SIEMENS

SIMATIC

Readme

Readme

Validity 1

Improvements in STEP 7 2

Improvements in WinCC 3

Improvements in WinCC Unified 4

03/2024
A5E53403219-AA

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens Aktiengesellschaft. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Siemens Aktiengesellschaft
Digital Industries
Postfach 48 48
90026 NÜRNBERG
GERMANY

A5E53403219-AA
Ⓟ 01/2024 Subject to change

Copyright © Siemens 2023 - 2024.
All rights reserved

Table of contents

1 Validity 5

2 Improvements in STEP 7 7

2.1 Improvements in Update 1 7

3 Improvements in WinCC 11

3.1 Important notes 11

3.2 Improvements in Update 1 12

3.3 Runtime Advanced 13
3.3.1 Validity 13
3.3.2 Important notes 13
3.3.3 Improvements in Update 1 13

3.4 Runtime Professional 14
3.4.1 Validity 14
3.4.2 Important notes 14
3.4.3 Improvements in Update 1 14

3.5 Panel 16
3.5.1 Improvements in Update 1 16

4 Improvements in WinCC Unified 17

4.1 Validity 17

4.2 Important notes 18

4.3 Important changes in behavior 20

4.4 Addressing of screen objects in functions 21

4.5 Improvements in Engineering and Runtime 22
4.5.1 General improvements in Update 1 22

4.6 Unified Engineering 24
4.6.1 General improvements in Update 1 24

4.7 Unified PC 26
4.7.1 General improvements in Update 1 26
4.7.2 Important notes (Unified PC) 29

Validity

1

Validity

This update is valid for the following products:

- STEP 7 Basic V19
- STEP 7 Professional V19
- WinCC Basic V19
- WinCC Comfort V19
- WinCC Advanced V19
- WinCC Professional V19
- WinCC Unified V19
- TIA Portal Openness V19

Note

If you modify your system after installing the update with the product DVD, you will have to perform the update again.

Improvements in STEP 7 2

2.1 Improvements in Update 1

This update contains the following improvements and changes:

Working with the TIA Portal

Stability when working with the TIA Portal has been improved, partly based on the feedback from returned crash reports.

CA certificates of projects from TIA Portal < V17 are not accepted when connecting from/to S7-1500 CPUs

Secure communication from/to S7-1500 CPUs with firmware V3.1 cannot be established if CA certificates are used and the project in use was created with TIA Portal < V17. These CA certificates are not accepted because the "KeyUsage" property is missing and the property "BasicContraints" is not set as "critical".

In this case, follow these steps:

1. Create a new CA certificate with TIA Portal V19.
   - To do this, open the certificate manager under "Project tree > Security functions".
   - Call the context menu command "Create" in the table of the certificate authority (CA). The "Create certificate" dialog opens.
   - Make the desired settings for the new CA certificate and click "OK".
2. Export the newly created CA certificate as a certificate file (PKCS12) with the file extension ".p12".
3. Delete the newly created CA certificate, otherwise it will not be possible to use it in the next action step.
4. Replace the original CA certificate with the exported CA certificate.
   - To do this, open the certificate manager under "Project tree > Security functions".
   - Call the "Replace" command in the context menu of the original CA certificate.
   - In your file system, select the previously exported certificate file with the file extension ".p12" and click "Open".

   All derived device certificates are automatically digitally signed with the renewed CA certificate.
5. Then download all affected devices with the updated certificates.

Long-term project trace - abort of the display when renaming a variable

If you rename a measured variable during the recording, the device-specific long-term project trace configuration and the installed long-term project trace become inconsistent.

The device-specific signals are not displayed anymore in the time diagram.

The signals not displayed anymore continue to be recorded and saved in the target path. No data will be lost.

Change the variable name back to make the signals visible again. When the device-specific long-term project trace configuration is consistent again with the installed long-term project trace, all signals appear again in the time diagram.

Symbolic access during runtime

The instructions "IS_ARRAY", "CountOfElements" and "TypeOfElements" now also support variables of the data type "ResolvedSymbol". With these instructions you can check whether a dissolved symbol points to an ARRAY and determine the number or the data type of the ARRAY elements.

