



Remote Access for Schneider M258 PLCs



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This guide explains in a few steps how to configure your eWON COSY, your Talk2M account and your PLC software to access your Schneider M258 PLCs for remote diagnosis and programming.

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1. Hard- and Software Requirements

1.1 Hardware Requirements

In order to follow this guide you'll need:

- 1 eWON with VPN capabilities (for example eWON COSY 141)
- 1 Schneider M258 PLC
- PC suitable to configure the eWON and the PLC

1.2 Software Requirements

1.2.1 eWON Related Software

- ◆ **Web browser** – Internet Explorerⁱ or Firefoxⁱⁱ to configure the embedded eWON parameters.
- ◆ **eBuddy** – eWON detection and firmware maintenance utility
<http://support.ewon.biz/software.htm>
- ◆ **eCatcher** – VPN tunneling utility
<http://support.ewon.biz/software.htm>
Note: this utility will be used to create the Talk2M account and to connect to your eWON remotely.

1.2.2 Schneider Related Software

- ◆ **SoMachine** (version 3.0, 3.1 or 4.0)

1.3 eWON Firmware Version

Successfully following these guidelines requires an eWON firmware version 6.2 s0 or higher. The eBuddy application will allow you to upgrade your eWON firmware if required.

2. Objective

The objective of this document is to guide you through the steps required to enable remote access of your Schneider M258 PLCs.

The remote access setup is composed of the following steps:

- ◆ Creating your Talk2M account and adding the eWON COSY to it
- ◆ Assigning an IP address to your eWON with eBuddy
- ◆ Running the eWON COSY configuration wizard
- ◆ Connecting/disconnecting with the remote eWON

Then we address the PLC connection itself:

- ◆ Linking the eWON COSY with your Schneider M258 PLC
- ◆ PLC remote access

To configure the eWON COSY, all you need is a Web Browser and to open the internal Web page of the eWON COSY. (<http://10.0.0.53> is the default IP factory setting)

3. Prerequisite: Determining suitable IP addresses

Configuring remote access is simple. However, you will have to pay special attention to the different IP ranges mentioned below.

3.1 Internet connection using the WAN Interface

The eWON COSY connects to the Internet using its WAN interface. The eWON COSY requires a LAN IP address at the PLC side and a WAN IP address at the network side.



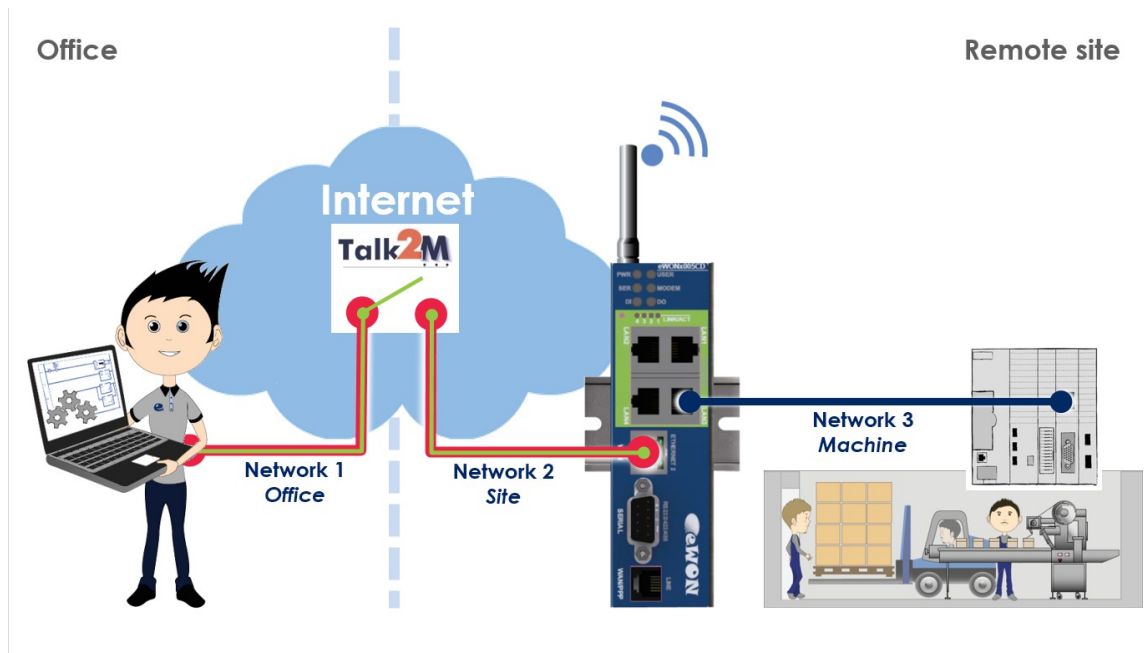
Important Note: The company network address ranges (Company LAN and Site LAN in the example above) are specified and managed by the respective network administrators. These ranges simply cannot be changed. So before configuring your eWON COSY LAN IP address and your PLC IP addresses, please ask for:

1. The specified company LAN network range to be used by the PC that will initiate the remote connection (Company LAN).
In our example this range is 10.0.0.#
2. The specified company LAN network (Site LAN) range which the eWON COSY WAN port will use to get Internet connection.
In our example this range is 10.10.0.#

Knowing the ranges in use at the Company and Site side, you will be able to select a range **outside** these networks for the eWON COSY LAN-port and the PLC. In the above example, we could select addresses in the 192.168.0.# IP range for the eWON COSY LAN and PLC since it does not overlap either with the Company LAN range or with the Site LAN range.

3.2 For proper routing, remember...

1. The eWON LAN IP address must be part of the same IP range as the PLC LAN.
2. The eWON WAN and LAN IP addresses must be in different IP ranges. The WAN port of the eWON is generally DHCP-enabled, which is a good way to make sure that it will be compatible with the company network.
3. The remote PLC network (eWON LAN) must be in a different IP range than the company network on which your PC is connected (Company LAN).



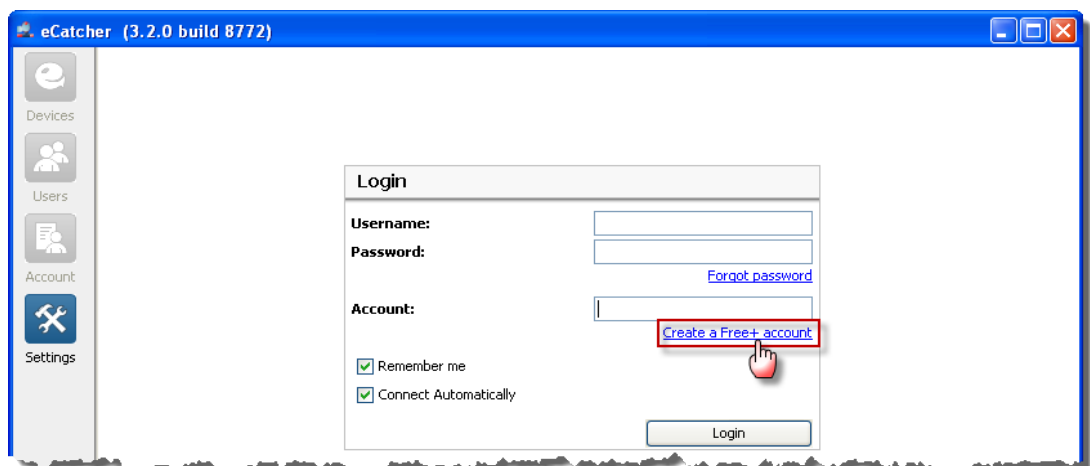
Network 3 = eWON LAN = PLC LAN (all in same range).
Network 3 \neq Network 2
Network 3 \neq Network 1

4. Talk2M and eWON COSY configuration

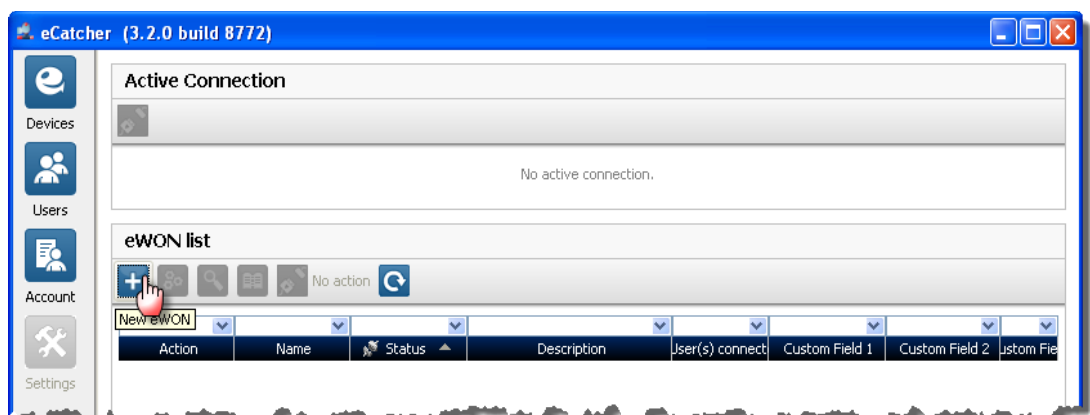
4.1 Step 1: Creating a Talk2M account and adding an eWON COSY to it

To connect to your eWON COSY remotely, we will use the VPN tunneling tools eCatcher and Talk2M.

1. Connect your PC to a network with Internet access...
2. Download the eCatcher application from here <http://support.ewon.biz/softwares.htm> and install it.
3. Start eCatcher and, if you do not yet have a Talk2M account, create an account using the link **Create a Free+ account**.



4. Login to your Talk2M account
5. On the menu on the left side of the eCatcher interface click on the "+" (New eWON) icon in the eWON list section.



4. Talk2M and eWON COSY configuration

6. The following window appears:

The screenshot shows the 'New eWON' configuration window. The title bar reads 'New eWON'. The window contains the Talk2M logo and the text 'Now machines can talk'. The configuration fields are as follows:

Field Label	Value
eWON Name:	eWON Company XY
eWON Description:	eWON at Company XY
Connection Type:	Permanent (LAN / ADSL / 3G)

Buttons at the bottom right: Cancel, Next.

Enter the **eWON name** you want to use on the Talk2M server to identify the remote connection to your eWON COSY.

The **eWON Description** is optional can be left empty.

Select **Permanent (LAN / ADSL / 3G)** as **Connection Type** to specify how your eWON COSY will be connected to the Talk2M server.

7. Click on **Next**.

Here you can optionally enter additional information concerning your remote

The screenshot shows the 'New eWON' configuration window, specifically the 'Custom Fields' section. The title bar reads 'New eWON'. The window contains the Talk2M logo and the text 'Now machines can talk'. The configuration fields are as follows:

Field Label	Value
Custom Field 1	Group of locations
Custom Field 2	Location
Custom Field 3	Unit

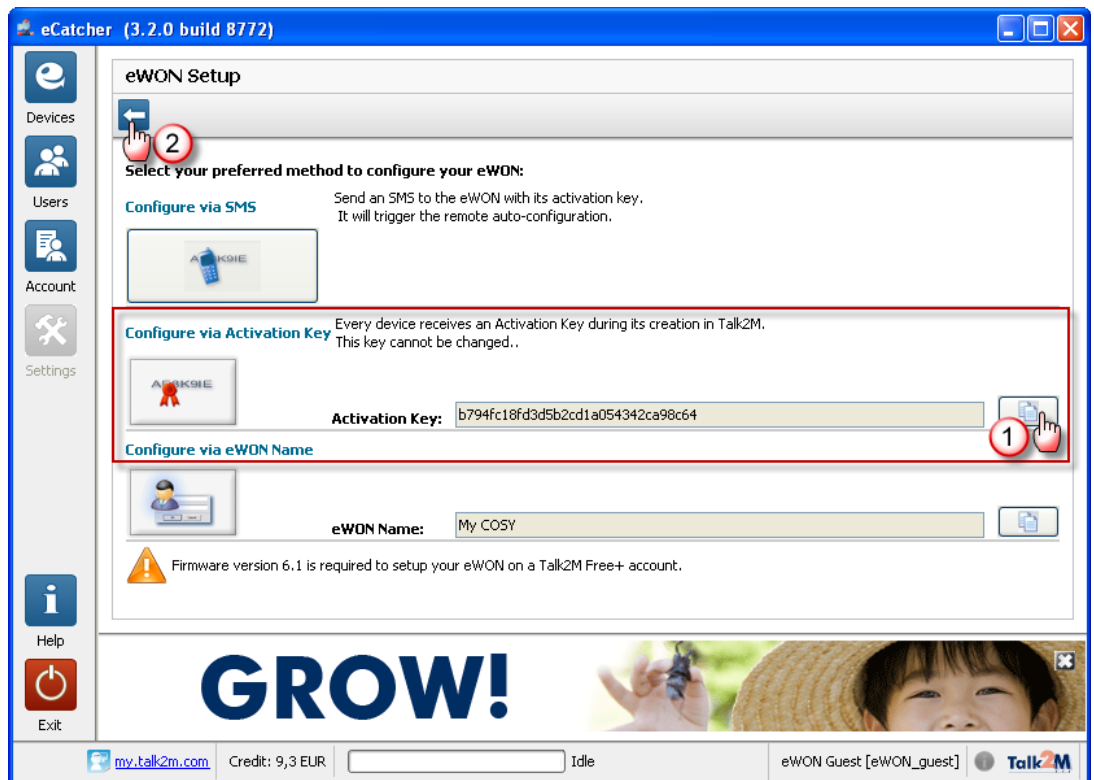
Buttons at the bottom right: Previous, Finish.

connection. The **Custom Fields** can be used to classify or filter your different remote connections. This will allow you to find easily the eWON COSY you need to connect to.

