WebLoader Utility for Momentum M1E Processors User Guide

Version 1.0
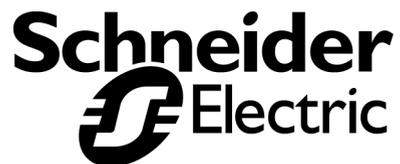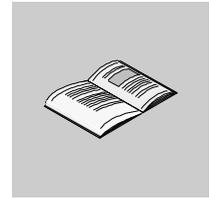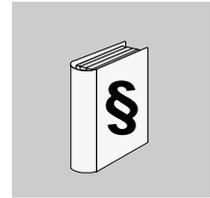
Schneider Electric

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, serious injury, or equipment damage.

⚠ WARNING

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

⚠ CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, **can result** in injury or equipment damage.

PLEASE NOTE   Electrical equipment should be serviced only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material. This document is not intended as an instruction manual for untrained persons.

About the Book
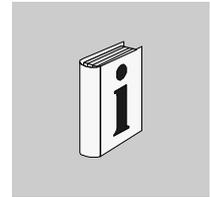
At a Glance

Document Scope

DISCLAIMER

The use of this WebLoader Utility and "SA Comm Lite" SDK document is not intended as a training tool nor exercise, but requires experience and specific knowledge in the operation and behavior of the application you are attempting to control. Using the these tools requires experience and specific knowledge in programming languages such as Java, as well as experience and specific training in Web content development. This express disclaimer does not modify or exclude Schneider Electric standard license terms.

Momentum M1E Memory

There is 128 K byte of FLASH Memory available in the Momentum M1E processor for Web content. In the development of Web content files, the application engineer must take into consideration the available memory.

This Guide

This guide describes the WebLoader Utility for Momentum M1E processors and describes the process of transferring Web content using the WebLoader Utility.

The WebLoader Utility for Momentum M1E processors and the "SA Comm Lite" Software Development Kit (SDK) are intended for application engineers that have the background in creating Web pages, Java applets, and applications.

This manual is not intended to attempt to teach Java programming, or the how to create Web pages. It is expected that users of the WebLoader Utility for Momentum M1E processors and of the "SA Comm Lite" SDK are proficient in these capabilities. This manual is intended as an overview and introduction to the WebLoader Utility for Momentum M1E processors.

	WARNING
⚠	**IUNINTENDED SYSTEM OPERATION** Use of downloaded Web content, which has the capacity of altering data within a PLC, could cause unintended system operation. • Select carefully the variables given write access. • Design interlocks into your application where write access variables are used. • Validate before commissioning. **Failure to observe this precaution can result in death, severe injury, or equipment damage.**

Validity Note   The data and illustrations found in this book are not binding. We reserve the right to modify our products in line with our policy of continuous product development. The information in this document is subject to change without notice and should not be construed as a commitment by Schneider Electric.

Related Documents

Title of Documentation	Reference Number
Momentum M1E Processor adapter and Option Adapter User Guide	870USE10100

Product Related Warnings   Schneider Electric assumes no responsibility for any errors that may appear in this document. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.
All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to assure compliance with documented system data, only the manufacturer should perform repairs to components.

User Comments   We welcome your comments about this document. You can reach us by e-mail at TECHCOMM@modicon.com

Product Overview — WebLoader Utility for Momentum M1E Processors

1

At a glance

Introduction

The following material introduces you to the WebLoader Utility for Momentum M1E Processors.

This first chapter provides a brief overview of the WebLoader Utility for those who wish only a brief summary, and the second chapter describes in detail using the WebLoader.

What's in This Chapter?

This chapter contains the following topics:

Topic	Page
WebLoader Overview	10
The Basic Steps for Using the WebLoader	11

WebLoader Overview

What it Does   The Momentum M1E WebLoader Utility is a software tool that will enable the transferring of Web content between a PC and a M1E Processor's FLASH memory over the Modbus TCP/IP communication network.

The Momentum M1E WebLoader Utility for Momentum M1E processors is a Windows-based 32 bit application used to manage Web content embedded in Momentum M1E processors. The WebLoader uses a wizard-like interface that guides you through the Web content transfer processes of moving files from PC to PLC (download), or from PLC to PC (upload).

> **Note:** This Utility does not include any capability for the creation of Web content. Web content can be created using a standard Web development tools. The decision on which tool is used to develop the Web content should be made by the user based on their capabilities and system requirements. There is 128K bytes of memory available in the M1E processor for Web content.

Once you have installed the application on your PC, the WebLoader guides you through the process of transferring Web content.

Functions, Communications Services, and Protocols   Use the WebLoader Utility to perform the following functions:
- Select a target device
- Select a source/destination folder for Web content

Use the WebLoader Utility to perform these communications services:
- Connect to the target PLC
- Transfer Web content **from** a folder on your PC to a PLC
- Transfer the PLC's Web content **to** a folder on your PC
- Retrieve information from the PLC

The WebLoader uses Modbus over the TCT/IP communications protocol.