Example:

```
myTag : ResolvedSymbol
myElementCount : Int
IF IS_ARRAY(#myTag) THEN
   #myElementCount := CountOfElements(#myTag)
END_IF;
```

Importing SIMATIC AX libraries into TIA Portal

Library elements from SIMATIC AX run on the following target systems:

- S7-1500 with FW version 2.9 or higher.
- S7-1500V (VPLC)
- SIMATIC software controllers

The SIMATIC AX website can be reached under: https://console.simatic-ax.siemens.io (https://console.simatic-ax.siemens.io)

Optimization of the configuration data

If you use TIA Portal V19 Update 1 to open a project saved with V19, an optimization of the configuration data is carried out for performance reasons. To retain these improvements, you must save your project.

Syntax of named value data types

The following syntax is correct for the declaration of named value data types:

In contrast to the syntax description in the documentation, the pragma "{ PUBLISHED := 'TRUE|FALSE' }" is located after the declaration "TYPE".

```
NAMESPACE <name>
 TYPE
```

```
  { PUBLISHED := 'TRUE|FALSE' }
   (
    <NAME_1> := <Value_1>
    <NAME_2> := <Value_2>,
    <NAME_3> := <Value_3>
   ) := <Default>;
 END_TYPE
END_NAMESPACE
```

Improvements in WinCC

3

3.1 Important notes

This page contains important information about product properties

Upgrade to V19 Update 1

If you use TIA Portal V19 Update 1 to open a project saved with V19, an optimization of the configuration data is carried out for performance reasons. To retain these improvements, you must save your project.

3.2 Improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved, among others, on account of the feedback received.

3.3 Runtime Advanced

3.3.1 Validity

Validity

This update is valid for the following products:

- WinCC Runtime Advanced V19

Note

If you modify your system after installing the update with the product DVD, you will have to perform the update again.

3.3.2 Important notes

This page contains important information about product properties

3.3.3 Improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved, among others, on account of the feedback received.

3.4 Runtime Professional

3.4.1 Validity

Validity

This update is valid for the following products:

- WinCC Runtime Professional V19

Note

If you modify your system after installing the update with the product DVD, you will have to perform the update again.

3.4.2 Important notes

This page contains important information about product properties.

PLC code view

Data blocks whose name contains a point, e. g. "Block2.DB", cannot be displayed via C-script in the PLC code view.

Alarm control

"AutoScroll" is deactivated by default for the following alarm list types. This means the vertical scroll bar is displayed and manual navigation is possible:

- Historical alarm list (long-term archive)

"AutoScroll" is activated by default for the following alarm list types, this means the vertical scroll bar is hidden and manual navigation is not possible:

- Alarm list
- Historical alarm list (short-term archive)
- Disabled alarms

"AutoScroll" can be activated or deactivated with the button in the toolbar.

3.4.3 Improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved based on the feedback received and other factors.

3.5 Panel

3.5.1 Improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved, among others, on account of the feedback received.

Improvements in WinCC Unified

4

4.1 Validity

Validity

This update is valid for the following products:

- WinCC Unified V19
- WinCC Unified Runtime V19

Note

If you modify your system after installing the update with the product DVD, you will have to perform the update again.

4.2 Important notes

This page contains important information about product properties.

If you use TIA Portal V19 Update 1 to open a project saved with V19, an optimization of the configuration data is carried out for performance reasons. To retain these improvements, you must save your project. These improvements may also require you to recompile the PLC.

Previously installed versions of WinCC Unified

If you have V16 installed and want to upgrade to V19 with the latest update, it is recommended that V16 be uninstalled first.

Microsoft ODBC Driver for SQL Server: Security update

Microsoft ODBC Driver for SQL Server has been updated in V19 Update 1.

This new driver version eliminates vulnerabilities CVE-2023-36785, CVE-2023-36730, CVE-2023-36728, CVE-2023-36420, CVE-2023-32027, CVE-2023-32026, CVE-2023-32025, CVE-2023-29356, CVE-2023-23375, CVE-2023-28304 and CVE-2023-24607.