4. Talk2M and eWON COSY configuration

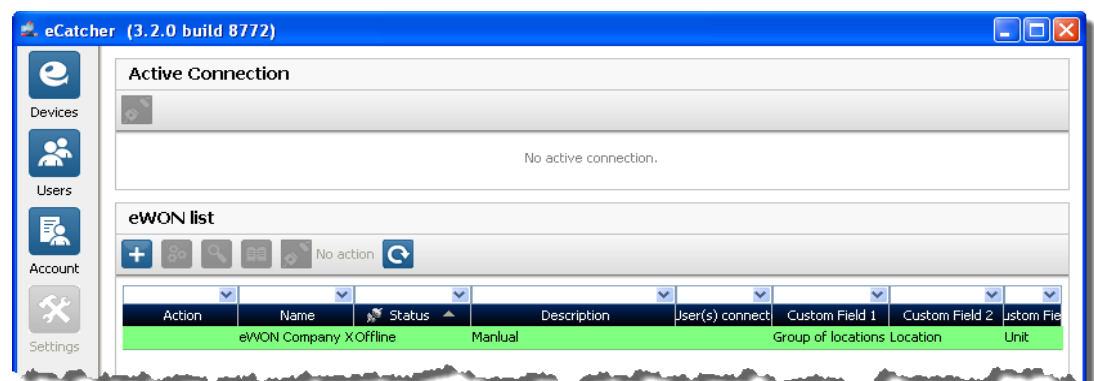
8. Click on **Finish**. The Talk2M activation key window opens.

To enable the eWON COSY connecting to the Talk2M server, an activation key is needed. The eWON COSY will need this key during its VPN configuration.



Under the **Configure via Activation Key** section you will find the Activation Key. Click on the **Copy** (1) icon to copy the activation key into the clipboard of your PC. Keep this information on your clipboard to complete Step 3.

Click on the **Return** icon (2). The new eWON COSY account will now be displayed in the **eWON List** section on the lower part of the window.



Note: Using the **Activation Key** is the standard procedure for Talk2M configuration. Next to this method, there are 2 alternative methods: **Configure via SMS** and **Configure via eWON Name**.

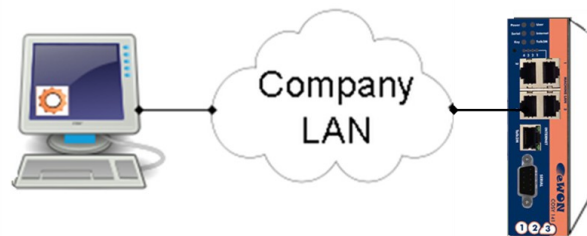
End of step 1.

4.2 Step 2: Setting IP address of eWON COSY LAN

Once you have selected your IP addresses, you can start configuring your eWON COSY. In our example, we will change the default factory address 10.0.0.53 to 192.168.0.53. This address has to fit into the PLC-range and may not interfere with the Company LAN (see § 3 [Prerequisite: Determining suitable IP addresses](#)).

To configure your eWON COSY LAN IP:

1. This connection can be made through the Company network or with a point-to-point link. At this stage there is no constraint as to the IP configuration of the Ethernet adapter of your PC. Actually, eBuddy is able to modify the LAN IP address eWON COSY even if your PC and the eWON COSY have different network address ranges.



Connection through company LAN



Point-to-point connection

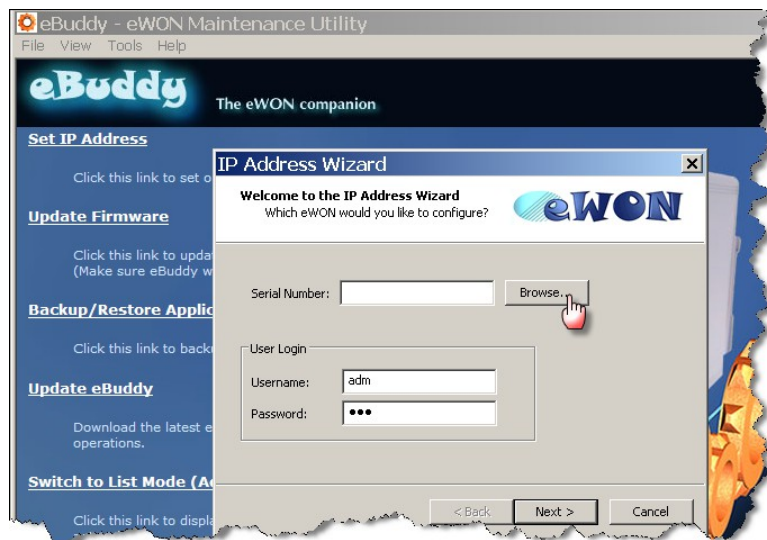
2. Start the **eBuddy** utility on your PC
eBuddy – eWON detection and firmware maintenance utility
<http://support.ewon.biz/software.htm>

4. Talk2M and eWON COSY configuration

3. In the home page, select **Set IP Address**

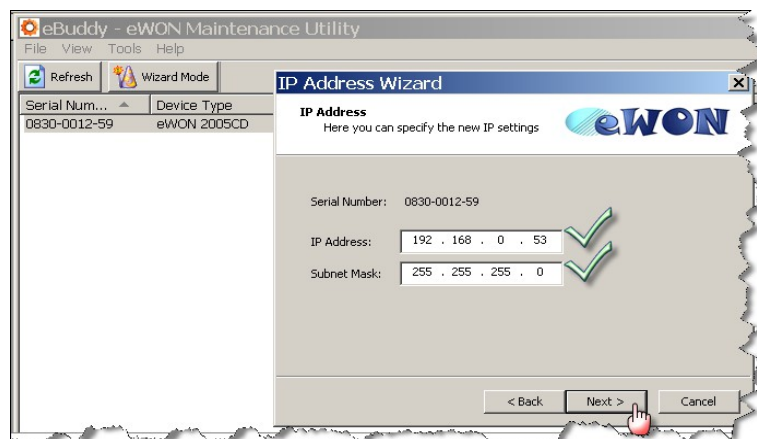


4. You don't need to fill out the Serial Number, just click on **Browse**



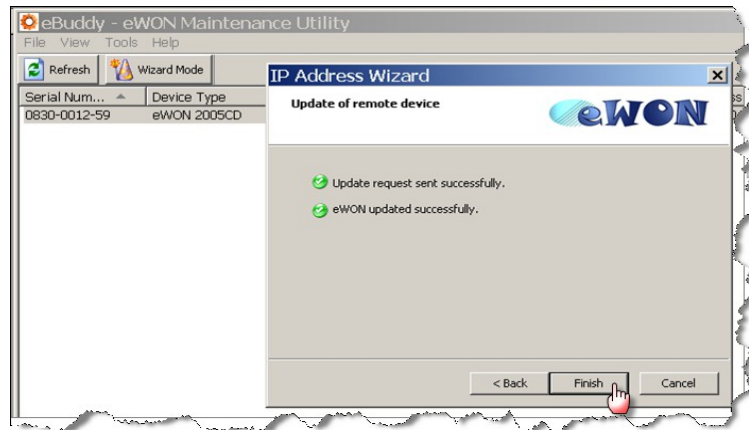
eBuddy finds your eWON COSY. Select it by double-clicking on it and the IP Address window opens.

5. Enter new LAN IP address and Subnet Mask. Click **Next**



4. Talk2M and eWON COSY configuration

6. Wait until address update and device reboot are completed. Click **Finish**.



7. End of step 2.

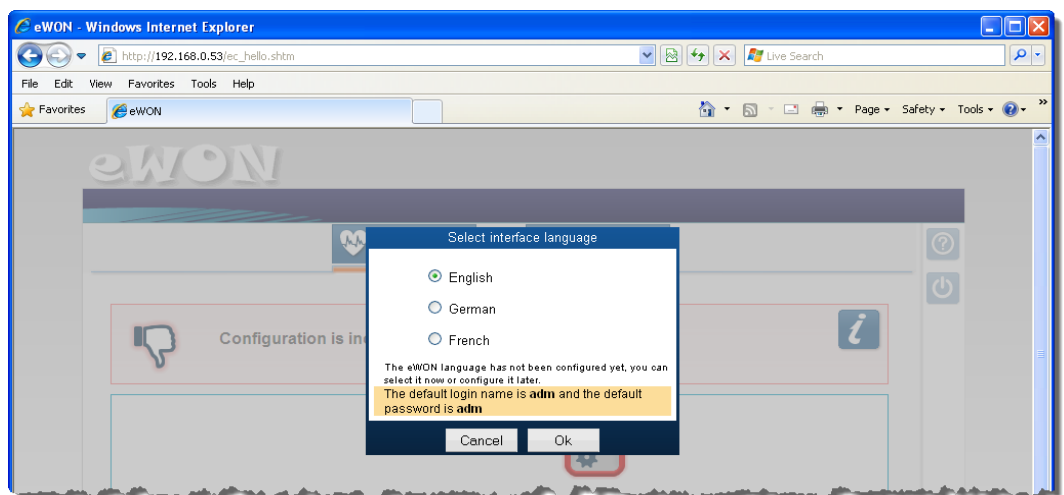
4.3 Step 3: Run the eWON COSY configuration Wizard

To configure your eWON COSY :

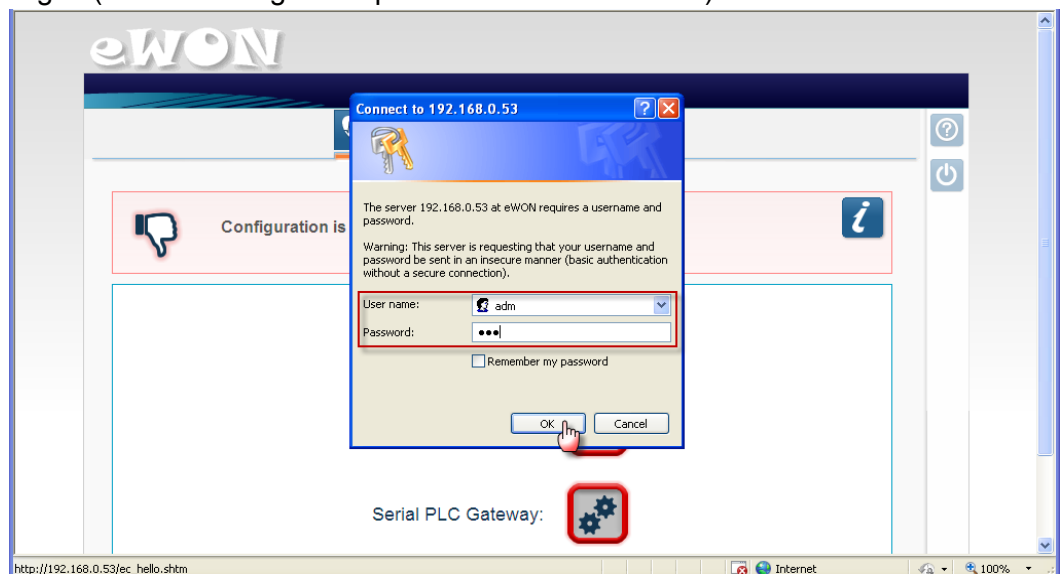
1. Connect the WAN port of the eWON COSY to a network with Internet access.
2. Configure the network parameters of your configuration PC to be in the same IP range as the eWON COSY LAN.
3. Connect the PC to one of the LAN ports of the eWON COSY.
4. Open your Internet browser and access the eWON COSY internal Web page by typing the LAN address you just configured (in our example <http://192.168.0.53>)

