

Compatibility Notice M241_M251

CompatibilityNotice_M241_M251
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Table of Contents

About the Book.....	5
Modicon M241 Logic Controller and Modicon M251 Logic Controller :	
Hardware Version and Firmware Version Compatibilities	5
User Rights Management - General Information.....	6
Resetting Device User Rights	7
Deactivating Device User Rights.....	10
Managing Device User Rights by Call Parameters	11
Managing Device User Rights Using the Scripting API.....	12
Including User Rights While Cloning the SD Card	13
Additional Information	13

Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book

Document Scope

This document describes the cybersecurity best practices in the context of user rights management.

Validity Note

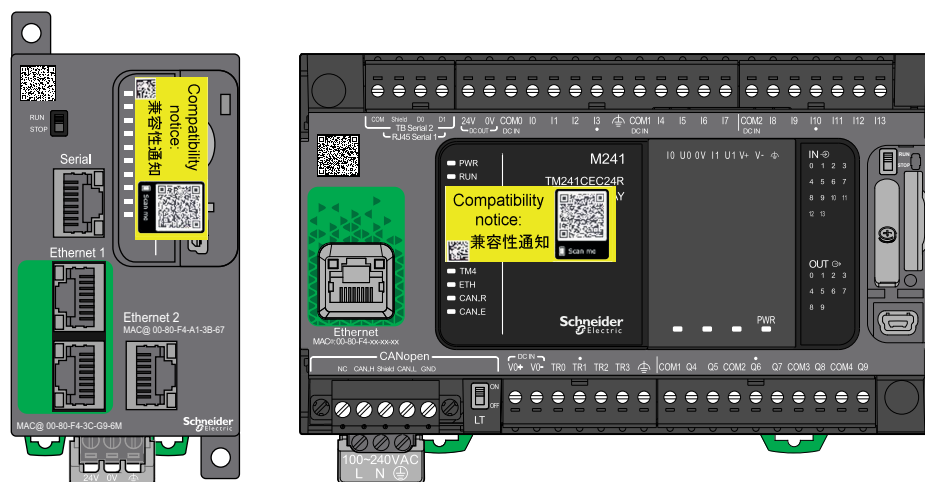
This document has been updated for the release of EcoStruxure™ Machine Expert V1.2.

Modicon M241 Logic Controller and Modicon M251 Logic Controller

Hardware Version and Firmware Version Compatibilities

Overview

Modicon M241 Logic Controller and Modicon M251 Logic Controller are produced with a new hardware revision. They are compatible with the firmware versions V4.0.6.41 or greater.



Use the table below to identify your hardware version:

References	Previous Product Version	New Product Version
TM241••R	8	9
TM241••T/U	6	7
TM251MES•••	5	6

NOTE: If a firmware downgrading occurs, flash a firmware version (V4.0.6.41 or greater) with an SD card to recover the logic controller.

Notes for SoMachine Users

- Firmware version V4.0.6.41 is available for download on the Schneider Electric home page www.se.com
- Firmware version V4.0.6.41 is compatible with any application built with SoMachine (V4.x)

- Firmware version V4.0.6.41 is compatible with all hardware versions

User Rights Management - General Information

Overview

In order to meet constantly evolving cybersecurity requirements, with EcoStruxure Machine Expert V1.2 the user rights management is by default activated for Schneider Electric M241, M251, M262, PacDrive LMC Eco, PacDrive LMC Pro/ Pro2 controllers. This has the effect that every Schneider Electric controller equipped with the latest EcoStruxure Machine Expert V1.2 firmware prompts you for user credentials whenever you attempt to gain access.

NOTE: The new user rights management does not apply for HMISCU controllers.

For general information regarding device user management, refer to the Programming Guide [online help](#), section **Software > Programming > Programming Guide > Configuration > Common Device Editor Dialogs > Device Configuration > Users and Groups > Users and Groups Management**.

First Login to Schneider Electric Controller with User Rights Management Activated Using Default Credentials

As user management is activated by default in the controllers, use the following default credentials for first login and modify them immediately.

