PLCnext Controller to Mguard Secure Cloud communication

Contents

Objective

Accessing a PLCnext controller via the Mguard Secure Cloud

Requirements

- A PLCnext conroller
- A PLCnext Community account
- A ProfiCloud account (optional)
- An Mguard Secure Cloud account
- An Mgurad Secure Cloud PLCnext License

Procedure

Following is a summary of the steps needed to set up Secure Cloud communicatio to a PLCnext controller.

- Create a PorfiCloud account
- Use the ProfiCloud account credentials to log into the PLCnext Store
  - *The store is where PLCnext libraries and Apps can be obtained*
- Download the Mguard Secure Cloud Connector App for the PLCnext controller
  - *The connector App function as the VPN client in the PLCnext controller and creates a VPN to the Secure Cloud*
- Install the Mguard Secure Cloud App on the PLCnext controller
- Obtain a Mguard Secure Cloud PLCnext license
  - *This will Have to be purchased*
- Add the License to the PLCnext store account
- Enter the License int the PLCnext controller
- Activate the License offline

- Create an mGuard Secure Cloud account
- Obtain an ipSec VPN PLCnext controller configuration from the mGuard Secure Cloud account page
- Install the PLCnext controller configuration onto the PLCnext controller

Creating the required accounts

We will first create a Proficloud account. These credentials can then be used to log into the PLCnext Store
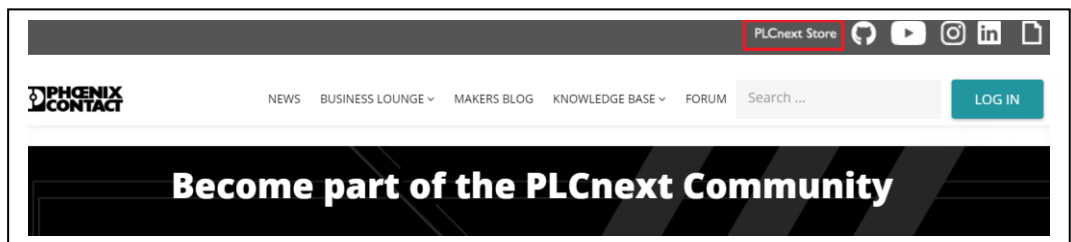
1. Go to: www.proficloud.net
2. Click **Register** to create an account

3. Once the account has been created, Sign into the account and scroll down to the **PLCnext Community** icon
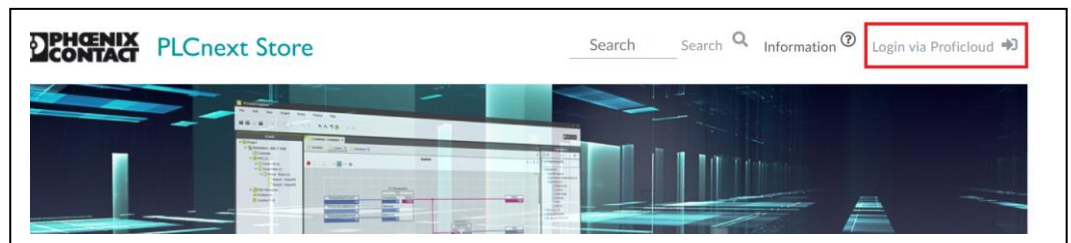4. Go to the PLCnext Community by clicking on the icon:
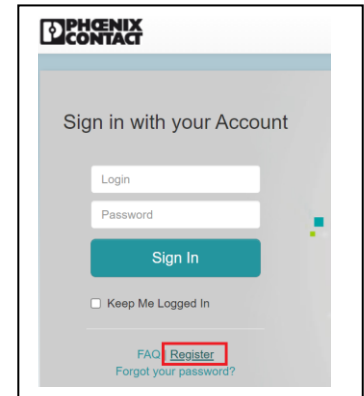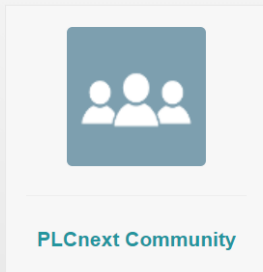
5. When at the Community, click the **PLCnext Store** icon to access the PLCnext store
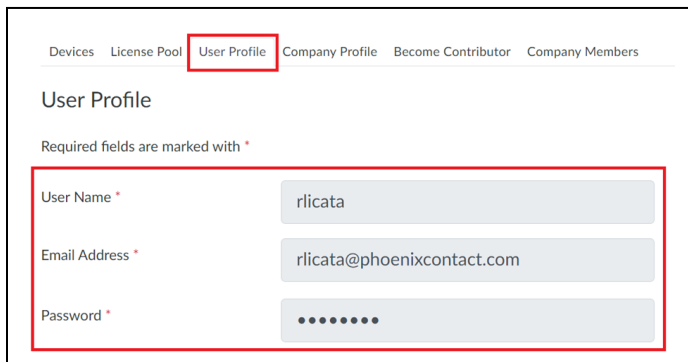

6. When at the PLCnext store, select **Login via Proficloud** and enter your Proficloud account credentials
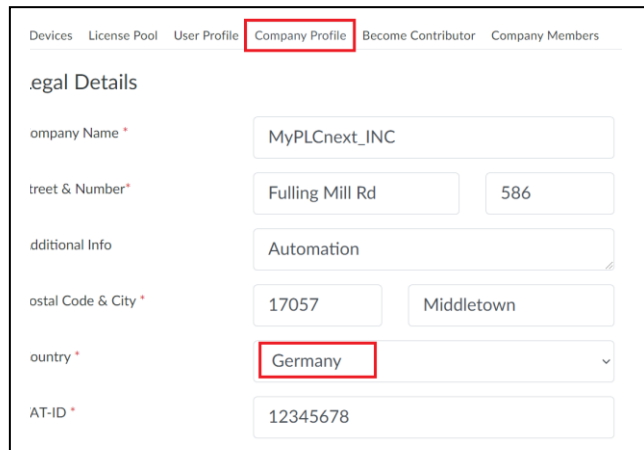
As of 9/10/2021 (the writing of this procedure) you must create a fictitious German company account to be able to download the necessary software items