4.3.1 First Login & Launch of the Wizard

1. The eWON COSY first connection screen appears, select the language.

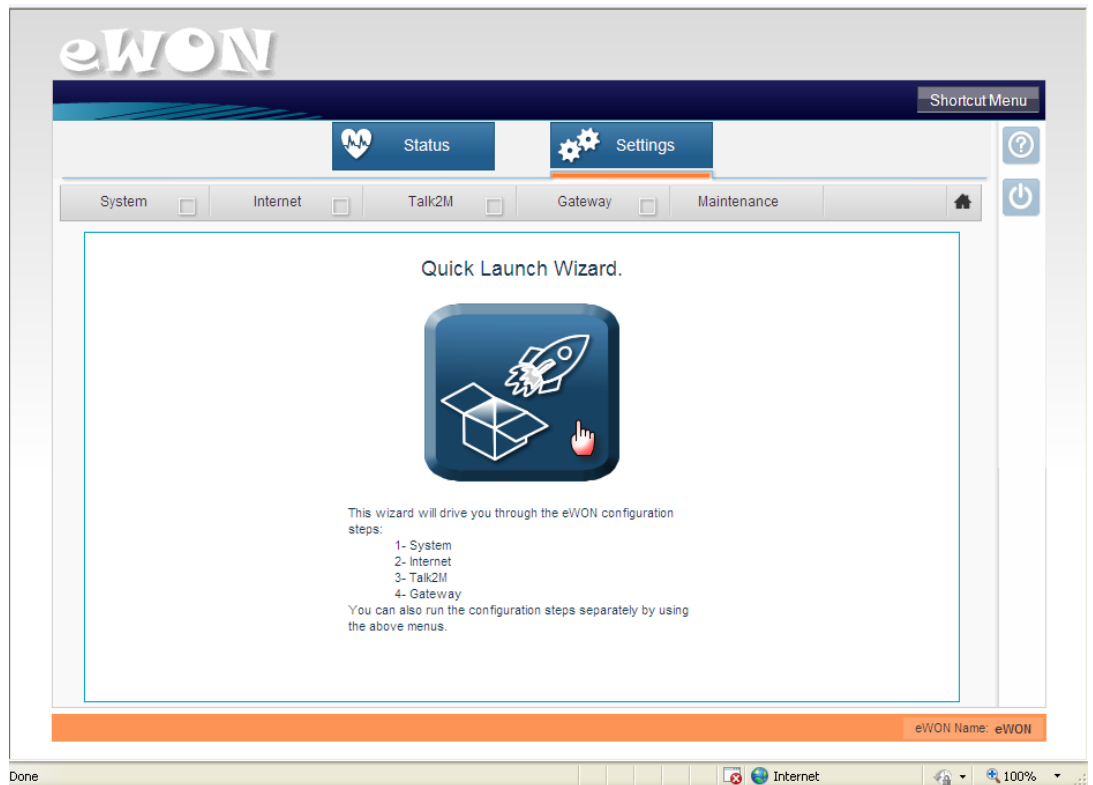


2. Log in (the default login and password are **adm / adm**)



4. Talk2M and eWON COSY configuration

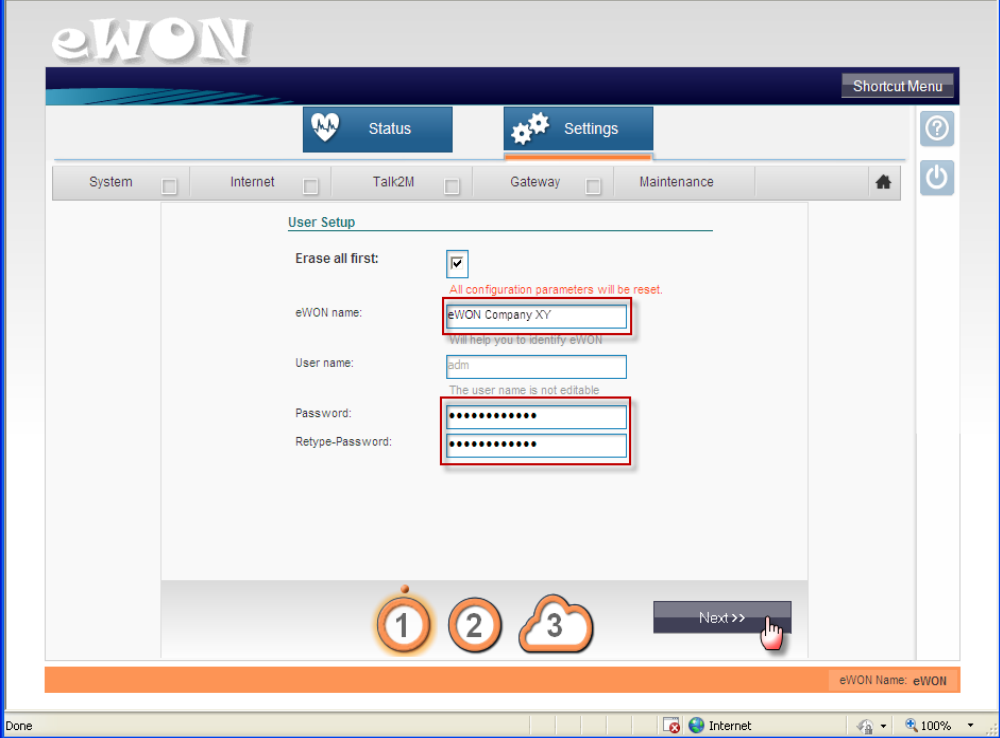
3. The wizard launch page appears, click on the **Quick Launch Wizard** button



4. Talk2M and eWON COSY configuration

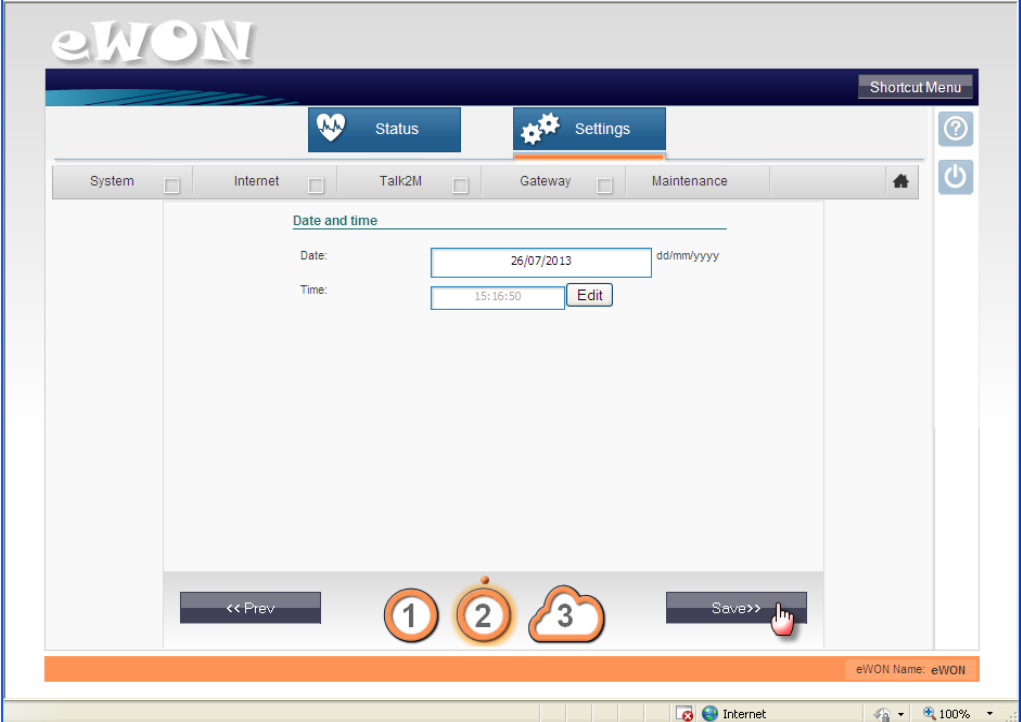
4.3.2 System Setup

1. The System wizard starts. In this page you can give a name to your eWON COSY and you can define another password to the user adm. For security reasons, it is highly recommended to change the default password adm. Click **Next**.



The screenshot shows the eWON web interface with the 'Settings' tab selected. The 'User Setup' section is active, featuring a progress indicator with three steps: 1 (selected), 2, and 3. The 'Erase all first:' checkbox is checked, with a red box around it and a warning message: 'All configuration parameters will be reset.' Below this, the 'eWON name:' field contains 'eWON Company XY' (highlighted with a red box), the 'User name:' field contains 'adm', and the 'Password:' and 'Retype-Password:' fields are filled with dots (both highlighted with red boxes). A 'Next >>' button is visible at the bottom right. The status bar at the bottom shows 'eWON Name: eWON'.

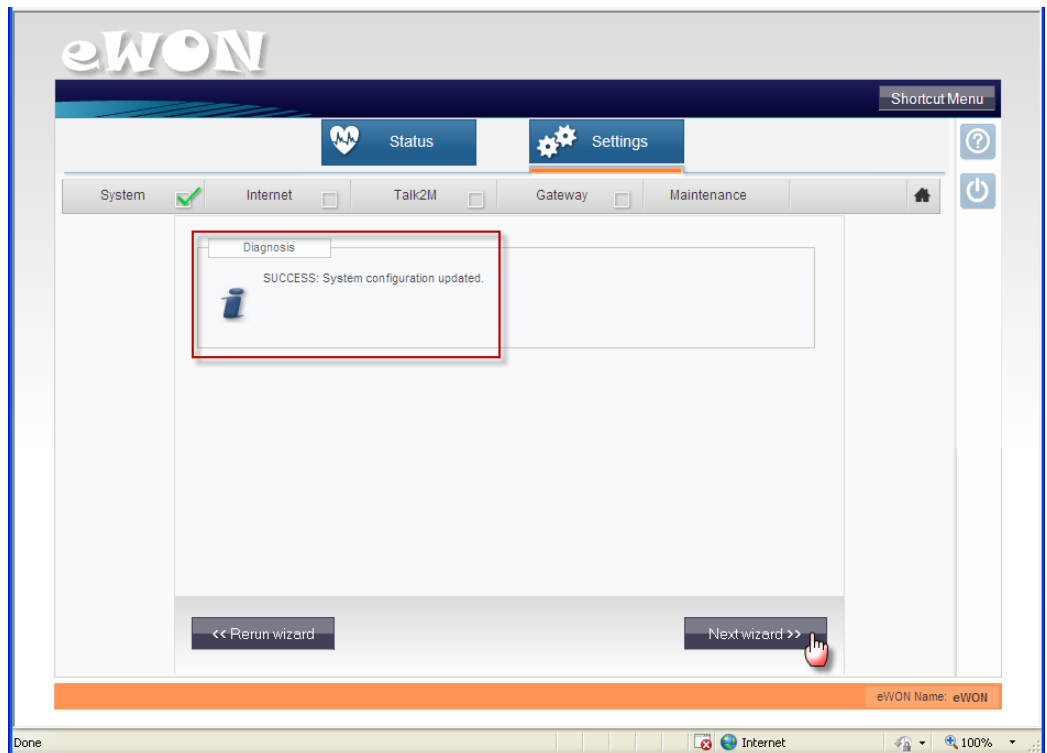
2. Check Date and Time and click **Save**.



The screenshot shows the eWON web interface with the 'Settings' tab selected. The 'Date and time' section is active, featuring a progress indicator with three steps: 1, 2 (selected), and 3. The 'Date:' field contains '26/07/2013' and the 'Time:' field contains '15:16:50'. An 'Edit' button is next to the time field. A '<< Prev' button is on the left and a 'Save >>' button is on the right. The status bar at the bottom shows 'eWON Name: eWON'.

4. Talk2M and eWON COSY configuration

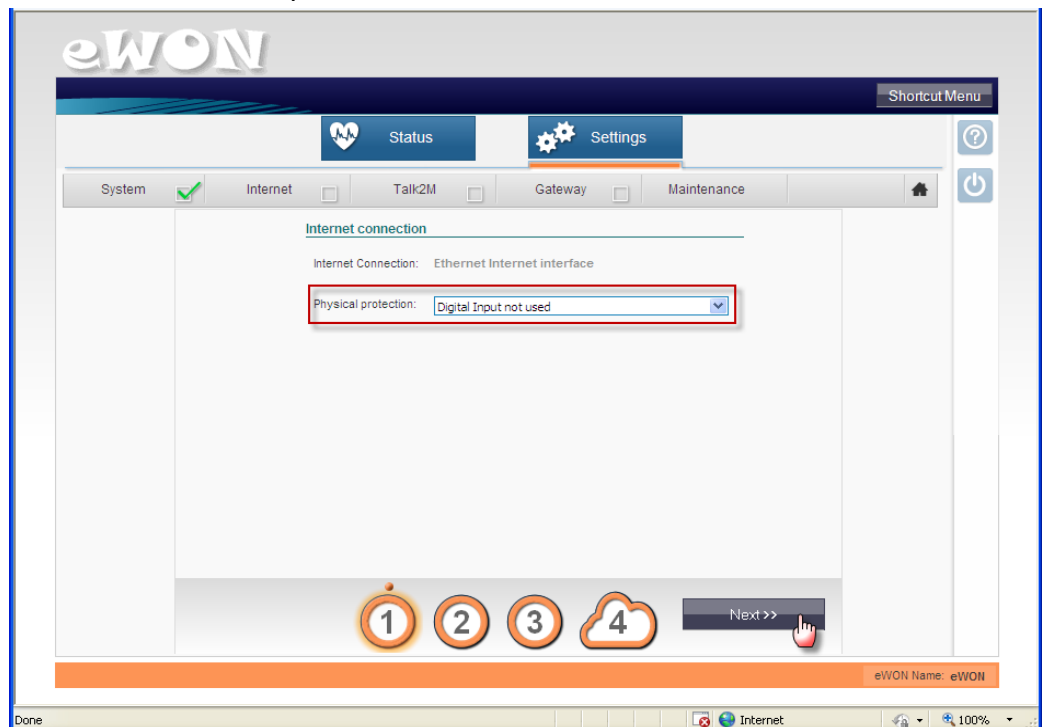
3. When the System part of the wizard is successfully completed, click **Next wizard**



4.3.3 Internet Setup

As required before launching the wizard, make sure to connect the WAN port of the eWON to a network with Internet access