The Basic Steps for Using the WebLoader

Starting the WebLoader

Start the WebLoader utility. The **WebLoader - Welcome** screen appears.
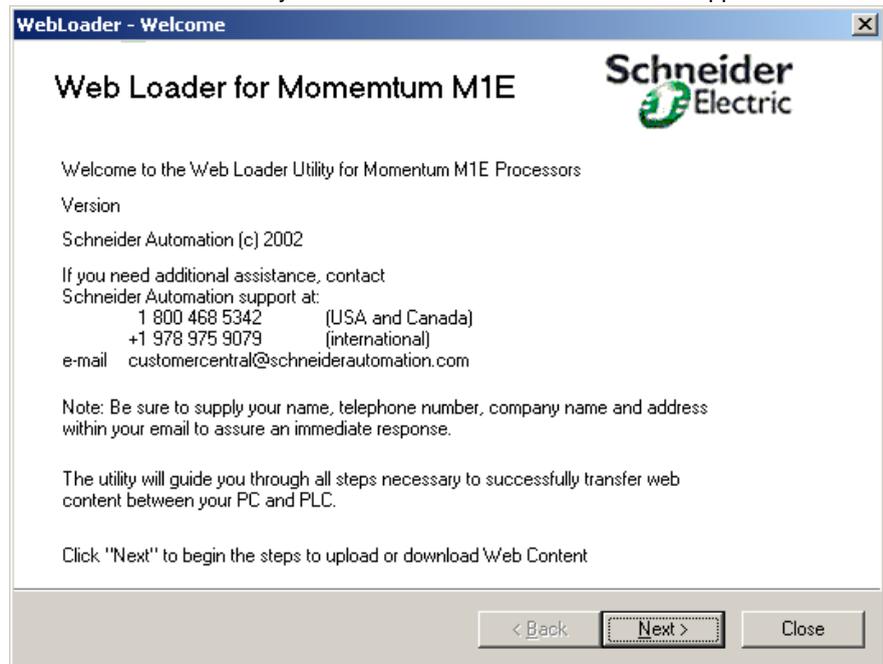
Click **Next** and proceed to the steps below.

**Using the
WebLoader**

The following table shows the ease of using the WebLoader Utility. After clicking
Next, a series of screens display. The steps associated with each screen are
summarized below, and for more detailed information, you can go to a description
of the steps in the chapter *Using the WebLoader Utility, p. 15*.

Step	Action	Comment
1	Select the Target Device (See *Choosing a Target Device Using an IP Address, p. 18*)	Use the **WebLoader - TCP/IP Target** screen to select the IP Address of the target device. Select the IP Address by typing the device's IP Address in the **TCP/IP Address of PLC** field.
2	Select Download or Upload (See *Using the WebLoader - Operation Screen, p. 19*)	Use the **WebLoader - Operation** screen to choose whether you want to transfer files: ● **To** PLC — Download ● **From** PLC — Upload Once you choose an operation, do the following: **1.** Select the folder (source) from which to retrieve (download), or the folder (destination) in which to store (upload) the files. **2.** The **WebLoader - Operation** screen displays the files in the selected folder.
3	Select the files to transfer (See *Selecting the Files to Transfer, p. 22*)	Use the **WebLoader - File and PLC Info** screen to select the files to transfer. This screen displays two list boxes which allow you to see the local files (on your PC) and the files in the PLC.
4	Confirm the files to transfer (See *Using the WebLoader - Summary Screen, p. 24*)	Use the **WebLoader - Summary** screen to confirm ● Transfer operation ● Source/destination folder Decide whether your choices are ● **Incorrect** Click **< Back** and return to the screens where you need to make changes. ● **Correct** Click **Transfer** to start the transferring process. The **WebLoader - Progress** screen displays immediately showing the progress of the transfer.

Step	Action	Comment
5	Complete the transfer process (See *Completing the Transfer Process, p. 26*)	Use the **WebLoader - Progress** screen to watch the progress of the transfer. **1.** When the transfer process is complete, the **WebLoader - Progress** screen displays The download/upload operation completed SUCCESSFULLY. **2.** Click **Done** to dismiss the **WebLoader - Progress** screen and return to the **WebLoader - Welcome** screen. **3.** Click **Close** to exit the utility.

Using the WebLoader Utility

2

At a Glance

Introduction

This material shows you, in detail, how to use the WebLoader Utility for Momentum M1E processors. The steps introduced previously are detailed here.

What's in This Chapter?

This chapter contains the following topics:

Starting the WebLoader Utility

System Requirements

The system requirements for the WebLoader Utility are as follows:
- IBM®-compatible Pentium or greater PC
- Windows 98, Windows 2000, Windows XP, and Windows NT Operating System
- 5 MB of Hard Disk Space available
- 64 MB RAM minimum
- Network cards
  - NIC for a PC
  - PCMCIA for a laptop
- Valid TCP/IP connection

Momentum M1E Memory

There is 128K byte of FLASH Memory available in the Momentum M1E processor for Web content. In the development of Web content files, the application engineer must take into consideration the available memory.

