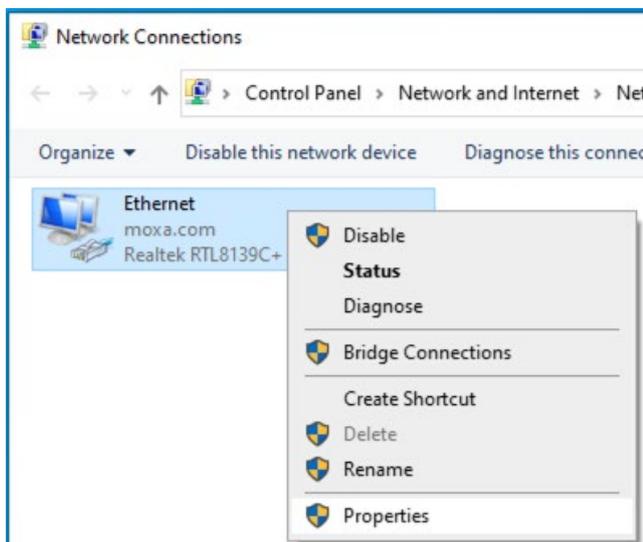
2. Enable the Link-local IPv6 address on the PC.

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

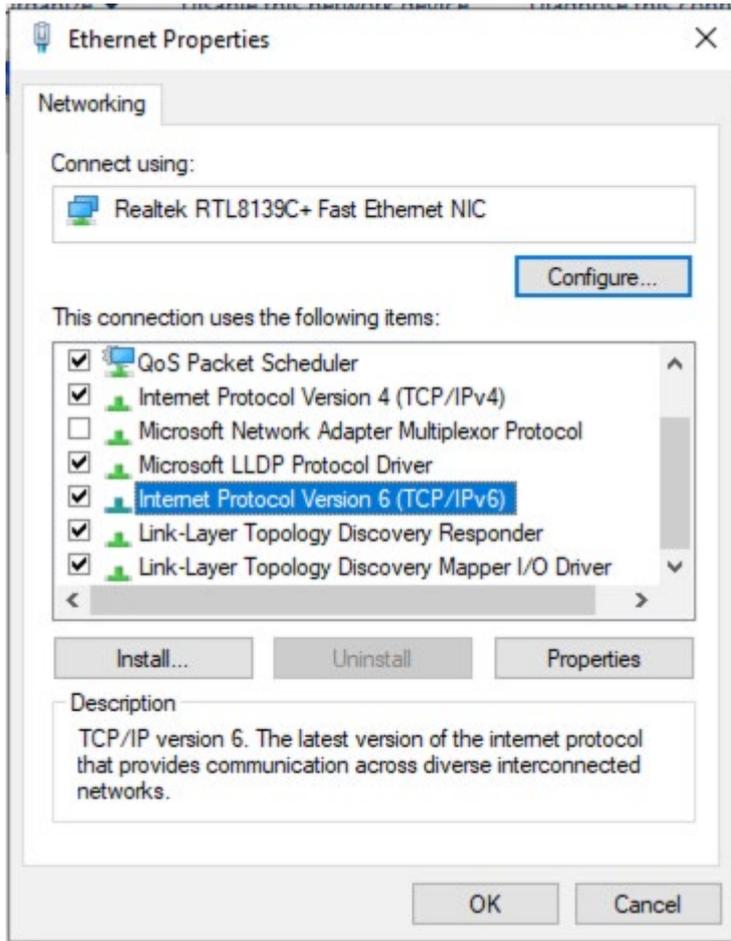
- i. In the Windows Search box, enter **view network connections** and click **Open**.



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



- iii. Select the **Internet Protocol Version 6 (TCP/IPv6)** option.



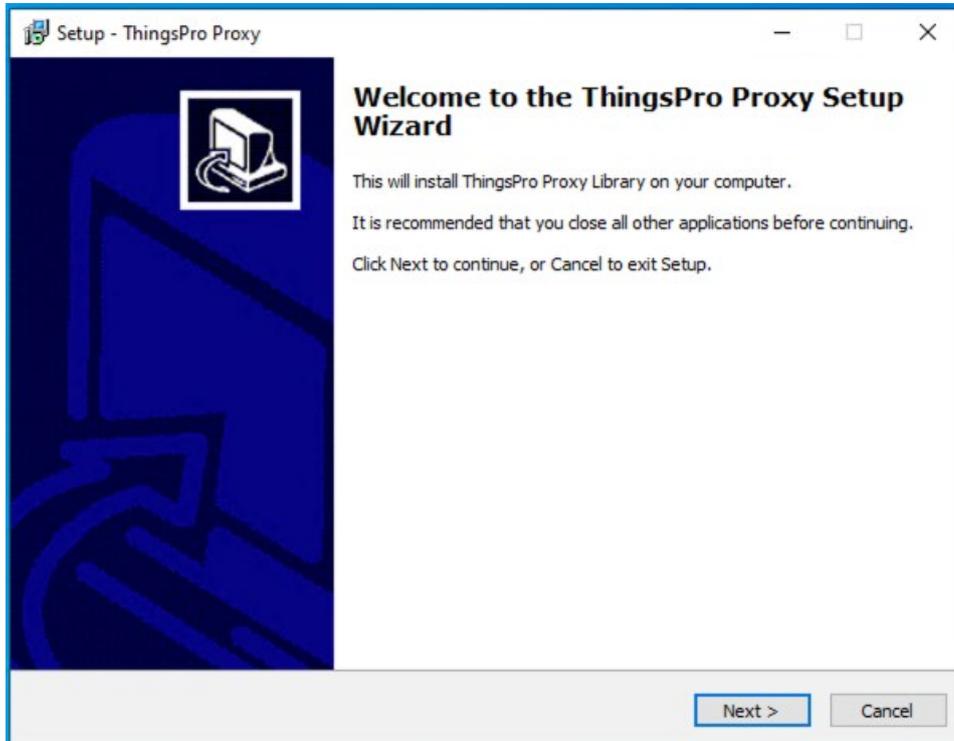
NOTE Ensure that the service port 5001 (local host) is available for the ThingsPro Proxy web server.

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

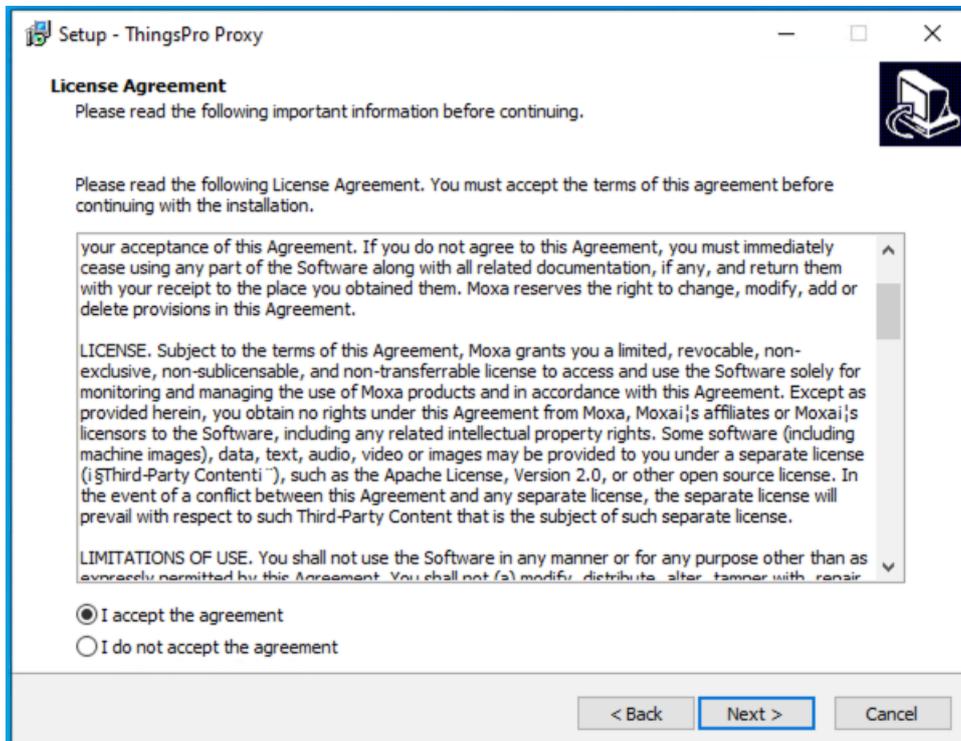
Installation

To install the ThingsPro Proxy App, do the following:

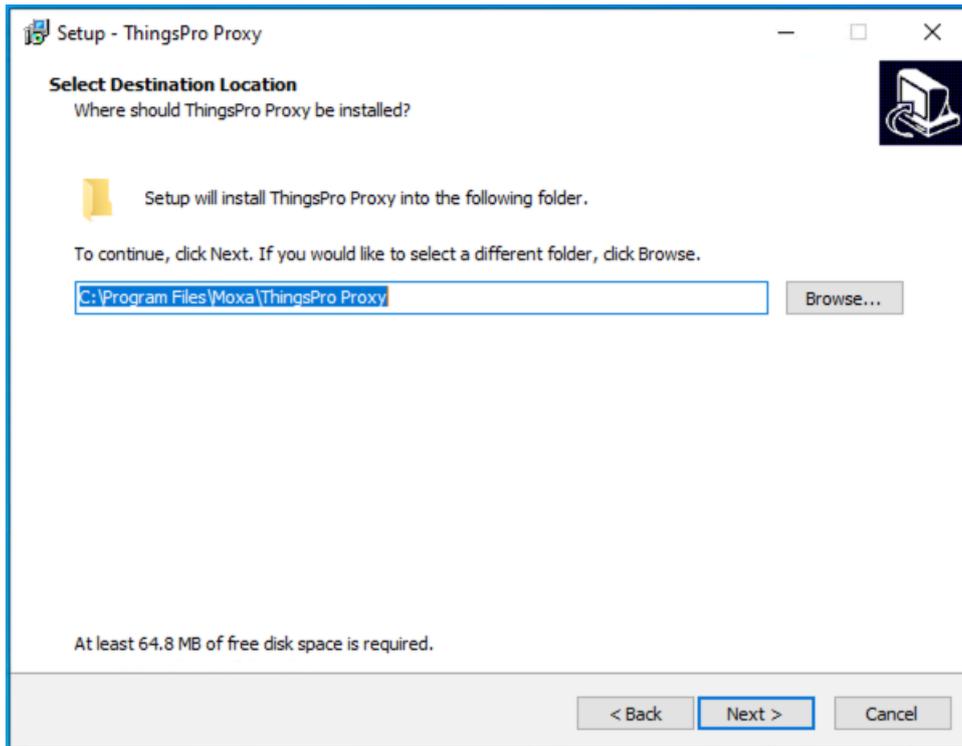
1. Download and run the ThingsPro Proxy installation file **ThingsProProxySetup-x.x.x-yyyyymmdd**.



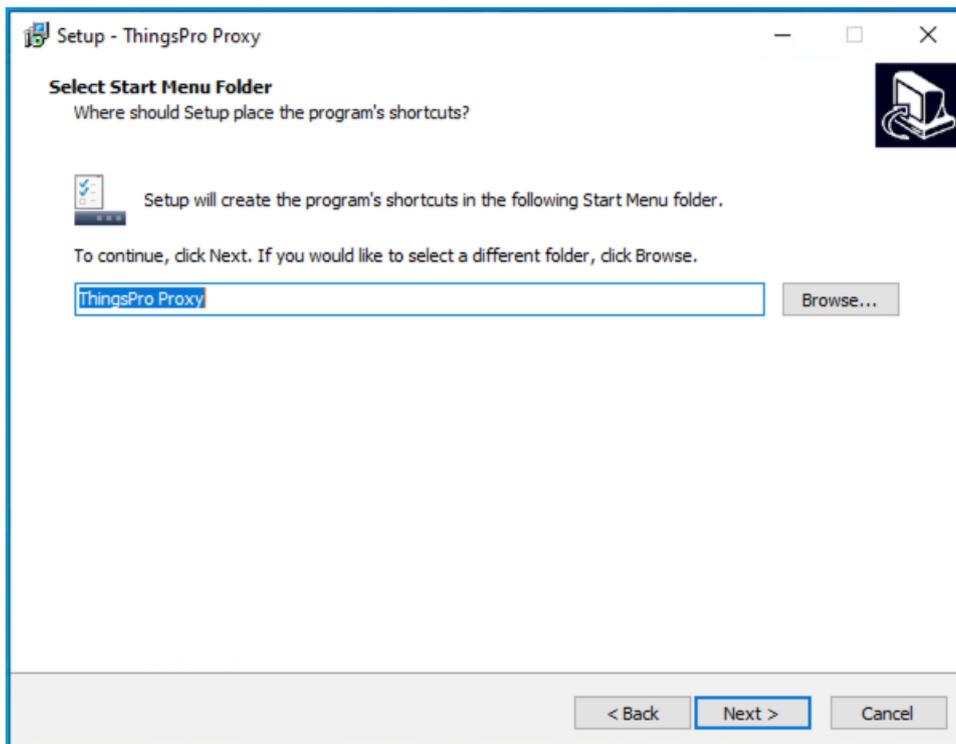
2. Click **Next**.
3. Select the **I accept the agreement** option and click **Next**.



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

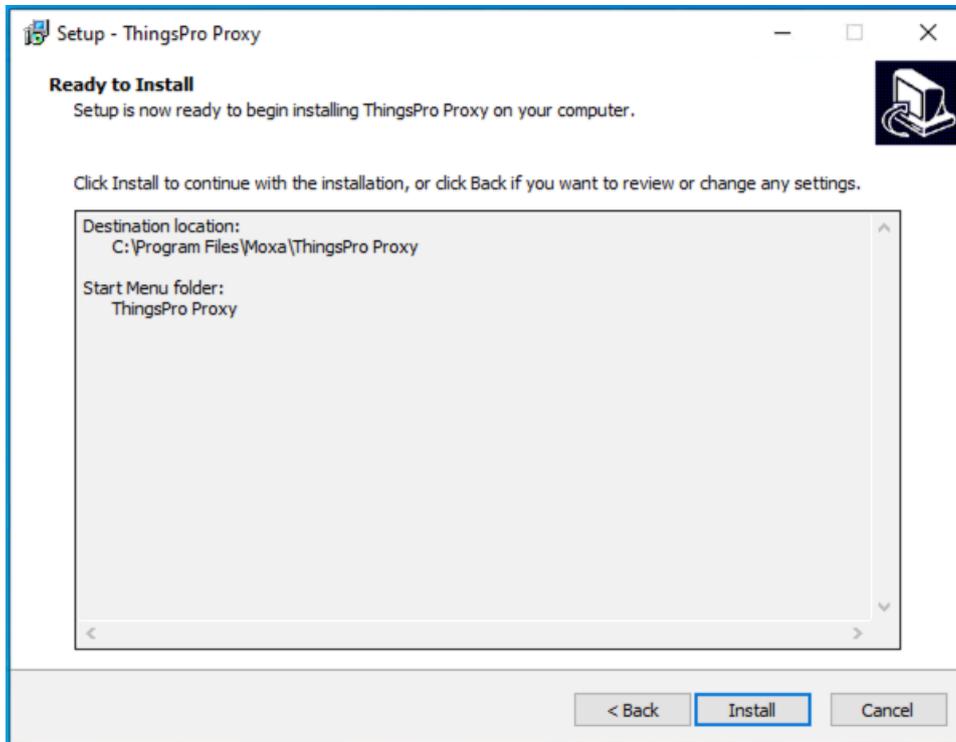


- 5. Specify the folder to create the ThingsPro Proxy shortcut in and click **Next**.