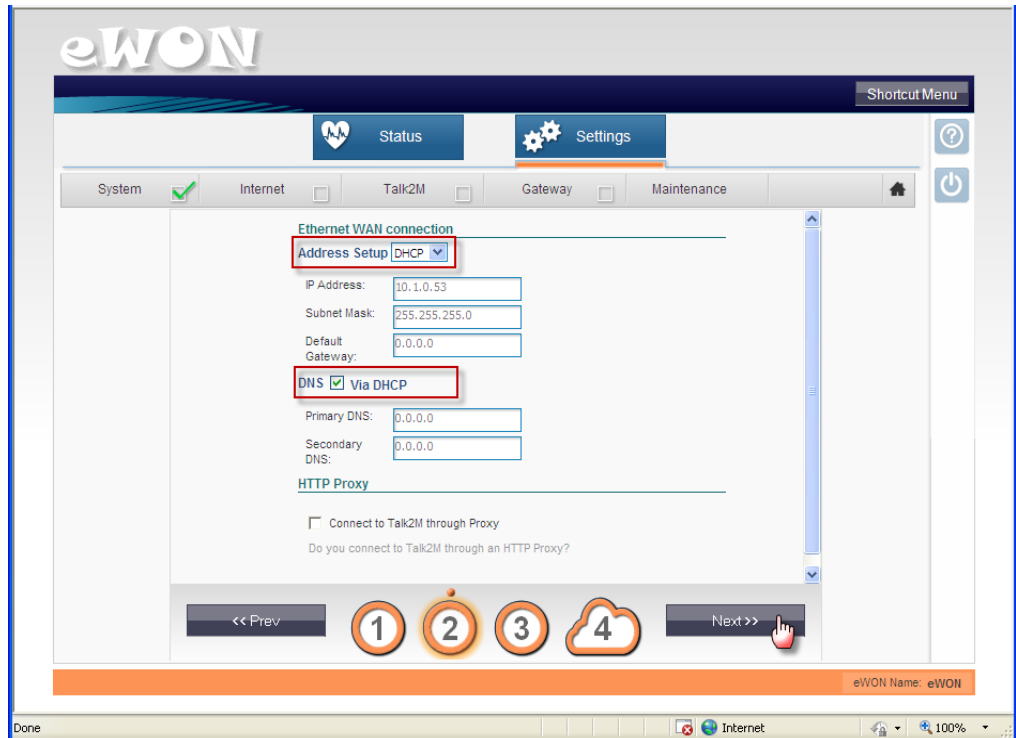
1. In the first page, you configure whether you want the Digital Input of your eWON COSY to be used to open/close the Internet access or not, click **Next**



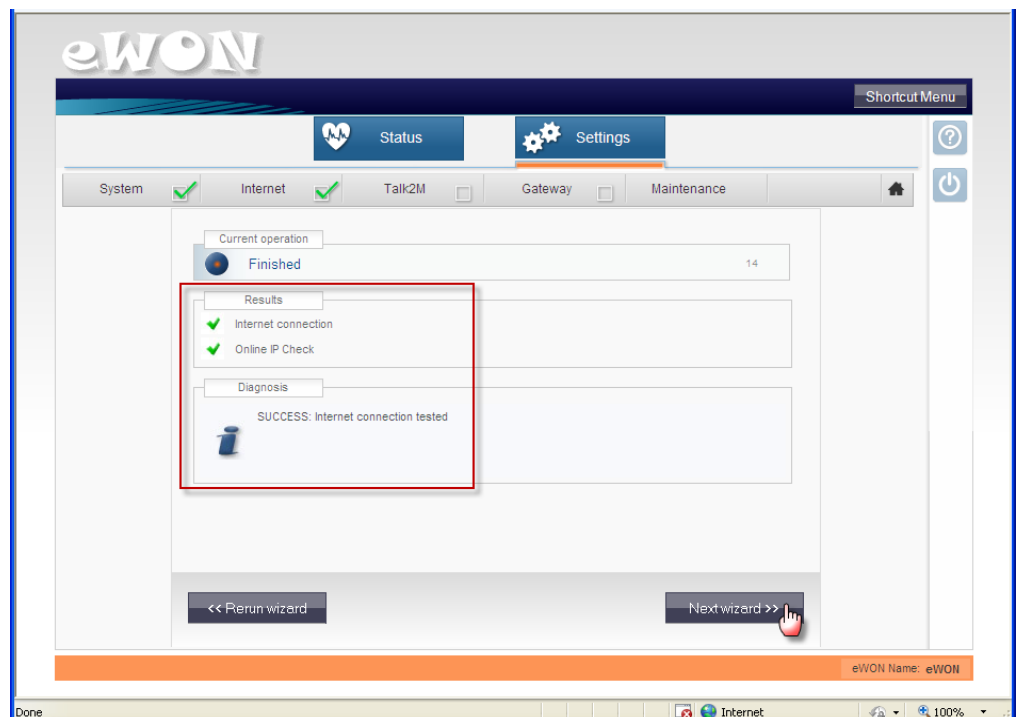
4. Talk2M and eWON COSY configuration

If used, the digital input can lock access to the Internet from an external command (contact or switch).

2. Configure the WAN access to define how the eWON COSY will access the Internet. The simplest configuration is to use DHCP. Click **Next**



3. Check the connection test results and click **Next wizard**

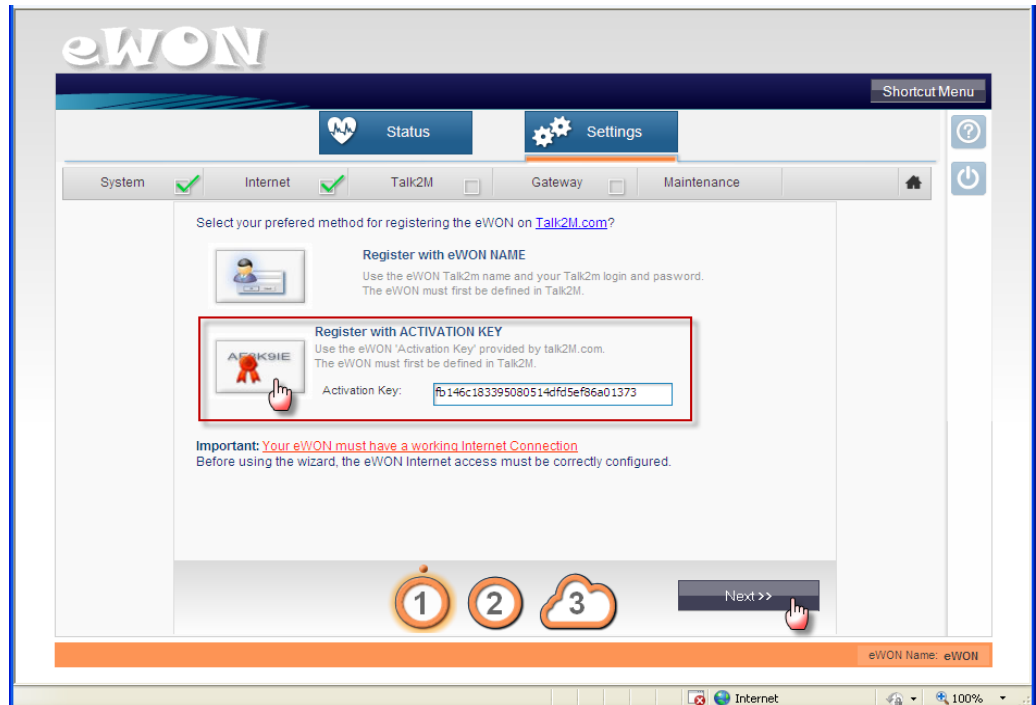


Note: at least the Ethernet connection should be OK, Online IP check should be OK as well but is less critical.

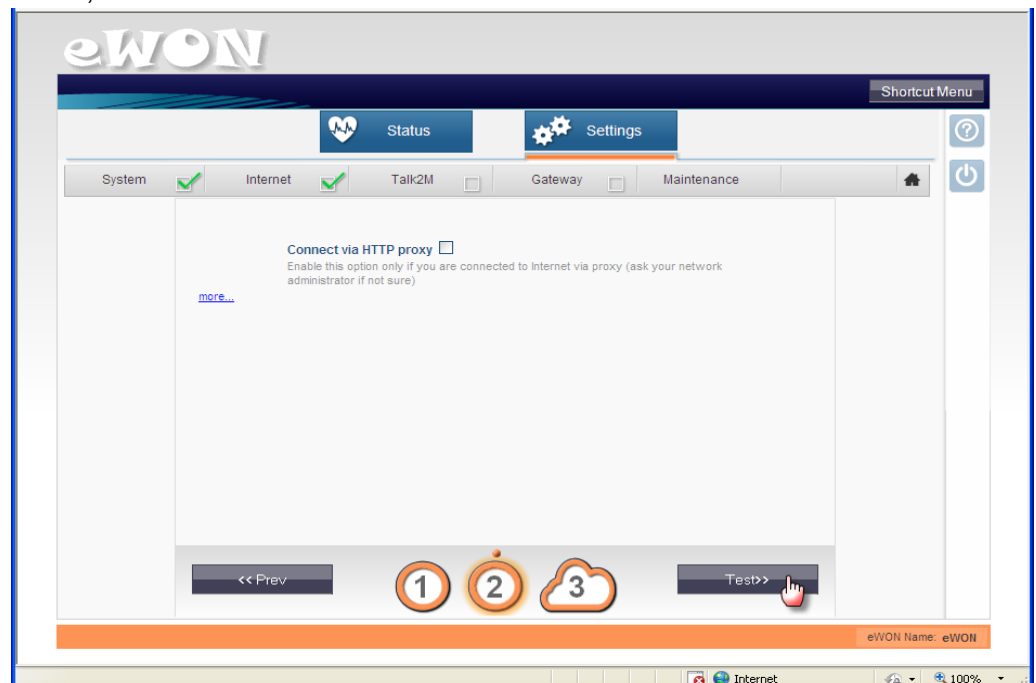
4. Talk2M and eWON COSY configuration

4.3.4 Talk2M Setup

1. The Talk2M registration wizard starts. Paste the activation key that is still on your clipboard from the Talk2M configuration of your eWON COSY in Step1 and click **Next**

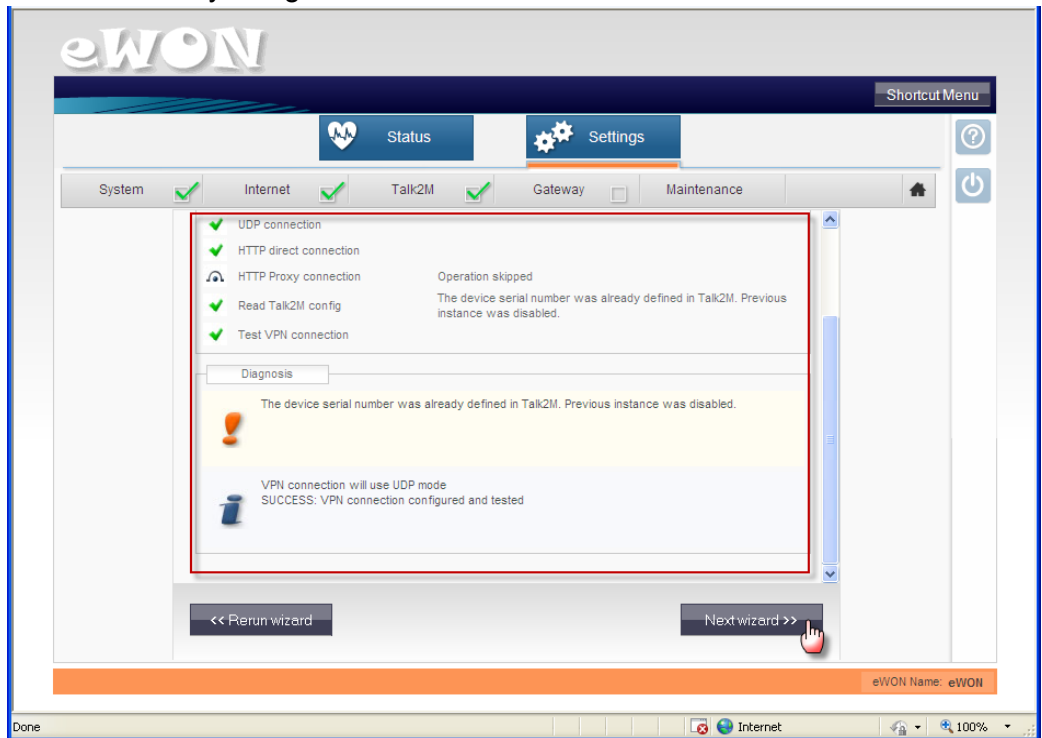


2. Check this box only if the eWON COSY has Internet access through a proxy server, click **Test**



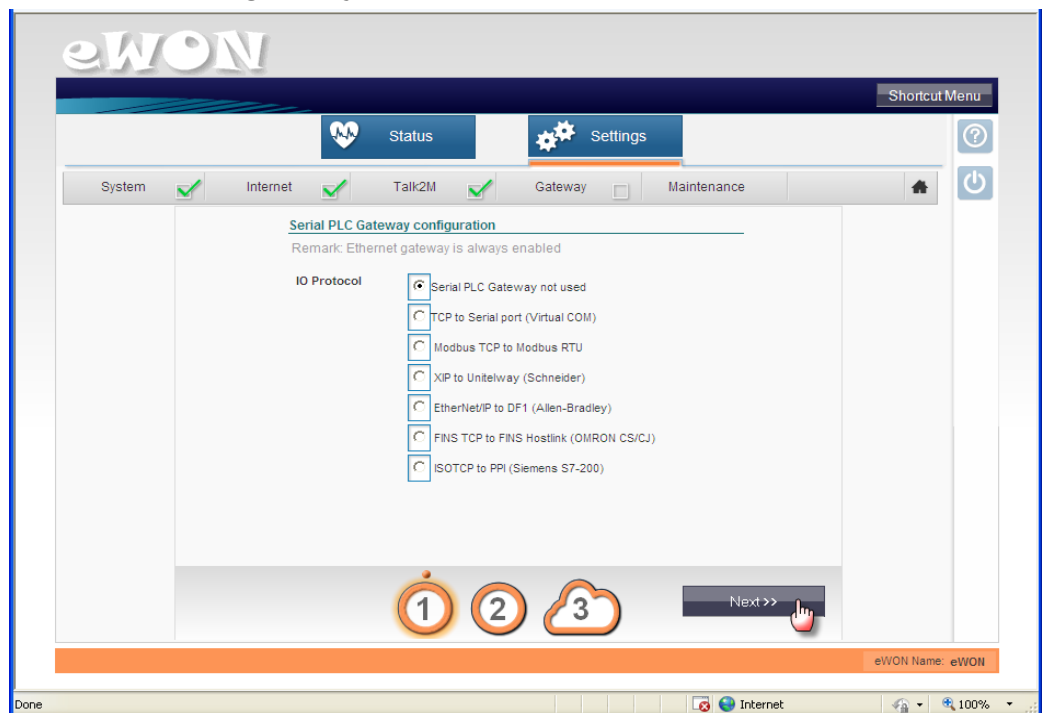
4. Talk2M and eWON COSY configuration

3. Verify whether the connection tests are OK. Now your eWON COSY is configured to work remotely using a Talk2M VPN connection. Click **Next wizard**



