Unity Pro 6.0

OSLoader
User Manual

07/2011

Schneider *Electric*

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

No part of this document may be reproduced in any form or by any means, electronic or mechanical, including photocopying, without express written permission of Schneider Electric.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.
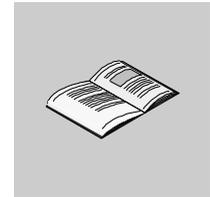
When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

Table of Contents

Safety Information

Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, 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 an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

> ### ⚠ WARNING
>
> **WARNING** indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

> ### ⚠ CAUTION
> **CAUTION** indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

> ### CAUTION
> **CAUTION**, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** equipment damage.

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
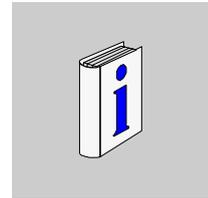
At a Glance

Document Scope

This documentation presents OSLoader software and describes the communication principle behind PLCs.

Validity Note

This documentation is valid from Unity Pro 6.0.

Product Related Information

> ## ⚠ **WARNING**
>
> **UNINTENDED EQUIPMENT OPERATION**
>
> The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.
>
> Follow all local and national safety codes and standards.
>
> **Failure to follow these instructions can result in death, serious injury, or equipment damage.**

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.

OSLoader General Information

I
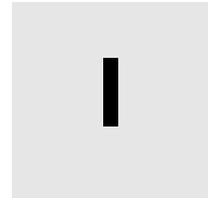
Introduction

This part gives general information about OSLoader and the hardware that it is able to update.

What's in this Part?

This part contains the following chapters:

Presentation of OSLoader

1

Introduction

This chapter introduces the OSLoader software.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
General	12
Installation of OSLoader	13
Security Management	14
Cautions and Preconditions	15

General

At a Glance

The OSLoader software included with Unity Pro is able to do the following:

- upgrade the operating systems of certain Premium/Quantum processors
- upgrade the operating systems of certain Premium/Quantum processors with Ethernet ports
- upgrade the operating systems of certain Ethernet modules (TSX ETY ••••, 140 NOE 771 ••)
- downgrade Premium/Quantum processors so that they are compatible with the PL7 V4 and Concept V2.6 programming software

NOTE: OSLoader is compatible with the operating systems that can be used by Unity Pro, in particular:

- Windows 2000
- Windows XP

Installation of OSLoader

Introduction

The OSLoader software can be installed either at the same time as Unity Pro or separately.

Install OSLoader and Unity Pro

To install both OSLoader and Unity Pro, follow those instructions.

Step	Action
1	Insert the Unity Pro CD.
2	Choose the installation language and follow the installation steps.
3	In the **Select Installation Type** screen, you can select either standard or complete installation. If you choose the **Custom** installation, verify that OSLoader box is checked.
4	Follow the instructions.
5	The program will install OSLoader and Unity Pro Software.

Install OSLoader separately

To install OSLoader when Unity Pro is already installed on the computer, follow those instructions.

Step	Action
1	Insert Unity Pro CD.
2	Choose the installation language and follow the installation steps.
3	In the **Select Installation Type** screen, choose the **Custom** installation, and check the OSLoader box.
4	Follow the instructions.
5	The program will install OSLoader .

Remove OSLoader

To remove OSLoader, follow those instructions.

Step	Action
1	Insert Unity Pro CD.
2	Choose the installation language and follow the installation steps.
3	In the **Select Installation Type** screen, choose the **Custom** installation, and uncheck the OSLoader box.
4	Follow the instructions.
5	The program will remove OSLoader .

Security Management

Introduction

OSLoader influences the PLC's behavior. While the processor is being upgraded, the controller is stopped.

For this reason, when starting OSLoader, authentication of access rights is required to authorize its execution.

Security

OSLoader's security management tool is the same as used by Unity Pro.

Two profiles are available:

- **Read-only**: no transfer is authorized
- **All rights**: all OSLoader functions are available

NOTE: Other profiles, beyond the default profiles, can be added.

Cautions and Preconditions

Before OS Upgrade

NOTE: The PLC program and data must be saved before starting the upgrade process.

⚠ **CAUTION**

IRREPARABLE EQUIPMENT DAMAGE

Do not use a *.bin* file located on the network. If the network access were to go down, it would interrupt the download process and cause irreparable damage to the device.

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

NOTE: Download of the firmware may not operate correctly when performed through a Modbus Plus network with several nodes. In this case, please transfer the firmware through a peer to peer mode between the PC and the PLC.

During Download

⚠ **CAUTION**

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:

- Never interrupt the power supply to the CPU.
- Never interrupt the OS transfer process.
- Never interrupt the communication between PC and PLC.

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

Upgrade Duration

The upgrade action using Modbus or Uni-Telway can take more than an hour.

PLC in Stop Mode

The PLC must be stopped during the download.

Communication Principles

2

Introduction

This section describes OSLoader's communication links.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Device Types	18
Communication Types Used and Associated Cables	19

Device Types

Introduction

The OSLoader target devices are as follows:

- processors
- devices directly connected to the communication link but that have no application program
- in-rack modules
- remote modules

Processors and Other Devices

For devices directly connected to the OSLoader communication link (processors etc.), standard addressing provides the connection.

OSLoader can execute the processor's run (**RUN**) and stop (**STOP**) commands for the devices (processors etc.).

In-Rack Modules

OSLoader communicates with the in-rack modules through the processor.

The messages are sent to the processor with an address indicating the position of the target module in the rack.

Remote Modules

OSLoader communicates with the remote modules through the processor and an input/output module.

The messages are sent with an address made up of two different parts:

- the first part indicates to the processor the position of the input/output module
- the second part indicates the address of the target remote module on the input/output bus to the input/output module

Communication Types Used and Associated Cables

Communication Types

The communication types used by OSLoader are as follows:

- Modbus Plus
- Modbus
- Uni-Telway
- FTP

Communication Drivers

The communication drivers used by OSLoader are as follows:

Device Type	Communication Driver
Premium processor	UNTLW01 (Uni-Telway, Terminal port)
Quantum processor	MODBUS01/MBPLUS02 (Modbus/Modbus Plus, processor port)
TSX ETY •••• module	FTP (Ethernet port)
140 NOE 771 •• module	FTP (Ethernet port), Modbus, Modbus Plus (processor port)

Description of the Communication Screen

When starting up OSLoader, after the welcome window, a dialog box displays that allows the choice of communication type:

- Modbus Plus *(see page 79)*
- Modbus *(see page 82)*
- Uni-Telway *(see page 76)*
- FTP *(see page 85)*

Communication Cables

The following table lists the cables to use according to the type of communication between OSLoader and processor:

Communication	Module restrictions	Cable
Uni-Telway (terminal port)	no restriction	TSX PCX 1031
Modbus (processor port)	for 140 CPU 311/140 CPU •34 1• • processor	● 990 NAA 263 x0 (x: 2, or 5)
	for 140 CPU 6•••0 and 140 CPU 6•1•0S processors	● 110 XCA 282 0x (x: 1, 2, or 3), and ● the 110 XCA 203 00 adapter

Communication	Module restrictions	Cable
Modbus Plus (processor port)	for 140 CPU 6•••0 and 140 CPU 6•1•0S processors	● 990 NAD 218 x0 (x: 1, or 3)
	for 140 CPU 311/140 CPU •34 1• • processor	● 990 NAD 211 x0 ((x: 1, or 3)
FTP	if using a switch between processor and PC, the right Ethernet cable is needed, otherwise use a cross cable	

Compatibility Between Programming Software and Processors

3

Introduction

This chapter contains tables showing compatibility of Schneider Electric programming software (PL7, Concept and Unity Pro) to Schneider Electric processors.

What's in this Chapter?

This chapter contains the following topics:

Compatibility of Software (PL7 and Unity Pro) to Processors (Premium and Atrium Range), and TSX ETY Modules

Introduction

OSLoader allows the operating systems of certain processors, modules, and Ethernet modules to be upgraded. The list of processors compatible with this upgrade is indicated in the following tables.

Premium Processors Compatibility

The following table shows the compatibility of software (PL7 and Unity Pro) to processors in the Premium range.

Processors	PL7 V3	PL7 V4	Unity Pro V1	Unity Pro V2.••	Unity Pro V3.•
TSX P57 ••2	x	x	-	-	-
TSX P57 ••3	-	x	x (1)	x (1)	x (1)
TSX P57 •623	-	x	x (1)	x (1)	x (1)
TSX P57 ••4	-	-	x	x	x
TSX P57 •634 (2)	-	-	x	x	x
TSX P57 6634	-	-	-	-	x
TSX H57 •4	-	-	-	-	x

X compatible processors
- non-compatible processors
(1) after upgrades by OSLoader to the processor's operating system
(2) includes TSX P57 *634 except for TSX P57 6634

Atrium Processors Compatibility

The following table shows the compatibility of software (PL7 and Unity Pro) to processors in the Atrium range.

Processors	PL7 V3	PL7 V4	Unity Pro V1	Unity Pro ≥ V2.••
TSX PCI 57 ••4	-	-	x	x

X compatible processors
- non-compatible processors

Ethernet TSX ETY •••• Modules Compatibility

The following table shows the compatibility of software (PL7 and Unity Pro) to the TSX ETY •••• range of modules.

Processors	PL7 V3	PL7 V4	Unity Pro V1	Unity Pro ≥ V2.••
TSX ETY •102	x	x	x (1)	x (1)
TSX ETY •103	-	x	x	x

X compatible processors

- non-compatible processors

(1) after upgrades by OSLoader to the processor's operating system

Compatibility of Software (Concept and Unity Pro) to Processors (Quantum Range), and NOE Modules

Introduction

With OSLoader, the operating systems of certain processor modules can be upgraded. The list of processors compatible with this upgrade is given in the following table.

Quantum Processor Compatibility

The following table shows the compatibility of software (Concept and Unity Pro) to processors in the Quantum range.

Processors	Concept V2.6	Unity Pro V1	Unity Pro < V2.3	Unity Pro V2.3	Unity Pro ≥ V3.•
140 CPU ••3 0•	x	-	-	-	-
140 CPU 311 1•	-	x	x	x	x
140 CPU •34 1• A	x	x (1)	x (1)	x (1)	x (1)
140 CPU •34 1• U	-	x	x	x	x
140 CPU 651 •0	-	x	x	x	x
140 CPU 671 60	-	x	x	x	x
140 CPU 672 61	-	x	x	x	x
140 CPU 652 60	-	-	-	x	x
140 CPU 6•1 60S	-	-	-	-	x (2)

X compatible processors
- non-compatible processors
(1) after upgrades by OSLoader to the processor's operating system
(2) safety processors are compatible with Unity Pro XLS only

NOE Module Compatibility

The following table shows the compatibility of software (Concept and Unity Pro) to the NOE range of modules.

Modules	Concept V2.6	Unity Pro V1	Unity Pro ≥ V2••
140 NOE 771 •1 (exec < V3.0)	x	x (1)	x (1)
140 NOE 771 •1 (exec ≥ V3.0)	x	x (2)	x (2)
140 NOE 771 •1 (exec ≥ V3.5)	-	x	x

X compatible modules

- non-compatible modules

(1) The upgrade procedure for a NOE (exec < 3.0) or ENT on the "Unity Level" is as follows. For NOE (exec < 3.0), first upgrade the module's exec to 3.30. Use the Concept **EXECLoader** to do this. Then use OSLoader to create a "Unity V2"-compatible NOE (exec 3.5).

(2) after upgrades by OSLoader to the module's operating system

Upgrading Principle

II
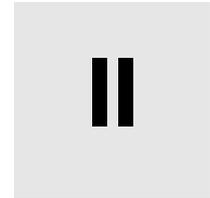
Introduction

This part describes the upgrading principle according to the type of hardware and Schneider Electric programming software (PL7, Concept and Unity Pro).