7. After logging into the PLCnext store click on the **Account** option
8. Then select **Become Contributor**

9. Click the User Profile tab and enter your user information including the username and the password used for your ProfiCloud account. Also enter your email address
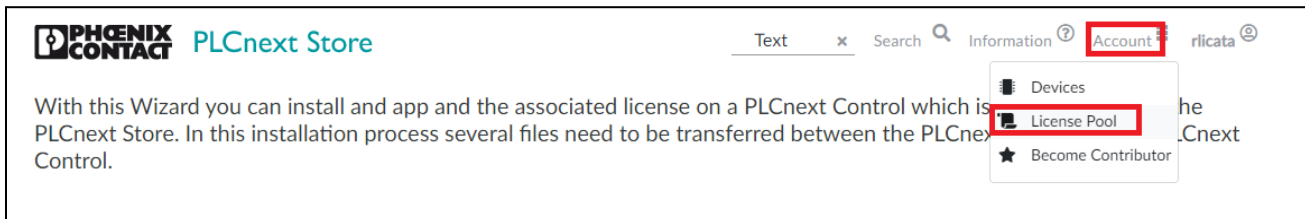10. Fill in the remaining information and click **Save**
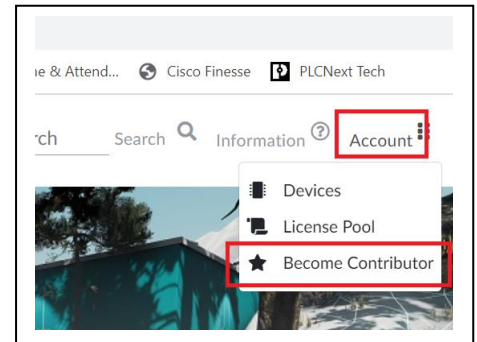
11. Next click **Company** Profile tab
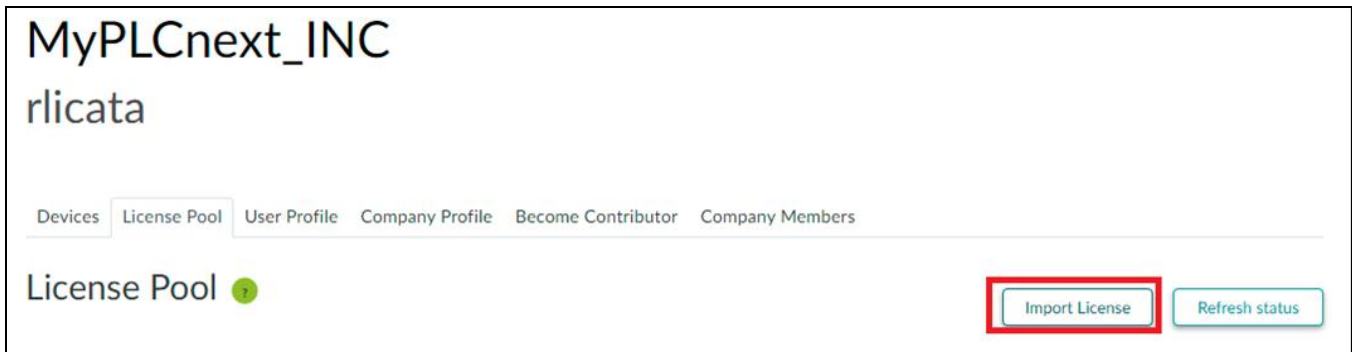12. Create a fictitious Company . Make sure the selected Country is **Germany**

13. After completing the form Click **Save**
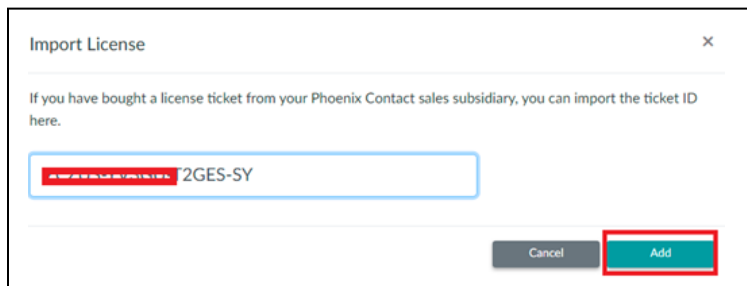
Adding the License key

14. At the PLCnext Store click **Account** then select **License Pool**

15. Next click on the **Import License** button

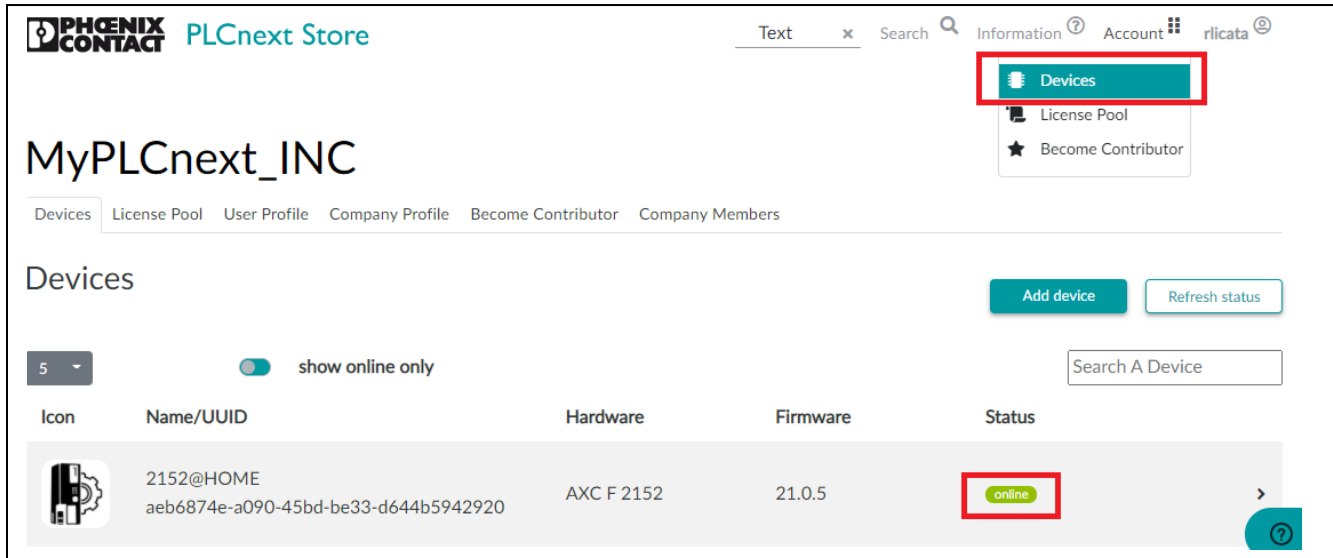16. Enter your purchased license number and click **Add**