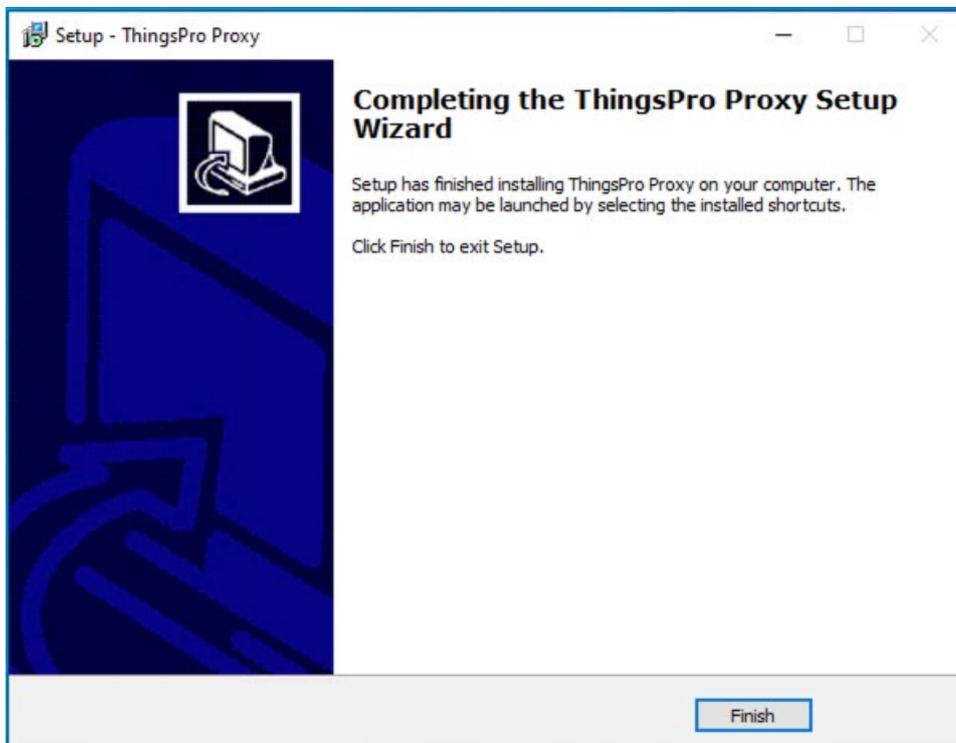


6. Click **Install**.

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

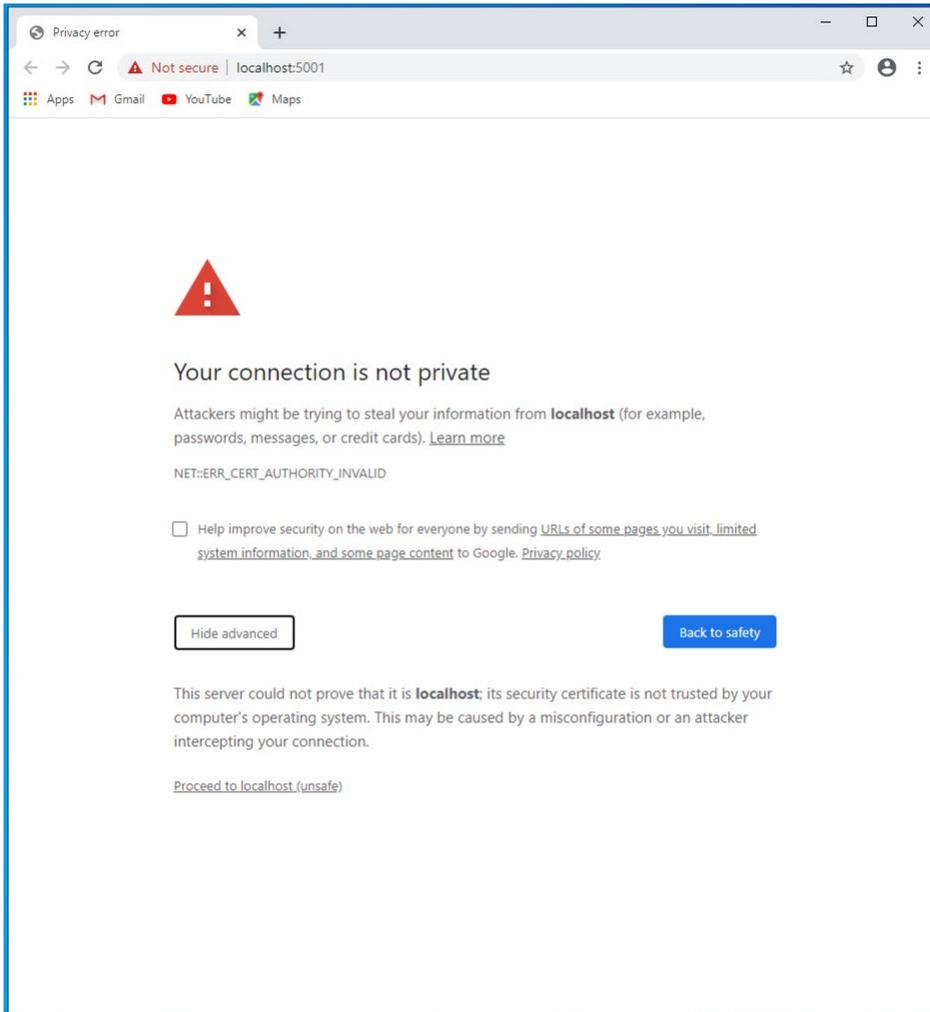


7. After the installation process is complete, click **Finish**.

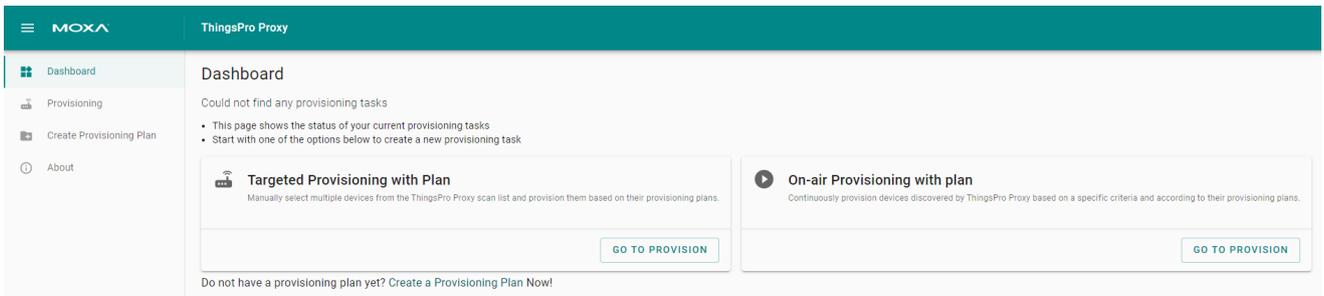


8. Launch the ThingsPro Proxy App.
A webpage with privacy-related warnings will open.

9. Click **Advanced**.



10. Click **Proceed to localhost (unsafe)**.



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.

Configuring ThingsPro Proxy

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

The following topics are covered in this chapter:

▣ **Configuring ThingsPro Proxy**

- Creating a Provisioning Plan
- Provisioning Devices
- Checking for Updates

Configuring ThingsPro Proxy

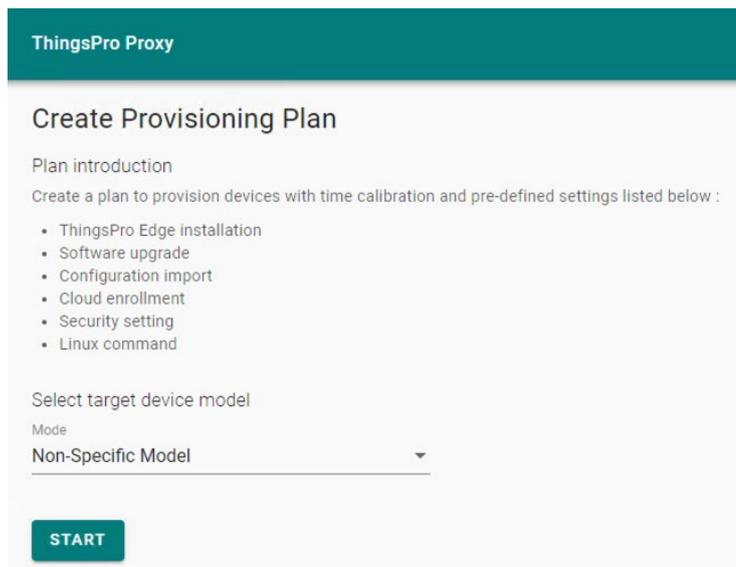
You will require at least one provisioning plan in ThingsPro Proxy before you can provision devices.

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 time calibration and pre-defined settings listed below :

- ThingsPro Edge installation
- Software upgrade
- Configuration import
- Cloud enrollment
- Security setting
- Linux command