Step	Action
1	At first login to a Schneider Electric controller, enter the default user credentials: <ul style="list-style-type: none"> • User name: Administrator • Password: Administrator Result: You are requested to change the default password.
2	Enter your individual Password .
3	Re-enter your individual Password .
4	Click OK to confirm. Result: Access to your controller is now protected by these new credentials. They are assigned the highest user rights level and allow you to manage access rights for users or user groups.

NOTE: For future login, the new **Password** will be required.

Controller Locked After Entering Incorrect Credentials

If you enter incorrect credentials for three times, the controller will be locked for 60 seconds. After this time, retry to connect by entering the correct credentials.

Logoff Procedure

After successful login to the controller, you can perform further online actions on the controller with EcoStruxure Machine Expert. As long as your project remains open, you will not be prompted to enter your credentials again.

In order to log off the present user from the controller, execute the command **Online > Security > Logoff current device user**.

After that you will be prompted for your credentials when you attempt to perform another online command on the controller.

Firewall Settings

Most of the communication services like FTP or OPC UA access the controller by using the settings of the user rights management. Therefore, make sure that the firewall settings on the controller allow the services to access the controller file system.

Controller - HMI Communication with User Rights Management Activated

With user rights management activated in the controllers, the connection between an HMI programmed with Vijeo-Designer and the controller will not be established.

The following solutions are available to solve this issue:

- In Vijeo-Designer, open the **Network Equipment Settings** dialog box of the **I/O Manager** and enter the **Username** and the **Password** to access the controller.
- Reset the device user rights of the controller, page 7.

Resetting Device User Rights

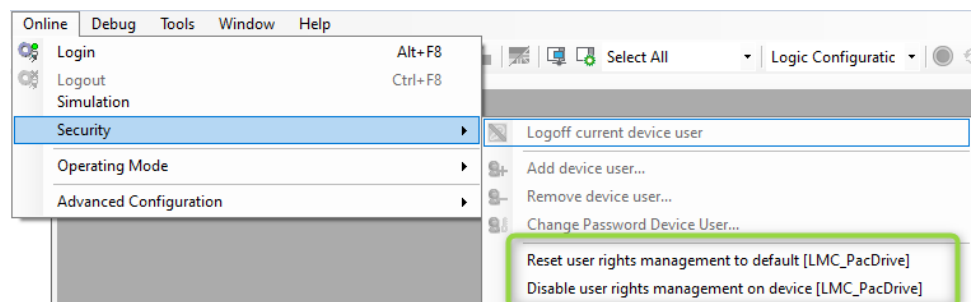
Overview

You can reset the device user rights to the default settings by using different software tools. Your individual credentials are required for this procedure. For further information on the default settings, refer to the *First Login to Schneider Electric Controller with User Rights Management Activated Using Default Credentials* paragraph, page 6.

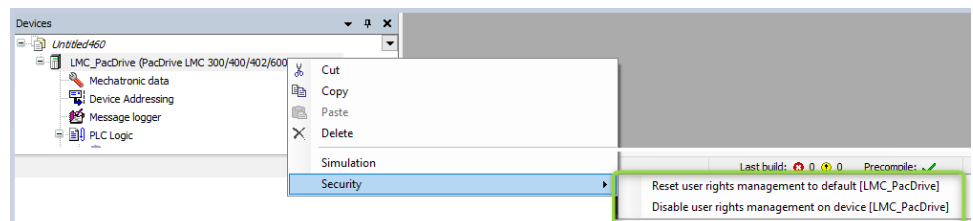
Reset via EcoStruxure Machine Expert Logic Builder

For PacDrive LMC Eco and PacDrive LMC Pro/Pro2 controllers, you can reset the device user rights using the **Reset user rights management to default** command that is available at two different locations:

Online > Security > Reset user rights management to default menu:



Contextual menu of the controller, **Security > Reset user rights management to default** command:



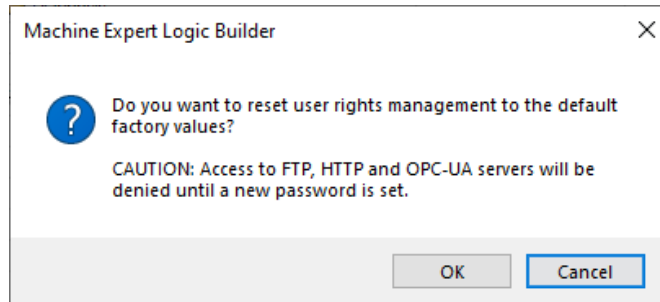
⚠ CAUTION

NO ACCESS VIA FTP, HTTP, OPC-UA

When you reset the user rights management to the default values, access to FTP, HTTP and OPC-UA servers is denied until you set your individual user name and password.