After completing the preceding steps, you will be ready to perform either an Off-line APP+ license install or an On-line APP + License install.

You can check to see if the PLC is online by as follows:
- In the PLCnext Store click Account.
- Then Select Devices

If your PLCnext controller is On-line you will see the online (green) status to the right of the listed controller

- **If the PLC is Offline, follow the procedure on page 5**
- **If the PLC is Online, follow the procedure on page 13**

Offline Installation

Downloading the mGuard Secure Cloud Connector App

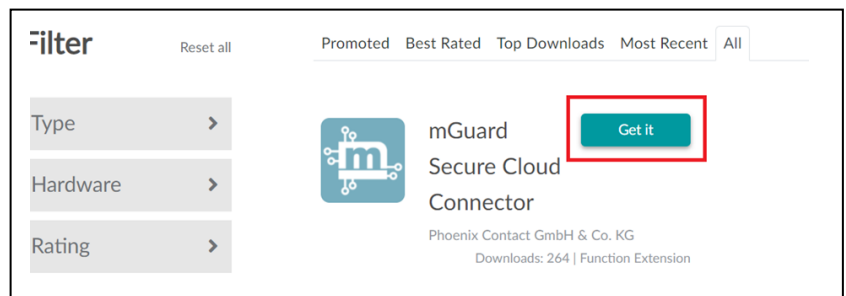17. Now that the Company profile has been created, use the search option (top of page) to search on the word **mguard**

The **mGuard Secure Cloud Connector** app should appear in the list of objects found

18. Click **Get it** for the mGuard **Secure Cloud Connector APP**

19. Download the Connector app

by Phoenix Contact GmbH & Co. KG

Function Extension | Version: 1.1.0

Install
with trial license

Download
for offline installation

Contact
the app developer

Description
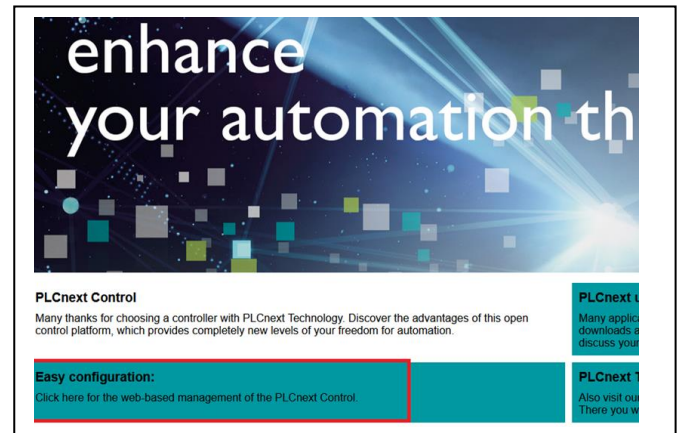
20. Place the downloaded App somewhere on your computer so that it can be located when needed
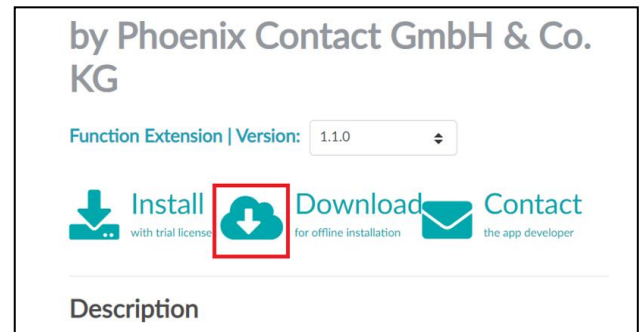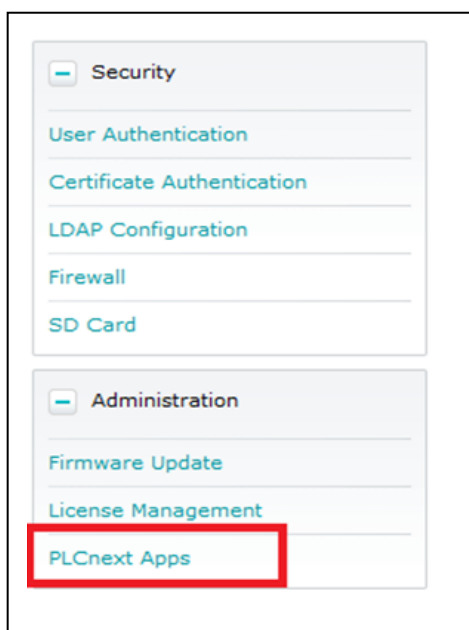
Installing the Connector App on the PLCnext controller

21. Access the PLCnext controller's web interface by entering the IP address of the controller into a web browser (this example used Google Chrome browser)
22. Select **Easy configuration**

enhance
your automation th

PLCnext Control
Many thanks for choosing a controller with PLCnext Technology. Discover the advantages of this open control platform, which provides completely new levels of your freedom for automation.