What's in this Part?

This part contains the following chapters:

Updating Operating Systems

<div style="text-align: right">

4

</div>

Upgrading Principles

Definition

The various hardware upgrades are broken down into:

- a table that presents the hardware for which it is possible to apply these upgrades,
- a logic diagram that describes the procedures required to upgrade the operating system,
- a table associated with the logic diagram that sends procedures to the application with OSLoader,
- a localization and naming example of the *.bin* file on the OS CD-ROM.

.bin File

OSLoader uses a *.bin* file to upgrade a hardware OS.

According to the hardware and software used, the upgrade procedure uses one or two *.bin* files:

- an intermediate file,
- a final file.

These files are available:
- on the OS CD-ROM,
- on the *www.telemecanique.com* web site.

Use a local *.bin* file. If the desired file is on the network, download it to the local disk before using.

⚠ CAUTION

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:

- Never interrupt the power supply to the CPU.
- Never interrupt the OS transfer process.
- Never interrupt the communication between PC and PLC.

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

Application

Those examples of operating system updates are described on the following pages:

- a Premium processor:
  - PL7 to Unity 2.••,
  - Unity 1.0 to Unity 2.••,
  - Unity 2.yy to Unity 2.xx,
  - Unity 2.•• to PL7.
- a Quantum processor:
  - Concept to Unity 2.••,
  - Unity 2.yy to Unity 2.xx,
  - Unity 2.•• to Concept.
- a networking module (ETY, NOE).

OS CD-ROM

The OS CD-ROM, available with Unity Pro, contains the data (.bin file, et cetera) required for updating the processors and networking modules.

The *readme.txt* file on the OS CD-ROM describes the files and their location on the CD-ROM.

Upgrading Operating Systems for Premium Processors and TSX ETY xxxx

5

Introduction

This chapter presents the operating system upgrade principles for Premium processors and TSX ETY •••• modules according to the type and version of programming software.

What's in this Chapter?

This chapter contains the following topics:

Upgrading TSX ETY xxxx Modules and Embedded Ethernet Port of Premium Processors for Unity 2.xx

Overview

For the TSX ETY •••• module and Premium processors with a Copro or embedded Ethernet port, upgrading must be done on the boot ROM and the Exec version. The number of steps to use for this upgrade depends on the hardware version.

NOTE: OS upgrades on processors must be done **after** upgrading the TSX ETY •••• module's embedded Ethernet port.

Upgradeable Device Hardware

Each piece of hardware is identified by its module or processor type, its PV (Product Version), and its Exec Version.

Network Module Type	PV (Product Version)	Exec Version before upgrade	Boot ROM and Exec Version after upgrade	Equivalent Network Module Type in Unity Pro
TSX ETY 4102	≥ 01	2.0, 2.1	3.1	TSX ETY 4103
TSX ETY 5102	≥ 01	2.0, 2.1	3.1	TSX ETY 5103
TSX ETY 4103	≥ 01	≥ 3.0	≥ 3.1	TSX ETY 4103
TSX ETY 5103	≥ 01	≥ 3.0	≥ 3.1	TSX ETY 5103
TSX P57 2623	≥ 01	2.0, 2.1	≥ 3.1	TSX P57 2634
TSX P57 3623	≥ 01	2.0, 2.1	≥ 3.1	TSX P57 3634
TSX P57 2634	≥ 01	3.1	≥ 3.1	TSX P57 2634
TSX P57 3634	≥ 01	3.1	≥ 3.1	TSX P57 3634

Files Used for Upgrading from PL7 to Unity 2.••

The following table gives the information for upgrading the TSX ETY •••• module and TSX P57 •••• processor Ethernet ports from PL7 to Unity 2.••:
- the number of downloads to carry out
- the names of the files to use for the downloads

NOTE: The number next to each file gives its usage order (for example: the *(2)ETH_572634_V310_BOOT.bin* file must be used for the second download).

Network Module Type	Number of downloads	File used to upgrade from PL7 to Unity	File used for last Exec version
TSX ETY 4102 (1)	4	*(1)ETH_4103_V300.bin* *(2)ETH_4103_V310_BOOT.bin* *(3)ETH_4103_V310.bin*	*(4)ETH_4103_V340.bin*
TSX ETY 5102 (1)	4	*(1)ETH_5103_V300.bin* *(2)ETH_5103_V310_BOOT.bin* *(3)ETH_5103_V310.bin*	*(4)ETH_5103_V340.bin*
TSX ETY 4103 (1)	1	–	*(1)ETH_4103_V340.bin*
TSX ETY 5103 (1)	1	–	*(1)ETH_5103_V340.bin*
TSX P57 2623 (2)	4	*(1)ETH_572634_V300.bin* *(2)ETH_572634_V310_BOOT.bin* *(3)ETH_572634_V310.bin*	*(4)ETH_572634_V340.bin*
TSX P57 3623 (2)	4	*(1)ETH_573634_V300.bin* *(2)ETH_573634_V310_BOOT.bin* *(3)ETH_573634_V310.bin*	*(4)ETH_573634_V340.bin*

1 network modules remain compatible with Premium PL7 processors after upgrading

2 the processor must also be upgraded (the number of downloads only corresponds to upgrades of Ethernet ports).

Files Used for Upgrading from Unity 1.00 to Unity 2.••

The following table gives the information for upgrading the TSX P57 •••• processor Ethernet ports from Unity 1.00 to Unity 2.••:

- the number of downloads to carry out
- the names of the files to use for the downloads

NOTE: The number next to each file gives its usage order (for example: the *(2)ETH_573634_V310_BOOT.bin* file must be used for the second download).

Network Module Type	Number of downloads (1)	File used to upgrade from Unity 1.00 to Unity 2.••	File used for last Exec version
TSX P57 2634	3	*(1)ETH_572634_V310_BOOT.bin* *(2)ETH_572634_V310.bin*	*(3)ETH_572634_V340.bin*
TSX P57 3634	3	*(1)ETH_573634_V310_BOOT.bin* *(2)ETH_573634_V310.bin*	*(3)ETH_573634_V340.bin*
TSX P57 5634	1	-	*Os_Eth_CoproP.bin*

1 the processor must also be upgraded (the number of downloads only corresponds to upgrades of Ethernet ports).

Files Used for Upgrading from Unity 2.yy to Unity 2.xx

The following table gives the information for upgrading the TSX ETY •••• module and TSX P57 •••• processor Ethernet ports from Unity 2.yy to Unity 2.xx:

- the number of downloads to carry out
- the names of the files to use for the downloads

NOTE: The number next to each file gives its usage order (for example: the *(2)ETH_573634_V310_BOOT.bin* file must be used for the second download).

Network Module Type	Number of downloads	File used to upgrade from Unity 1.00 to Unity 2.••	File used for last Exec version
TSX ETY 4103	1	–	*(1)ETH_4103_V34.bin*
TSX ETY 5103	1	–	*(1)ETH_5103_V340.bin*
TSX P57 1634 (1)	3	*(1)ETH_571634_V310_BOOT.bin* *(2)ETH_571634_V310.bin*	*(3)ETH_571634_V340.bin*
TSX P57 2634 (1)	3	*(1)ETH_572634_V310_BOOT.bin* *(2)ETH_572634_V310.bin*	*(3)ETH_572634_V340.bin*
TSX P57 3634 (1)	3	*(1)ETH_573634_V310_BOOT.bin* *(2)ETH_573634_V310.bin*	*(3)ETH_573634_V340.bin*
TSX P57 4634 (1)	1	-	*(1)Os_Eth_CoproP.bin*
TSX P57 5634 (1)	1	-	*(1)Os_Eth_CoproP.bin*

1 the processor must also be upgraded (the number of downloads only corresponds to upgrades of Ethernet ports).

Upgrading PL7 Processors to Unity 2.xx

Upgradeable Premium Hardware

Each piece of hardware is identified by its processor type, PV (Product Version), and SV (Software Version).

The following tables show the only Premium hardware that can be upgraded from PL7 to Unity 2.••, and the equivalent processor types in Unity Pro.

Processor Type	PV (Product Version)	SV (Software Version)	Equivalent Processor Types in Unity Pro
TSX P57 203M	≥ 01	≥ 5.0	TSX P57 204M
TSX P57 253M	≥ 01	≥ 5.0	TSX P57 254M
TSX P57 2623M (1)	≥ 01 ≥ 01	≥ 5.4 2.0, 2.1	TSX P57 2634M
TSX P57 303M	≥ 01	≥ 5.0	TSX P57 304M
TSX P57 353M	≥ 01	≥ 5.0	TSX P57 354M
TSX P57 3623M (1)	≥ 01 ≥ 01	≥ 5.4 2.0, 2.1	TSX P57 3634M

(1) processor with an embedded Ethernet port *(see page 32)*

Upgrading PL7 to Unity OS

To upgrade the OS from PL7 to Unity 2.••, carry out the following procedure.
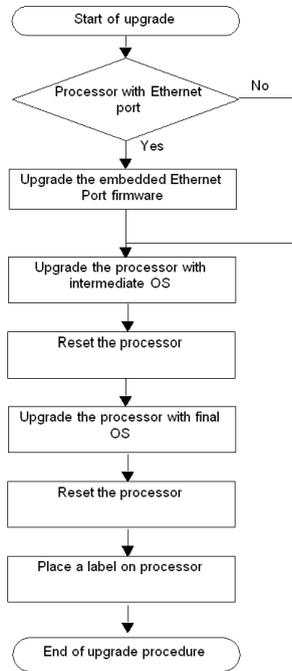
The following table describes the steps for upgrading a PL7 OS to Unity 2.••.

Step	Description	Associated Procedure	Communication Protocol
Upgrade the embedded Ethernet port firmware (1)	If the processor has an Ethernet port, upgrade it.	Ethernet port *(see page 62)*	FTP (Ethernet port)
Upgrade the processor with intermediate OS	The intermediate OS must be downloaded to the PLC before the final OS binary file.	Intermediate OS *(see page 58)*	UNTLW01 (Terminal port)
Reset the processor	Perform a cold start-up by pushing the PLC Reset button.	-	-
Upgrade the processor with final OS	The final OS binary file must be downloaded to the PLC.	Final OS *(see page 60)*	UNTLW01 (Terminal port)

(1) only for TSX P57 2623 and TSX P57 3623.

Location of the Files

The corresponding *.bin* files can be found:

- at *www.telemecanique.com* in the menu **Product** →**Product index**, click on **Automation** →**Modicon Premium** →**Software and firmware**, and
- on the OS CD-ROM.

Example for the TSX P57 2623M.

File	Directory
OS Ethernet port	*Premium\Processor modules\Pl7_to_Unity_V2.••\ TSXP572623_to_2634\Eth_Os\ETH572623_to_572634V300\ ETH_572634_V300.bin Premium\Processor modules\Pl7_to_Unity_V2.••\ TSXP572623_to_2634\Eth_Os\ETH572634v300_to_572634v310 ETH_572634_V310_BOOT.bin Premium\Processor modules\Pl7_to_Unity_V2.••\ TSXP572623_to_2634\Eth_Os\ETH572634v300_to_572634v310 ETH_572634_V310.bin Premium\Processor modules\Pl7_to_Unity_V2.••\ TSXP572623_to_2634\Eth_Os\ETH572634v310_to_572634v320\ ETH_572634_V320.bin*
Intermediate OS	*Premium\Processor modules\PL7_to_Unity\ TSXP572623_to_2634\Plc_Os\Pl7_to_UnityV240_2634.bin*
Final OS	*Premium\Processor modules\PL7_to_Unity\ TSXP572623_to_2634\Plc_Os\TSX_P57_2634m.bin*

⚠ CAUTION

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:

- Never interrupt the power supply to the processor.
- Never interrupt the OS transfer process.
- Never interrupt the communication between PC and PLC.

