

SoMachine Software

SoMachine V4.1 SP1.2

Release Notes



Software Version: V4.1 SP1.2

Build: 15.07.09.01

Release Date: 09.07.2015

Development Stage: Final

This document contains important information about the SoMachine software patch. Please read the complete document before you run the product.

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1. SYSTEM REQUIREMENTS

1.1. Supported Operating Systems

This patch can be installed on the following operating systems:

- Microsoft Windows 7 Professional Edition 32 Bit / 64 Bit
- Microsoft Windows 8.1 Professional Edition 32 Bit / 64 Bit

SoMachine V4.1 SP1.2 is optimized for a 64 Bit Operating system (see 1.4. for details on 32 Bit systems).

1.2. PC Software Requirement

This software requires the following system components to run properly:

- Microsoft .NET Framework 3.5
- Microsoft .NET Framework 4.0

1.3. PC Hardware Requirement

EQUIPMENT	MINIMUM	RECOMMENDED
Processor	Intel® Core™ 2 Duo* or equivalent	Intel® Core™ I7 or equivalent
RAM	3 GB	8 GB
Free Hard Disk Space	8 GB including the memory space for the typical software installation, temporary space for execution and space for saving applications	15 GB for the full software installation, temporary space for execution and space for saving applications
Drive	DVD reader	
Display	Resolution: 1280 x 1024 pixel	Resolution: 1680 x 1050 pixel
Peripherals	A mouse or compatible pointing device	
Peripherals	USB interface	
Web Access	Web registration requires internet access system	

*Might run with less performance CPUs, but with restrictions.

For restrictions on usage of VM please check the “Limitations and Restrictions” chapter.

1.4. Restrictions on 32 Bit systems

In this version SoMachine is able to cope better with large projects regarding the memory consumption. Nevertheless, there is a technical limit of memory usage by 32bit operating systems. You can encounter this technical limit with a large SoMachine project.

Remark: Categorizing a project as large is difficult. It might help having a look at the total count of "objects" (like devices, POUs and Actions, DUTs, GVLs, Visualizations) as seen in the 'Statistics' tab of the 'Project Information' dialog. However, it could also be that one or several of these objects are extraordinarily large.

Note that 32 bit operating systems like Windows XP or Windows 7 32-bit have, by default, a maximum memory limit of 2GB assigned to user processes like SoMachine. You might consider increasing this limit to 3GB by using the /3GB boot option.

Before making this modification, be aware that this modification may not be compatible with your hardware or with other software installed on your system. It will probably not work with Video cards sharing memory with your computer as it is, for example, with an Intel HD Graphic Card.

If you experience any unintended, or what you may consider abnormal, behavior with the 3GB switch enabled, you may want to disable it and move to a 64 bit application.

Other hints for reducing SoMachine's memory consumption:

In case your large project contains independent parts (like independent root devices), you might consider splitting it into several smaller projects.

Note also that by keeping several editors open, this too will increase SoMachine's memory consumption. Consider closing unneeded editors for reducing memory consumption.

Windows 7:

How to enable the 3GB switch:

1. Start Menu -> All Programs -> Accessories
2. Right-click Command Prompt and Click Run as Administrator.
3. Enter "**bcdedit /set IncreaseUserVa 3072**"
4. Restart the computer.

How to disable the 3GB switch:

1. Start Menu -> All Programs -> Accessories
2. Right-click Command Prompt and Click Run as Administrator.
3. Enter "**bcdedit /deletevalue IncreaseUserVa**"
4. Restart the computer.

1.5. Installing .NET Framework 3.5 under Windows 8.1

Installing .NET Framework on Demand

Use the .NET Framework 3.5 or 3.5 SP1 for apps built for versions 2.0 and 3.0 as well as 3.5.

- .NET Framework 3.5 should be installed before installing any Windows language packs.
- Windows CardSpace is not available with the .NET Framework 3.5 on Windows 8.

Windows 8:

Method 1:

Enabling the .NET Framework 3.5 in Control Panel

- Open the **power user menu** and select **Control Panel**.
- In Control Panel, choose **Programs and Features**, choose Turn **Windows features on or off**, and then select the **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** check box. This option requires an Internet connection. You do not need to select the child items for Windows Communication Foundation (WCF) HTTP activation unless you are a developer who requires WCF script and handler mapping functionality.
- Select **Download files from Windows Update**.
- Wait while the previous versions of .NET Framework are downloaded and installed.
- Restart the system

If the installation of .NET Framework 3.5 fails, you may get one of the following error messages:
0x800f0906: "Windows couldn't connect to the Internet to download necessary files. Make sure that you're connected to the Internet, and click Retry to try again."
0x800F081F: "The changes could not be completed. Please reboot your computer and try again."