PLCnext
Many applic
downloads a
discuss your

Easy configuration:
Click here for the web-based management of the PLCnext Control.

PLCnext T
Also visit our
There you w

23. When in the web page of the PLCnext controller, click on the **PLCnext Apps** option

Security

User Authentication

Certificate Authentication

LDAP Configuration

Firewall

SD Card

Administration

Firmware Update

License Management

PLCnext Apps

24. Click on the Install App and browse to the App you have

just downloaded from the PLCnext store

Administration

PLCnext Apps

System Message	
Information	-
Warning	Apps management can adversely affect the real-time behavior o

Installed PLCnext Apps

App Name	App ID	Version	Min FW Version

Install App

AXC F 2152
2404267

- Information

General Data

Network Configuration

- Diagnostics

After the App is installed you will see it in the Installed PLCnext Apps list

25. You must now start the App by clicking Start

Administration

PLCnext Apps

System Message	
Information	-
Warning	Apps management can adversely affect the real-time behavior of the system. Therefore, do not manage any apps during productive operation!

Installed PLCnext Apps

App Name	App ID	Version	Min FW Version	Manufacturer	License Status	App Status		
mGuard Secure Cloud Connector	60002172000180	1.1.0	21.0.0	PHOENIX CONTACT GmbH & Co. KG	License invalid	STOP	Start	Uninstall

Install App

The status of the App will change to RUN and it will be unlicensed

Administration

PLCnext Apps

System Message	
Information	-
Warning	Apps management can adversely affect the real-time behavior of the system. Therefore, do not manage any apps during productive operation!

Installed PLCnext Apps

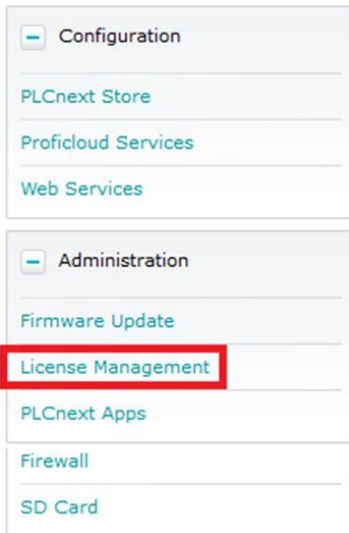| App Name	App ID	Version	Min FW Version	Manufacturer	License Status	App Status	
mGuard Secure Cloud Connector	60002172000180	1.1.0	21.0.0	PHOENIX CONTACT GmbH & Co. KG	License invalid	RUN	Stop

Install App

Activating the license off-line
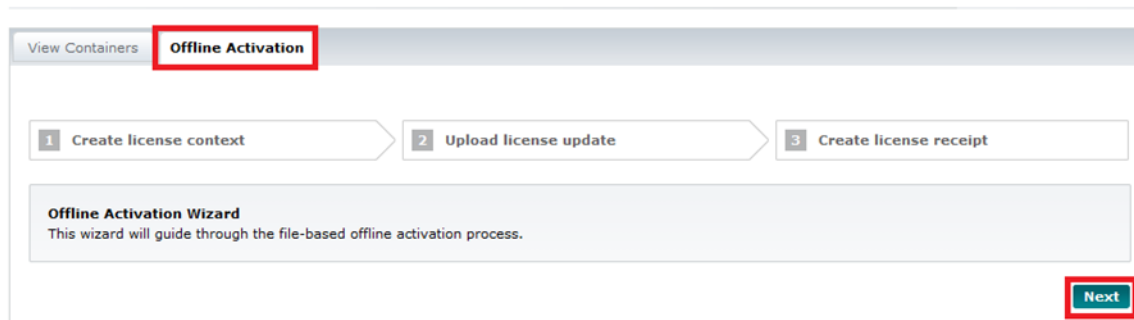
26. While in the web Page of the PLCnext controller, access the License management
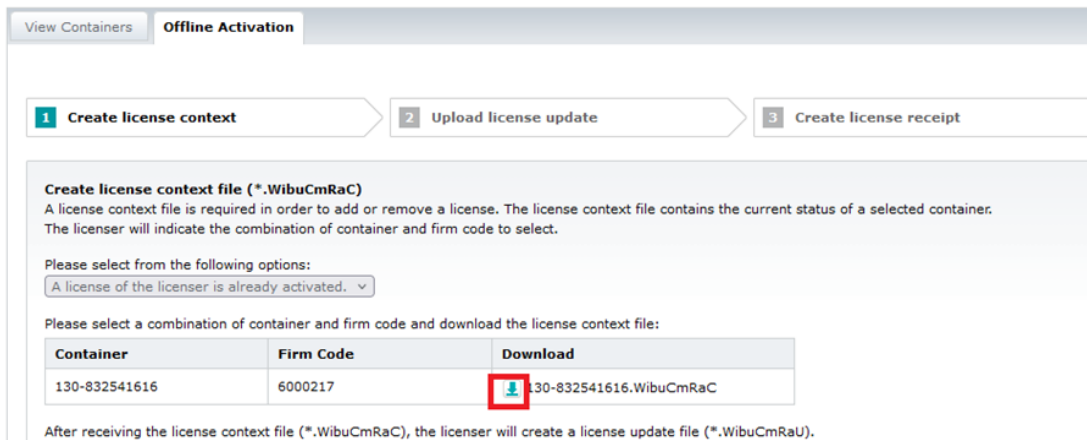

27. Next, click on the **Offline Activation**

After loading the mGuard Secure Cloud Connector app you should have a .WibuCmRac file in this area of the web page

28. Click on the download arrow and download this file to your computer. Place the file in a location where it can be found for further use

29. Next go back to the PLCnext community / PLCnext Store · "https://www.proficloud.net". and log in with your created account credentials