Select target device model

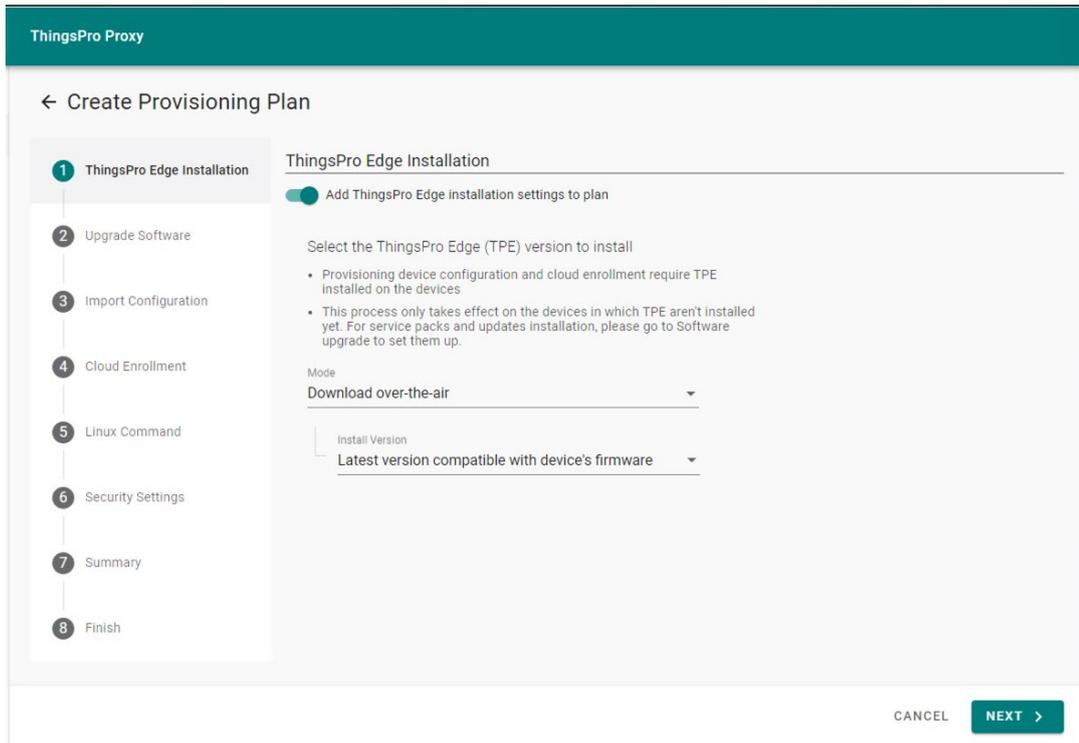
Mode

Non-Specific Model

START

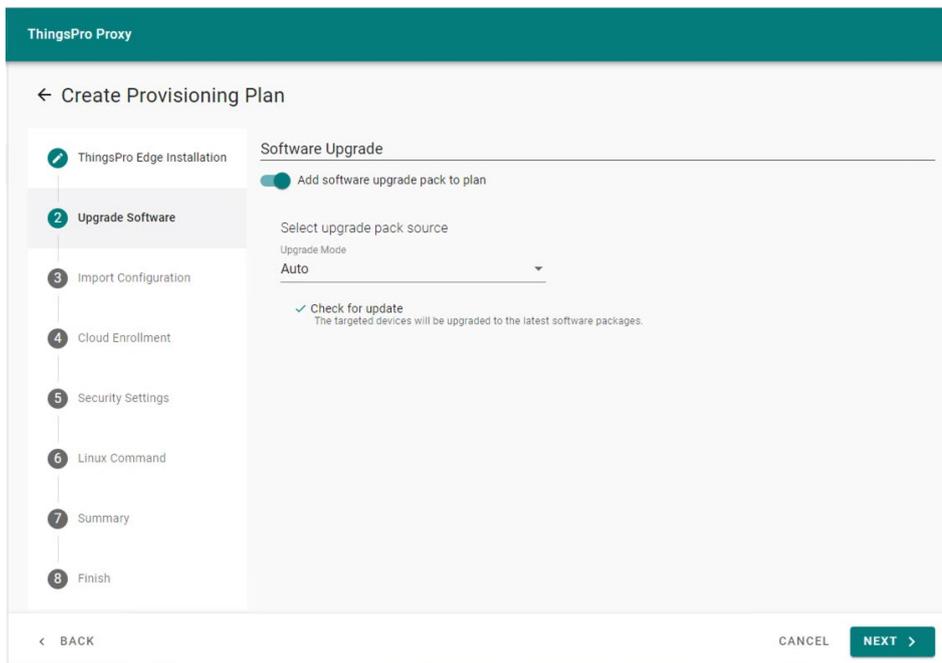
2. Select the target device model and click **START**.
3. Specify the **ThingsPro Edge (TPE) Installation** settings and click **NEXT**.
 - a. Enable/disable the TPE installation settings using the **Add ThingsPro Edge installation settings to plan** slider.
 - b. Select a mode.
 - i. **Download over-the-air**: 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

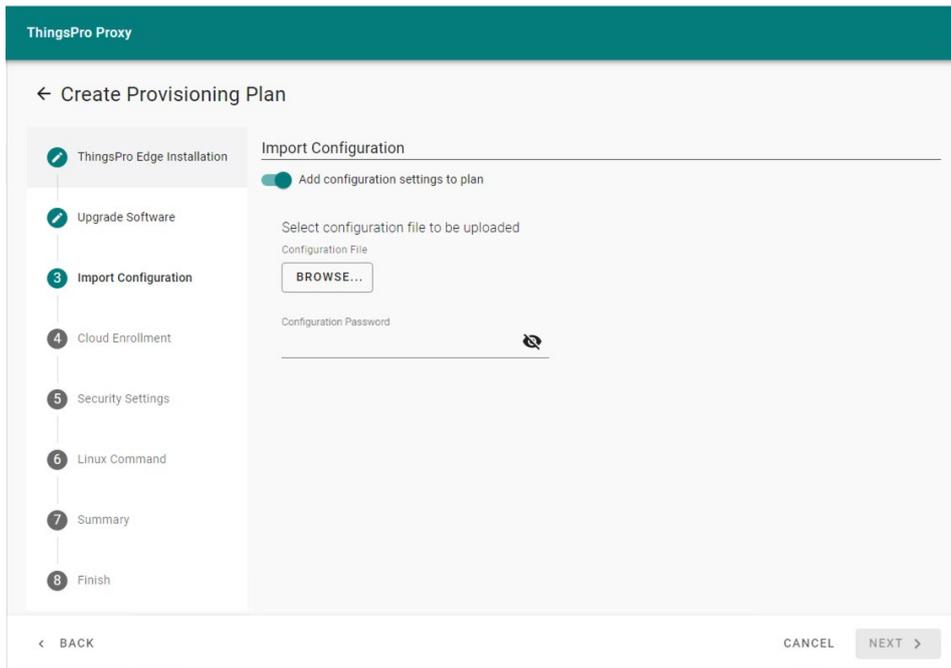


4. Specify the software upgrade settings and click **NEXT**.

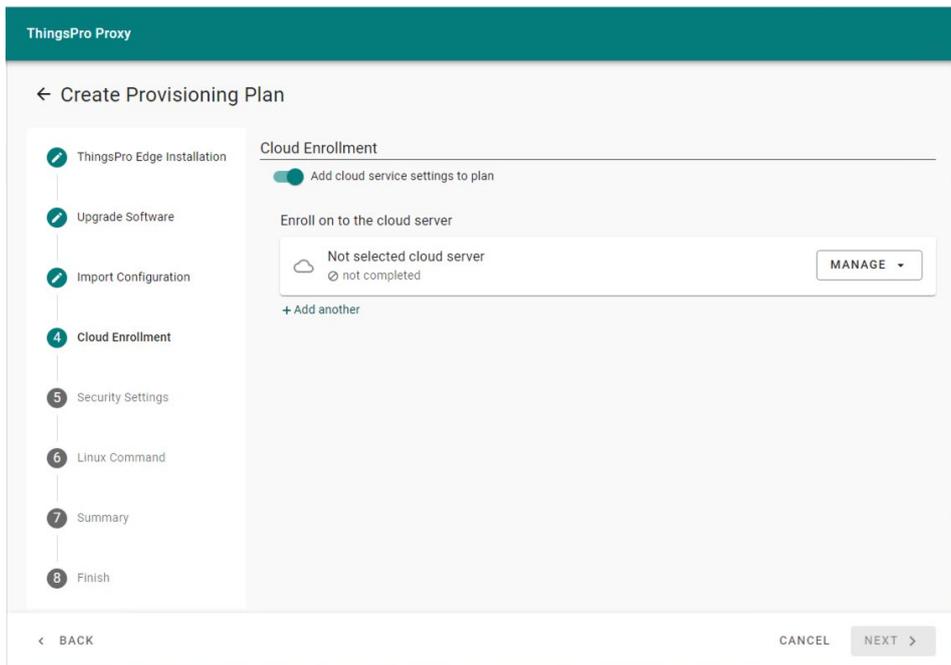
- A. Enable/disable software upgrade using the **Add software upgrade pack to plan** slider.
- B. If you have enabled software upgrade, choose a method to upgrade the software pack—**Auto** or **manual**—and browse to the folder path or specify a cloud URL.



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

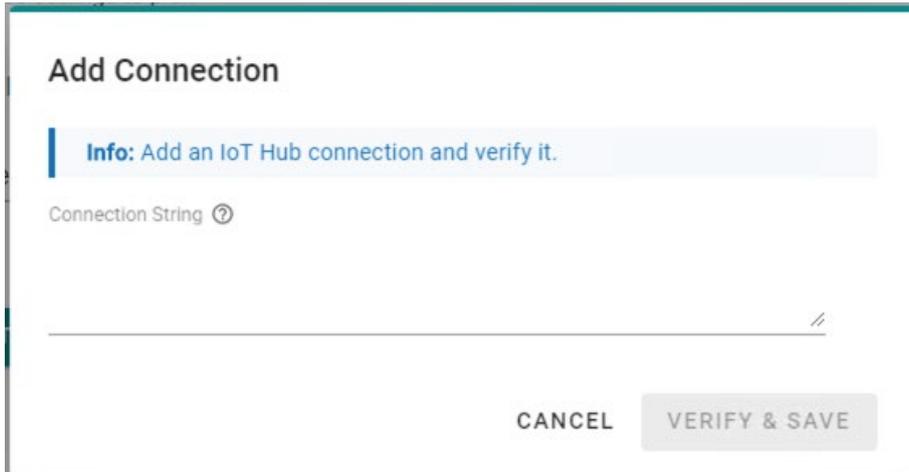


- (optional) In the Cloud Enrollment page, click **Manage** and select **Edit** to change the settings. To add more cloud services, click **+ Add another**.