These messages may be displayed for the following reasons:

Your computer is not connected to the Internet. Please connect, and then retry the operation.

If you cannot connect to the Internet, follow the Method 2

Method 2:

To enable the .NET Framework 3.5 by using the Deployment Image Servicing and Management (DISM) command-line tool and specifying the installation media (ISO image or DVD) you installed Windows 8 from.

- In Windows 8, open a Command Prompt window with administrative credentials (that is, choose Run as administrator).
- To install the .NET Framework 3.5 from installation media located in the D:\sources\sxs directory, use the following command:

DISM /Online /Enable-Feature /FeatureName:NetFx3 /All /LimitAccess /Source:d:\sources\sxs

where:

- **/Online** targets the operating system you're running (instead of an offline Windows image).
- **/Enable-Feature /FeatureName:NetFx3** specifies that you want to enable the .NET Framework 3.5.
- **/All** enables all parent features of the .NET Framework 3.5.
- **/LimitAccess** prevents DISM from contacting Windows Update.
- **/Source** specifies the location of the files needed to restore the feature (in this example, the D:\sources\sxs directory).

Please refer following link for additional information:

<http://msdn.microsoft.com/en-us/library/hh506443.aspx>

2. IMPORTANT INFORMATION

2.1. Installation

The installation of this product can only be done on a PC where SoMachine 4.1 SP1 is already installed. In this case an update will be performed. Otherwise it is necessary to install SoMachine 4.1 SP1 before.

2.2. Changes compared to SoMachine V4.1 SP1

2.2.1. Improvements in SoMachine V4.1 SP1.1

- New ModbusTCP Slave library for HMISCU devices
- Performance improvements in several use cases (depending on the project):
 - General Ladder performance on opening and editing POU's
 - AutoDeclare
 - Open projects
 - Build (All)
 - Clean (All)
- Memory consumption optimized
- Ladder Editor: Fixed an issue with function calls in parallel branches
- Performance improvement on opening projects with many libraries
- Direct Addressing in Network Variable List is now possible
- Softmotion: Fixed an issue on scaling factor with non-integral modulo value

2.2.2. Improvements in SoMachine V4.1 SP1.2

- Fixed an issue with writing/forcing variables without address information in online mode
- Support for Vijeo Designer 6.2 SP3
 - New HMIGTU device family
 - New iPC devices
 - Fix for HMISCU
- Fix for Altivar71 (see below 2.3)
- Corrections for OnlineHelp TM3 Safety
- Fix for TM3 Thermocoupler
- Improvement of performances after a modification of GVL
- Fixed an issue that after update device the device is in simulation mode
- Fixed an issue that after creating a NVL SoMachine is not responding
- Fixed an issue with the device filter inside the new project assistant
- Global variables can now be published using the software catalog

ATTENTION

Vijeo Designer 6.2 SP3 or higher is absolutely necessary to connect the above mentioned HMIGTU and iPC devices.

2.2.3. Improvements in SoMachine V4.1 SP1.2 build 15.07.09.01

- Corrections of the LMC078 chapter in the OnlineHelp

2.3. Documentation changes for Altivar71_control

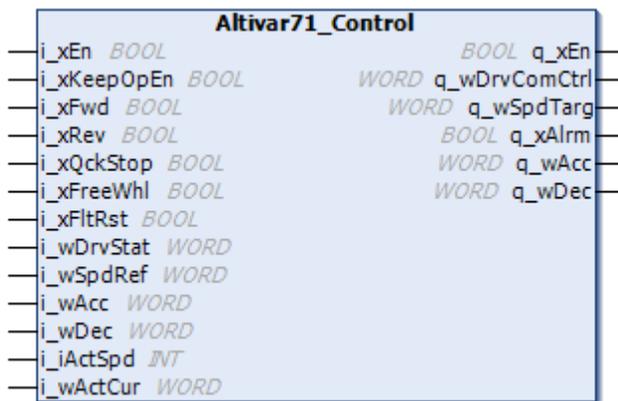
General Purpose:

The already existing function BRH4 implemented in the Altivar 71 device can help to prevent suspended loads from falling for the rare case when the holding brake fails (see documentation of the Altivar 71 device).

The BRH4 function uses the encoder feedback to detect movement of the axis, after the brake should have been closed. If a movement is detected, the drive applies current to the motor in order to hold the load.