30. Log into the account and scroll down to
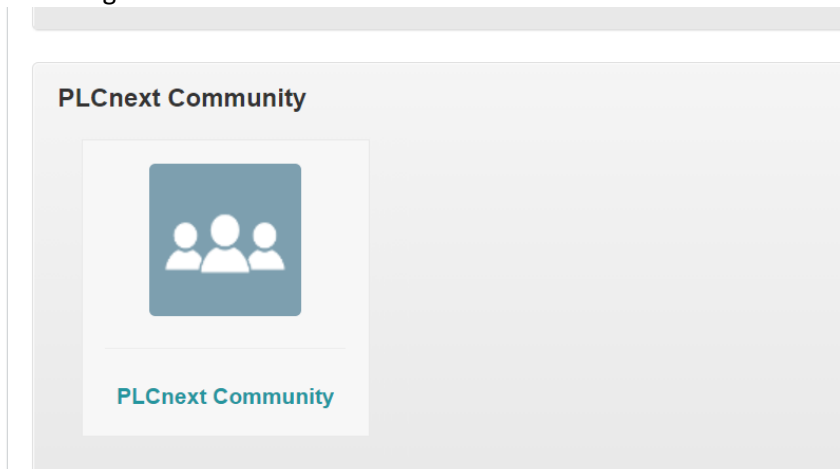
31. Click on the PLCnext Community button to go to the Community
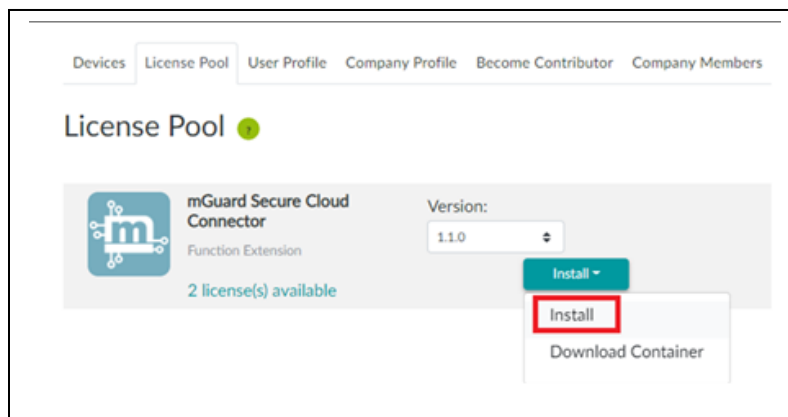32. When at the Community, click to access the **PLCnext Store**
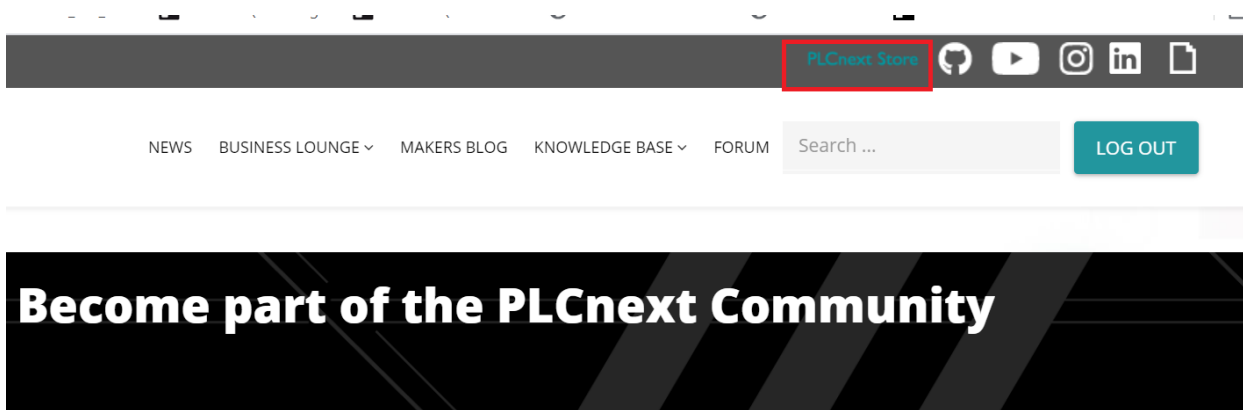
You may have to log in again with your Proficloud credentials

33. Select Account then select **License Pool** from the drop-down menu

34. Click on the Install and select Install

35. Next select the off-line PLC controller to which the license will be installed
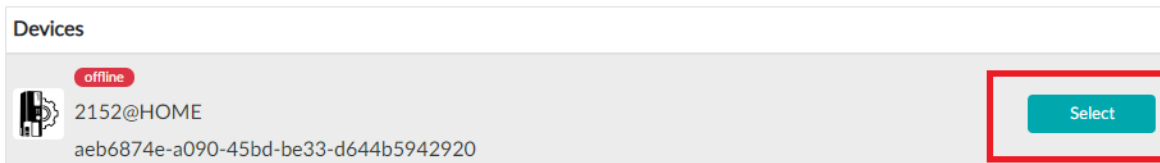
📥 Installation with <u>full</u> license

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E-mail: techservice@phoenixcon.com | Website: www.phoenixcontact.com

36. Now select the third option [Manual]

`offline`

🔲 2152@HOME

aeb6874e-a090-45bd-be33-d644b5942920

Choose the desired installation option for your device

Option 1	**Automatic**	The installation is automatically performed via the devices' internet connection. This option is only available if the device is currently online.
Option 2	**Scheduled**	The installation is automatically performed via the devices' internet connection once the device is online again. This option is only available if the device is currently offline.
Option 3	**Manual**	The installation is performed as a manual offline process. The user has to interact manually with the device to finish the installation.

37. Accept the terms and click **Install**

🔲 2152@HOME

aeb6874e-a090-45bd-be33-d644b5942920

Manual Installation

The device may perform an automatic restart to finish the installation. Therefore, be aware that the device might go offline for a few minutes once the installation has been finished.

Please accept the terms of use for downloads.
☑ I accept the general terms of use
☑ I accept the software license terms

Install

38. Click the **Upload WbuCmRaC** file arrow and browse to the **XXX.WibuCmRaC** file that was saved on your computer in step **28**. This file will be converted to an **XXX.WibuCmR** file.
39. Click the **Download License File (*WibuCmR)** button to download the new XXX.WibuCmR file to your computer. Place it where it can be found for later use.