This guide describes the WebLoader Utility for Momentum M1E processors and describes the process of transferring Web content using the WebLoader Utility.

⚠	**WARNING**
	UNINTENDED SYSTEM OPERATION
	Use of downloaded Web content, which has the capability of altering data within a PLC, could cause unintended system operation. • Select carefully the variable given write access. • Design interlocks into your application where write access variables are used. • Validate before commissioning.
	Failure to observe this precaution can result in death, severe injury, or equipment damage.

Running the WebLoader Utility

Once the WebLoader Utility is installed, start the application using one of the following methods.
- Using the Start button and the Programs menu
  1. Click **Start | Programs**.
  2. Select **Schneider Electric Web Tools**.
  3. Select **WebLoader Utility**.
  4. Release the mouse button and the application starts.

Using the WebLoader - Welcome Screen

The **WebLoader - Welcome** screen provides information about
- WebLoader version number
- Contact numbers for additional assistance

When you start the WebLoader Utility, the **WebLoader - Welcome** screen displays.
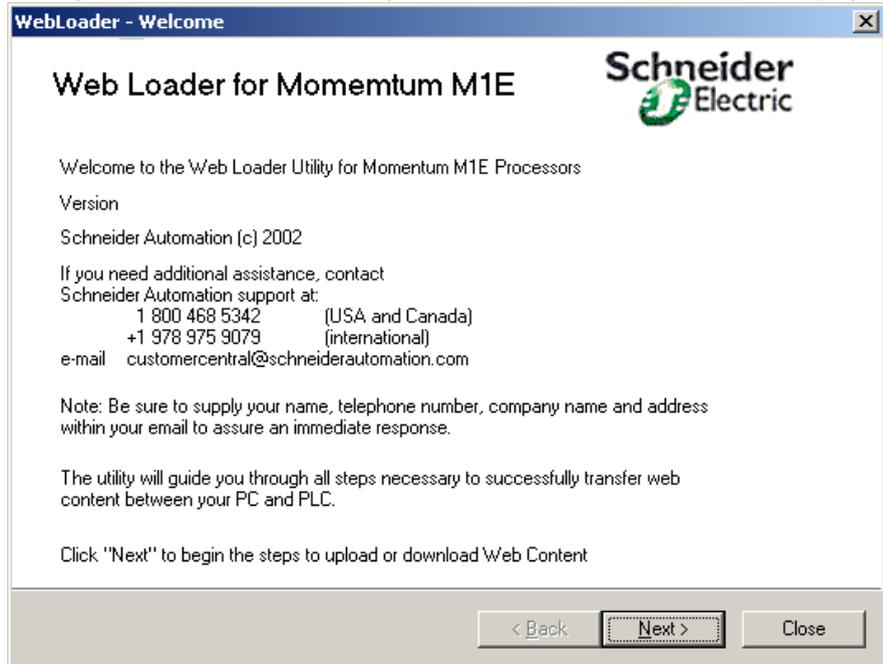
Click **Next >** to proceed to the **WebLoader - TCP/IP Target** screen.

Choosing a Target Device Using an IP Address

To choose the IP Address of the target device do the following:

Step	Action
1	Type the IP Address of the target device in the **TCP/IP Address of PLC** field, which appears in the **Target Address** box.
	WebLoader - TCP/IP Target
	Schneider Automation - WebLoader
	Step 1: Please select the Target Device
	Schneider Electric
	Target Address
	TCP/IP Address of PLC:
	139 . 158 . 012 . 022
	< Back Next > Close
	The IP Address is a 32-bit identifier made up of four groups of decimal numbers separated by a period, such as `139.158.012.022`.
2	Click **NEXT >** to proceed to the **WebLoader - Operation** screen.
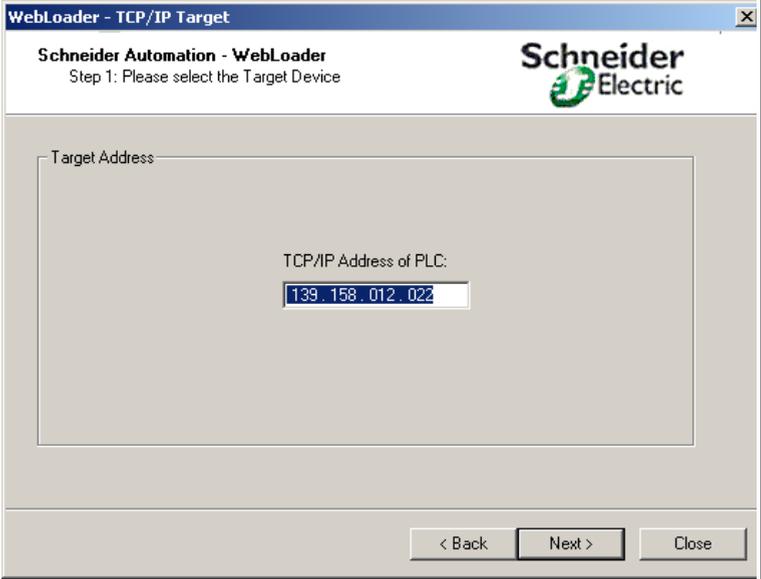
Using the WebLoader - Operation Screen

Selecting Download or Upload

> **Note:** The PLC must be configured before the transferring process can proceed.