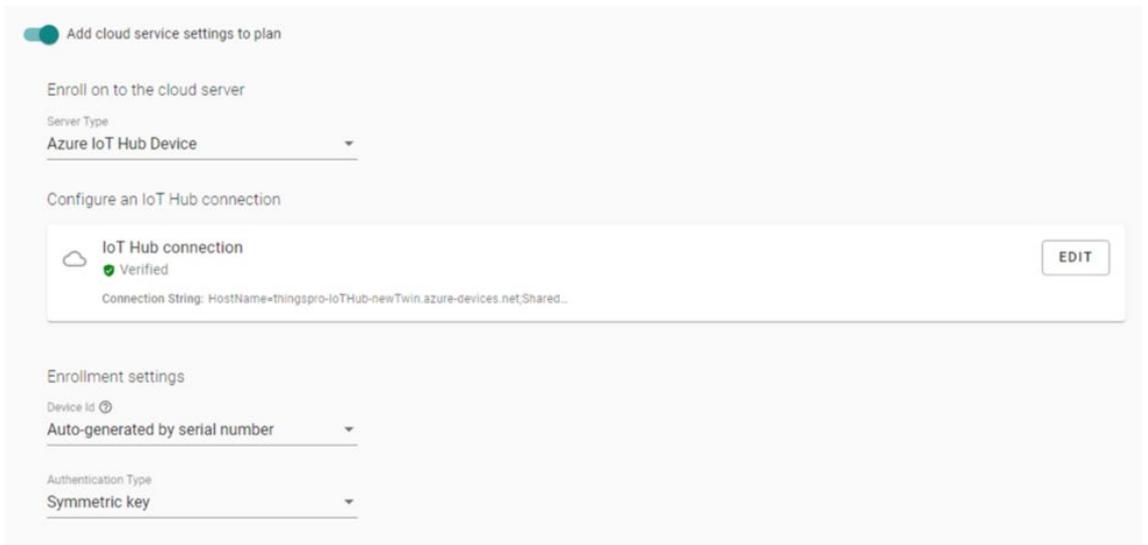
A. Azure IoT Device/ Azure IoT Edge

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



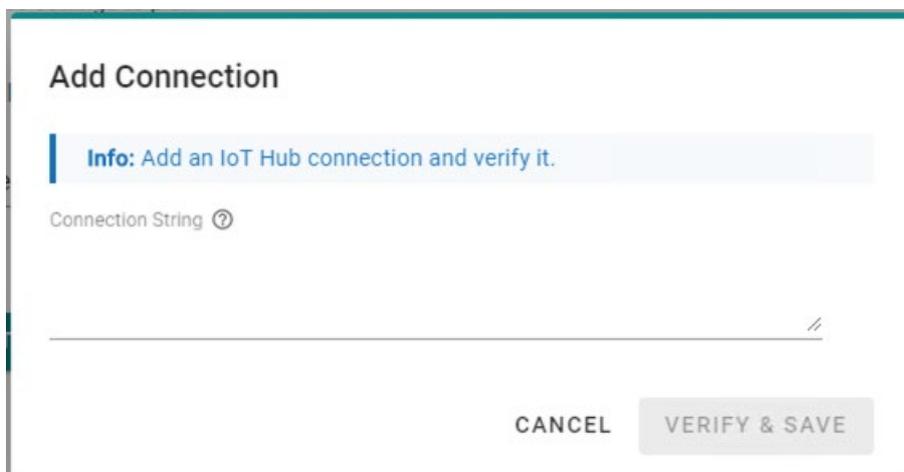
If you want to edit the Connection String, click **EDIT**.

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



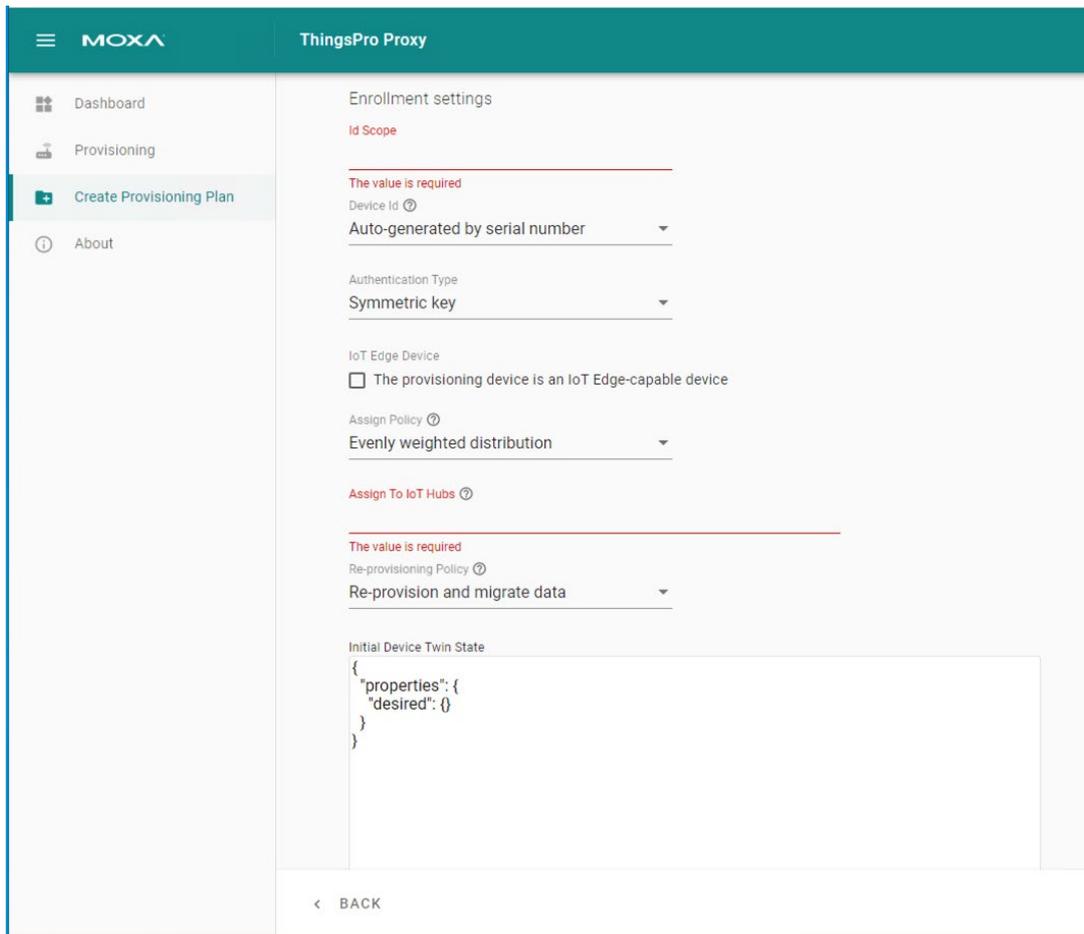
B. Azure DPS

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



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

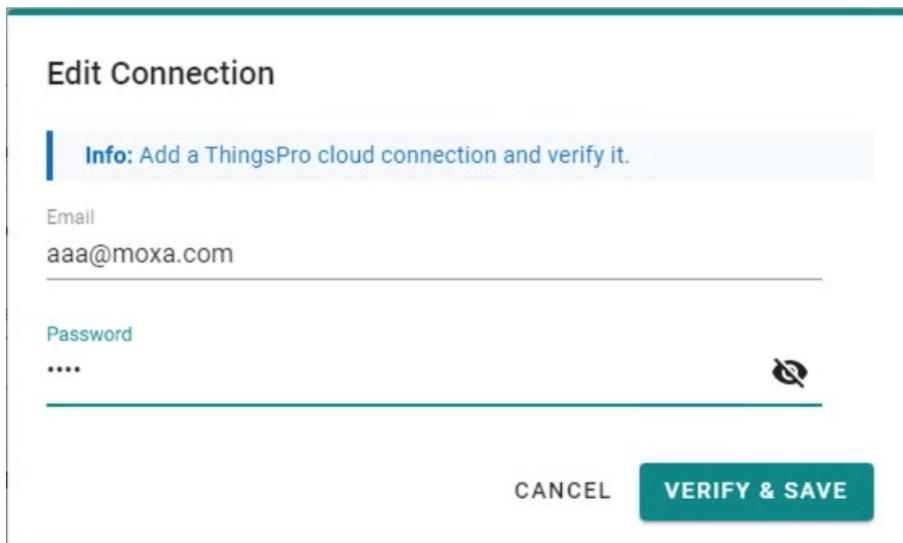
The Device ID is auto generated using the serial number of the device and authenticated via a symmetric key.