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

Label the PLC

After upgrading a processor or network module from PL7 to Unity, we recommend placing a label on the front panel of the product to indicate that the processor type or network module has been upgraded.

The label should clearly display the following upgrade information for processors.

PL7 Processor Types	Upgraded to equivalent Processor Types in Unity Pro
TSX P57 203M	TSX P57 204M
TSX P57 253M	TSX P57 254M
TSX P57 2623M	TSX P57 2634M
TSX P57 303M	TSX P57 304M
TSX P57 353M	TSX P57 354M
TSX P57 3623M	TSX P57 3634M

Upgrading Unity 1.0 Processors to Unity 2.xx

Upgradeable Premium Hardware

The following tables show Premium hardware that can be upgraded from Unity 1.0 to Unity 2.•• and the equivalent processor types in Unity Pro.

Processor Type	Equivalent Processor Types in Unity Pro
TSX P57 204M	TSX P57 204M
TSX P57 2634M	TSX P57 2634M
TSX P57 304M	TSX P57 304M
TSX P57 3634M (1)	TSX P57 3634M
TSX P57 4634M (2)	TSX P57 4634M
TSX P57 5634M (2)	TSX P57 5634M
TSX P57 6634M (2)	TSX P57 6634M
TSX PCI57 204M	TSX PCI57 204M

(1) processor with an embedded Ethernet port *(see page 32)*
(2) processor with a Copro Ethernet port *(see page 32)*

Upgrading Unity 1.0 to Unity 2.•• OS

To upgrade the OS from Unity 1.0 to Unity 2.••, carry out the following procedure.
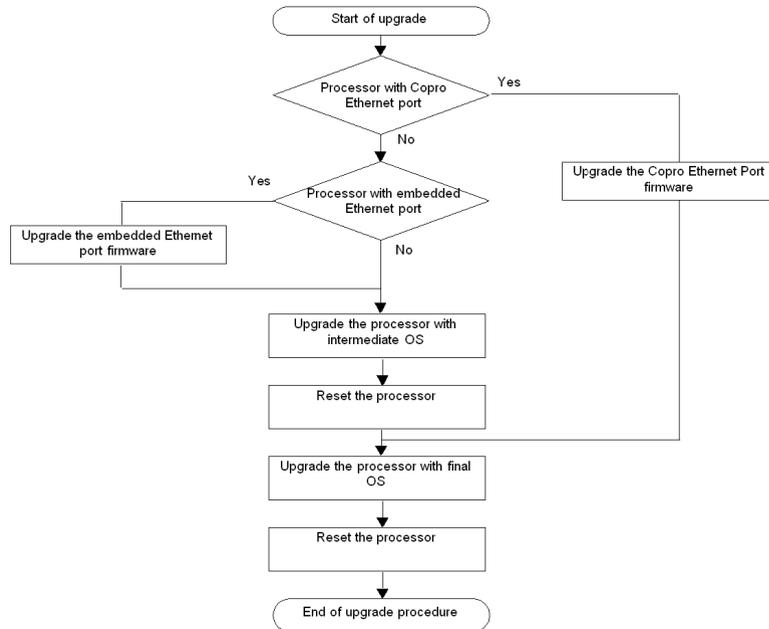
The following table describes the steps for upgrading from Unity 1.0 to Unity 2.••.

Step	Description	Associated Procedure	Communication Protocol
Upgrade the Copro Ethernet port firmware (1)	If the processor has a Copro Ethernet port, upgrade it.	Ethernet port *(see page 62)*	FTP (Ethernet port)
Upgrade the embedded Ethernet port firmware (2)	If the processor has an Ethernet port, upgrade it.		
Upgrade the processor with intermediate OS (3)	The intermediate OS must be downloaded to the PLC before the final OS binary file.	Intermediate OS *(see page 58)*	UNTLW01 (Terminal port)
Reset the processor (3)	Perform a cold start-up by pushing the PLC Reset button.	-	-
Upgrade the processor with final OS	The final OS binary file must be downloaded to the PLC.	Final OS *(see page 60)*	UNTLW01 (Terminal port)

(1) only for TSX P57 6634/5634/4634
(2) only for TSX P57 3634
(3) not for TSX P57 6634/5634/4634

Location of the Files

The corresponding *.bin* files can be found:
- on Schneider Electric web site at www.schneider-electric.com in the menu **Product** →**Product index**, click on **Automation** →**Modicon Premium** → **Software and firmware**, and
- on the OS CD-ROM.

Example for the TSX P57 2634M.

File	Directory
OS Ethernet port	*Premium\Processor modules\Unity_V1.0_to_Unity_V2.••\ TSXP572634_V1.0_to_2634_V2.••\Eth_Os\ETH572634v310\ ETH_572634_V310_BOOT.bin Premium\Processor modules\Unity_V1.0_to_Unity_V2.••\ TSXP572634_V1.0_to_2634_V2.••\Eth_Os\ETH572634v310\ ETH_572634_V310.bin Premium\Processor modules\Unity_V1.0_to_Unity_V2.••\ TSXP572634_V1.0_to_2634_V2.••\Eth_Os\ETH572634v320\ ETH_572634_V320.bin*
Intermediate OS	*Premium\Processor modules\Unity_V1.0_to_Unity_V2.••\ TSXP572634_V1.0_to_2634_V2.••\Plc_Os\Unity1M2M_2634.bin*
Final OS	*Premium\Processor modules\Unity_V1.0_to_Unity_V2.••\ TSXP572634_V1.0_to_2634_V2.••\Plc_Os\TSX_P57_2634_m.bin*

⚠ CAUTION

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:
- Never interrupt the power supply to the processor.
- Never interrupt the OS transfer process.
- Never interrupt the communication between PC and PLC.

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

Upgrading Premium Unity Processors from 2.yy to 2.xx

Upgradeable Premium Hardware

The following tables show Premium hardware that can be upgraded from Unity 2.yy to Unity 2.xx and the equivalent processor types in Unity Pro.
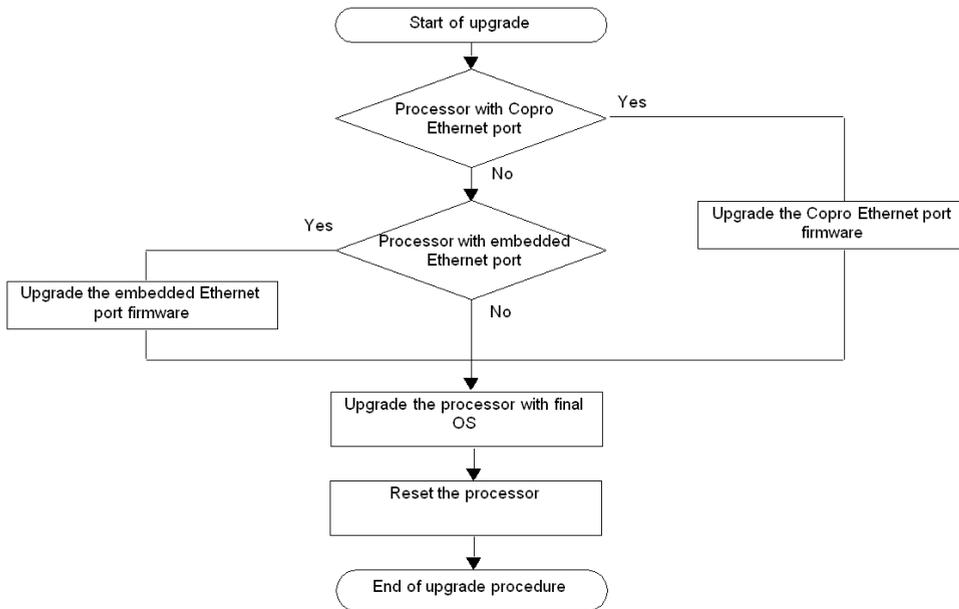
Processor Type	Equivalent Processor Types in Unity Pro
TSX P57 C024M	TSX P57 C024M
TSX P57 024M	TSX P57 024M
TSX P57 104M	TSX P57 104M
TSX P57 154M	TSX P57 154M
TSX P57 1634M (1)	TSX P57 1634M
TSX P57 204M	TSX P57 204M
TSX P57 254M	TSX P57 254M
TSX P57 2634M (1)	TSX P57 2634M
TSX P57 304M	TSX P57 304M
TSX P57 354M	TSX P57 354M
TSX P57 3634M (1)	TSX P57 3634M
TSX P57 454M	TSX P57 454M
TSX P57 4634M (2)	TSX P57 4634M
TSX P57 554M	TSX P57 554M
TSX P57 5634M (2)	TSX P57 5634M
TSX PCI57 204M	TSX PCI57 204M
TSX PCI57 354M	TSX PCI57 354M
TSX P57 6634M (2)	TSX P57 6634M
TSX H57 24M	TSX H57 24M
TSX H57 44M	TSX H57 44M

(1) processor with an embedded Ethernet port *(see page 32)*
(2) processor with a Copro Ethernet port *(see page 32)*

Upgrading Unity 2.yy to Unity 2.xx OS

To upgrade the OS from Unity 2.yy to Unity 2.xx, carry out the following procedure.

The following table describes the steps for upgrading a Unity 2.yy OS to Unity 2.xx.

Step	Description	Associated Procedure	Communication Protocol
Upgrade the Copro Ethernet port firmware (1)	If the processor has a Copro Ethernet port, upgrade it.	Ethernet port *(see page 62)*	FTP (Ethernet port)
Upgrade the embedded Ethernet port firmware (2)	If the processor has an Ethernet port, upgrade it.		
Upgrade the processor with final OS	The final OS binary file must be downloaded to the PLC.	Final OS *(see page 60)*	UNTLW01 (Terminal port)
Reset the processor	Perform a cold start-up by pushing the processor's reset button.	-	-

(1) only for TSX P57 4634, TSX P57 5634, and TSX P57 6634
(2) only for TSX P57 1634, TSX P57 2634, and TSX P57 3634

Location of the Files

The corresponding *.bin* files can be found:
- at *www.telemecanique.com* in the menu **Product** →**Product index**, click on **Automation** →**Modicon Premium** →**Software and firmware**, and
- on the OS CD-ROM.

Example for the TSX P57 3634M.

File	Directory
OS Ethernet port	*Premium\Processor modules\Unity_V2.••\ TSX573634\Eth_Os\ETH573634v320\ETH_573634_V320.bin* *Premium\Processor modules\Unity_V2.••\ TSX573634\Eth_Os\ETH573634v340\ETH_573634_V34.bin*
Final OS	*Premium\Processor modules\Unity_V2.••\ TSX573634\Plc_Os\tsx_p57_3634m.bin*

Upgrading Operating Systems for Quantum and 140 NOE 771 xx

6

Introduction

This chapter presents the operating system upgrade principles for Quantum processors and 140 NOE 771 •• modules according to the type and version of programming software.

What's in this Chapter?

This chapter contains the following topics:

Upgrading 140 NOE 771 x1 Module and the 140 CPU 6x1 xx Copro Ethernet Port to Unity 2.xx

Overview

For the 140 NOE 771 •1 module, upgrades must be done on the Kernel and the Exec version.

For Quantum processors with a Copro Ethernet port, upgrades must be done on the Exec version.

The number of steps to use for this upgrade depends on the hardware version.

NOTE: OS upgrades of processors must be done **after** upgrading the Copro Ethernet ports.