Failure to follow these instructions can result in injury or equipment damage.

Confirm the message with **OK**.



Reset via Controller Webserver

The Modicon M241 Logic Controller, Modicon M251 Logic Controller, and the Modicon M262 Logic/Motion Controller support the reset of device user rights management via the embedded webserver: **MAINTENANCE > USER MANAGEMENT > USER ACCOUNTS MANAGEMENT > RESET TO DEFAULT**

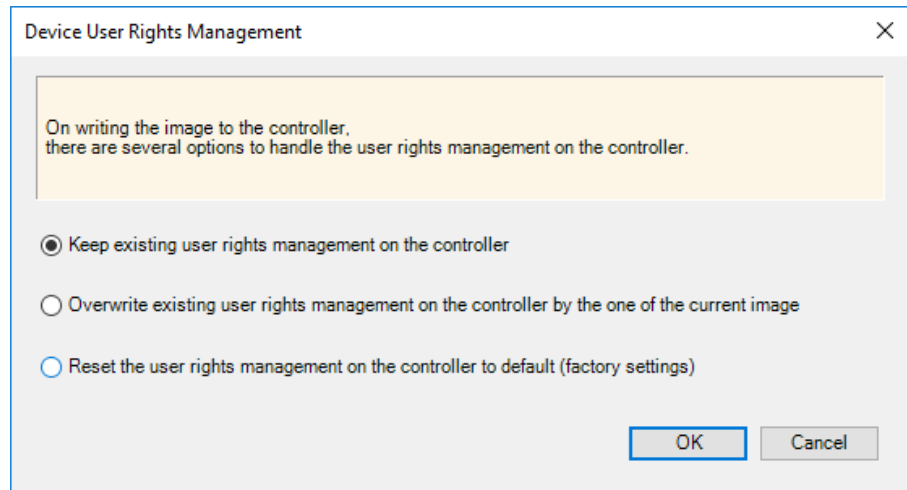
Consult the *Programming Guide* specific to your controller in the EcoStruxure Machine Expert online help for further information:

- Modicon M241 Logic Controller
Machine Expert > V1.2 > Controllers > M241 Logic Controllers > M241 Logic Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server
- Modicon M251 Logic Controller
Machine Expert > V1.2 > Controllers > M251 Logic Controllers > M251 Logic Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server
- Modicon M262 Logic/Motion Controller
Machine Expert > V1.2 > Controllers > M262 Logic/Motion Controllers > M262 Logic/Motion Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server

Reset via Controller Assistant

With EcoStruxure Machine Expert V1.2, the service tool Controller Assistant supports user rights management of PacDrive LMC Eco and PacDrive LMC Pro/Pro2 controllers.

By attempting to write an image to the controller in online mode or to the SD card or flash disk, you will be prompted to decide how to handle user rights in the controller:



The following options are available:

- **Keep existing user rights management on the controller**
Activate this option to keep the existing user rights management as it is. This applies even if the user rights management is disabled.
NOTE: If you attempt to write an EcoStruxure Machine Expert V1.2 or later firmware to a controller without user rights defined, the user rights management in the controller will be set to the default settings.
- **Overwrite existing user rights management on the controller by the one on the current image**
The user rights management in the controller will be overwritten by the user rights management that is defined in the image you attempt to write.
NOTE: If you attempt to write an EcoStruxure Machine Expert V1.2 or later firmware and if there is no user rights management defined in the image, the user rights management in the controller will be set to the default settings.
- **Reset the user rights management on the controller to default (factory settings)**
The user rights management in the controller will be set to the default settings.

By default, the user rights management existing in the controller are preserved when writing to the controller in online mode.

Reset Without Credentials

If you have lost the credentials, you can reset the user rights management of the controller by using the service tool Controller Assistant to write the image to the SD card or flash disk.