If you selected a valid IP Address and the WebLoader was able to connect to the selected device, the **WebLoader Operation** screen will display allowing you to choose to transfer files either
- **To** a PLC — Download
- **From** a PLC — Upload

Before you complete the process, you should
- Check that the source/destination folder is the folder you want, or
- Select a source/destination folder

> **Note:** A transfer overwrites existing files. Therefore,
> 1. Transferring to the PLC overwrites existing Web content in the PLC and replaces the existing content with the chosen files.
> 2. Transferring from the PLC reads the target's Web content and stores the data on your PC in your chosen folder. You will be prompted on a file by file basis during the upload if replacing would overwrite existing files.

Choosing Transfer To (Downloading)

Here are the steps for transferring files to a PLC (downloading).

Step	Action
1	To transfer files to a PLC (download), select the first option in the **Select Operation** box: ● Transfer Web Content to PLC (downloading) The following is a sample view of the **WebLoader - Operation** screen for transferring files to a PLC (downloading). **WebLoader - Operation** **Schneider Automation - WebLoader** Step 2: Please select which Operation should be performed Schneider Electric Select Operation ● Transfer Web Content to PLC ○ Transfer Web Content from PLC PC Folder Content: feeder.gif feeder.htm index.htm loader.gif loader.htm product.htm SACommLt.jar stats.htm sysdiag.jar Source folder for download to PLC Browse ... a:\My New Web Pages < Back Next > Close
2	Select a source folder using either one of the two following options: ● Click **Browse ...** to find a file Clicking the **Browse ...** button displays the **Source folder for download to PLC** dialog box and allows you to navigate through your folders to select a folder. Click **OK** to confirm your choice and return to the **WebLoader - Operation** screen. ● Type in a folder name in the **Source folder for download to PLC** field
3	Click **Next >** to proceed to the **WebLoader - File and PLC Info** screen. If the PLC is Running, you will be prompted to stop the PLC with the following message: **WebLoader Utility** ⚠ PLC is running. Press OK to Stop the PLC. Note: Ensure that your process is in a state such that stopping the PLC will cause no adverse effects. OK Cancel
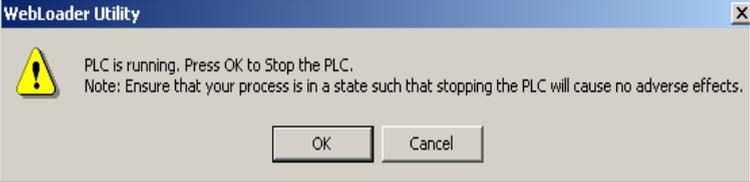
Choosing Transfer From (Uploading)

Here are the steps for transferring files from a PLC (uploading).