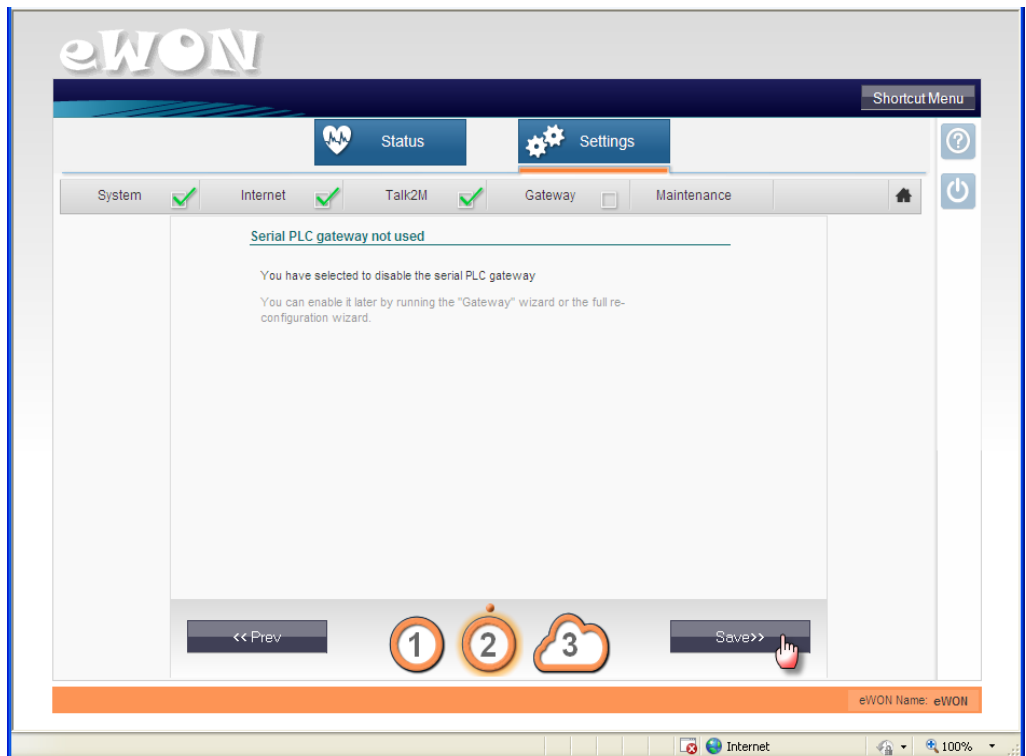
4.3.5 Gateway setup

1. For the remote access to the PLC we will not use the serial connection. So here select **Serial PLC gateway not used**, click **Next**

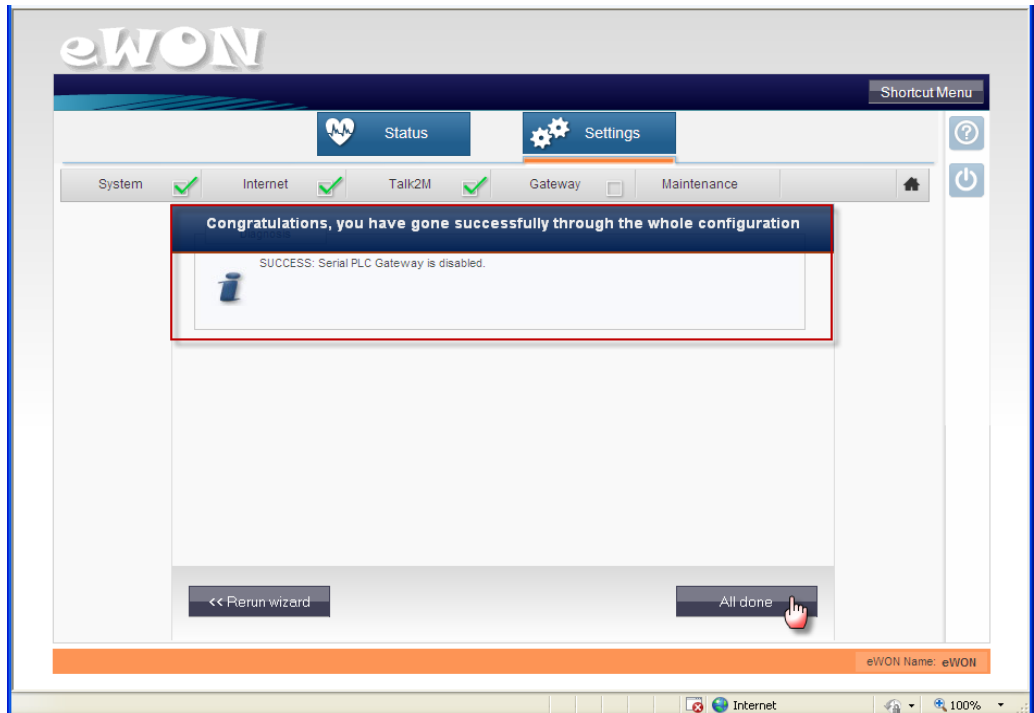


4. Talk2M and eWON COSY configuration

2. Click **Save**



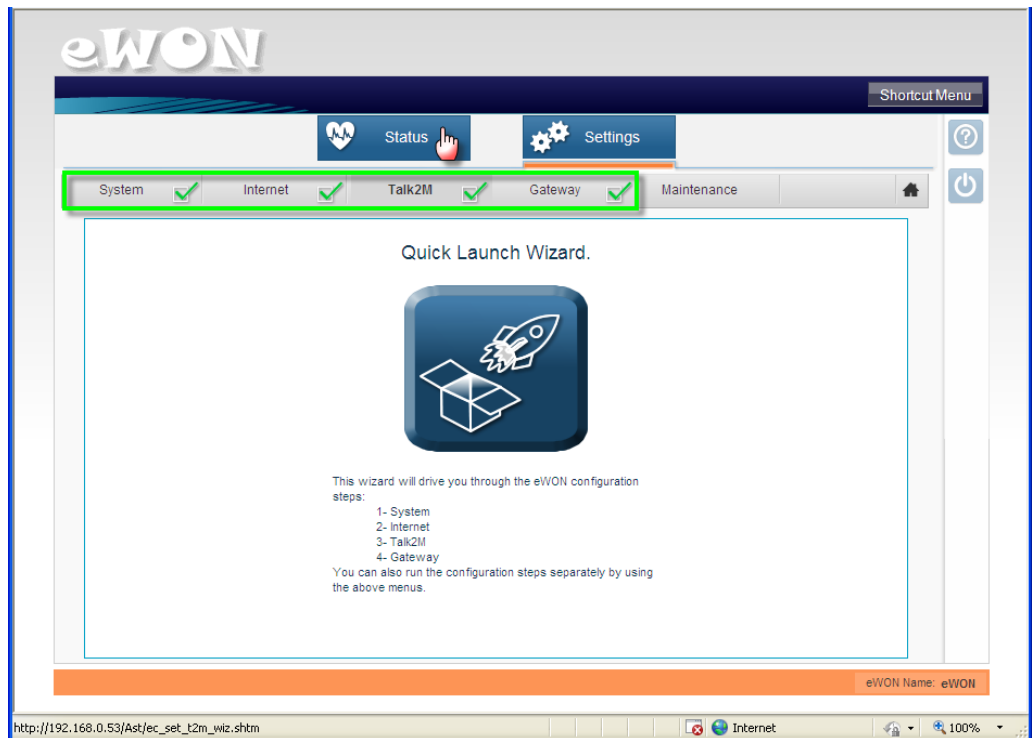
3. Click **All done**



4. Talk2M and eWON COSY configuration

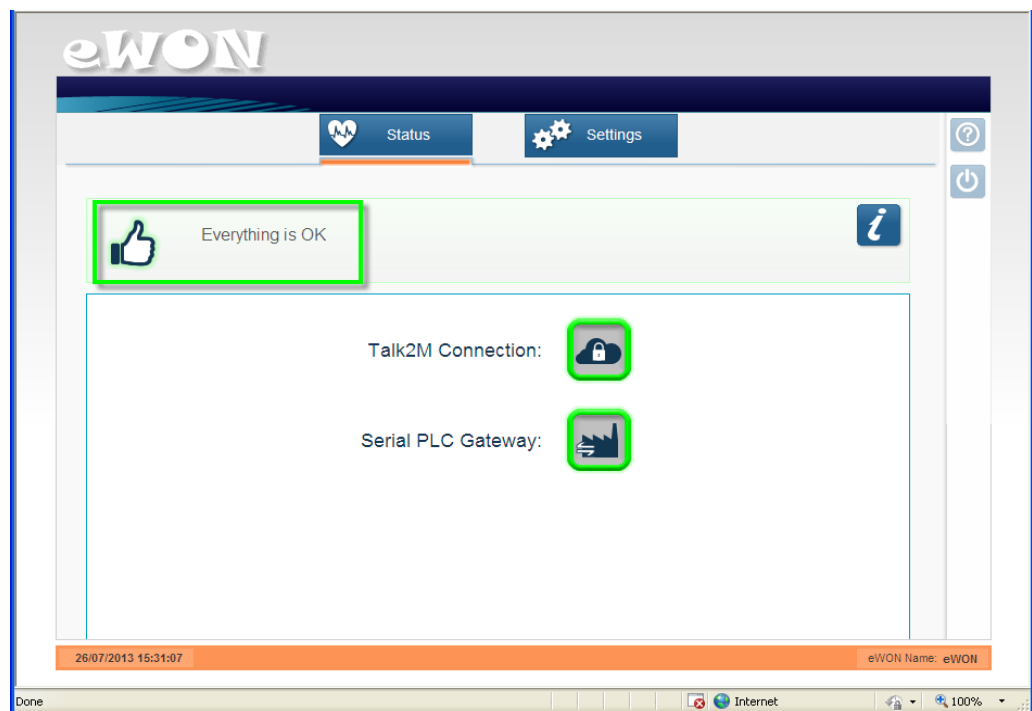
4.3.6 Final checks

1. You return to the Quick launch Page with all parts of the wizard completed



A click on Status allows to access a status summary page.

2. Status summary page.



End of Step 3.

4.4 Step 4: Connecting / disconnecting the remote eWON COSY

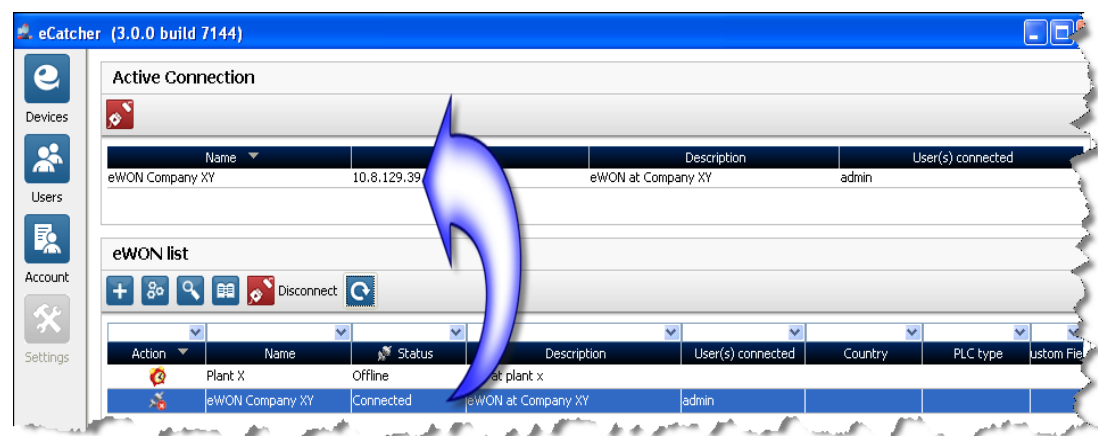
Now that the eWON COSY is configured to connect to Talk2M, we can establish the remote connection to the eWON COSY.