40. Return to the License Management page of the PLCnext controller and select the **Offline Activation** tab
41. Click the **Next buttons** until you reach the **Upload license updated file (*.WibuCmR)** page
42. Click the **Browse** button and locate the XXX.WibuCmR file that was downloaded in step 39
43. Clcick **Next**

The Installed mGuard Secure Cloud Connector app should now have a valid license

| System Message	
Information	-
Warning	Apps management can adversely affect the real-time behavior of the system. Therefore, do not manage any apps during productive operat

Installed PLCnext Apps

App Name	App ID	Version	Min FW Version	Manufacturer	License Status	App Status
mGuard Secure Cloud Connector	60002172000180	1.1.0	21.0.0	PHOENIX CONTACT GmbH & Co. KG	**License valid**	**RUN**

Install App

On-Line Connector APP and License install

If the PLCnext controller is Online do the following to install the Connector App and the License. You must have already completed steps 1 through 16

1. In the PLCnext Store perform a search on mguard

PHOENIX CONTACT PLCnext Store

mguard × Search	Information	Account
mguard		
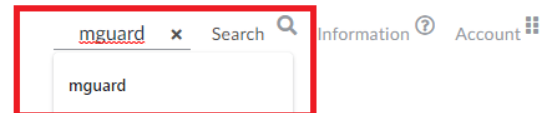
MyPLCnext_INC

rlicata

You will see the following App.
2. Click on the [m] icon. Not on the Get it

Filter   Reset all

Promoted   Best Rated   Top Downloads   Most Recent   All

Type	>
Hardware	>
Rating	>

mGuard Secure Cloud Connector   **Get it**

Phoenix Contact GmbH & Co. KG

Downloads: 279 | Function Extension

(Ord.No.: 1270965) Access your

3. Next select Install with full license

mGuard Secure Cloud Connector
by Phoenix Contact GmbH & Co. KG

Function Extension | Version: 1.1.0

⬇ **Install** with full license ☁ **Download** for offline installation ✉ **Contact** the app developer

Description

(Ord.No.: 1270965)

4. Select the online PLC to which the App and License will be installed

1 Target Device **2** Installation Option **3** Finish Installation

Select the target device for this installation.

▣ only online ▣ only eligible | Search A Device |

Devices

online
2152@HOME
aeb6874e-a090-45bd-be33-d644b5942920 | Select |

5. Next, select the Automatic option

Choose the desired installation option for your device

Option 1	Automatic	The installation is automatically performed via the devices' internet connection. This option is only available if the device is currently online.
Option 2	Scheduled	The installation is automatically performed via the devices' internet connection once the device is online again. This option is only available if the device is currently offline.
Option 3	Manual	The installation is performed as a manual offline process. The user has to interact manually with the device to finish the installation.

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E-mail: techservice@phoenixcon.com | Website: www.phoenixcontact.com

6. Now accept the general terms and select Install

Automatic Installation

The device may perform an automatic restart to finish the installation. Therefore, be aware that the device might go offline for a few minutes once the installation has been finished.
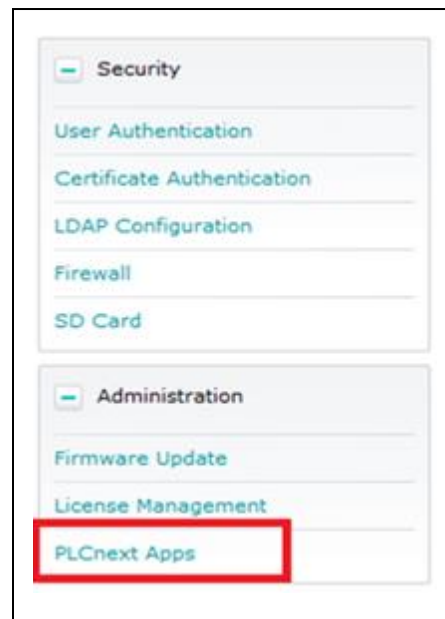
Please accept the terms of use for downloads.
☑ I accept the general terms of use
☑ I accept the software license terms

Install

It may take a few minutes. The Connector App and the License will now be pushed to the Online PLC

After completing the preceding steps, you can log into the web page of the PLCnext controller to check that the App has been installed

7. Click on the PLCnext Apps link

— Security

User Authentication

Certificate Authentication

LDAP Configuration

Firewall

SD Card

— Administration

Firmware Update

License Management

PLCnext Apps

You should see the App listed with a Valid license.
If it is not running, click RUN

System Message

| Information	-
Warning	Apps management can adversely affect the real-time behavior of the system. Therefore, do not manage any apps during productive operation

Installed PLCnext Apps

App Name	App ID	Version	Min FW Version	Manufacturer	License Status	App Status
mGuard Secure Cloud Connector	60002172000180	1.1.0	21.0.0	PHOENIX CONTACT GmbH & Co. KG	License valid	RUN

Install App

Obtaining a cloud configuration for the PLCnect controller

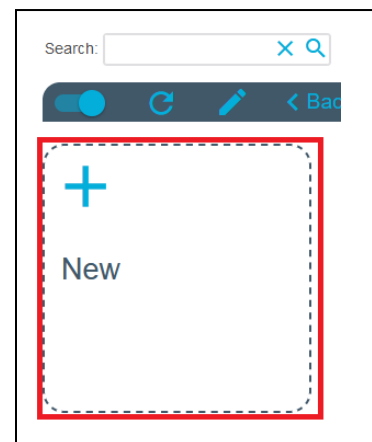This section assumes you have an Active Secure Cloud account.