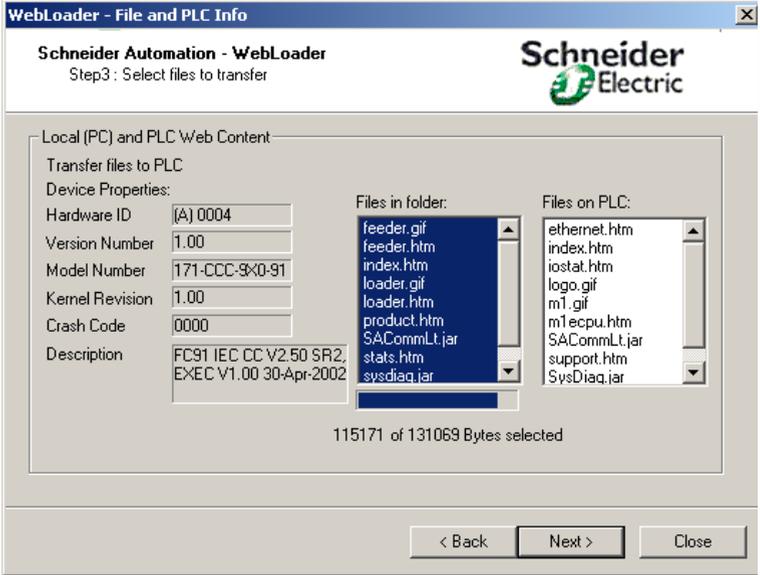| Step	Action
1	To transfer files from a PLC (upload), select the second option in the **Select Operation** box: ● Transfer Web Content from PLC (uploading) The following is a sample view of the **WebLoader - Operation** screen to select transferring files from a PLC (uploading). **WebLoader - Operation** ✕ **Schneider Automation - WebLoader** **Schneider** Step 2: Please select which Operation 🐾 **Electric** should be performed ┌─ Select Operation ─────────┐ PC Folder Content: │ ○ Transfer Web Content to PLC The directory is empty │ ● Transfer Web Content from PLC └──────────────────────────┘ Destination folder for upload from PLC [Browse ...] a:\My Old Web Pages [< Back] [Next >] [Close]
2	Select a destination folder using either one of the two following options: ● Click **Browse ...** to find a file Clicking the **Browse ...** button displays the **Source folder for upload to PLC** dialog box and allows you to navigate through your folders to select a folder. Click **OK** to confirm your choice and return to the **WebLoader - Operation** screen. ● Type the folder name in the **Destination folder for upload from PLC** field
3	Click **Next >** to proceed to the **WebLoader - File and PLC Info** screen. If the PLC is Running, you will be prompted to stop the PLC with the following message: **WebLoader Utility** ✕ ⚠ PLC is running. Press OK to Stop the PLC. Note: Ensure that your process is in a state such that stopping the PLC will cause no adverse effects. [OK] [Cancel]
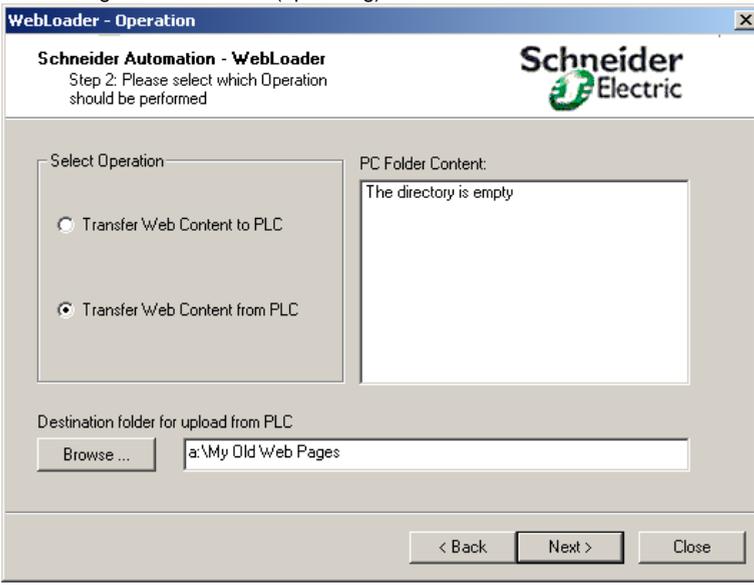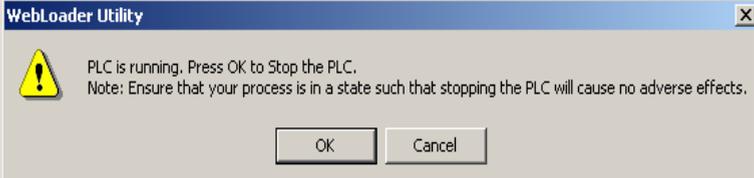
Selecting the Files to Transfer

Transferring to a PLC (Downloading)

Use the **WebLoader - File and PLC Info** screen to select certain files to transfer to the PLC (downloading).

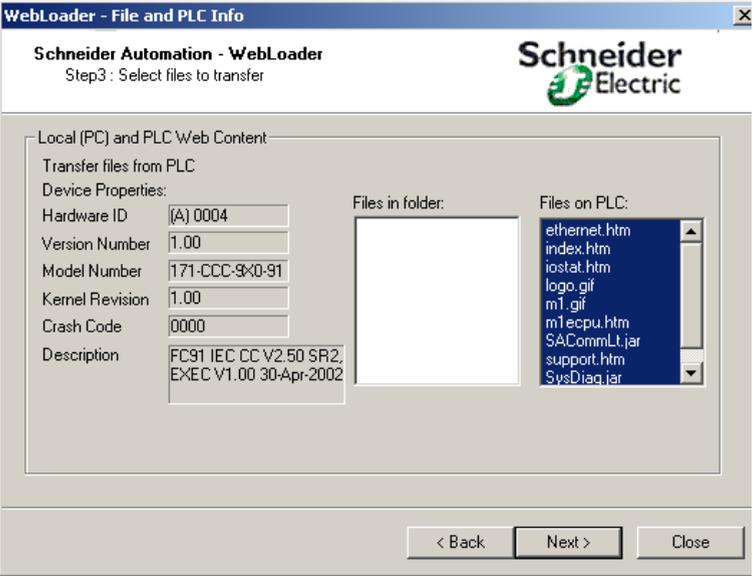| Step	Action
1	If all the files in the selected folder will fit in the PLC, all files will be selected. The following is a sample view of the **WebLoader - File and PLC Info** screen for a transfer to the PLC (download) process.
2	You can deselect and select files by clicking on them.
3	As you add files to the list, the file size indicator bar displays both a numeric and graphical representation of the amount of space your selections will occupy in the PLC. The file size indicator bar appears below the **Files in folder:** list box.
4	If the size of the files exceeds maximum capacity, the indicator bar fills with red.
5	Click **NEXT >** to proceed to the summary step.