1. Connect your PC to the company LAN and configure its network parameters to have access to the Internet (usually DHCP enabled).
2. Launch eCatcher and open your Talk2M account.
3. In the eWON list section select the eWON COSY you want to use for the remote connection.



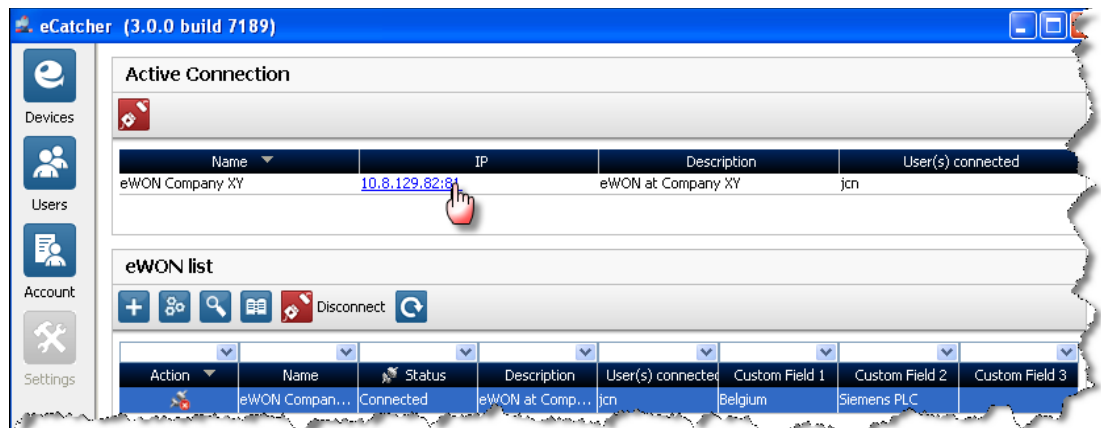
The eWON COSY which you just configured should now be displayed as on line (green tick in the action column). This means that the eWON COSY has established its VPN connection to the Talk2M server.

4. Double-click the **online icon** or click on the **Connect** button displayed in the eWON list menu to establish the remote connection to this eWON COSY. eCatcher will now establish the VPN connection to the Talk2M server.
5. Once the VPN connection to the eWON COSY is established, the eWON COSY will be displayed in the **Active connection** section on the top of the window.

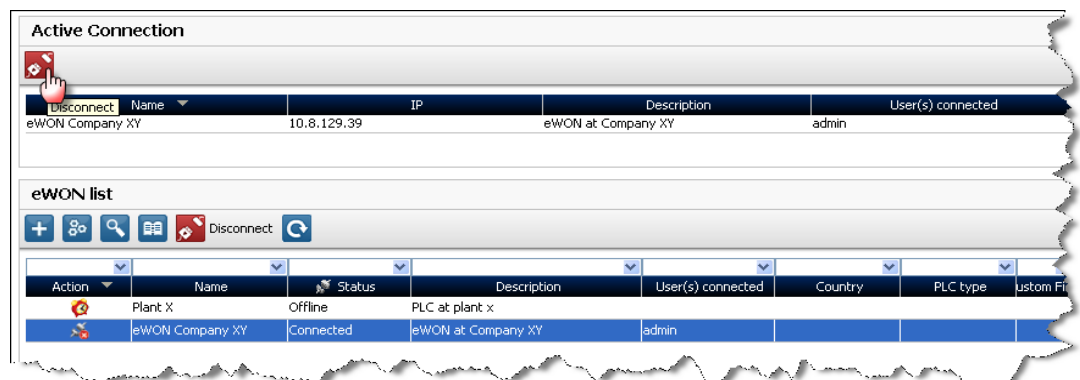


4. Talk2M and eWON COSY configuration

- The PC is now connected to the eWON COSY using the VPN tunnel and you can start to use the remote connection.
- If you want/need to connect to the eWON COSY itself, you can click on the IP address link in the **Active Connection** section, as displayed in the following picture. Once the home page of the eWON COSY web interface is displayed, you know for sure that your connection is effective.

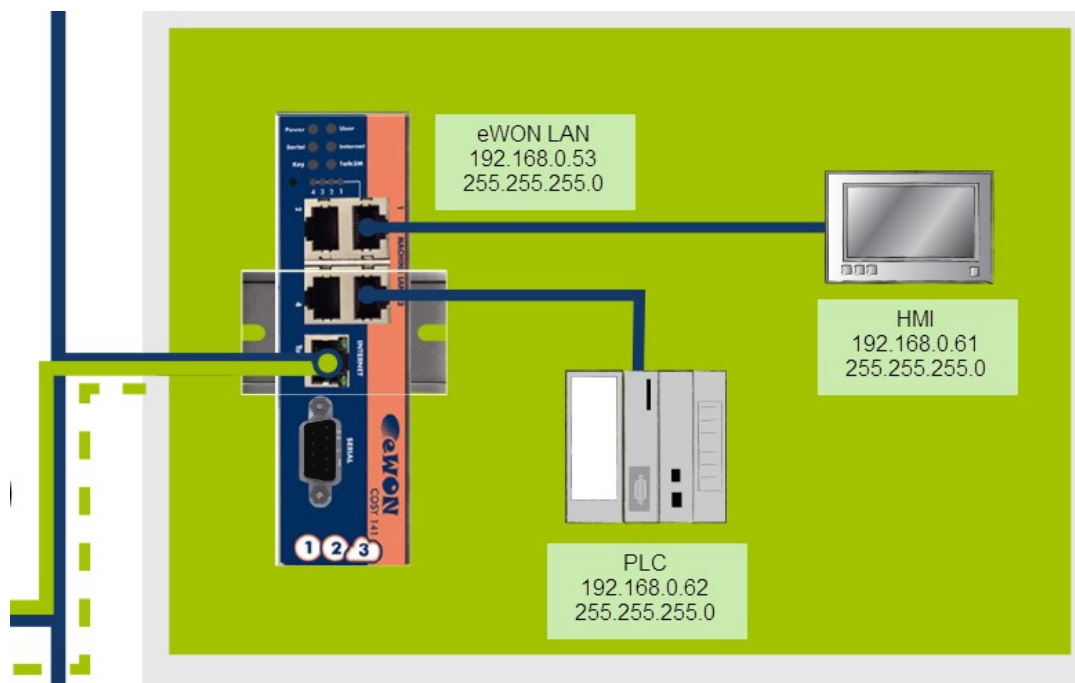


- When you no longer need it, you will have to close the remote connection. To close the connection, click on the **Disconnect** button in the **Active connection** section. This will close the VPN connection with the eWON COSY.



- End of step 4.

5. Linking eWON COSY and Schneider M258 PLCs



There is nothing special to do but make sure that the the LAN IP of the eWON COSY and the PLC IP address are in the same range.

- Tips -

As of firmware v12, there is a PLC Discovery feature inside the eWON. This allows the automatic discovery of PLC (linked to the eWON) on the network while you are connected through Talk2M. No need to set the IP of the PLC in the same range than the IP of the eWON.

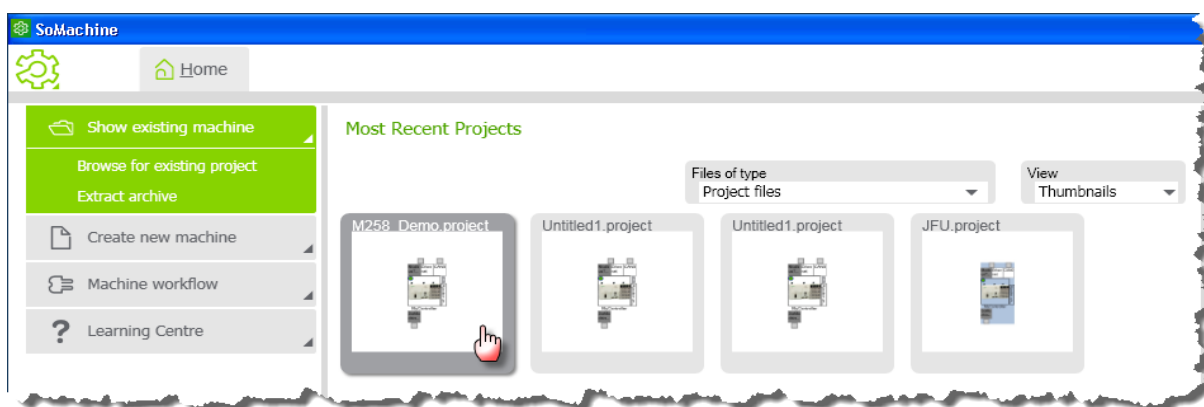
For more information, please refer to [AUG-070: PLC Discovery through Talk2M](#)

6. PLC remote access

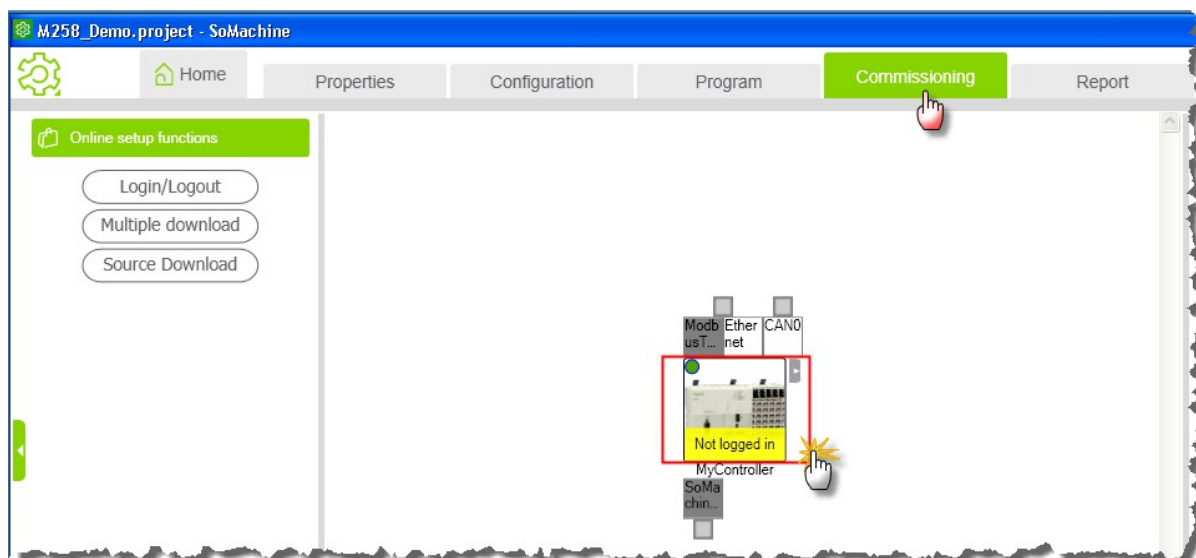
You are supposed to be connected to the eWON through Talk2M as described in the previous steps. You don't need a physical point-to-point connection with your PLC to configure it for remote access. The procedure below starts on the PC having the connection with the eWON AND hosting Schneider's SoMachine software.

6.1 SoMachine V 3.0 and V 3.1

1. Start SoMachine and open your project



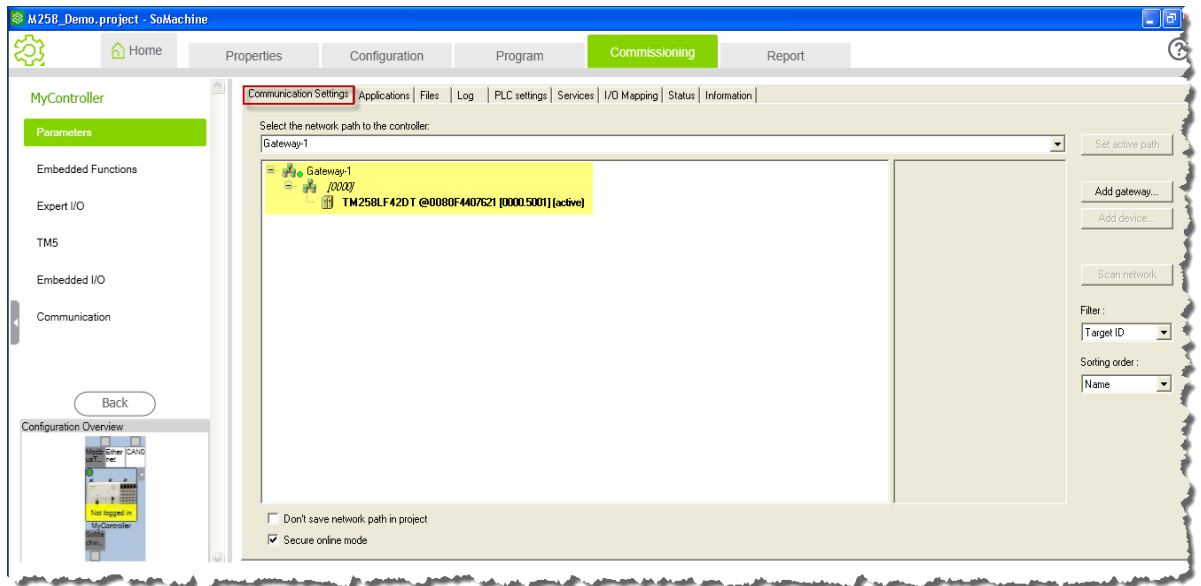
2. Open the **Commissioning** menu...