You can find more information using the CVE number here.

Configuration of the column width

You can configure maximum and minimum column widths in engineering in the properties of a control.

These settings are not supported in Runtime by the following controls:

- Alarm control
- Parameter set control
- Table view
- Value table

Renewed loading of the Unified Panel after updating of the CPU configuration

If the configuration of the CPU is changed and loaded into the control unit, the PLC communications certificate of the control unit is updated.

In this case the Unified Panel connected with the CPU also has to be reloaded. After loading, the panel trusts the PLC certificate.

Cloning a client rule in My WinCC Unified

When you clone a client rule, the PIN configured in the "Kiosk" facet at the original rule is not applied to the clone.

Configure a new PIN in the cloned rule.

Parameter set control: Importing parameter sets

If no changes are made to a parameter set after an export, the status text "Import failed" is output.

I/O field: Scripting

The properties "MeasurementUnit" and "MeasurementUnitType" of an IO field are reserved in scripting for future versions.

Tags: Scripting

The sequence of the parameters of the method "Tag.WriteQCD" matches the sequence in the documentation.

The correct syntax is "Tag.WriteQCD([value], [writeType], [TimeStamp], [QualityCode])".

Scripting: Access to collection object

Use the following syntax variants to access individual elements of collection objects, such as "HmiTrendAreaCollection" or "HmiYValueAxisCollection" in scripts:

- item.TrendAreas(0).LeftValueAxes(1).EndValue = 111;
- item.TrendAreas[0].Item(0).LeftValueAxes[1].Item(0).EndValue = 111;

Access with square brackets to individual elements is only possible with the add-on of the method "Item(0)".

Faceplates

When loading a screen for the first time, the dynamic content of text fields in faceplates may not be displayed correctly. In this case, perform a screen or language change.

4.3 Important changes in behavior

Contents

4.4 Addressing of screen objects in functions

In some functions, e.g. FindItem, SetPropertyValue and GetPropertyValue, the object path is used to address a screen object.

Addressing with absolute object paths

The object path of screen objects consists of the names of screen windows (ScreenWindows) and screen objects (ScreenItems). The names are connected according to their hierarchical arrangement using a slash ("/"). The object path ends with the screen object to be addressed. Screens (Screens) and their names are not used in the object path.

The absolute object path addresses a screen object starting from the screen window at the highest level (TopLevelScreenWindow). Note the following:

- A single slash "/" at the start of the object path addresses a top-level screen window whose name must follow, e.g. "/Main screen window".
- A top-level screen window generally has no name. By using a double slash "//", all screen objects of the screen in the top-level screen window can be addressed, e.g. "//Button_1".
- If a main screen window has been defined in the screen management, it becomes the top-level screen window and has a name. All references must include the name of the main screen window, e.g. "/Main screen window_1/Button_1". References with double slashes "//" no longer function and must be adapted.
- Alternatively, the tilde character "~" addresses the top-level screen window in the screen window's own screen hierarchy, e.g. "~/Button_1".
- Within a popup window (PopupScreenWindow), the popup window itself is the top-level screen window and is addressed with double slashes "//" or its own name, e.g. "/Popup window_1". Scripts within popup windows can address an unnamed top-level screen window outside the popup window only using `UI.Windows(0).Name`.

Examples of the use of absolute object paths

- Addressing using the screen window's own screen hierarchy:
  ```
  UI.SysFct.SetPropertyValue('~/Screen window_1/Screen window_2/
  Circle_1', "Visible", 0);
  ```
- Addressing using an unnamed top-level screen window:
  ```
  UI.SysFct.SetPropertyValue('//Screen window_1/Screen window_2/
  Circle_1', "Visible", 0);
  ```
  Please note that this notification cannot be used if a named top-level main screen window exists.
- Addressing using a main screen window of the screen management:
  ```
  UI.SysFct.SetPropertyValue('/Main screen window_1/Screen window_1/
  Screen window_2/Circle_1', "Visible", 0);
  ```
- Addressing using an unnamed top-level screen window from a popup window:
  ```
  UI.SysFct.SetPropertyValue('/' + UI.Windows(0).Name + '/Screen
  window_1/Screen window_2/Circle_1', "Visible", 0);
  ```

4.5 Improvements in Engineering and Runtime

4.5.1 General improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved based on the feedback received and other factors.