Transferring from a PLC (Uploading)

Use the **WebLoader - File and PLC Info** screen to select certain files to transfer from the PLC (uploading).

Step	Action
1	All files in the PLC will be selected.
	The following is a sample view of the **WebLoader - File and PLC Info** screen for a transfer from the PLC (Upload) process.
2	You can deselect and select files by clicking on them.
3	Click **NEXT >** to proceed to the summary step.
4	You will be prompted on a file by file basis during the upload if replacing would overwrite existing files

Using the WebLoader - Summary Screen

**Confirming the
Web Content to
Transfer**

The **WebLoader - Summary** screen displays your selections such as:
- IP Address of the PLC
- Transfer to or transfer from the PLC
- Source/destination folder

The following is a sample view of the **WebLoader - Summary** screen for a transfer to PLC (download) process.

```
WebLoader - Summary                                                  [x]

  Web Loader Utility for Momentum M1E Processors
  Version

  M1E Processor Address:            139.158.12.22
  Requested Service:                TRANSFER to M1E Processor
  Source Directory:                 a:\My Web Pages


  To continue, click the "Transfer" button




                                     < Back    Transfer      Close
```
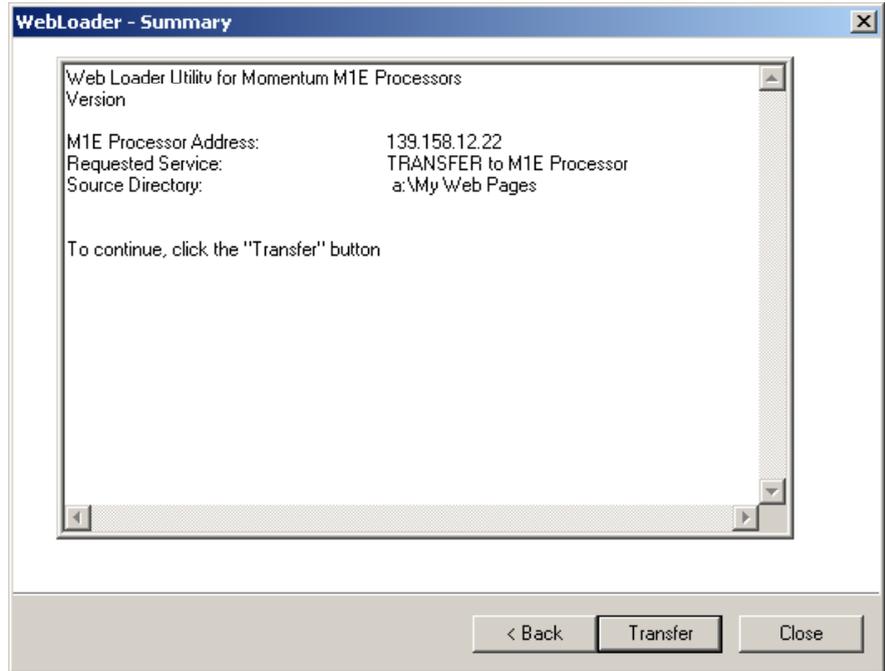
The following is a sample view of the **WebLoader - Summary** screen for a transfer from PLC (upload) process.

```
WebLoader - Summary                                              [X]

  ┌────────────────────────────────────────────────────────────┐ [▲]
  │ Web Loader Utility for Momentum M1E Processors              │
  │ Version                                                     │
  │                                                             │
  │ M1E Processor Address:              139.158.12.22           │
  │ Requested Service:                  TRANSFER from M1E Processor │
  │ Destination Directory:              a:\My Old Web Pages     │
  │                                                             │
  │                                                             │
  │ To continue, click the "Transfer" button                   │
  │                                                             │
  │                                                             │ [▼]
  │ [◄]                                                     [►] │
  └────────────────────────────────────────────────────────────┘

                           [ < Back ]  [ Transfer ]  [ Close ]
```
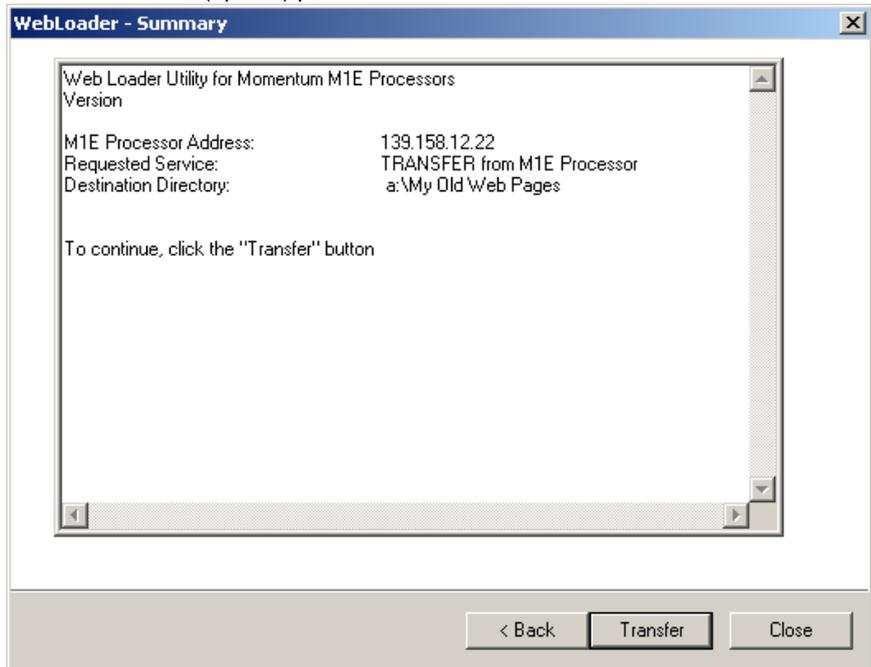
To perform the transfer:

1. Confirm that the information is correct before starting the actual transfer operation.

2. Click **Transfer** to start transferring.

3. The **WebLoader - Progress** screen displays.

Completing the Transfer Process

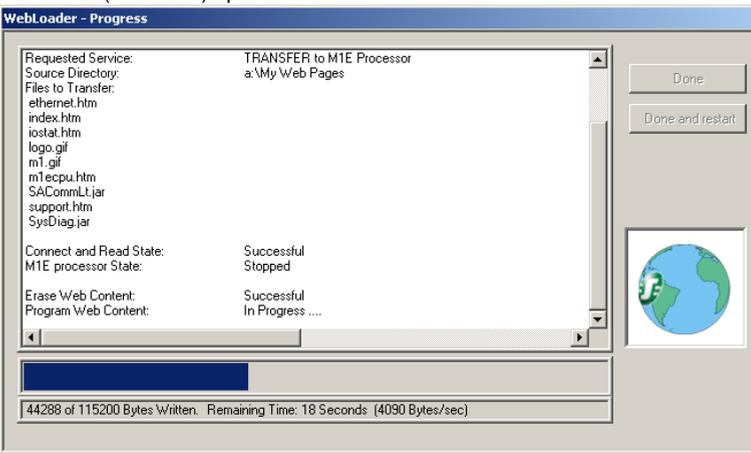**Displaying the Progress of the Transfer Operation**

The **WebLoader - Progress** screen displays status information as the WebLoader transfers files.
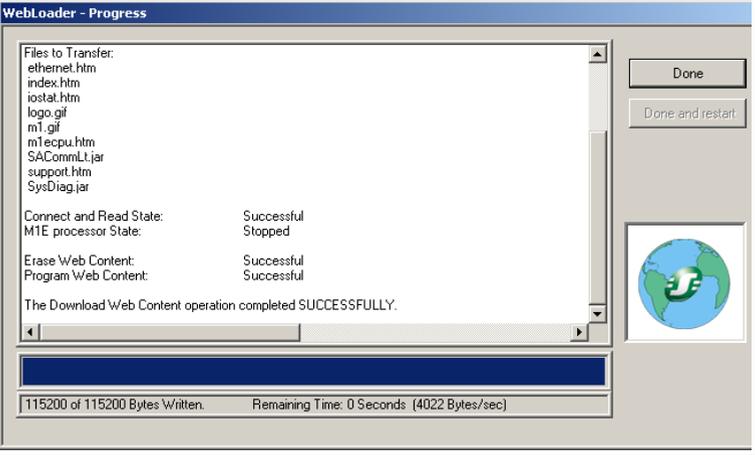A progress indicator bar appears at the bottom of the screen and displays
- Number of bytes transferred
- Time remaining
- Current transfer rate in bytes per second

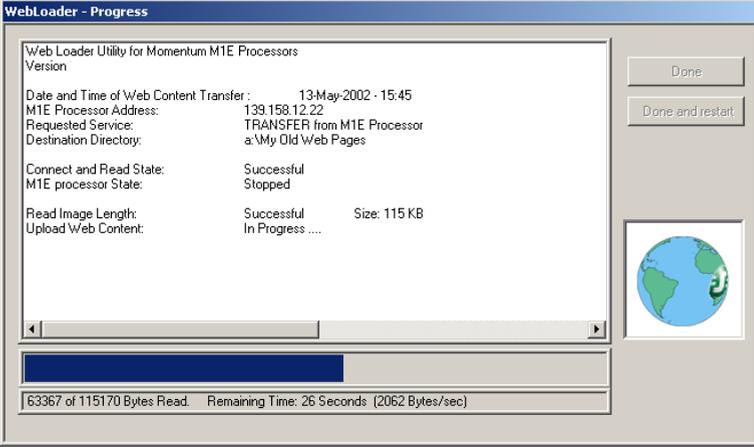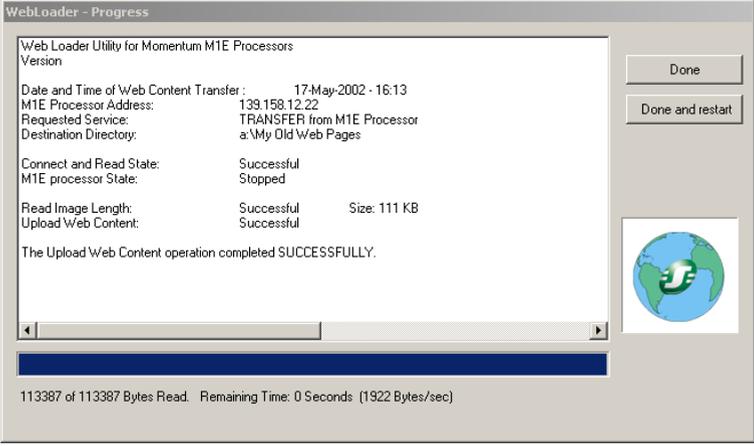**Using the WebLoader - Progress Screen for a Transfer To (Download) Process**