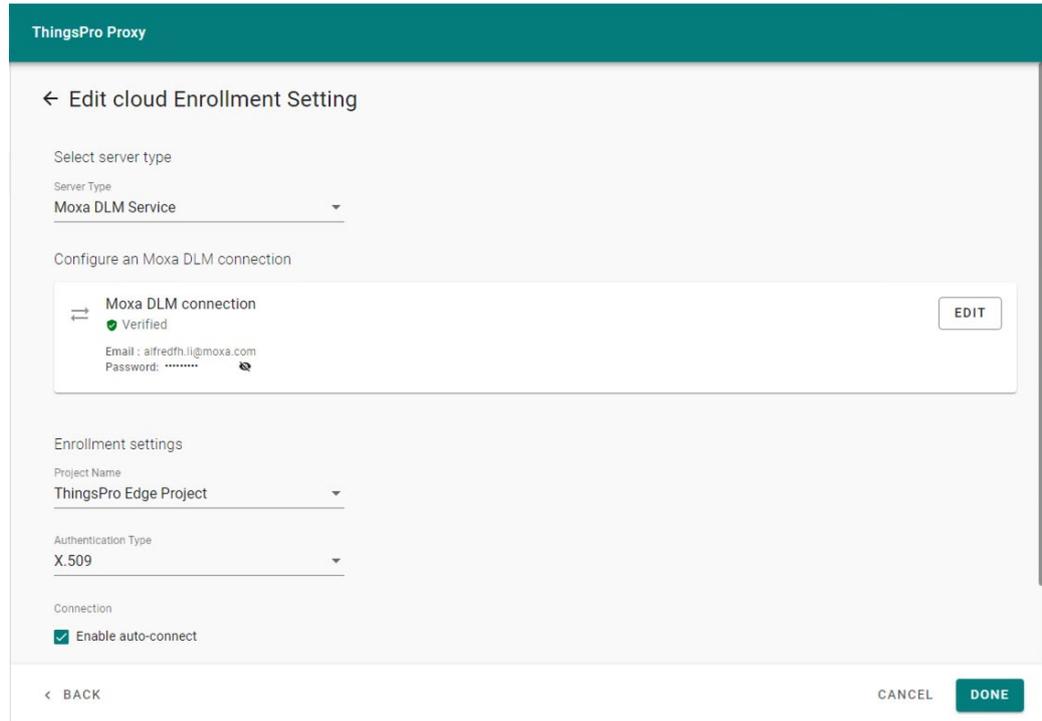
- ii. (optional) Select **The provisioning device is an IoT Edge-capable device**.
- iii. Select an **Assign Policy**.
- iv. Enter the name of the **IoT Hubs**.
- v. Select a Re-provisioning policy.
- vi. (optional) Customize the Initial Device Twin State.
- vii. Click **NEXT**.

C. Moxa DLM Service

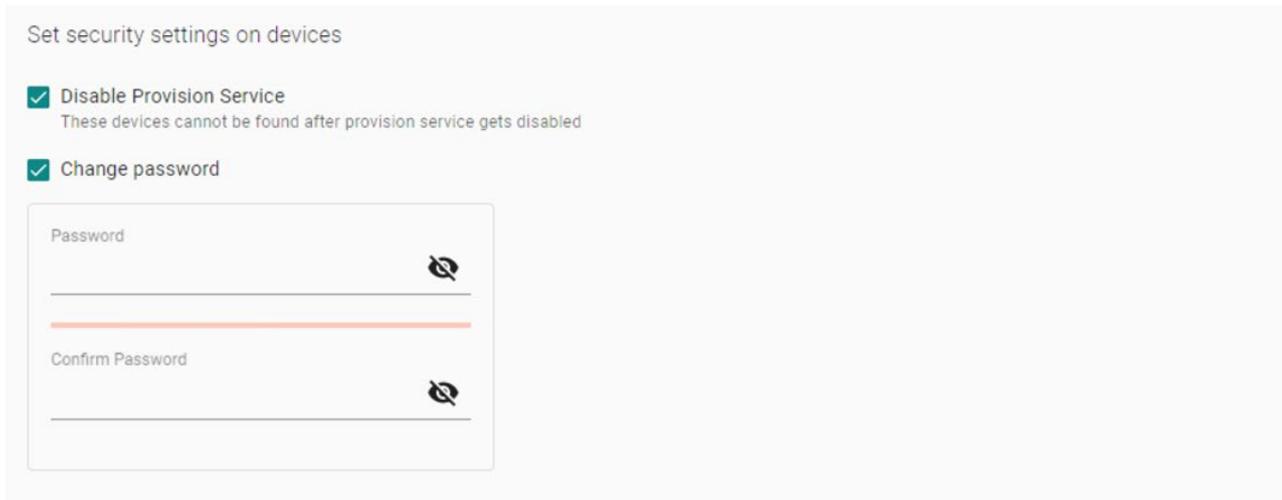
- i. Select the service type **Moxa DLM Service**.
- ii. Enter an **Email** (account) and **Password**.



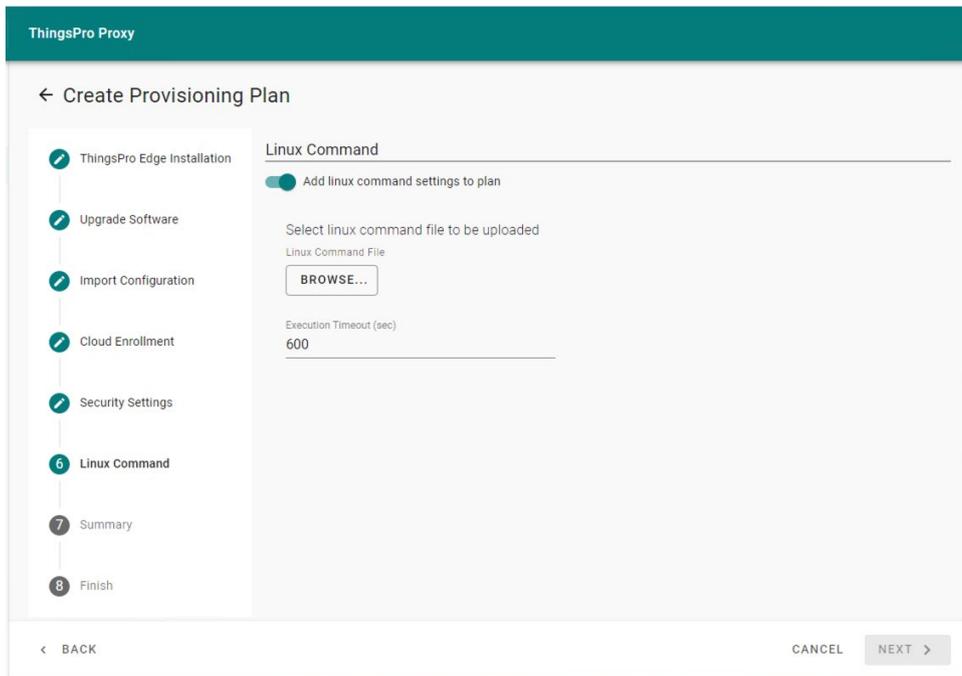
- iii. Select a project name to register devices.



- iv. Click **NEXT**.
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.



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.



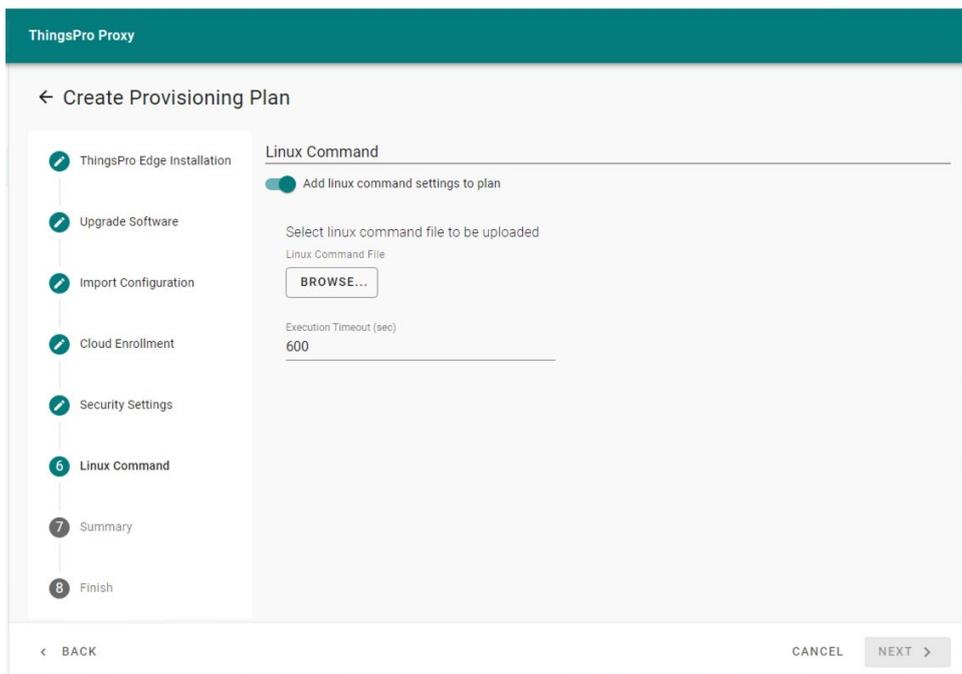
NOTE You must include the following command in the Linux command file to request an authentication token for the ThingsPro Edge API.