Upgradeable Device Hardware

Each piece of hardware is identified by:
- the module or processor type
- the Kernel Version
- the Exec Version

Network Module Type	Kernel Version before upgrade	Exec Version before upgrade	Kernel Version after upgrade	Exec Version after upgrade	Equivalent Network Module Type in Unity Pro
140 NOE 771 01	1.0	< 3.0	2.0	3.30	-
140 NOE 771 01	≥ 2.0	≥ 3.0	2.0	4.0	140 NOE 771 01
140 NOE 771 11	1.0	< 3.0	2.0	3.30	-
140 NOE 771 11	≥ 2.0	≥ 3.0	2.0	4.0	140 NOE 771 01
140 CPU 651 50	–	1.0	–	2.0	140 CPU 651 50
140 CPU 651 50	–	2.0	–	2.1	140 CPU 651 50
140 CPU 651 60	–	1.0	–	2.0	140 CPU 651 60
140 CPU 651 60	–	2.0	–	2.2	140 CPU 651 60

File Used for Updating from Concept to Unity 2.xx

The following table gives the information for upgrading 140 NOE 771 •1 modules from Concept to Unity 2.••:
- the number of downloads to carry out
- the names of the files to use for the downloads with Concept Exec Loader
- the names of the files to use for the download with OSLoader

NOTE: The number next to each file gives its usage order (for example: the *(2)NOE77101XW.bin* file must be used for the second download).

The corresponding *.bin* files can be found:
- at *www.telemecanique.com* in the menu **Product** →**Product index**, click on **Automation** →**Modicon Quantum** →**Software and firmware**
- in the OS CD-ROM directory *Quantum\Ethernet_modules\Concept_to_Unity_V2.••\140NOE771•1\.*

Network Module Type (Note 1)	Number of downloads	File used to upgrade with Concept Exec Loader	File used for last Exec version with OSLoader (Note 2)
140 NOE 771 01 Kernel V1.0/Exec Any	3	*(1) 7101KER.bin (2) NOE77101.bin*	*(3) NOE77101XW.bin*
140 NOE 771 01 Kernel V2.0/Exec < V3.10	2	*(1) NOE77101.bin*	*(2) NOE77101XW.bin*
140 NOE 771 11 Kernel V1.0/Exec Any	3	*(1) 7111KER.bin (2) NOE77111.bin*	*(3) NOE77111XW.bin*
140 NOE 771 11 Kernel V2.0/Exec < V3.10	2	*(1) NOE77111.bin*	*(2) NOE77111XW.bin*

Note 1: Network modules remain compatible with Quantum Concept processors after upgrading.
Note 2: In the CD-ROM, we recommend using the file in *Quantum\Ethernet_modules\Unity_V2.••\140NOE771•1\From_V3.60_to_V4.00*

Files Used for Updating from Unity 2.yy to Unity 2.xx

⚠ CAUTION

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:
- Never interrupt the power supply to the processor
- Never interrupt the transfer process
- Never interrupt the communication betwen PC and PLC

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

The following table gives the information for upgrading 140 NOE 771 •1 modules and 140 CPU 6•1 •0 processor Ethernet ports from Unity 2.yy to Unity 2.xx:
- the number of downloads to carry out
- the names of the files to use for the download

The corresponding *.bin* files can be found:
- on the address *www.telemecanique.com* in the menu **Product →Product index**, click on **Automation →Modicon Quantum →Software and firmware**
- in the OS CD-ROM directory
  Quantum\Ethernet_modules\Unity_V2.••\140NOE771•1 or
  Quantum\Processor_modules\Unity_V2.••\140CPU6•1•0

Network Module Type	Number of downloads	File used for last Exec version
140 NOE 771 01 Kernel V2.0/Exec ≥ V3.0	1	*NOE77101XW.bin*
140 NOE 771 11 Kernel V2.0/Exec ≥ V3.0	1	*NOE77111XW.bin*
140 CPU 651 50 (x)	1	*Os_Eth_CoproQ.bin*
140 CPU 651 60 (x)	1	*Os_Eth_CoproQ.bin*
140 CPU 671 60 (x)	1	*HSBY Copro fw.bin*

(x) the processors must also be upgraded *(see page 52)*. The number of downloads only corresponds to upgrade of the Ethernet port.

Label the module

After upgrading the module from Concept to Unity, we recommend placing a label on the front panel of the product to indicate that the module has been upgraded.

# Upgrading Concept Processors to Unity 2.xx

Upgradeable Quantum Hardware

The following tables show Quantum hardware that can be upgraded from Concept/LL984 to Unity 2.•• and the equivalent processor types in Unity Pro.

Processor Type	Equivalent Processor Types in Unity Pro
140 CPU 434 12A	140 CPU 434 12 U
140 CPU 534 14A	140 CPU 534 14 U

Upgrading Concept to Unity 2.•• OS

To upgrade the OS from Concept/LL984 to Unity 2.••, carry out the following procedure.
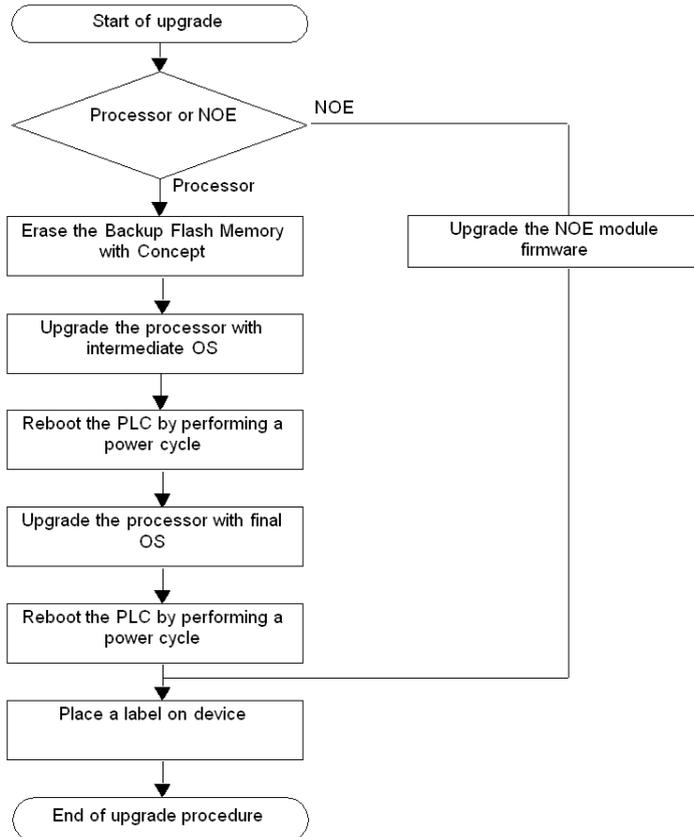
The following table describes the steps for upgrading a Concept/LL984 OS to Unity 2.••.

Step	Description	Associated Procedure	Communication protocol
Upgrade the NOE module firmware	If it is a NOE module, then upgrade it.	NOE *(see page 46)*	FTP (Ethernet port)
Upgrade the processor with intermediate OS	The intermediate OS must be downloaded to the processor before the final OS binary file.	intermediate OS *(see page 58)*	MODBUS01 (Modbus port) MBPLUS02 (Modbus Plus port)
Reboot the PLC by performing a power cycle	A power cycle of the PLC performs a cold or warm restart (depending on the key switch position on the front of the processor). **NOTE:** The step is complete when Ready LED is steady and RUN LED is blinking. In all other cases reset the PLC.	-	-
Upgrade the processor with final OS	The final OS binary file must be downloaded to the processor.	final OS *(see page 60)*	MODBUS01 (Modbus port) MBPLUS02 (Modbus Plus port)

Location of the Files

The corresponding *.bin* files can be found:
● at *www.telemecanique.com* in the menu **Product** →**Product index**, click on **Automation** →**Modicon Quantum** →**Software and firmware**
● on the OS CD-ROM

Example for the 140 CPU 434 12A:

File	Directory
Intermediate OS	*Quantum\Processor modules\Concept_to_Unity_V2.••\ 140CPU43412U\Concept_to_Unity_43412U.bin*
Final OS	*Quantum\Processor modules\Concept_to_Unity_V2.••\ 140CPU43412U\CPU 434 12.bin*

Clear Backup Flash Memory

The Backup Flash Memory must be cleared to remove any saved applications from Concept.

This is done in Concept via **Online** →**Online Control Panel** →**Flash Program** → **Clear Flash**.

Label the PLC

After upgrading a processor from Concept to Unity, we recommend placing a label on the front panel of the product to indicate that the processor type has been upgraded.

Upgrading Quantum processors from Unity 2.yy to 2.xx

Upgradable Quantum Hardware

The following tables show Quantum hardware that can be upgraded from Unity 2.yy to Unity 2.xx and the equivalent processor types in Unity Pro.

Processor Type	Equivalent Processor Types in Unity Pro
140 CPU 311 10	140 CPU 311 10
140 CPU 434 12U	140 CPU 434 12U
140 CPU 534 14U	140 CPU 534 14U
140 CPU 651 50 (1)	140 CPU 651 50
140 CPU 651 60 (1)	140 CPU 651 60
140 CPU 671 60 (1)	140 CPU 671 60
140 CPU 672 61 (1)	140 CPU 672 61
140 CPU 652 60	140 CPU 652 60

(1) processor with a copro Ethernet port *(see page 46)*

Upgrading Unity 2.yy to Unity 2.xx OS

To upgrade the OS from Unity 2.yy to Unity 2.xx, carry out the following procedure.
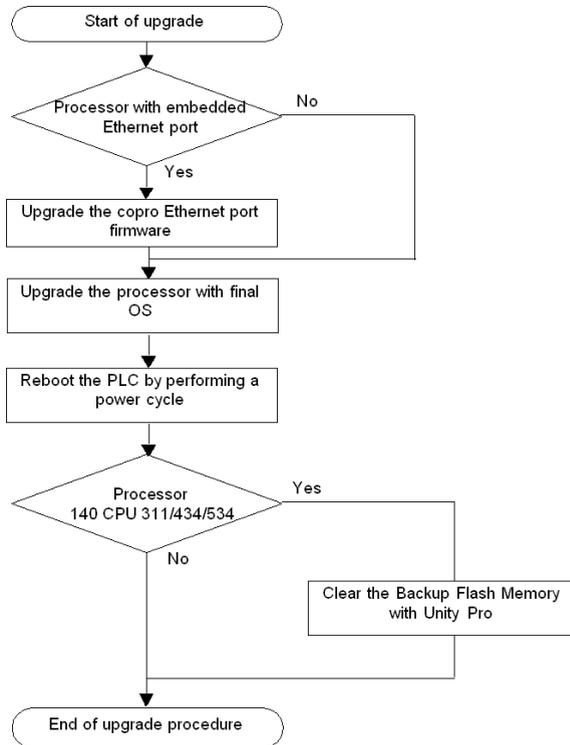
The following table describes the steps for upgrading a Unity 2.yy OS to Unity 2.xx.

Step	Description	Associated Procedure	Communication Protocol
Upgrade the copro Ethernet port firmware	If the processor has a copro Ethernet port, upgrade it.	Ethernet port *(see page 62)*	FTP (Ethernet port)
Upgrade the processor with final OS	The final OS binary file must be downloaded to the processor.	final OS *(see page 60)*	MODBUS01 (Modbus port) MBPLUS02 (Modbus Plus port)
Reboot the PLC by performing a power cycle	A power cycle of the PLC performs a cold or warm restart (depends on the key switch position on the front of the processor).	-	-

Location of the Files

The corresponding *.bin* files can be found:
- at *www.telemecanique.com* in the menu **Product** →**Product index**, click on **Automation** →**Modicon Quantum** →**Software and firmware**, and
- on the OS CD-ROM.

Example for the 140 CPU 434 12U.