From the message prompting you to decide how to handle user rights in the controller, select the option **Reset the user rights management on the controller to default (factory settings)**. If this option is not available, you can create a new firmware from scratch that comes with the default settings. Then you can restart the controller directly from this SD card or flash disk.

The Modicon M241 Logic Controller, Modicon M251 Logic Controller, and the Modicon M262 Logic/Motion Controller also allow you to modify a script.cmd file on the SD card to reset the user rights management. Consult the *Programming Guide* specific to your controller for further information.

Deactivating Device User Rights

Overview

In order to help prevent unauthorized access to your controller, keep the device user rights management function activated. If you ensure that your machine or process is not accessible to unauthorized personnel, you can deactivate the function as described in this chapter. Your individual credentials are required for this procedure.

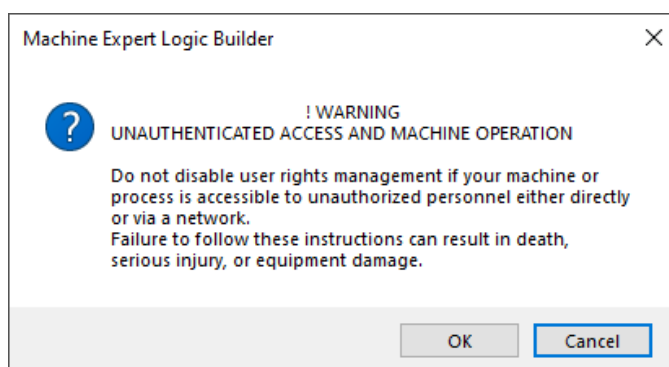
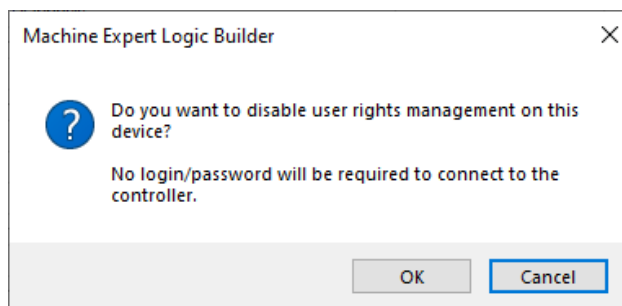
Deactivating via EcoStruxure Machine Expert Logic Builder

For PacDrive LMC Eco and PacDrive LMC Pro/Pro2 controllers, you can deactivate the device user rights management using the **Disable user rights management on device** command that is available at two different locations:

- **Online > Security > Disable user rights management on device** menu
- Contextual menu of the controller, **Security > Disable user rights management on device** command

⚠ WARNING
UNAUTHENTICATED ACCESS AND MACHINE OPERATION
Do not disable user rights management if your machine or process is accessible to unauthorized personnel either directly or via a network.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Confirm the two confirmation messages with **OK** if you are sure to deactivate the device user rights.



Result: Access the controller is now available without credentials.

Deactivating via Controller Webserver

The Modicon M241 Logic Controller, Modicon M251 Logic Controller, and the Modicon M262 Logic/Motion Controller allow you to deactivate the device user rights management via the embedded webserver: **MAINTENANCE > USER MANAGEMENT > USER ACCOUNTS MANAGEMENT > DEACTIVATE**

Consult the *Programming Guide* specific to your controller in the EcoStruxure Machine Expert online help for further information:

- **Modicon M241 Logic Controller**
Machine Expert > V1.2 > Controllers > M241 Logic Controllers > M241 Logic Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server
- **Modicon M251 Logic Controller**
Machine Expert > V1.2 > Controllers > M251 Logic Controllers > M251 Logic Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server
- **Modicon M262 Logic/Motion Controller**
Machine Expert > V1.2 > Controllers > M262 Logic/Motion Controllers > M262 Logic/Motion Controller - Programming Guide > Ethernet Configuration > Ethernet Services > Web Server

Deactivating User Rights for the Simulation Device in EcoStruxure Machine Expert Logic Builder

The simulation device in EcoStruxure Machine Expert Logic Builder has own user rights that can differ from those that are defined in the real controller.