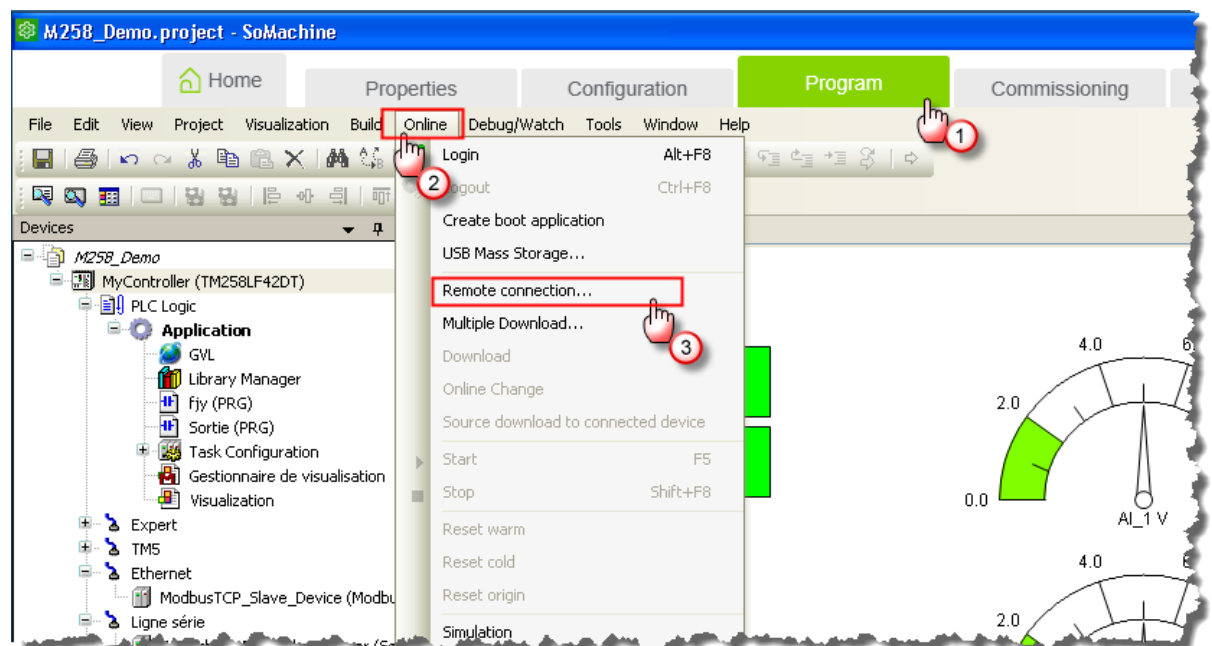
... and double-click on the PLC to open the **MyController > Parameters** window.

6. PLC remote access

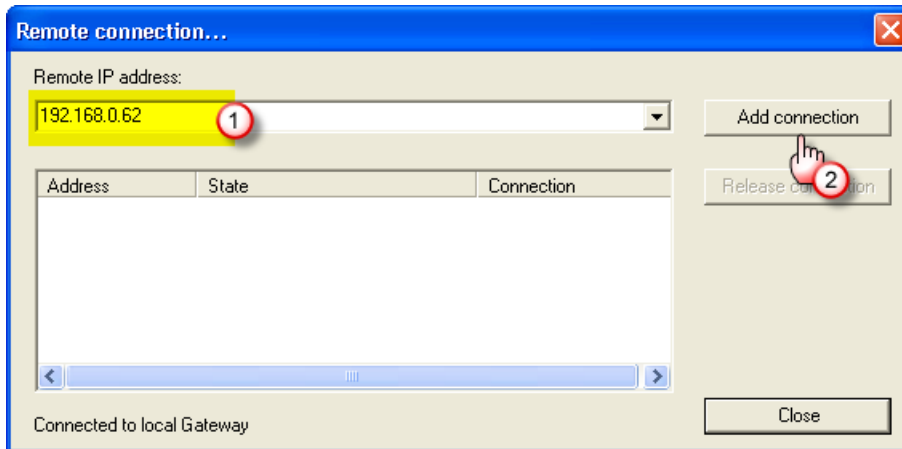
3. In the **Communication Settings** tab, make sure as shown below that a Gateway was declared in this window.



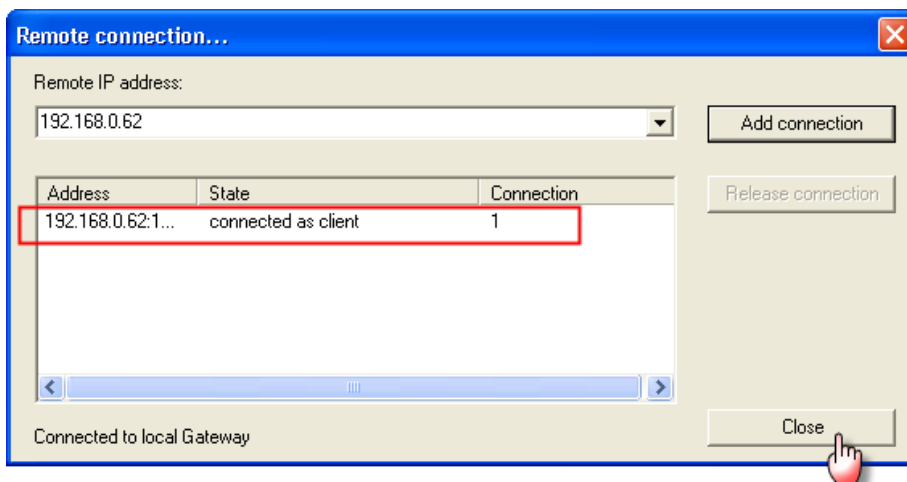
4. Open the **Program Menu** (1), select **Online** (2) > **Remote connection** (3)...



5. Specify the PLC IP address (1) in the **Remote connection** window and click **Add connection** (2)

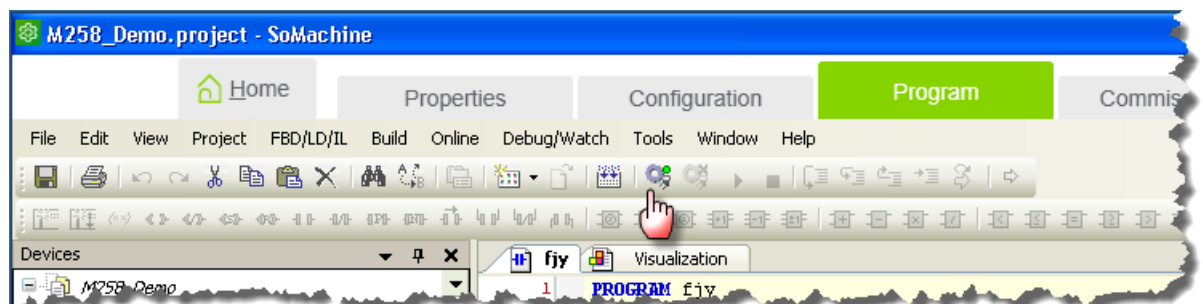


After a while, the IP address of the remote PLC appears in the lower part of the window with **connected as client** in the State column.



Note: At this point, if you have no Talk2M connection with the eWON , the message shown in the State column would be **connection in progress**. Click **Close**.

6. Login to your PLC either through the menu **Online > Login** or through the **Online Viewing** icon on the toolbar



6. PLC remote access

7. You are now remotely connected with the PLC

The screenshot displays the Schneider M258 PLC software interface. The title bar indicates the project is 'M258_Demo.project - SoMachine'. The main menu includes 'Home', 'Properties', 'Configuration', 'Program', 'Commissioning', and 'Report'. The 'Program' tab is active, showing a variable declaration table and a ladder logic diagram.

Expression	Type	Value	Prepared value	Comment
bit0	BOOL	FALSE		
bit1	BOOL	FALSE		
Var1	REAL	0		
Var2	DWORD	0		
Pulse	TP			
bidon	TIME	T#180ms		
Timer	TON			
bidon2	TIME	T#0ms		

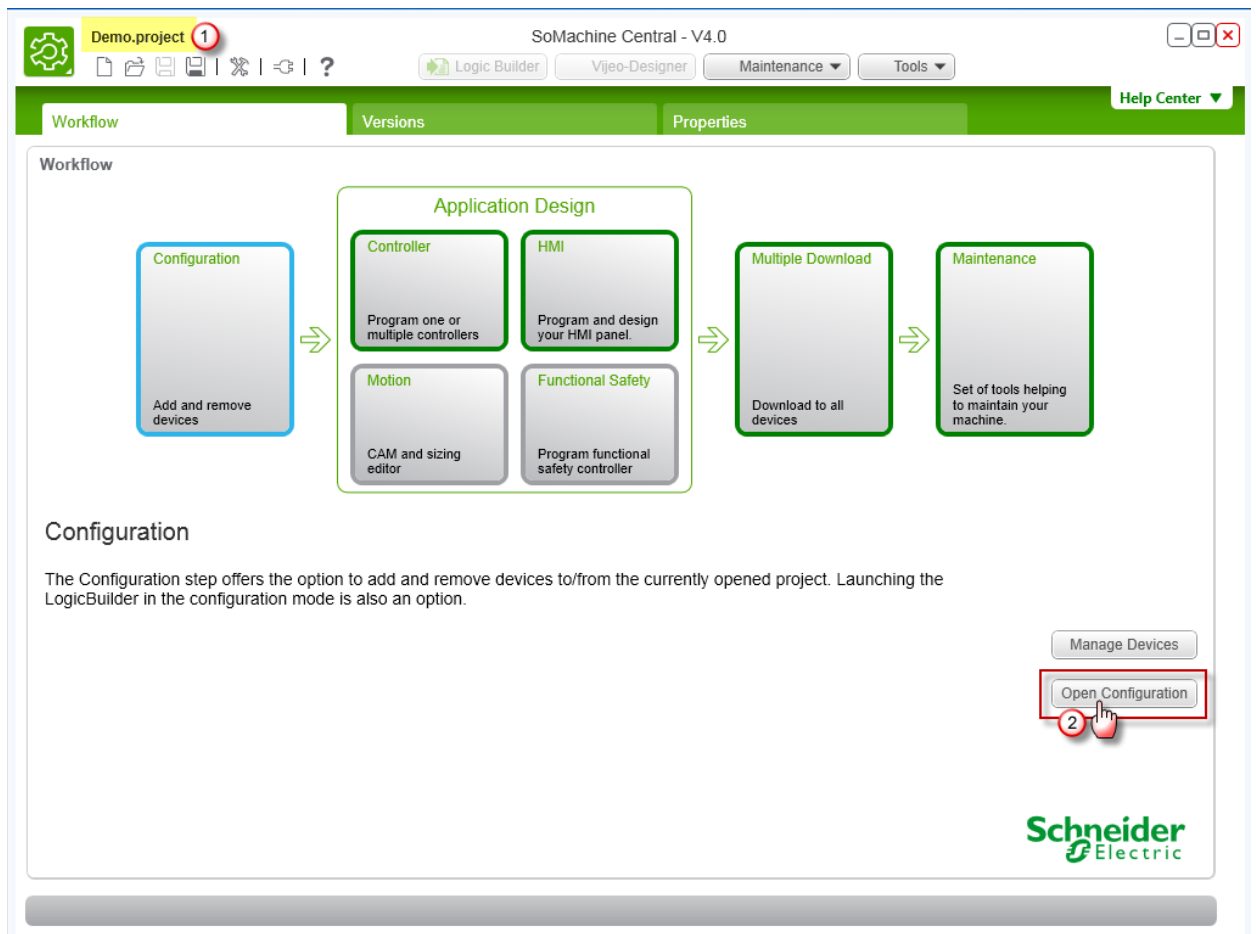
The ladder logic diagram shows two rungs:

- Rung 1:** A normally open contact labeled 'Timer.Q' is connected to the 'IN' of a 'Pulse' block. The 'PT' (pulse width) is set to 't#255ms'. The 'Q' output of the 'Pulse' block is connected to 'bidon', which is set to 'T#180ms'.
- Rung 2:** A normally open contact labeled 'Pulse.Q' is connected to the 'IN' of a 'Timer' block. The 'PT' is set to 't#250ms'. The 'Q' output of the 'Timer' block is connected to 'bidon2', which is set to 'T#0ms'.