File	Directory
Final OS	*Quantum\Processor modules\Unity_V2.••\ 140CPU43412A\CPU_434_12.bin*

⚠ **CAUTION**

IRREPARABLE EQUIPMENT DAMAGE

During OS transfer:
- Never interrupt the power supply to the processor.
- Never interrupt the transfer process.
- Never interrupt the communication betwen PC and PLC.

Interrupting the transfer process before it has completed can cause irreparable damage to the device.

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

Clear Backup Flash Memory

The Backup Flash Memory must be cleared to remove any saved applications from Unity.

This is done in Unity Pro via **PLC** →**Project** →**Project Backup** →**Clear**.

Upgrading and Checking Procedures

III
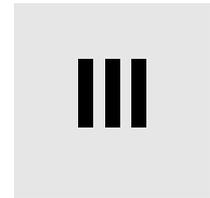
Introduction

This part explains how to use OSLoader to upgrade operating systems on various types of hardware and how to check their properties.

What's in this Part?

This part contains the following chapters:

Upgrading Operating Systems

7

Introduction

This chapter describes how to upgrade the operating system using OSLoader.

What's in this Chapter?

This chapter contains the following topics:

Downloading the Intermediate OS to the Device

Intermediate OS

An intermediate *.bin* file must be used for some processors and software versions before upgrading with the final *.bin* file.

This intermediate file must be used when updating:
- a Premium processor:
  - PL7 to Unity 2.••
  - Unity 1.0 to Unity 2.••
  - Unity 2.•• to PL7
- a Quantum processor:
  - Concept to Unity 2.••
  - Unity 2.•• to Concept

Procedure

Using Modbus or Modbus Plus ports on High End Quantum CPUs, only address 1 is allowed for downloading. If not set to 1, change the Modbus or Modbus Plus address of the CPU to 1 with the keyboard functions before launching OSLoader. Ensure that no other device on the network is using address 1

The following table describes the procedure for downloading the intermediate OS.

Step	Action	Result
1	Start OSLoader via **Start →Program →Schneider Electric →Unity Pro →OS Loader**.	The Welcome *(see page 74)* window is displayed.
2	Keep the default settings of the context file and proceed to the next step by clicking the **Next...** button.	The Communication Protocol *(see page 75)* window is displayed.
3	Select the driver to be used for communication between the PC and the PLC. • for a **Premium** processor select **UNTLW01** • for a **Quantum** processor select **MODBUS01** or **MBPLUS02** • for an Ethernet port select **FTP** Proceed to the next step by clicking the **Next...** button.	The protocol *(see page 73)* window is displayed.
4	As **Device Type**: • select **Processor** for a processor or **Direct Device** for an Ethernet port, and • select **Local Head** for a Local Head device or **Remote I/O Drop** for a remote module **Remark 1:** for the **Local Head**, the **Slot Number** indicates the position of the target module in the rack. **Remark 2:** for the **Remote I/O Drop**, the **Slot Number** indicates the position of the target module in the rack and the **Drop Number** indicates the remote target module address.	

Step	Action	Result
5	For a Premium processor, click on the **Connect** button. For a Quantum processor or other target device: ● Select the **Modbus Address** (make sure that the processor is also configured to same Address, rotary switches or keypad display) or the **Modbus Plus Address**. If using a **Modbus Plus Target**, specify that the target device must be accessed through its Modbus Plus connection. ● Click on the **Connect** button. For an Ethernet port: ● Select the **FTP Address** of the target device specific to the FTP communication type, ● Click on the **Connect** button.	In the **Device** area the active node **Node: SYS-PLC** is displayed (Premium).
6	Select the active node **Node: SYS-PLC**. **Remark:** If the PLC is not stopped at this moment, the **Stop PLC** button can be used. Proceed to the next step by clicking the **Next...** button.	The Operation *(see page 88)* window is displayed.
7	Select **Download OS to device** and click the **Browse...** button and select the file..	
8	Proceed to the next step by clicking the **Next...** button.	A message is displayed.
9	Click on the **OK** button. Green markers must be present. If not, the selected file and device are incompatible. The filename and device name must be identical.	The File and Device Info *(see page 90)* window is displayed.
10	Proceed to the next step by clicking the **Next...** button.	The Summary *(see page 93)* window is displayed.
11	Click on the **Download** button.	The Progress - Initialization *(see page 94)* window is displayed meaning that the intermediate operating system is downloaded to the processor.
12	When the download is completed, the **Progress (100%)** window appears, click on the **Close** button of the different windows to exit OSLoader.	
13	For a Premium processor, press the processor **Reset** button. For a Quantum processor, reboot the processor by performing a processor power cycle.	
14	Re-start OSLoader to download the final OS binary. Check *(see page 68)* the new OS version before downloading the final OS binary.	

Downloading the Final OS to the Device

Final OS

The final *.bin* file must be downloaded to the device in every case. Some devices require downloading the final *.bin* file after the intermediate *.bin* file.

Procedure

Using Modbus or Modbus Plus ports on High End Quantum CPUs, only address 1 is allowed for downloading. If not set to 1, change the Modbus or Modbus Plus address of the CPU to 1 with the keyboard functions before launching OSLoader. Ensure that no other device on the network is using address 1.

The following table describes the procedure for downloading the final OS.

Step	Action	Result
1	Start OSLoader via **Start** →**Program** →**Schneider Electric** → **Unity Pro** →**OS Loader**.	The Welcome *(see page 74)* window is displayed.
2	Keep the default settings of the context file and proceed to the next step by clicking the **Next...** button.	The Communication Protocol *(see page 75)* window is displayed.
3	Select the driver to be used for communication between the PC and the PLC. ● For a Premium processor select **UNTLW01**, ● For a Quantum processor select **MODBUS01** or **MBPLUS02**, ● For an Ethernet port select **FTP**. Proceed to the next step by clicking the **Next...** button.	The protocol *(see page 73)* window is displayed.
4	As **Device Type**: ● select **Processor** for a processor or **Direct Device** for an Ethernet port, and ● select **Local Head** for a Local Head device or **Remote I/O Drop** for a remote module. **Remark 1:** for the **Local Head**, the **Slot Number** indicates the position of the target module in the rack. **Remark 2:** for the **Remote I/O Drop**, the **Slot Number** indicates the position of the target module in the rack and the **Drop Number** indicates the remote target module address.	
5	For a **Premium** processor, click on the **Connect** button. For a **Quantum** processor or other target device: ● Select the **Modbus Address** (make sure that the processor is also configured to same Address, rotary switches or keypad display) or the **Modbus Plus Address**. If using a **Modbus Plus Target**, specify that the target device must be accessed through its Modbus Plus connection. ● Click on the **Connect** button. For an Ethernet port: ● Select the **FTP Address** of the target device specific to the FTP communication type, ● Click on the **Connect** button.	In the **Device** area the active node **Node: SYS-PLC** is displayed (Premium).

Step	Action	Result
6	Select the active node **Node: SYS-PLC**. **Remark:** If the PLC is not already stopped, the **Stop PLC** button can be used, this action is password protected on Safety PLCs, otherwise, the PLC will be stopped at step 11. Make sure no other Unity Pro is connected to the PLC. Proceed to the next step by clicking the **Next...** button.	The Operation *(see page 88)* window is displayed.
7	Select **Download OS to device** and click the **Browse...** button and select the file.	
8	Proceed to the next step by clicking the **Next...** button.	A message is displayed.
9	Click on the **OK** button. Green markers must be present. If not, the selected file and device are incompatible. The filename and device name must be identical.	The File and Device Info *(see page 90)* window is displayed.
10	Proceed to the next step by clicking the **Next...** button.	The Summary *(see page 93)* window is displayed.
11	Click on the **Download** button. **Remark:** If the PLC is not already stopped, you are asked to do so, this action is password protected on Safety PLCs. Make sure no other Unity Pro is connected to the PLC.	A message is displayed.
12	Click on the **Yes** button.	The Progress - Initialization *(see page 94)* window is displayed meaning that the final operating system is downloaded to the processor.
13	When the download is completed, the **Progress (100%)** window appears, click on the **Close** button of the different windows to exit OSLoader.	

Downloading the OS to Ethernet Devices

Overview

The procedure below is for upgrading:

- TSX ETY •••• modules
- processor Ethernet ports
- processors with Copro Ethernet

Preconditions

Check if the hardware can be upgraded *(see page 32)*.

In Unity Pro or PL7:

- Configure a rack with:
  - a power supply
  - the processor, and
  - the TSX ETY •••• module if needed
- Configure the embedded Ethernet port's or the TSX ETY •••• module's IP address.
- No program is necessary.
- Check that only the PC with OSLoader and the PLC rack are on the Ethernet network.

NOTE: This note concerns the Ethernet Copros of Safety PLCs CPU 6x1 60S products. It is possible to download a new version of the Ethernet processor firmware into the Quantum Safety CPU with the OSLoader even in Safety Mode without stopping the PLC. However, Schneider Electric recommends not to download the Ethernet processor firmware in run state of the Safety Mode.

Procedure

The following table describes the procedure for downloading the OS to Ethernet devices.

Step	Action	Result
1	Start OSLoader via **Start →Program →Schneider Electric → Unity Pro →OS Loader**.	The Welcome *(see page 74)* window is displayed.
2	Keep the default settings of the context file and proceed to the next step by clicking the **Next...** button.	The Communication Protocol *(see page 75)* window is displayed.
3	Select the **FTP** communication driver. Proceed to the next step by clicking the **Next...** button.	The FTP Target *(see page 85)* window is displayed.
4	Select **Direct Device**, enter the IP address in the FTP Address field (see preconditions) and click on the **Connect** button. **Remark:** If requested, enter the MAC address of the target PLC. The MAC address can be found on the front of the module.	

Step	Action	Result
5	Click on the **Next >** button.	The **Operation** window is displayed.
6	Select **Download OS to device** and click the **Browse...** button and select the file.	
7	Proceed to the next step by clicking the **Next...** button. Green markers must be present. If not, the selected file and device are incompatible. The filename and device name must be identical.	The File and Device Info *(see page 90)* window is displayed.
8	Proceed to the next step by clicking the **Next...** button.	The Summary *(see page 93)* window is displayed.
9	Click on the **Download** button.	The Progress - Initialization *(see page 94)* window is displayed meaning that the operating system is downloaded to the processor.
10	When the download is completed, the **Progress (100%)** window appears, click on the **Close** button of the different windows to exit OSLoader.	
11	The device needs at least 60 seconds to reboot and implement the new Exec files. When this process is completed, the RUN and STS LEDs on the module are lit for at least 30 seconds. **Remark:** If the RUN and STS LEDs do not lit steady during 30 seconds after 2 minutes, perform a power cycle on the module. Check *(see page 68)* the new OS version.	
12	Repeat the procedure as many times as needed to transfer the various files *(see page 32)*.	

Downloading the OS to 140 NOE 771 x1

Overview

The procedures below are for upgrading the 140 NOE 771 •1 modules.

Preconditions

If the module has a Kernel version ≥ V2.0 and an Exec version ≥ V3.0 you can skip the following procedure.

Step	Action
1	In Concept: ● Configure a rack with: ● a power supply, ● the processor, and ● the 140 NOE 771 •1 module. ● Configure the embedded Ethernet port's or the 140 NOE 771 •1 module's IP address. ● No program is necessary. ● Check that only the PC with Exec Loader and the PLC rack are on the Ethernet network. ● The processor must be in STOP mode.
2	Click on the **EXECLoader symbol** in the NOE subdirectory named "v2.xx to v3.xx Upgrade Instructions" and click on **Next** to access the protocol selection screen.
3	Select **TCP/IP Protocol** and enter the TCP/IP address of the NOE. Select **Direct Device** and enter the OS file to be downloaded.
4	Start the download.
5	Repeat those steps as many times as needed to transfer the various files *(see page 46)*.
6	In Unity Pro: ● Configure a rack with: ● a power supply, ● the processor, and ● the 140 NOE 771 •1 module. ● Configure the embedded Ethernet port's or the 140 NOE 771 •1 module's IP address. ● No program is necessary. ● Check that only the PC with OSLoader and the PLC rack are on the Ethernet network.