NOTE: To help avoid account lockout (deadlocking), first disconnect EcoStruxure Machine Expert Logic Builder from the controller and make sure no other client, for example, an HMI, automatically attempts to connect using the previous user rights configuration.

In order to deactivate user rights in the simulation device, proceed as follows:

Step	Action
1	Close all instances of EcoStruxure Machine Expert Logic Builder.
2	Close all instances of Vijeo-Designer.
3	Remove the folder c:\ProgramData\CODESYS\Simulation. Result: The simulation device is reset to the default settings.

Managing Device User Rights by Call Parameters

Overview

The service tools Controller Assistant and Diagnostics provide command line arguments that are used to connect to a controller with the required credentials. For detailed information, refer to the Controller Assistant - User Guide and the Diagnostics - User Guide in the EcoStruxure Machine Expert online help.

The following arguments are available:

- -username <Username>
- -password <Password>
- -renewalpassword <RenewalPassword>

Examples

```
ControllerAssistant.exe -username Administrator -password  
Administrator -renewalpassword MyNewPassword  
-getcontrollerinfo etcp4://192.168.3.40  
Diagnostics.exe -username Administrator -password MyPassword  
-save ip etcp4://192.168.3.40 c:\Temp\MyDiagnosticsFile.pdi
```

-renewalpassword Argument

The argument `-renewalpassword` is used when a new password needs to be inserted. This is typically the case when the first login to a controller is performed and the default credentials (user name = Administrator and password = Administrator) are required.

The argument `-renewalpassword` cannot be used to change the password.

Starting Controller Assistant

Controller Assistant can also be started with graphical user interface using the command line arguments. In this case, you are not prompted to enter the credentials. They are retrieved from the values of the arguments.

Managing Device User Rights Using the Scripting API

Scripting for Using Online Services

EcoStruxure Machine Expert provides access to many of its online services via the scripting API. In order to establish a connection or to use an online service at a later time, valid credentials must be stored in the system.

Providing Specific Credentials for Online Services

You can store credentials via online device or online application in case of multi-controller projects. If there are specific credentials provided for the connection, they will be used by the system.

Example:

```
# create an "online device" to use online services
root_device = projects.primary.find("LMC_PacDrive", False)
[0]
online_device = online.create_online_device(root_device)

# store credentials specific to this "online device"
online.set_specific_credentials(online_device, "my_user",
"my_password")

# use of any online service
online_device.connect()
```

Providing Default Credentials for Online Services

If no specific credentials are provided for the connection, the system uses the default credentials.

Example:

```
# create an "online device" to use online services
root_device = projects.primary.find("LMC_PacDrive", False)
[0]
online_device = online.create_online_device(root_device)

# store default credentials
online.set_default_credentials("my_user", "my_password")

# use of any online service
online_device.connect()
```

Scripting for Enforced Password Renewal

The following scenarios require the password to be changed by the user after authentication:

-
- First login to a new controller.
 - First connection after the user rights management has been reset to default.
 - A password renewal is enforced for a specific user by an administrator of the device.

EcoStruxure Machine Expert V1.2 does not support the renewal of passwords using the scripting API. Perform this by using the service tool Controller Assistant.

You can call the latest version of Controller Assistant from command line as indicated in the following example:

```
"c:\Program Files (x86)\Schneider Electric
\EcoStruxureMachine Expert\Tools\ControllerAssistant
\ControllerAssistant.exe" -username Administrator -password
Administrator -renewalpassword MyNewPassword
-getcontrollerinfo etcp4://192.168.3.50
```

Including User Rights While Cloning the SD Card

Overview

The Modicon M241 Logic Controller, Modicon M251 Logic Controller, and the Modicon M262 Logic/Motion Controller provide a clone function that allows you to write the image of the controller to an SD card. By default, the user rights management is not written to the SD card with the image. If supported by your controller, you can activate the user rights management for the clone procedure in the **Clone management** on the webserver of the controller. Consult the *Programming Guide* specific to your controller for further information.

Additional Information

Cybersecurity Best Practices

Schneider Electric has incorporated cybersecurity best practices and solutions in our products.

NOTE: To help keep your Schneider Electric products secure and protected, it is in your best interest that you implement the cybersecurity best practices as indicated in the *Cybersecurity Best Practices* document provided on the Schneider Electric website.

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