During the transfer to (download) process, the **WebLoader - Progress** screen displays the content to transfer and the progress of various steps executed in the transfer process.

Step	Action
1	The following is a sample view of the **WebLoader - Progress** screen **during** a transfer to (download) operation. **WebLoader - Progress** Requested Service: TRANSFER to M1E Processor Source Directory: a:\My Web Pages Files to Transfer: ethernet.htm index.htm iostat.htm logo.gif m1.gif m1ecpu.htm SACommLt.jar support.htm SysDiag.jar Connect and Read State: Successful M1E processor State: Stopped Erase Web Content: Successful Program Web Content: In Progress .... Done Done and restart 44288 of 115200 Bytes Written. Remaining Time: 18 Seconds (4090 Bytes/sec)

Step	Action
2	The following is a sample view of the **WebLoader - Progress** screen **after** a transfer to (download) operation. **WebLoader - Progress** Files to Transfer: ethernet.htm index.htm iostat.htm logo.gif m1.gif m1ecpu.htm SACommLt.jar support.htm SysDiag.jar Connect and Read State: Successful M1E processor State: Stopped Erase Web Content: Successful Program Web Content: Successful The Download Web Content operation completed SUCCESSFULLY. Done Done and restart 115200 of 115200 Bytes Written. Remaining Time: 0 Seconds (4022 Bytes/sec)
3	The following message displays when the process is complete ● The Download Web Content operation completed SUCCESSFULLY.
4	To complete the process, do either of the following: ● Click **Done** to complete the transfer process. or ● If you used the WebLoader Utility to stop the PLC, you can ● Click the **Done and restart** button, which will complete the transfer process and restart your PLC. In the screen capture in step 2, the **Done and restart** button is not enabled.

Using the WebLoader - Progress Screen for a Transfer From (Upload) Process

During the transfer from (upload) process, the **WebLoader - Progress** screen displays the progress of the various steps executed in the transfer process.

Step	Action
1	The following is a sample view of the **WebLoader - Progress** screen **during** a transfer from (upload) operation.
2	The following is a sample view of the **WebLoader - Progress** screen **after** a transfer from (upload) operation.
3	The following message displays when the process is complete ● The Upload Web Content operation completed SUCCESSFULLY.

Step	Action
4	To complete the process, do either of the following: ● Click **Done** to complete the transfer process. or ● If you used the WebLoader Utility to stop the PLC, you can ● Click the **Done and restart** button, which will complete the transfer process and restart your PLC.

"SA Comm Lite"
Software Development Kit

3

"SA Comm Lite" SDK

Important

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Disclaimier　　The use of this WebLoader Utility is not intended as a training tool or exercise, but requires experience and specific knowledge in the operation and behavior of the application you are attempting to control. Using the "SA Comm Lite" SDK also requires experience and specific knowledge in programming languages such as Java, as well as experience and specific training in Web content development. This express disclaimer does not modify or exclude Schneider Electric standard license terms.

What it Does   The "SA Comm Lite" SDK is provided for application engineers as a means to write Java programs that communicate with the Momentum M1E processors via the Modbus TCP/IP network. The SDK contains all the functionality needed to read and to write the values of Momentum M1E Processor's 'State RAM' addresses. These include discrete inputs, discrete outputs, input registers, and output registers. Included in the SDK are the following:

- *Developer's Guide for 'SA Comm Lite' Communications Library*, which describes the application programming interface (API) that is available for developers to use in writing their Java applets and applications that communicate with Momentum M1E controllers.
- API documentation, which provides detailed information on each of the Java classes that comprise the library.
- Example programs (two for a Java applet, and one for a Java application) that illustrate using the API.
- The Java Archive (JAR) file **SACommLt.jar**, which contains all the Java class files needed to compile and run a Java applet or application that uses SA Comm Lite.

The API documentation and the Developer's Guide are HTML-based documents and are viewed using a standard Web browser.

All of the above SDK components are included in the installation of the Momentum WebLoader Utility and are located in the "SDK" folder on the WebLoader's installation folder.