My Controls

If automatic login to Runtime has been enabled, access control now also works correctly for My Controls.

Slider

Sliders accept only numerical values in Runtime:

Non-numerical values are set to 0 when the slider is initialized in Runtime. Changes of values to non-numerical values in Runtime are not processed.

Reports

- You have the option in report templates of assigning a text list to a numerical column of a data source item of a time series segment. Instead of the numerical value, the report outputs the text list entry assigned to the numerical value.
  If the text list has been changed in Engineering, you also see the correct list entries in the Excel add-in after a delta download of the change to Runtime.
- Report templates can be configured in such a way that the values of the data table of a segment are visualized in an Excel chart.
  The following chart types, together with their subtypes, are now supported:
  - Column
  - Line
  - Pie
  - Bar
  - Area
  - XY (Scatter)
  - Radar
  - Treemap
  - Sunburst
  - Histogram
  - Box
  - Waterfall
  - Funnel

  The interaction of data table and chart has been improved. A configured chart now always evaluates the entire range of the data table in the generated report.
- Report generation performance has been improved. Reports with time series segments containing large data volumes are now generated more quickly.
- The formula of a user-defined column can now also contain references to multiple cells of the same column.
- When you choose a USB flash drive connected to the panel as the Reporting database storage in Engineering, an SD card is no longer needed in the panel for reporting.
- The generation of reports on panels has been improved. You can now also choose SD cards and USB flash drives with NTFS format as the storage location for reports.

Simulation

For simulations on panels, the flashing of objects in the process screen has been improved when the flash rate of the first object to flash is set to "None".

4.6 Unified Engineering

4.6.1 General improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved based on the feedback received and other factors.

Screens

Screens have the "Offset" property.

- "Offset - left" defines the leftward shift of a screen in relation to the parent item.
  The "Offset - left" property has no effect if the "Alignment - horizontal" property is set to "Centered".
- "Offset - top" defines the downward shift of a screen in relation to the parent item.
  The "Offset - top " property has no effect if the "Alignment - vertical" property is set to "Centered".

The preview of the content of screen windows or faceplate containers has been improved.

Alarm control - Change of column header

The column headers of an alarm control can be changed:

- In "Properties > Miscellaneous > Alarm control > Columns > [x] column > Column header > Text".
- In the properties of the "Columns" collection on the right side of the Inspector window

Faceplates

Reading the property "ContainedType" of a faceplate container via Openness results in the correct type designation being output.

Logs - Logging mode "On change"

Use of the logging mode "On change" results in correct logging of the logging tags when the tag value of the linked process tag changes.

Custom styles in Runtime

Runtime starts correctly after addition of a custom style to the project.

Error in the synchronization of IDs when downloading projects

Synchronization of IDs has been improved to prevent erroneous ID conflicts when the project is downloaded. If an existing project has already been affected by this error, perform the following steps:

1. Download the complete project.
   The project download fails. The ID database is updated.
2. Compile the project.
3. Download the complete project again and select the option "Do not synchronize" under "Synchronize IDs".
   The project is completely downloaded. The IDs with errors are overwritten.

When you have performed these steps, you can download your project after the next change as usual and select any option for synchronization of the IDs.

Visual Studio Code extension: WinCC Unified JS Connector

The Microsoft Visual Studio Code extension "WinCC Unified JS Connector" manages the export and import of script modules.

With this extension you export script modules from the TIA Portal for external editing and make use of the functions of the external development environment. After editing, you import the script modules back into the TIA environment.

You can find more information in SiePortal: AUTOHOTSPOT.

4.7 Unified PC

4.7.1 General improvements in Update 1

This update contains the following improvements and changes:

Stability and performance

The stability and performance have been improved based on the feedback received and other factors.

Alarm log

Upgrading has been improved for alarm logs.

Alarm control

If an alarm has not been translated into a particular Runtime language, the associated English text is displayed.

A memory leak caused by flashing in the alarm control has been corrected.