8. Log into you Secure Cloud account and select Service Target (Machines)
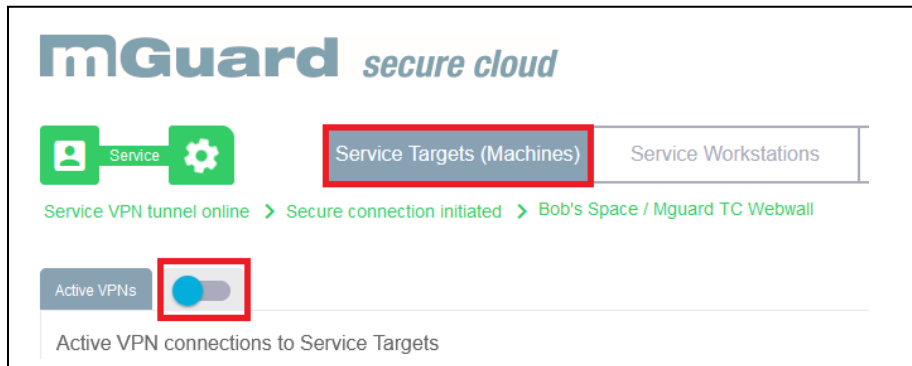
9. Click on the + New to create a new configuration

You must ,at least, give the new configuration a name

10. Click OK to save

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Phone: 717-944-1300 | Technical Service: 800-322-3225
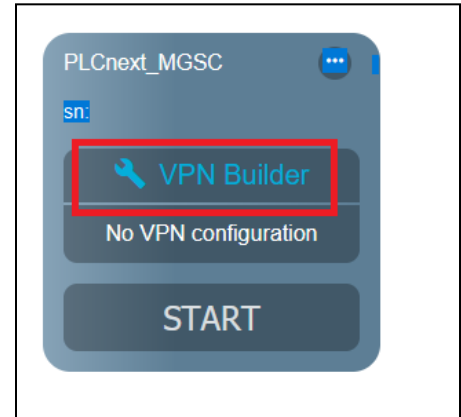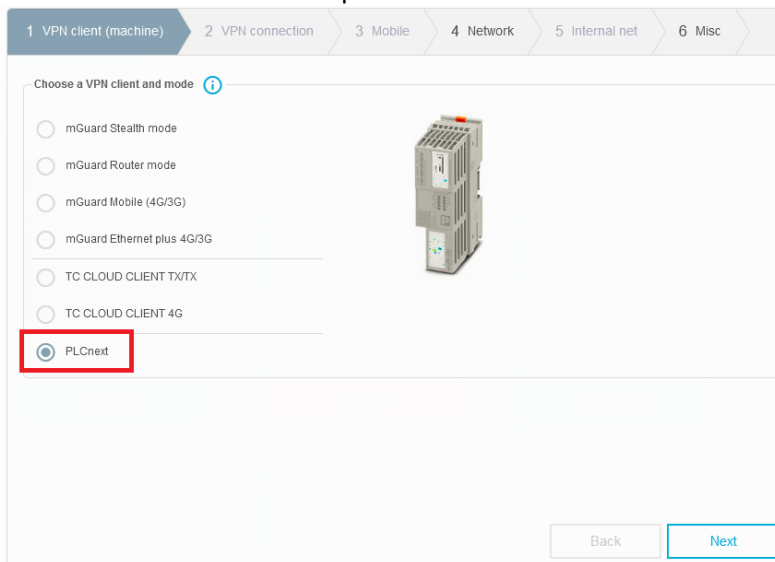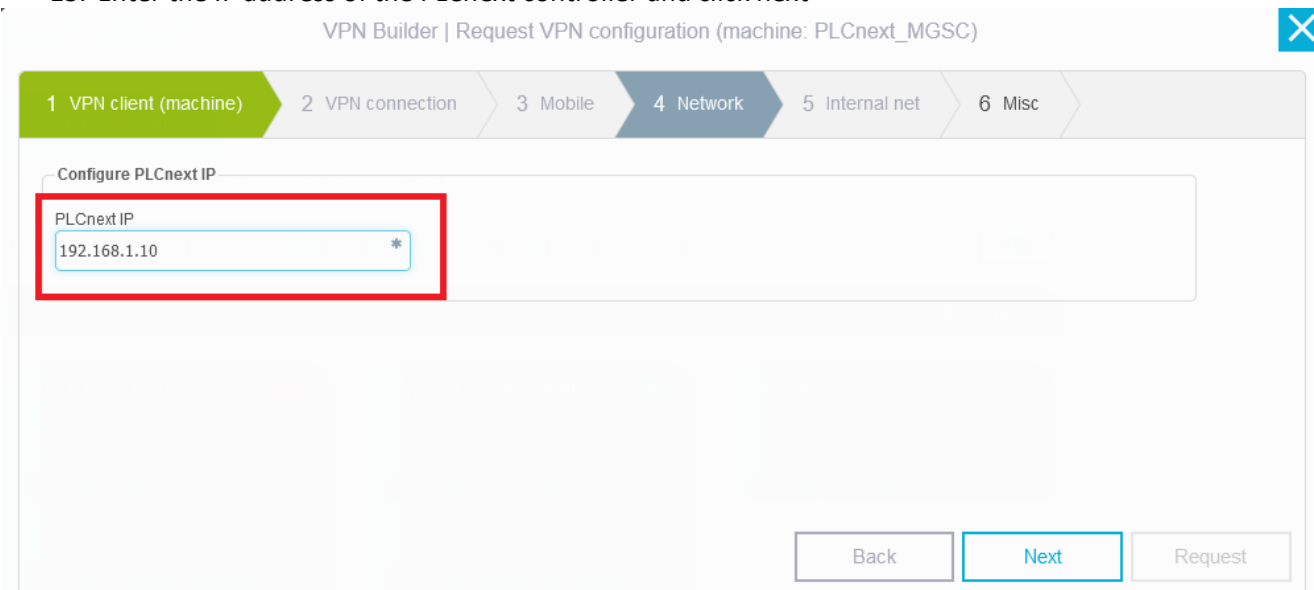E-mail: techservice@phoenixcon.com | Website: www.phoenixcontact.com