However, when Altivar71 is controlled via communication, the BRH4 function works only, if the drive is in state "Operation Enabled".

Modification of Altivar71_Control Function Block



Normally, the Altivar71_Control function block sets the drive to state "Switched On" as soon as there is no any direction command applied ($i_xFwd = FALSE$ and $i_xRev = FALSE$) and the actual velocity and actual current decrease to zero, and thus the BRH4 function does not work.

The improvement of the Altivar71_Control function block consists in a **new input i_xKeepOpEn**, which allows keeping the Altivar 71 in state "Operation Enabled", in order that the BRH4 function can work.

The new behavior becomes active after the first direction command ($i_xFwd = TRUE$ or $i_xRev = TRUE$) until the Function Block is disabled with $i_xEn = FALSE$.

The default value for the **new input i_xKeepOpEn** is FALSE, which means the default behavior of the Altivar71_Control FB is the same as in the past.

To get the new behavior (i.e. keeping Altivar71 in state "Operation Enabled" and making use of the BRH4 function) two steps have to be performed:

1. activate the BRH4 function, e.g. HMI, SoMove or within the application
2. set the **new input i_xKeepOpEn** of the Altivar71_Control to TRUE

NOTE: In case you were updating a project, the new input of the Altivar71_Control FB will not be initially visible. To make it visible use the contextual **ResetPins** command on the box in CFC and the **UpdateParameters** command in FBD/LD respectively.

2.4. Limitations and Restrictions

SoMachine Software

Installation

- You must have an already installed SoMachine V4.1 SP1 or V4.1 SP1.1 as a minimum requirement
- Installation of SoMachine V4.1 SP1.2 requires administration rights

Virtual Machine usage

- When using a VM running SoMachine V4.1 SP1, be sure to fulfill the minimal requirements especially for RAM, hard disk space and number of Cores inside the VM. Otherwise unexpected errors may occur. For example: out of memory exception when installing SoMachine V4.1 SP1.1

User rights

- When applying user rights configuration on a target, the new configuration might not be taken in account for connections that are already open. In order to be sure the configuration is fully applied, you should close all connections to this target by either rebooting the target or disconnecting all cables (Ethernet and Serial) for at least 1 minute.
- If you set Engineering Access to "Operate", "Program" or "Administrate" for a specific user, it will also activate Data Access for this user.
- Currently, it is not intended that the User Rights feature be used to protect the SoMachine project against malicious access, but rather to prevent mistakes from trusted users. If you want to protect your entire project, use the project encryption option instead. If you want to protect only a part of your code inside the project, the best option is to put this code inside a compiled library.

Restrictions regarding compatibility of projects created with SoMachine V3.1 or earlier

- Firmware versions included in SoMachine V4 are not compatible with prior versions of SoMachine, like V3.1 for example. If you want to use a SoMachine V3.1 project, you must ensure that your runtime version of the controller corresponds to a SoMachine V3.1 firmware version. If this is not the case, either you downgrade your firmware to the correct version, or you upgrade your SoMachine V3.1 project to SoMachine V4. Please refer to the "SoMachine Compatibility and Migration" guide for more details.
- Some critical hotfixes were provided to libraries in SoMachine 3.1. If you use a project from SoMachine 3.1 which use the library versions without the critical hotfix you will get a compiler error. In this case you can find the corrected version of the library in the Folder "C:\Program Files(x86)\Schneider Electric\SoMachine Software\4.1\LogicBuilder\Support". Please install this library version using the Library Repository dialog inside LogicBuilder from the Tools menu. You need to restart SoMachine afterwards to apply this changes.
- Some compatibility problems with old projects of SoMachine V1.1 still exist. Please update your projects to the SoMachine V3.1 before updating to SoMachine V4.1.