Procedure

The following table describes the procedure for downloading the OS to Ethernet devices.

Step	Action	Result
1	Start OSLoader via **Start** →**Program** →**Schneider Electric** → **Unity Pro** →**OS Loader**.	The Welcome *(see page 74)* window is displayed.
2	Keep the default settings of the context file and proceed to the next step by clicking the **Next...** button.	The Communication Protocol *(see page 75)* window is displayed.
3	Select the **FTP** communication driver. Proceed to the next step by clicking the **Next...** button.	The FTP Target *(see page 85)* window is displayed.
4	Select **Direct Device**, enter the IP address (see preconditions) and click on the **Connect** button. **Remark:** If requested, enter the MAC address of the target PLC. The MAC address can be found on the front of the module.	
5	Click on the **Next >** button.	The **Operation** window is displayed.
6	Select **Download OS to device** and click the **Browse...** button and select the file.	
7	Proceed to the next step by clicking the **Next...** button. Green markers must be present. If not, the selected file and device are incompatible. The filename and device name must be identical.	The File and Device Info *(see page 90)* window is displayed.
8	Proceed to the next step by clicking the **Next...** button.	The Summary *(see page 93)* window is displayed.
9	Click on the **Download** button.	The Progress - Initialization *(see page 94)* window is displayed meaning that the operating system is downloaded to the processor.
10	When the download is completed, the **Progress (100%)** window appears, click on the **Close** button of the different windows to exit OSLoader.	
11	The device needs at least 60 seconds to complete all actions then reboot and implement the new Exec files. Check *(see page 68)* the new OS version.	
12	Repeat the procedure as many times as needed to transfer the various files *(see page 46)*.	

Checking the Operating System on Hardware

8

Introduction

This chapter explains how to use OSLoader to check the operating system installed on hardware.

What's in this Chapter?

This chapter contains the following topics:

Checking the OS on the Device

Overview

The operating system can be checked in order to:
- identify the OS version before transferring,
- check the OS version after transferring,
- find the project name loaded on the processor.

Procedure

The following table describes the procedure for checking the OS version.

Step	Action	Result
1	Start OSLoader via **Start** →**Program** →**Schneider Electric** →**Unity Pro** →**OS Loader**.	The **Welcome** window is displayed.
2	Keep the default settings of the context file and click **Next...**.	The **Communication Protocol** window is displayed.
3	Choose the communication protocol according to the hardware and click **Next...**.	The **protocol** window is displayed.
4	• In the **Device Type** field, check the box corresponding to the desired type of target device. • In the **Device** area click on **Node: SYS-Not connected**. • In the **Target Address** field, enter the address of the target device. The addressing mode is specific to the communication type chosen. • Click on the **Connect** button.	In the **Device** area the active node **Node: SYS-PLC** is displayed.
5	Select the active node **Node: SYS-PLC** and click on the **Properties** button.	The **Device Properties** window is displayed:
6	Check: • the project name in the **Project Name** field. After a download, the field is empty. • the OS version in the **OS version** field.	
7	Click on the **Close** button to exit.	

Description of the Device Properties Screen

Device Properties

The **Device Properties** dialog box, which is accessible by pressing the **Properties** button in the **Devices** field of the **Protocol Target** window, gives access to information concerning the device selected.

Display of the **Device Properties** dialog box:

NOTE: In order to identify at a glance a safety processor (140 CPU 6*1 60S), the background of the description field is red.

Elements of the **Device Properties** dialog box:

Element	Description	Exemple
Project name	Name of the project loaded into the controller	Station
PLC state	Status of the corresponding PLC (RUNNING, STOPPED, INIT, NOT CONFIGURED, WAITING, PAUSED, ERROR)	RUNNING
Device Name	Device product name	TSX P57 304
Hardware ID	32-bit number used to uniquely identify a device type in a specific OS	0008 0101
OS version	Number used to uniquely identify the OS delivered	1.00
Description	Device description	Premium TSX P57 304 OS V1.0

Use the **Close** button to return to the **Protocol Target** screen.

Description of OSLoader Screens
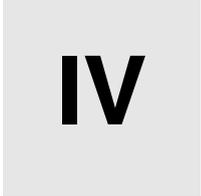
IV

OSLoader Screens

9

Introduction

This chapter describes the various OSLoader screens.

What's in this Chapter?

This chapter contains the following topics:

Welcome Screen

Illustration

The following sections describe major elements of the **Welcome** screen which appears at OSLoader startup.
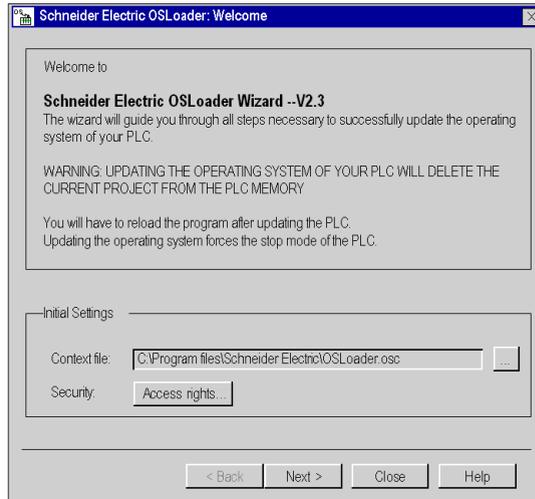
Context File

Choose the context file in this field. The last communication type, devices detected and the addresses are saved in this file. When OSLoader is reopened, details are available immediately.

The last context file used is shown in the input field.

Use the **...** (Find) button to choose the context file (or its path) in which OSLoader will operate.

Security

Use the **Access rights...** button to view the rights associated with the current user profile. If you click on the **Access rights...** button while the security function is turned off, an error message is displayed.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Next: to proceed to the next step
Close: to exit the software
Help: to access the online help

Communication Protocol Screen

Illustration

The main elements of the **Communication Protocol** screen are described here.
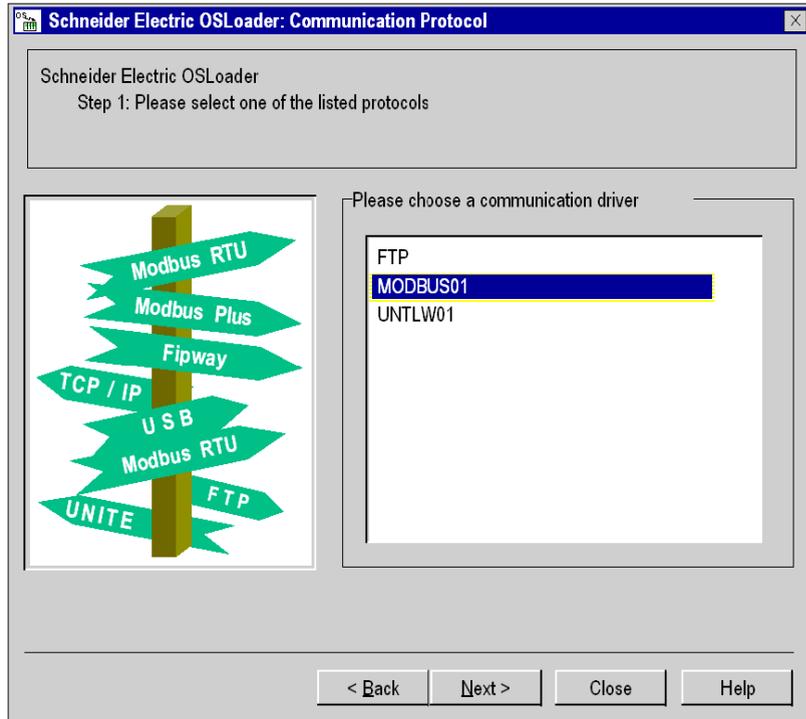
Communication Protocol

In the **Choose a communication driver** area, choose a communication type in the list. The drivers of the list are those installed previously by NetAccess.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follow:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
Help: to access the online help

Communication Protocol: Uni-Telway Target Screen

General

In this screen, you choose the target device according to the Uni-Telway communication type selected in the previous step.

Illustration

The main elements of the **Uni-Telway Target** screen are described in the following paragraphs.
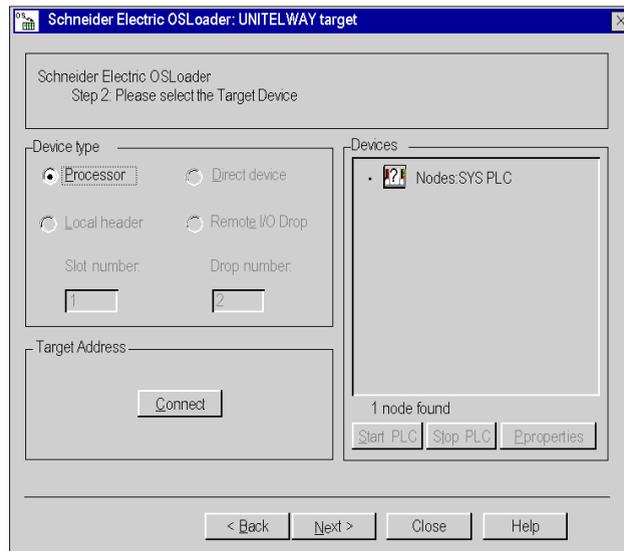
Device Type

The device types supported by OSLoader *(see page 18)* and available for the Uni-Telway communication type are displayed in the **Device Type** area. **Processor** is the only Uni-Telway target enabled.

Target Address

Press the **Connect** button in the **Target Address** area to connect OsLoader to the device.

If the connection is established, the target device is added to the directory tree in the **Devices** area.

If the connection cannot be established, an error message explaining the reason is displayed.

Devices: Directory Tree

The directory tree in the **Devices** area displays the list of connected devices. At OSLoader startup, when no connection is enabled, the directory tree is empty.

The following table shows the list of icons used in the directory tree and the corresponding description.

Icon	Description
	Processor in stop mode (**Stop**)
	Processor in run mode (**Run**)
	Processor is not configured (no application was ever loaded into the PLC)
	Host adapter (SA85 or PCMCIA Modbus Plus card)
	Bridge or Bridge plus or Bridge mux
	Input/output port
	Remote input/output module
	Device unknown

Proceed to the **Device Properties** dialog box by double-clicking on a specific device.

Devices: Start and Stop

The **Start PLC** and **Stop PLC** buttons are only available if a processor in the directory tree of the **Devices** field is selected. In other cases, they are disabled.

Stop the processor by pressing the **Stop PLC** button.

Restart the processor by pressing the **Start PLC** button.

Device Properties

The **Device Properties** dialog box *(see page 69)*, which is accessible by pressing the **Properties** button in the **Devices** area, gives access to information concerning the selected device.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
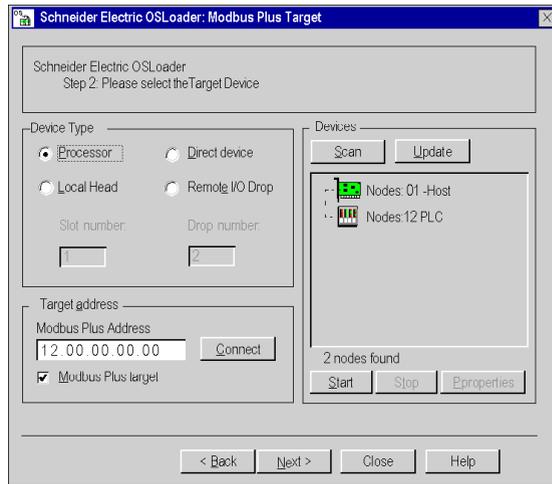**Help:** to access the online help

Communication Protocol: Modbus Plus Target Screen

General

The **Modbus Plus Target** dialog box allows you to choose the target device according to the Modbus Plus communication type.