11. Locate the new configuration and select the **VPN Builder** button. This will start the build a configuration application

12. Select the **PLCnext** option and click **Next**

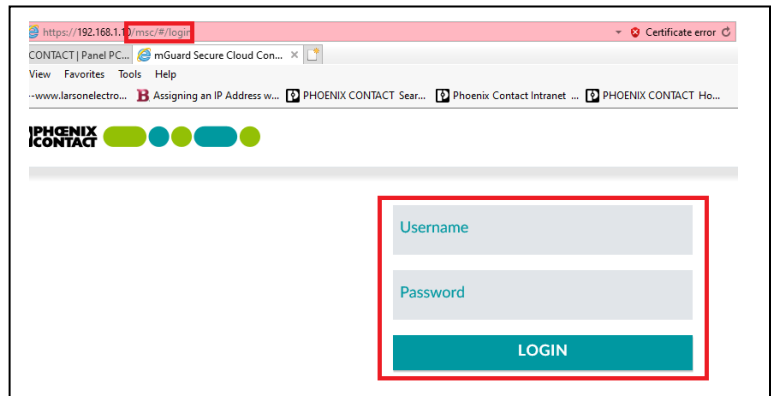13. Enter the IP address of the PLCnext controller and click next

You must now click Request and download the configuration to your computer. Place the configuration in a location on your computer where it can be found for future use.

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Phone: 717-944-1300 | Technical Service: 800-322-3225
E-mail: techservice@phoenixcon.com | Website: www.phoenixcontact.com

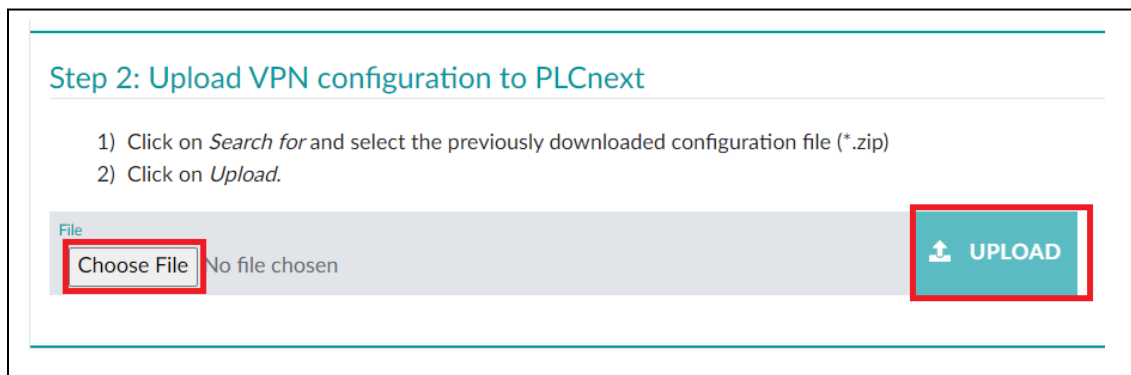**Loading the Mguard Secure Cloud configuration into the controller**

14. Open a browser which has access to the web page of the PLCnext controller and enter the address of the PLCnex controller followed by /msc. In this example I used: **192.168.1.10/msc**

You will see the Connector app Login page.

15. Enter the credentials for the PLCnext controller's web page access and click **LOGIN**

16. When logged in scroll down to the UPLOAD option and select **Choose File**
17. Browse to the downloaded Cloud configuration and select it
18. After the configuration is selected, click **UPLOAD**
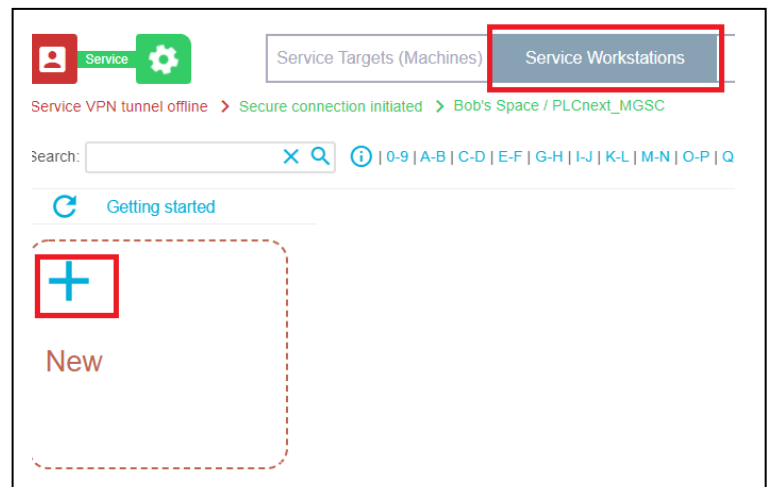

19. Scroll back up to the status section of this page and you should a tunnel started status

Creating the Service Workstation (mGuard Secure Client) configuration

1. Log into you mGuard secure cloud account
2. Click on the **Service Workstation** option
3. Next, click the + New to create request a new configuration

You must, at least, give the configuration a name

4. After you have added the configuration request to the Cloud account, locate it and click on the VPN Builder option

5. Select the VPN client (service) device, enter a password and click next

6. Select the standard IPsec of UDP 500 and 4500 and click Next

7. For the IP address of the network enter the subnet address of the IP address given to the mguard
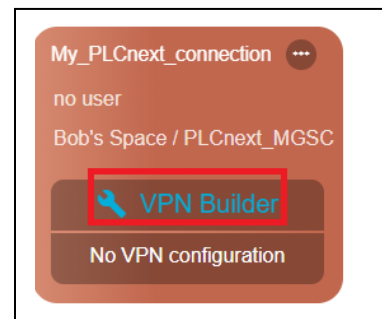
In this example the IP address of the PLCnext controller is 192.168.1.10. therefore, the subnet address will be 192.168.1.0 /24

8. Click **Request** to obtain the configuration
9. This configuration can now be downloaded in to the Mguard Secure VPN Client softwar