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

```
token=$(curl https://127.0.0.1:8443/api/v1/auth -X POST -H "Content-Type:application/json" -d '{"name":"admin","password":"admin@123"}' -k | jq -r .data.token)
curl https://127.0.0.1:8443/api/v1/function \
-X PATCH -H "Content-Type:application/json" \
-H "mx-api-token:$token" \
-d '{"name":"demo","enabled":true,"trigger":{"driven":"timeDriven","dataDriven":{"tags":{},"events":{},"timeDriven":{"mode":"boot","intervalSec":1,"cronJob":""}}},"expose":{"tags":[]}]'
```

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.



- Click **DOWNLOAD & FINISH** to download the plan.
The plan will be downloaded as a *.zip file.

NOTE 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

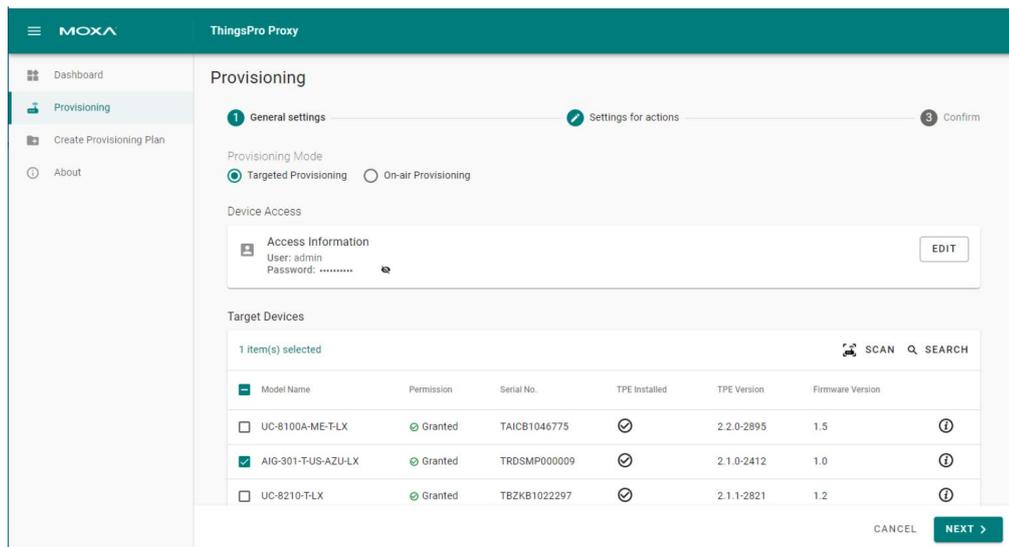
There are two ways to provision devices: **Targeted Provisioning** and **On-air Provisioning**.

- | | |
|------------------------------|--|
| Targeted Provisioning | You can specify a batch of devices for provisioning based on the device model, firmware version, ThingsPro Edge version, and communication interfaces. |
| On-air Provisioning | ThingsPro Proxy will automatically scan all compatible devices in LAN and batch deploy 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.

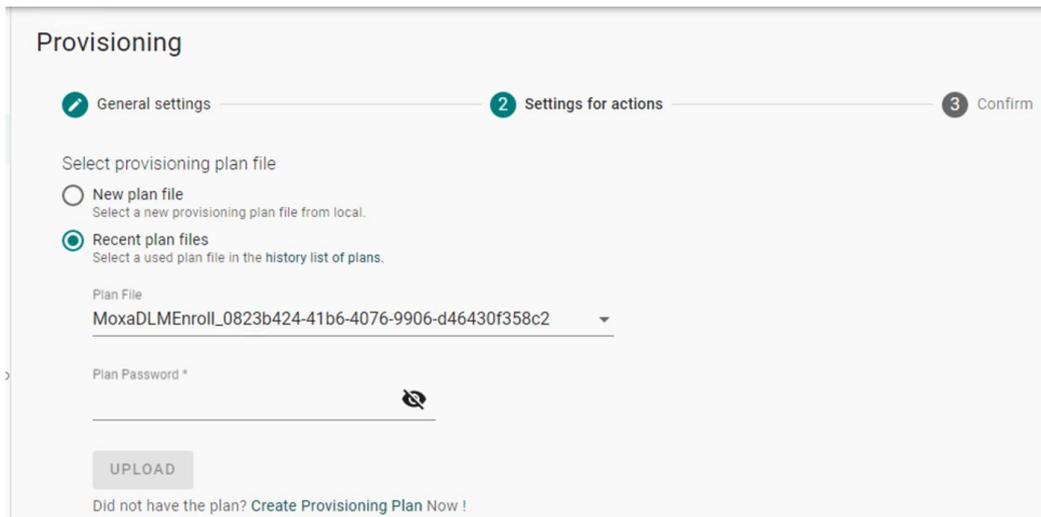
To provision devices, do the following:

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

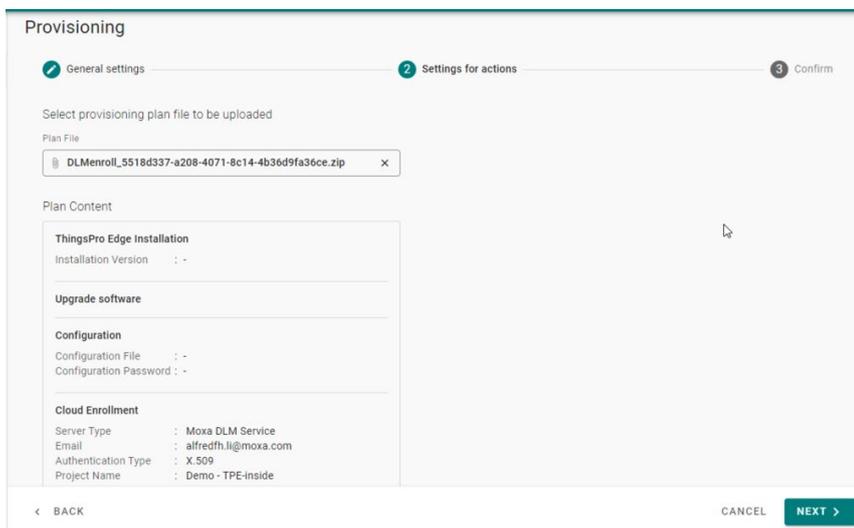


Devices will be accessed using their default credentials (Account: **admin**; Password: **admin@123**).

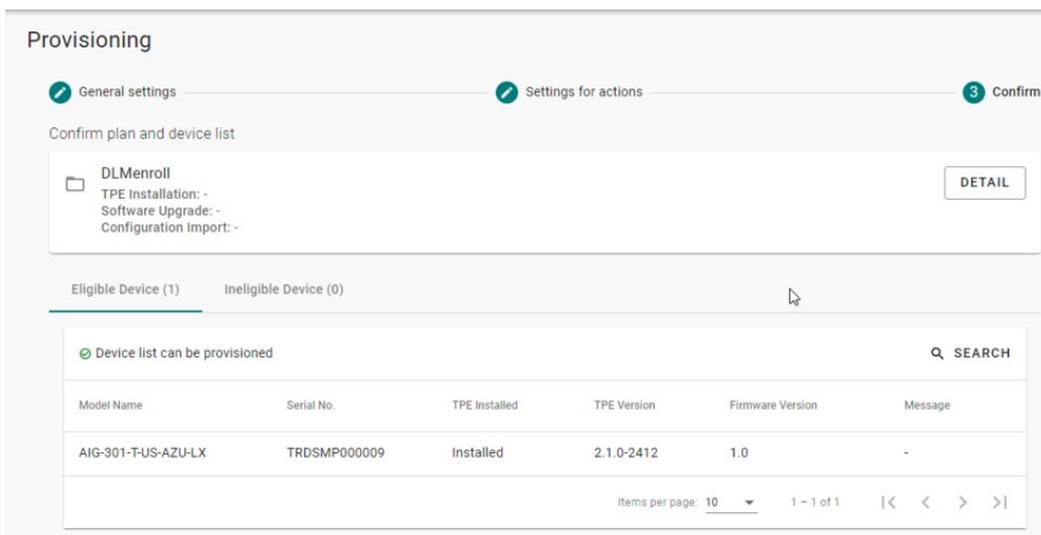
- (optional) Edit the default credential to discover your devices.
You can click **EDIT** in the **Device Access** section to change the default credentials so that the devices whose default credentials have been changed can be discovered.
- Select devices to discover or press **SCAN** to re-scan the LAN for devices.
- Click **NEXT**.
- 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.
- Click **UPLOAD**.