Illustration

The main elements of the **Modbus Plus Target** screen are described in the following paragraphs.

Device Type

The device types supported by OSLoader *(see page 18)* and available for the Modbus Plus communication type are displayed in the **Device Type** area. Check the box corresponding to the device desired.

The **Slot number** and **Drop number** boxes may be enabled or disabled according to the device type selected.

The following table shows the four possible cases.

Device Type Selected	Slot Number	Drop Number
Processor	Disabled	Disabled
Local Head	Enabled	Disabled
Remote I/O Drop	Enabled	Enabled
Direct device	Disabled	Disabled

Target Address

The following elements are displayed in the **Target Address** area.

Fields	Description
Modbus Plus Address	In this field, you must enter the address of the target device specific to the Modbus Plus communication type.
Modbus Plus Target	Activate the checkbox IF the device is finally reached by a Modbus Plus communication port.
Connect	Press this button to connect OsLoader to the target device whose address is specified in the **Modbus Address Plus** entry field. If the connection is established, the target device is added to the directory tree in the **Devices** area.

Devices: Directory Tree

The directory tree in the **Devices** area displays the list of connected devices. At OSLoader startup, when no connection is enabled, the directory tree is empty.

The following table shows the list of icons used in the directory tree and the corresponding description.

Icon	Description
	Processor in stop mode (**Stop**)
	Processor in run mode (**Run**)
	Processor is not configured (no application was ever loaded into the PLC)
	Host adapter (SA85 or PCMCIA Modbus Plus card)
	Bridge or Bridge plus or Bridge mux
	Input/output port
	Remote input/output module
??	Device unknown

When you click on a specific device, the **Modbus Plus address** entry field of the **Target Address** area is automatically updated.

Proceed to the **Device Properties** dialog box by double-clicking on a specific device.

Devices: Scan and Update

Press the **Scan** button to launch a sniffing program on the network. When a device is detected, its name and address are added to the directory tree in the **Devices** area. If a bridge is detected, the devices behind are added as sub-branches in the same directory tree.

Press the **Update** button to update the on/off status of the processors contained in the directory tree.

Devices: Start and Stop

The **Start** and **Stop** buttons are only available if a processor in the directory tree of the **Devices** field is selected. In other cases, they are disabled.

Stop the processor by pressing the **Stop** button.

Restart the processor by pressing the **Start** button.

NOTE: For safety PLCs (Unity Pro XLS) the **Start/Stop PLC** functions are password protected. If you try to start or stop the processor a dialog box is displayed and you are asked to enter the password.

Device Properties

The **Device Properties** dialog box *(see page 69)*, which is accessible by pressing the **Properties** button in the **Devices** area, gives access to information concerning the device selected.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
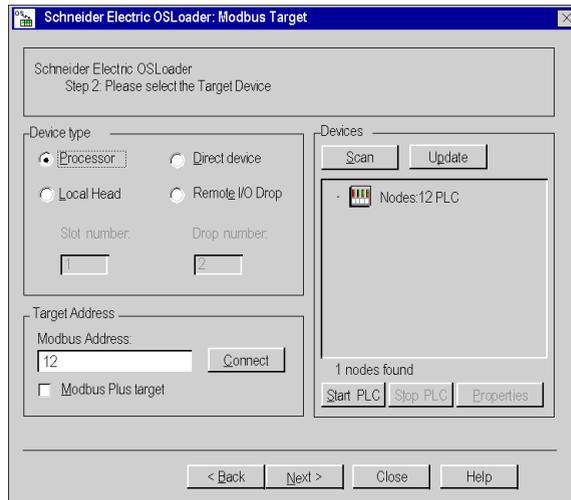**Help:** to access the online help

Communication Protocol: Modbus Target Screen

General

The **Modbus Target** dialog box allows you to choose the target device according to the Modbus communication type.

Illustration

The main elements of the **Modbus Target** screen are described in the following paragraphs.

Device Type

The device types supported by OSLoader *(see page 18)* and available for the Modbus RTU communication type are displayed in the **Device Type** area. Check the box corresponding to the device desired.

The **Slot number** and **Drop number** boxes may be enabled or disabled according to the device type selected.

The following table shows the four possible cases.

Device Type Selected	Slot Number	Drop Number
Processor	Disabled	Disabled
Local Head	Enabled	Disabled
Remote I/O Drop	Enabled	Enabled
Direct device	Disabled	Disabled

Target Address

The following elements are displayed in the **Target Address** area.

Field	Description
Modbus Address	Enter the address of the target device specific to the Modbus communication type.
Modbus Plus Target	Activate the checkbox IF the device is finally reached by a Modbus Plus communication port.
Connect	Press this button to connect OsLoader to the target device whose address is specified in the **Modbus Address** entry field. If the connection is established, the target device is added to the directory tree in the **Devices** area.

Devices: Directory Tree

The directory tree in the **Devices** area displays the list of connected devices. At OSLoader startup, when no connection is enabled, the directory tree is empty.

The following table shows the list of icons used in the directory tree and the corresponding description.

Icon	Description
	Processor in stop mode (**Stop**)
	Processor in run mode (**Run**)
	Processor is not configured (no application was ever loaded into the PLC)
	Host adapter (SA85 or PCMCIA Modbus Plus card)
	Bridge or Bridge plus or Bridge mux
	Input/output port
	Remote input/output module
??	Device unknown

When you click on a specific device, the **Modbus Address** entry field of the **Target Address** area is automatically updated.

Proceed to the **Device Properties** dialog box by double-clicking on a specific device.

Devices: Scan and Update

Press the **Scan** button to launch a sniffing program on the network. When a device is detected, its name and address are added to the directory tree in the **Devices** area. If a bridge is detected, the devices behind are added as sub-branches in the same directory tree.

Press the **Update** button to update the on/off status of the processors contained in the directory tree.

Devices: Start and Stop

The **Start** and **Stop** buttons are only available if a processor in the directory tree of the **Devices** field is selected. In other cases, they are disabled.

Stop the processor by pressing the **Stop** button.

Restart the processor by pressing the **Start** button.

NOTE: For safety PLCs (Unity Pro XLS) the **Start/Stop PLC** functions are password protected. If you try to start or stop the processor a dialog box is displayed and you are asked to enter the password.

Device Properties

The **Device Properties** dialog box *(see page 69)*, which is accessible by pressing the **Properties** button in the **Devices** area, gives access to information concerning the device selected.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
Help: to access the online help

Communication Protocol: FTP Target Screen

General

This screen is displayed if the driver selected in the previous step is the FTP driver.

Illustration

The main elements of the **FTP Target** screen are described in the following paragraphs.
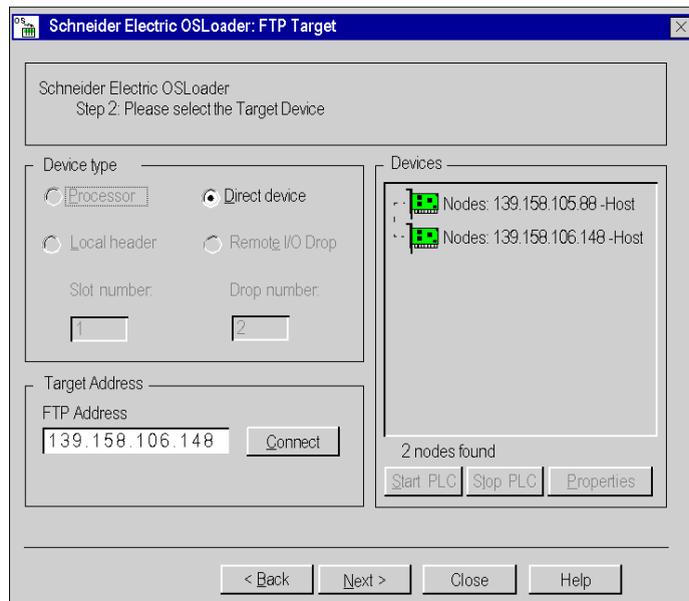
Device Type

The device types supported by OSLoader *(see page 18)* and available for the Ethernet/FTP communication type are displayed in the **Device Type** area. **Direct Device** is the only FTP target enabled.

Target Address

The following elements are displayed in the **Target Address** area.

Fields	Description
FTP Address	Enter the address of the target device specific to the FTP communication type. To be valid, the address must be made up of 4 numbers between 0 and 255 (TCP/IP address).
Connect	Press this button to connect OsLoader to the target device whose address is specified in the **FTP Address** entry field. For some devices, a **MAC** address can be requested before the connection. Generally this can be found on the device or can be read on the Quantum processor display. If the connection is established, the target device is added to the directory tree in the **Devices** area. If the connection cannot be established, an error message explaining the reason is displayed.

Devices: Directory Tree

The directory tree in the **Devices** area displays the list of connected devices. At OSLoader startup, when no connection is enabled, the directory tree is empty.

The following table shows the list of icons used in the directory tree and the corresponding description.

Icon	Description
	Processor in stop mode (**Stop**)
	Processor in run mode (**Run**)
	Processor is not configured (no application was ever loaded into the PLC)
	Host adapter (SA85 or PCMCIA Modbus Plus card)
	Bridge or Bridge plus or Bridge mux
	Input/output port
	Remote input/output module
??	Device unknown

When you click on a specific device, the **FTP Address** entry field of the **Target Address** area is automatically updated.

Proceed to the **Device Properties** dialog box by double-clicking on a specific device.

Device Properties

The **Device Properties** dialog box *(see page 69)*, which is accessible by pressing the **Properties** button in the **Devices** area, gives access to information concerning the selected device.

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
**Close:** to exit the software
Help: to access the online help

Operation Screen

General

OSLoader can execute two different commands:

- download a new operating system to the selected device
- upload the operating system of the selected device to a file **(not for Premium processors)**

Illustration

The main elements of the **Operation** screen are described in the following paragraphs.
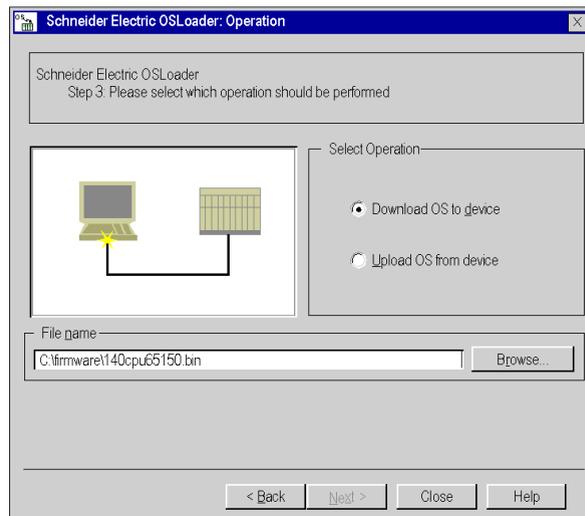
Select an Operation

The following table shows the two available commands.

Command	Description
Download OS to device	The new operating system replaces the existing one in the selected device *(see page 57)*. All information saved earlier will be lost. After downloading, reconfigure the processor.
Upload OS from device	The existing OS in the selected device is read by OSLoader and the data are stored in a file. **Note**: This type of procedure is recommended as a backup operation, particularly before downloading a new OS to the selected device.