Changes to the columns of an alarm control are displayed correctly.

The text in the alarm control is displayed clearly.

The sorting of the column headers in the alarm control has been improved.

The sort sequence in the grid is updated in accordance with the sort sequence in the Sort dialog box.

When "Sorting direction" is set to "None" in the alarm control properties and 1500 alarms have been triggered in Runtime, the data is displayed correctly following a change from the online view to the logged alarms view.

Alarms are displayed correctly after a language change in Runtime.

If descending sorting direction is selected for the logged alarms, more than 1000 alarms are now displayed.

The most recent logged alarms are displayed correctly.

The alarm selection functionality for an alarm control with more than 3500 triggered alarms has been improved.

The "Set time" functionality has been improved and the time of the alarms is displayed correctly.

Reading nested user data types with ODK

Instances of nested user data types are now read correctly.

Value table

The scroll bar in the trend companion is displayed correctly.

Trend control

If an IO field has been grouped with another object, the tag of the IO field is displayed correctly in the trend control in Runtime.

Function trend control

After selection in the selection dialog, trends are displayed correctly in Runtime.

Process diagnostics

PLC code view

The display of the PLC code view has been improved when scrolling horizontally to the left.

The constants in the footer and header areas of comparison operations are displayed correctly, i.e. value is displayed first, followed by the name of the constant.

The transition network of S7 GRAPH blocks is displayed in full in the PLC code view.

After a change of values, the PLC code view is updated and the values are displayed correctly.

System diagnostics control

The PLC name is displayed correctly in Runtime.

Import of changed audit files

Manipulations of exported audit files are marked in red when imported.

Parameter set control

A user data type with elements of the type "String" or "WString" that have a defined character length can be used in parameter set types. The defined character length is applied correctly to the parameter set element in the parameter set control.

Usage of the "Allow operator control" property leads to the correct behavior of the operability of the parameter set control in Runtime.

When using a resource list as a parameter in a parameter set type, the user interface of the parameter set control is displayed correctly in runtime.

Move operations in screen windows

When the interactive zooming of a screen window is deactivated, the "Move" function now functions correctly.

Flashing during color dynamization

If you have configured different flashing frequencies for the color dynamization in the project, first start the dynamization with the "Fast" frequency. The flashing then works correctly with all color dynamizations.

Touch operation

The swipe touch operation functions correctly.

IO field

The connection via OPC UA at the "IO field" screen object is retained after a screen change.

Faceplates

When a faceplate is opened in a popup window, the font and font size of the title bar is displayed correctly.

Script-based changes to the value of the "Visible" property of a faceplate are applied correctly in Runtime.

My WinCC Unified

- Logon and logoff have been improved. The following behavior, which occurred occasionally in the past, has been corrected:
  - Display of an empty screen after logon.
  - Unintended logoff by a mouse movement.
- Client names must be unique. Names that differ only in the case of one or more letters are not unique.
  When rules are imported, the case of letters in the client name is now also checked.

Reports

You have the option of defining a timeout for the generation of reports in PDF format:

1. Open the following file:
   <Unified installation directory>\bin\REPCreator\js\installerConfig.json
2. Add the attribute "timeout" and a time value in milliseconds to the entry in the file.
   Example: `{"useApp": "Excel", "path": null, "timeout": 60000}`

The timeout applies to all report tasks with the target format PDF. If the timeout is exceeded, the generation is canceled. A status alarm is generated in the control

Time format for LTime tags in reports

If a single value segment of a report template reads a tag or logging tag of the type LTime, you can now specify in the report template in which time format the tag value is output in the generated report.

Follow these steps:

1. In the report template, read the runtime data into Excel once.
2. Format the time value read into the cell as required.

When the report is generated, the formatting is retained.

4.7.2 Important notes (Unified PC)

This page contains important information about product properties.

Previously installed versions of WinCC Unified

If you have V16 installed and want to upgrade to V19 with the latest update, it is recommended that V16 be uninstalled first.

Windows 11 Home as operating system

Installation of Runtime on a PC with Windows 11 Home is only suitable for simulation of Runtime on the Engineering PC.