8. Click **NEXT**.



9. Click **APPLY**.



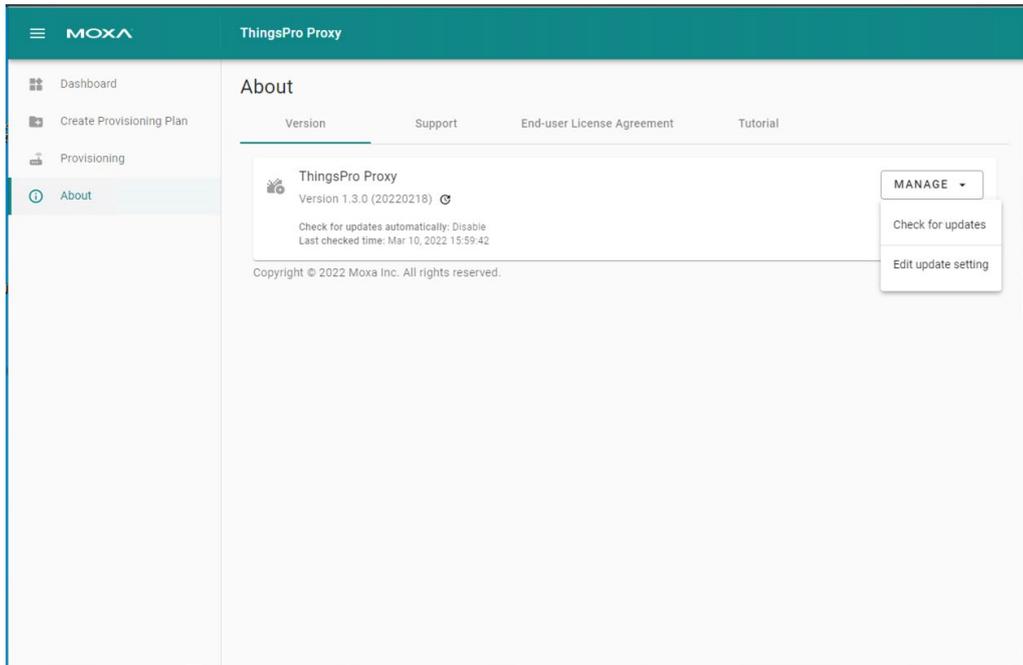
NOTE For ThingsPro Proxy to be able to discover devices correctly, the Ethernet interfaces should have a proper IP address, subnet mask, and default gateway configured. We recommended enabling a DHCP server to allocate IP addresses to devices instead of assigning them manually.

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

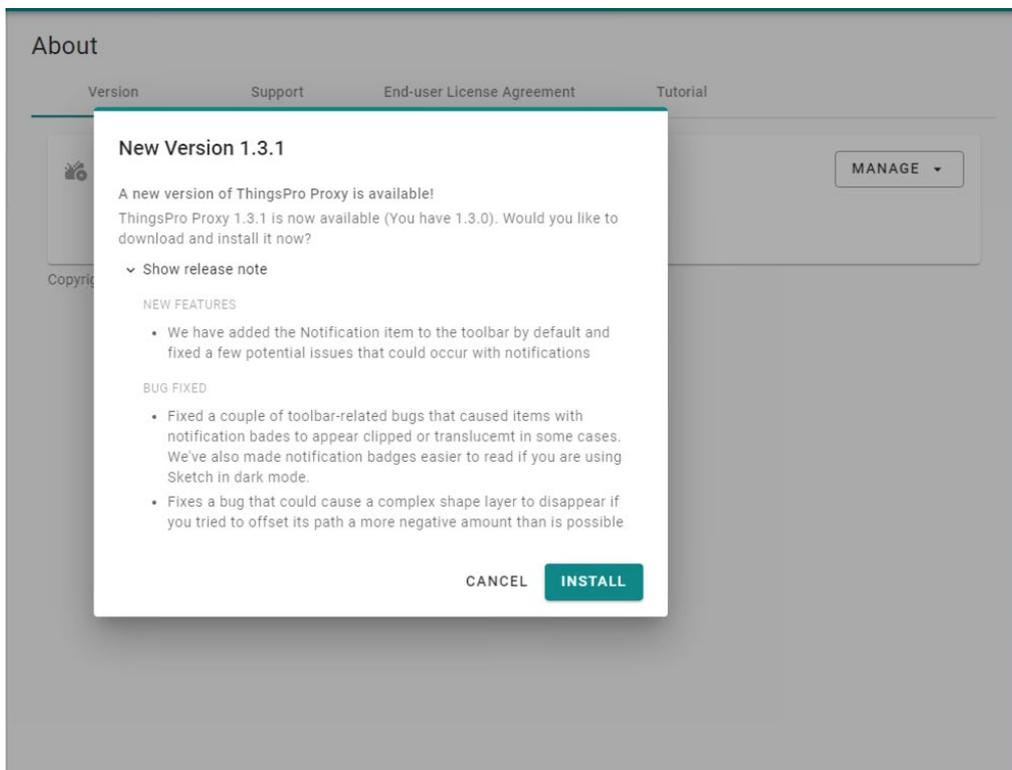
Checking for Updates

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

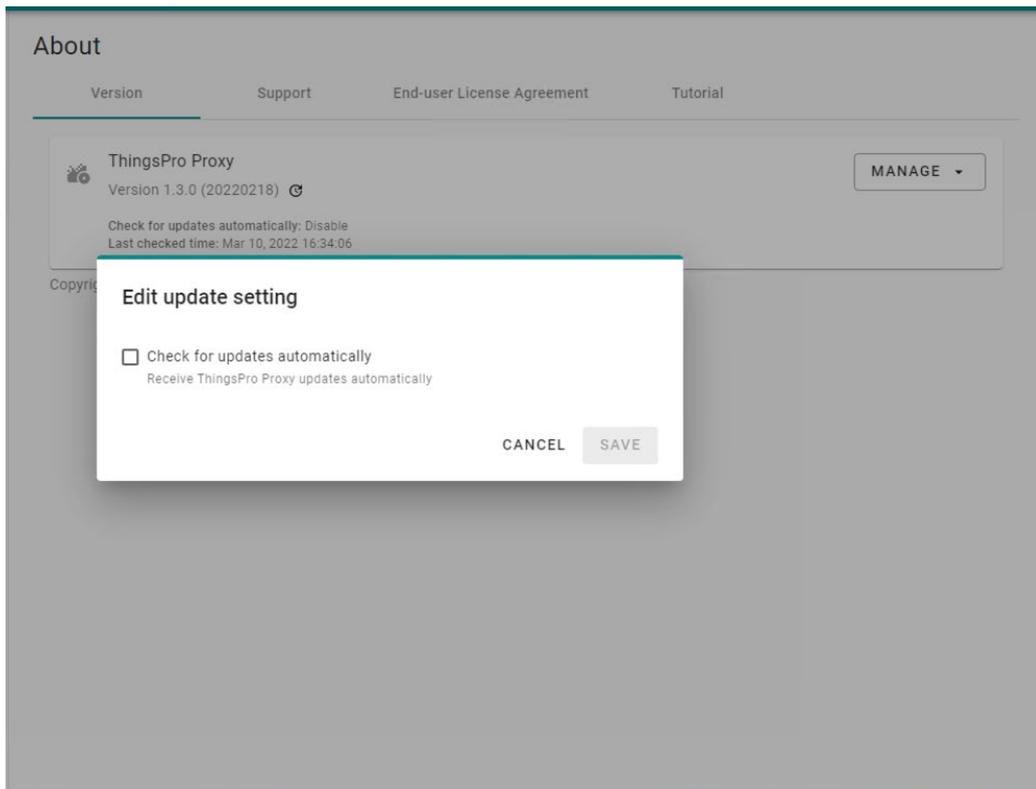
1. Go to the About page.
2. Click **MANAGE** and select **Check for updates**



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



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



Known Issues and Limitations

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.
4. 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 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.