6.2 SoMachine V 4.0

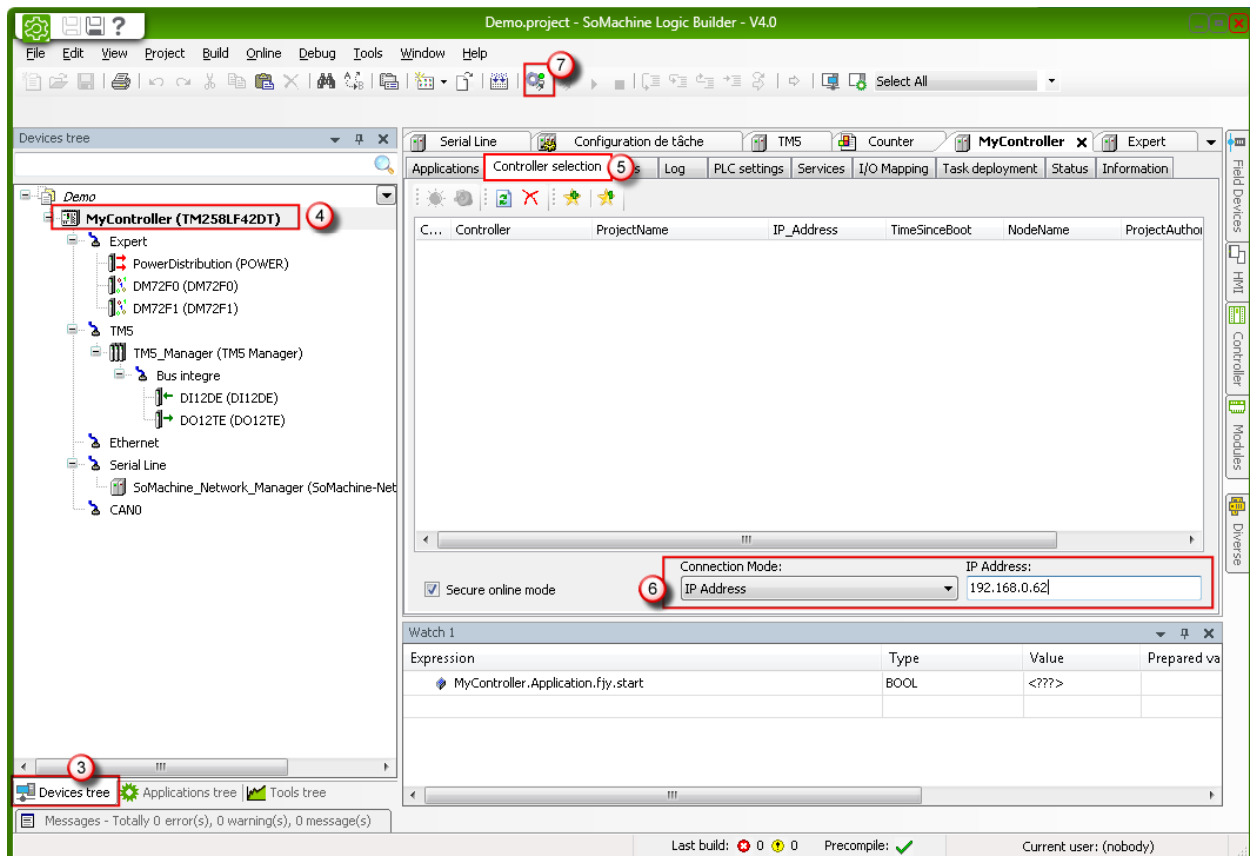
Reminder: You are supposed to be connected to the eWON through Talk2M as described in the previous steps.

1. Start SoMachine and open your project
2. Click on **Open Configuration**



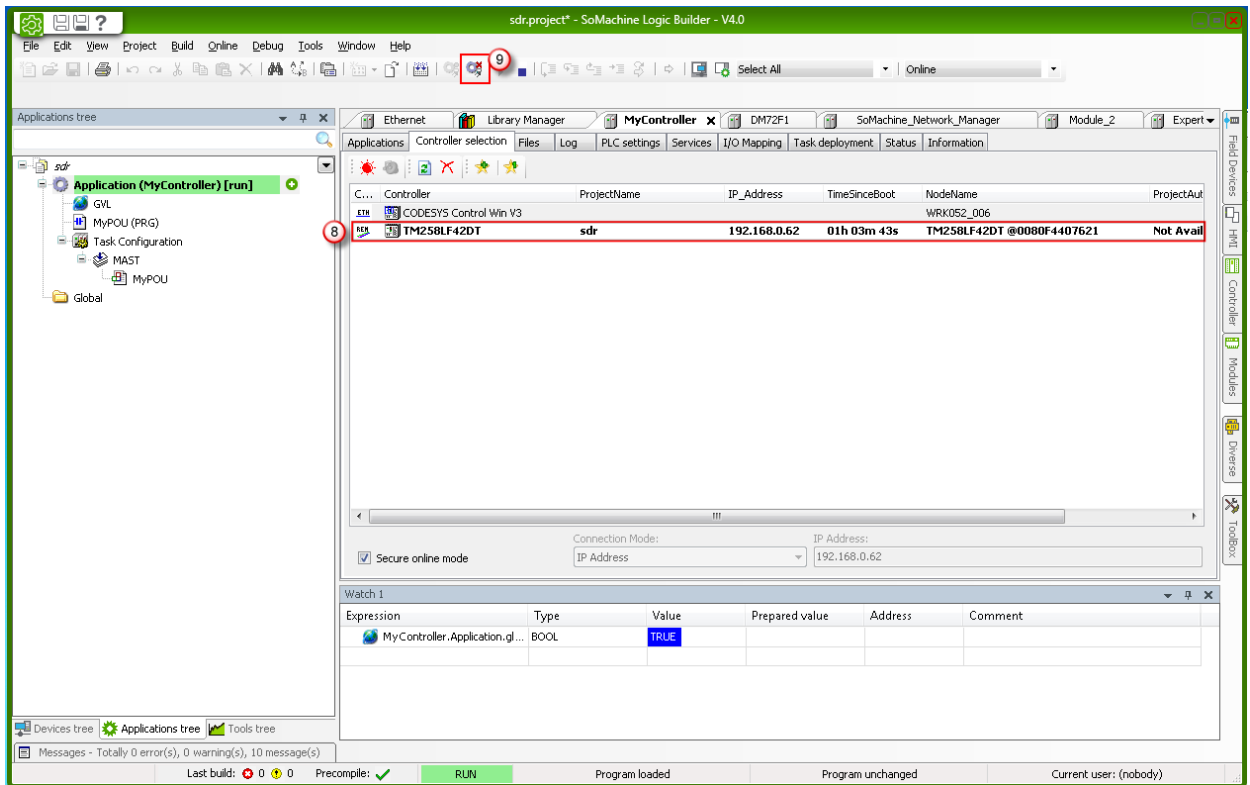
6. PLC remote access

3. Select the **Device tree** tab on the bottom left
4. Select **MyController** in the device tree
5. Open the **Controller selection** tab
6. Select **IP Address** as Connection Mode and introduce the IP address of the target PLC
7. Click on the **Login** icon from the toolbar



6. PLC remote access

8. After a while, the controller appears as connected in the **Controller selection** panel

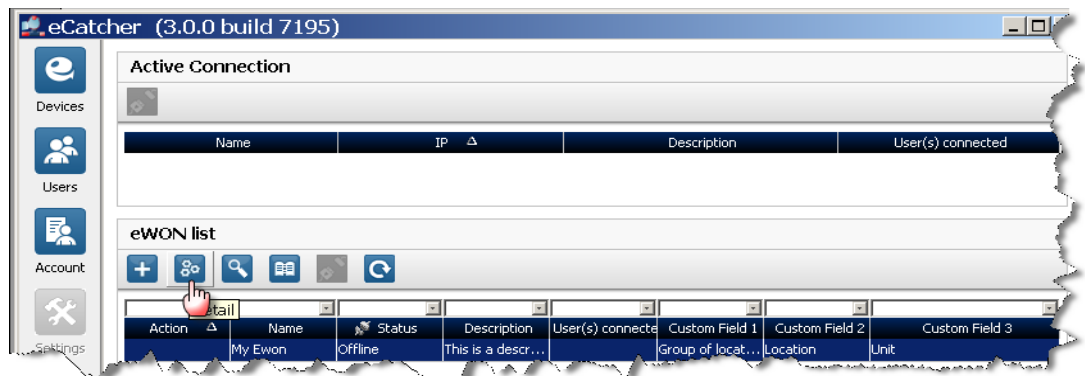


9. Click on the **Logout** icon from the toolbar to disconnect.

7. Troubleshooting

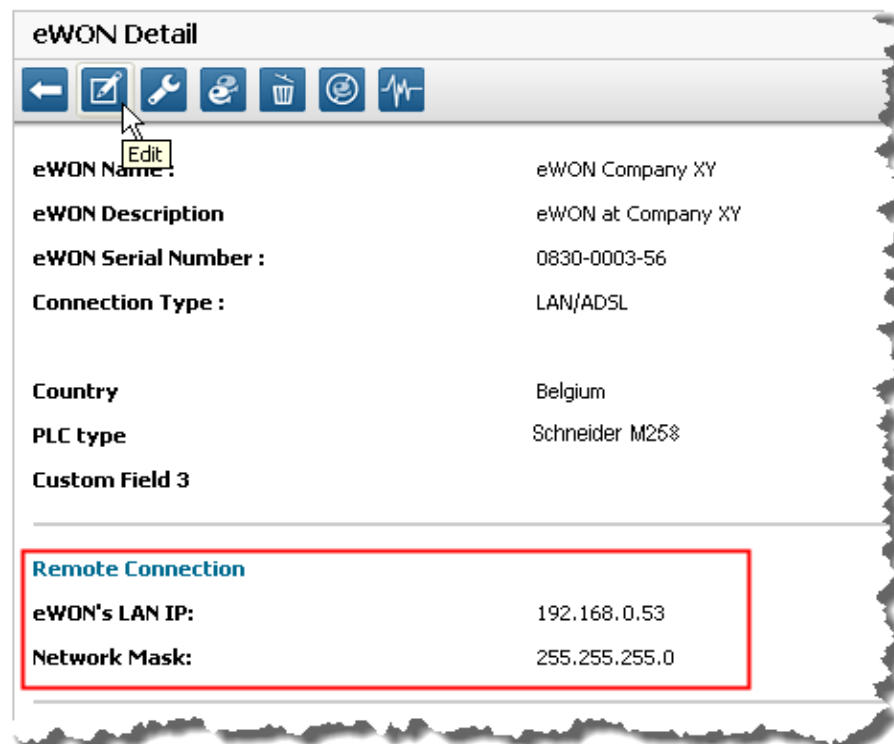
To be able to reach the Ethernet PLC, the following conditions must be fulfilled:

- Reboot the PLC after IP address and/or gateway change.
- You might have a mismatch between the actual IP configuration of the eWON and the eWON LAN IP address configured as **Remote Connection** in your Talk2M account. You can check, and if necessary, modify these settings, in eCatcher. Under the eWON list select the Name of the remote connection and click on the **Detail** button.



The eWON Detail window will open:

Here you will find the different information you configured. The Remote Network is specified under the **Remote Connection** section.



To change the Remote Connection settings, click on the Edit button on the top of the page.

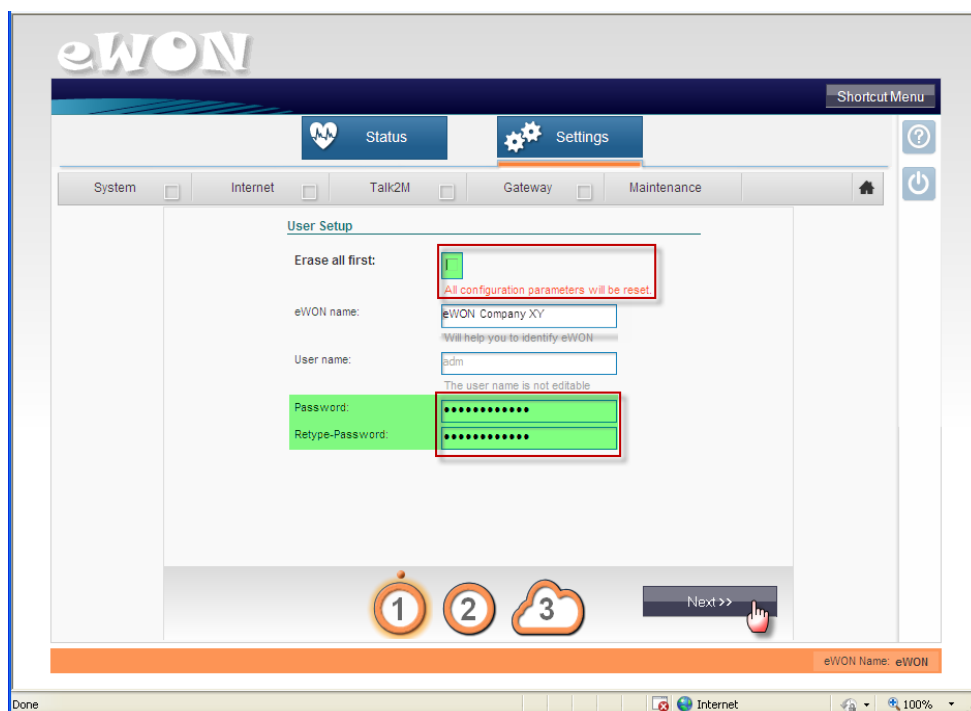
Once the modification is finished, click on the Save button which is displayed on the top of the window when in edit mode. After the change you would then have to save and **Disconnect** and **Connect** the VPN bridge to the eWON for Talk2M to take the modification into account.

The remote PLC network must be in a different range than the company network on which your PC is connected (see § 4.2 Step 2: [Setting IP address of eWON COSY LAN](#)).

8. Login security

A good security practice consists in modifying the password of the default user adm. Modifying the adm user password is done during the eWON COSY setup wizard (see § 4.3.2 [System Setup](#)).

If you re-run the wizard **ONLY** to change the password, **uncheck** the **Erase all first** box in the first system setup window.



Revision history

Revision Level	Date	Description
1.0	05-AUG-2013	Initial release
1.1	25-FEB-2014	Addition for So-Machine V4
1.2	15/12/16	Added "PLC Discovery" to Chapter 5

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