Filename

Use the **Browse...** button to select the following:

- the file to be downloaded (intermediate or OS replacement file), see the file description in the *readme.txt* on the OS CD-ROM
- the backup path of the OS image file

Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
Help: to access the online help

File and Device Info Screen

General

This screen provides a comparison between:
- The file properties to be transferred to a selected device (**File** area).
- The OS properties available in the target module (**Device** area).

Illustration

The main elements of the **File and Device Info** screen are described in the following paragraphs.

Comparison

The **Comparison of File and Device** field is divided into two main parts:
- The properties of the OS file to be downloaded.
- The properties of the OS already in the target device.

NOTE: Refer to Error Codes *(see Quantum with Unity Pro, Experts and Communication, Reference Manual)* for the **Crash Code** field description.

NOTE: Colored markers make it easier when comparing properties.

Green Marker

Representation:

Meaning:

Property	To be transferred		Current
Hardware ID	Operating system file	=	Operating System
OS version	Operating system file	≥	Operating System

Red Marker

Representation:

Meaning:

Property	To be transferred		Current
Hardware ID	Operating system file	≠	Operating System

NOTE: Proceeding to the next step is NOT possible if the hardware identification codes are incompatible. The navigation button **Next** is then disabled.

Yellow Marker

Representation:

Meaning:

Property	To be transferred		Current
Hardware ID	Operating system file	=	Operating System
OS version	Operating system file:	<	Operating System
or			
OS version	One of the version numbers cannot be determined.		

⚠ **WARNING**

UNEXPECTED EQUIPMENT OPERATION

You must test the application and address any safety issues before the system is returned to operation. Transfer of the operating system may cause changes in the behavior of the application.

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

Navigation Buttons

The navigation buttons, located at the bottom of the screen, are:
Back: Return to the previous step.
Next: Proceed to the next step.
Close: Exit the software.
Help: Access the online help.

Summary Screen

General

This screen contains a summary of the main information concerning the chosen procedure and gives access to the data transfer phase.

Illustration

The main elements of the **Summary** screen are described in the following paragraph.
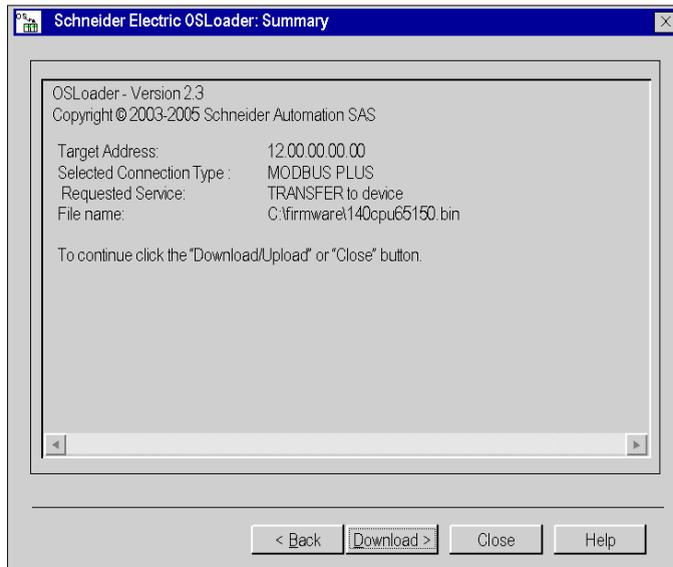
Navigation Buttons

Use the navigation buttons, located at the bottom of the screen, as follows:
Back: to return to the previous step
Next: to proceed to the next step
Close: to exit the software
Help: to access the online help

Progress Screen

General

The **Progress** screen indicates:

- the OS transfer progress,
- the number of bytes downloaded,
- the remaining time,
- the transfer rate in bytes/second.

NOTE: If the target device is in RUN mode when downloading the new operating system, a dialog box displays on-screen asking for authorization to stop the PLC.

Illustration

The main elements of the data transfer progress screen are described in the following paragraphs.
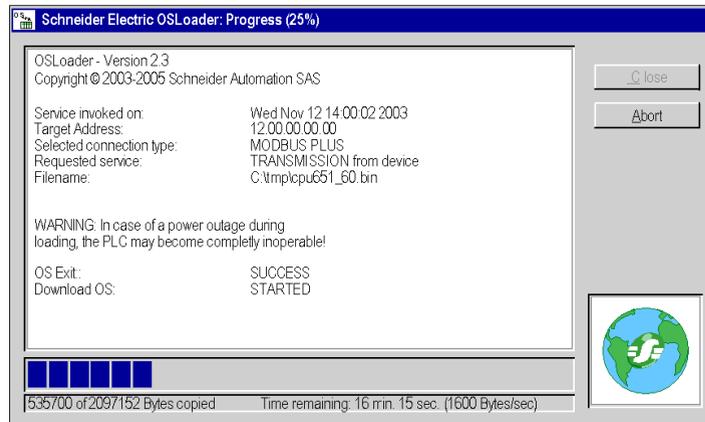
⚠ **WARNING**

CPU POWER SUPPLY INTERRUPTION

Never interrupt the power supply to the CPU during the transfer of the operating system.

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

Information

The **Progress** screen provides the main information concerning the current procedure: **UPLOADING to the device** or **DOWNLOADING from the device**.

Progress bar

The data transfer's progress status is displayed at the bottom of the **Progress** screen.

Transfer Complete

When the following **Progress 100%** window is displayed, the operation is successfully completed .
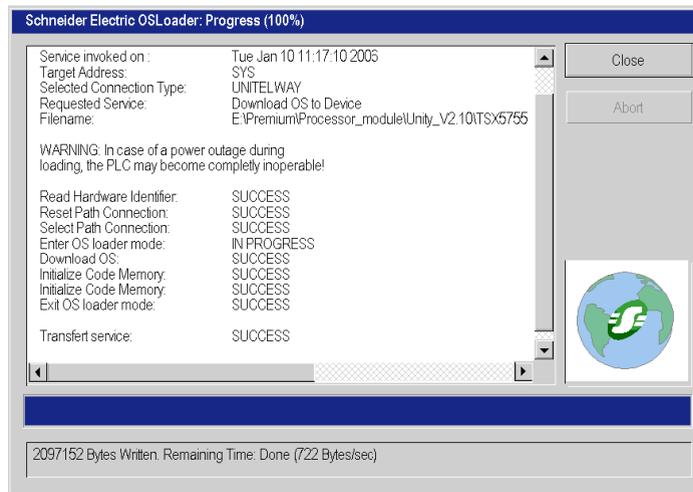
Abort and Close Buttons

The transfer procedure can be interrupted by clicking on **Abort**.


⚠ WARNING

UNEXPECTED EQUIPMENT OPERATION

If the loader is interrupted during download, the OS that is loaded may be corrupted. If this is suspected:

- attempt to reload the OS,
- if reloading is unsuccessful, return the unit to your Schneider Electric service location.

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

Use the **Close** button enabled at the end of the data transfer process to exit OLLoader .

Errors and Limitations

V
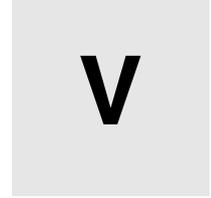
Communication Errors and Limits During Download

10

Introduction

This chapter describes the main communication errors and operating limits that may arise when downloading data.

What's in this Chapter?

This chapter contains the following topics:

Communication Interruptions

Overview

During the transfer, certain errors caused by OSLoader may arise, which may adversely influence the transfer. The following section provides information on how to deal with most common problems.

Error Type

Some events cause communication errors. These errors are of the following type:

● **Minor errors** (example: Disconnection of PG connection)
● **Serious errors** (example: Network down)

Minor Error

For minor errors a dialog box appears and gives the user the possibility of restarting or canceling the transfer.

When the cause of the error is fixed, select:
● **Repeat** to restart the transfer
● **Cancel loading** to cancel the operation

Serious Error

The PLC becomes unusable if a serious error arises. The **RUN**, **ERR**, and **I/O** LEDs light up, and communication between PG and the controller is no longer possible.

Operating Limits

Limits

The following table describes the main cases in which an operating system cannot be downloaded.

Limits	Comment
The PLC is down or is not responding.	It is impossible to establish the connection. Check that: ● the PLC has not suffered a power outage, ● the PLC is still connected to the terminal, ● no other tool is connected to the terminal port.
The PLC is already reserved by another tool.	Downloading is impossible. Disconnect the entity that has reserved the PLC. Restart the program.
The format of the selected file is not compatible with OSLoader.	Use a file with an appropriate format type.
The binary file to be loaded is incompatible with the target processor.	Downloading is impossible. Check the type of PLC, then select the appropriate binary file.

Appendices

The Reliance Driver

A
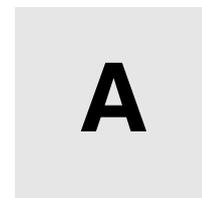
Reliance Driver

Description

The purpose of the Reliance Driver is to operate with the Modicon M340 memory card filesystem directly on a PC (read/write files) without using a FTP server.

The memory cards operate with a filesystem dedicated to the embedded computing in order to help secure the data (unlike the FAT filesystem for example). By default, the files are visible only in a module through a FTP server.

But it is possible to access to the memory card on a PC equipped with Windows 2000 or Windows XP (and shortly Vista) if the drivers have been first installed. Consequently, it is not possible with Linux or on a Mac.

Reliance Driver content

The Reliance Driver includes two files available on the OS CD-Rom:

- The **Reliance.inf** file,
- The **Reliance.sys** file.

Installation

To install the driver, you have to follow the procedure described below:

Step	Action
1	Select the **Memory card driver** directory located at the root of the CD-Rom.
2	Select the **reliance.inf** file.
3	Right-click on it and select **Install**. *Result*: Different files are installed.
4	Insert a memory card in the memory card reader.
5	In the Explorer, select the disk corresponding to the memory card. *Result*: You can read, write, rename or delete the files.

Glossary
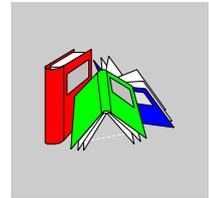
C

CPU

Central processing unit : generic name given to Schneider Electric processors.

E

Ethernet

Local area network.

I

I/O

Inputs/Outputs.

M

Modbus

Master/slave protocol.

O

Operating mode

For the OSLoader, these are the rules governing the behavior of the module during the transitional phases or on the appearance of detected errors.

OS

Operating System

OSLoader

Software for downloading the operating system of Schneider Electric PLCs.

S

SMART OS

Generic name given to the operating system of PL7 processors.

T

TCP / IP

Transmission Control Protocol / Internet Protocol.

U

Uni-TE

Telemecanique protocol.

UNITY OS

Generic name given to the operating system of Unity Pro processors.

Unity Pro

Programming software of Schneider Electric PLCs.

USB

Universal Serial Bus.

Index
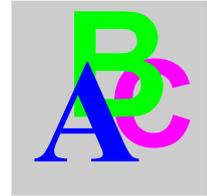
A

addressing, *19*

B

backup flash memory
    erase, *50*, *54*
before upgrade, *15*

C

cables
    communication, *19*
cautions and preconditions, *15*
communication, *19*
    cables, *19*
communication drivers, *19*
communication protocol, *19*
compatibility
    Atrium processors, *22*
    Premium processors, *22*
    Quantum processors, *24*

D

Device hardware
    upgradable, *32*, *46*
device properties screen, *69*
device types, *18*
download
    during, *15*

E

drivers
    communication, *19*
duration of upgrade
    using Modbus, *15*
during download, *15*

E

Ethernet TCP/IP, *19*

F

Final OS to device
    check, *68*
    download, *60*
flash memory
    erase, *50*, *54*
FTP, *19*, *85*

H

hardware
    upgradable, *32*, *46*, *52*
    upgradeable, *35*, *39*, *42*, *49*

I

installation, *13*
intermediate OS to device
    download, *58*