- When loading a SoMachine V3.1 project in SoMachine V4.1 several update dialogs may appear. Please confirm all dialogs to update your project. If any errors occur, they can be viewed in LogicBuilder.
- When updating a SoMachine V3.1 project in SoMachine V4.1 you may get compiler errors because the extension for libraries is missing. You need to add this extension to fix the compiler errors (e.g. GET_STATE -> CIA405.GET_STATE).
- The new feature to map variables on single bits is only offered for devices that are created with version SoMachine V4 or later.
If a SoMachine project was updated from an older version, this feature is not available for the existing / updated devices. To make it available, you have to create a new device and delete the old one.
- ModbusIOScanner: Read/Write (FUNC23) is no longer transformed automatically to Read (FUNC03) and Write (FUNC16) when the slave doesn't support the Read/Write function. The application needs to be modified to manually separate the Read/Write function into one Read and one Write.
- In SoMachine V3.1, it was possible to use internal variables implicitly created when adding a CANopen slave to access some information on the current state of the device. For example, MyOTB.nStatus or MyOTB.bSlaveAvailable. These internal structures are no longer supported in V4. Instead, use the GET_STATE function blocks of the CIA405 library to retrieve the state of your CANopen slaves.
- While using the '3S CanOpenStack' library inside your project you might encounter the build error "C0035: Program name or function block instance expected instead of 'xxx'.", where 'xxx' is a POU inside your project (for example a POU named 'START' or 'STOP').
- As the library '3S CanOpenStack' is of the category 'Intern' (i.e. not intended for direct usage), we recommend setting the checkbox "Only allow qualified access to all identifiers" in the "Properties" dialog of this library for overcoming those build errors. While updating a project from SoMachine V3.1 with HMISCU/XBTGC device and containing the HSC and PTO_PWM modules, the update leaves modules in error with red crosses. To fix it, you should update the device by right-clicking on the HMISCU/XBTGC node and select "Update Device..."
- When updating an application from SoMachine V3.1, it may be that variables defined in a GVL of a library are not correctly shared in Symbol Configuration editor. In this case, a message will appear in the build message box: "The POU xxx is no longer available within your compiled application but it is still configured in the symbol configuration". To be able to share again this variable in the symbol configuration, you can open the symbol configuration editor inside the updated project in SoMachine V4.1, deselect the variable that cause(s) the problem(s), close symbol configuration editor, reopen it, build the application and select the variable again.
- In SoMachine 3.1 a "Remote Connection" tool was available for connecting to controllers in remote subnets. In SoMachine V4.1 this can be performed via the "Controller Selection" dialog (by using the "Remote TCP" connection modes). Especially for connections via OPC, the "Diagnostics" tool may be used for establishing a remote bridge connection to a controller.
- When building a legacy application (from SoM V3.1 or earlier) with SoM V4.1 you might encounter "Internal Error in Statement" messages if you use direct addresses of the form "myvar AT %Mn : BOOL" in your variable declarations. You can skip this message by selecting "Ignore". However, build errors are generated for this usage. To overcome those, replace the address declaration, using the form "myvar AT %MXn.0 : BOOL".

General compatibility limitations

- While updating a legacy project file containing devices for which no new device description files are installed in the current SoMachine device repository, these devices will not be recognized by SoMachine.

In particular, this might be case for (customer) devices imported from EDS files.
 To avoid this, install these devices prior to updating your project.
 Generally, consider too the information inside the chapter "Migrations Considerations" in the "SoMachine Compatibility and Migration User Guide".

- When updating an application to SoMachine V4.1 SP1.2 , consider the following:
 - if choosing YES in the "Project Update" dialog and un-selecting "Update All libraries", this will lead to an update of placeholder libraries.
 - if library parameters of a POU were renamed between versions, the old parameters names will still be used in the POU code. To use the new parameter names, the command "Update Parameters" has to be executed manually for the corresponding POU call usage.

Compatibility

- SoMachine V4.1 SP1.2 is intended to update SoMachine V4.1 SP1 or SoMachine V4.1 SP1.1

Viejo Designer

- For "XBTGT with Control" devices, the "Upload project from controller" command does not work. If you try to use this command it will return an error: "No source archive available on the PLC". Refrain from using the "Upload project from controller" command for "XBTGT with Control" devices.
- The HMIGTU can only be used when latest Viejo Designer 6.2 SP3 is installed. When using this HMIGTU device with an older Viejo designer an incorrect device entry will be added and a connection to this device cannot be established. As SoMachine V4.1 SP1.2 software package does not contain Viejo Designer 6.2 SP3 you have to install it separately through SESU.
- An error can occur when you perform a "Download Target" to an HMI device by using the "SoMachine" protocol inside Viejo Designer (started from SoMachine). If the download does not work you need first perform a "Multiple Download" to the HMI device from Logic Builder (or from SoMachine Central). Thereafter, you will be able to use the "Download Target" in Viejo Designer with the "SoMachine" protocol.

2.5. List of integrated components

Component	Version
Central	4.1.0.5
Core	4.1.0.7
LogicBuilder	4.1.0.6
ModbusTcpSlave HMISCU	4.1.0.1
SEMAltivar AddOn	4.1.0.1
OnlineHelp Fix	4.1.0.2
Hoisting Library	4.1.0.2
TM3 Thermocoupler	4.1.0.1
HMIGTU Support for Viejo Designer 6.2 SP3	4.1.0.1