

# Pro-face BLUE Open Studio® 2023.1 Patch 1 (23.1.001) Release Notes

Last revision: 10/8/2025

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Pro-face BLUE Open Studio 2023.1 Release Notes

## Patch Installation

This patch is installed as a full installation. See [Installation Guide](#) below for instructions.

## Software Coexistence

### Industrial Graphics Coexistence

BLUE Open Studio 2023.1.001 and earlier versions of Pro-face BLUE Open Studio (back to BLUE Open Studio 2020) use different versions of Industrial Graphics that cannot coexist. If more than one version of Pro-face BLUE Open Studio with Industrial Graphics is installed on the same computer, Industrial Graphics won't work for any of them, and attempting to use Industrial Graphics may cause an abnormal program termination.

To install BLUE Open Studio 2023.1.001 with Industrial Graphics on a computer that already has an earlier version of BLUE Open Studio installed, first uninstall the earlier version of BLUE Open Studio or use the installer (**setup.exe**) to modify the previous installation to remove Industrial Graphics.

### AVEVA System Platform Coexistence

BLUE Open Studio 2023.1.001 is compatible with AVEVA Historian Server 2023 and later. If you are using an older version of AVEVA Historian Server, upgrade to AVEVA Historian Server 2023.

## New Features and Enhancements

This is a summary of important features and enhancements that have been introduced in this version.

### Password security

This patch release modernizes the password hashing algorithm. Prior to this patch, password hashing relied on the MD5 cryptographic hash algorithm (128-bit), which is now considered insecure. With this patch release, password hashing will use PBKDF2 (256-bit), which minimizes the risk from brute force attacks. This change addresses CVE-2025-9317.

Because of the new password hashing algorithm, once the user updates the application, it will no longer open in the previous version.

The TCP Client now requires Data Protection (DPAPI) to be enabled for secure operation. When opening the project in the new version, if the user has a TCP Client worksheet with security enabled, they need to ensure that data protection is enabled and re-enter their username and password.

### Version compatibility and transfer limitations

Transferring a project that was updated to this latest version into a remote runtime that is running an older version will cause the project to be rendered incompatible and the remote runtime will not function.

## Deprecated or removed features

The following third-party components have been removed in this release:

.NET Framework 4.8 setup has been removed from the setup. Ensure that .NET Framework 4.8 is installed in your computer.

## Cybersecurity

The following third-party components (open source or proprietary) have been updated to address cybersecurity vulnerabilities:

- .NET Framework and CVE-2024-29059
- Chromium Embedded Framework and CVE-2025-2783, CVE-2025-4664, CVE-2025-5419, CVE-2025-6554, CVE-2025-6558

# Issues resolved in this release

This is a list of important issues that have been resolved in this version.

## Issues Reported by Our Users

These are issues that were reported by our users and then logged in our customer relationship management system. If you reported an issue to us, you should have been given a case number at that time. You can look for your case number in the list below.

Please note that documentation changes are not counted as resolved issues, so if you reported an issue and it was resolved by a documentation change (such as by clarifying a step in a procedure), then it might not be included in this list.

| Case No.               | ID                 | Description                                                                                                                                                                                                                                              |
|------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 960429562              | 3385538            | While filtering alarms, the Viewer started to freeze and needed one to two minutes to respond.                                                                                                                                                           |
| 960434145              | 3408572            | BLUE Open Studio 2023 saw perpetual licenses as expired.                                                                                                                                                                                                 |
| 960447756              | 3506220            | On touch screen devices running Mobile Access, buttons and pushbutton animations appear to remain pressed for a few seconds after they have been released.                                                                                               |
| 960450048              | 3545414            | A project that used OPC XML/DA worksheets could read data from an OPC DA server but could not write to it.                                                                                                                                               |
| 960450835              | 3477973            | An incorrect Simplified Chinese translation for the word "confirmation" was displayed when the "require confirmation" option in the command button was enabled. The word "confirmation" was shown in Traditional Chinese rather than Simplified Chinese. |
| 960455430              | 3511258            | A trend object that displayed historical data with mnemonics and class tags for the tag/field in the pen assignment did not take a different class tag value from Mobile Access when the class name was transferred from a button.                       |
| 960455430              | 3603121            | Mobile Access did not load historical trend data when array tags were used as custom properties.                                                                                                                                                         |
| 960459098              | 3514578            | Shared tags, if used only in an alarm worksheet and that were not used to trigger alarms, were detected as unused tags and removed from the project.                                                                                                     |
| 960470939              | 3566103            | Array tags from GVL in TwinCat v4024.56 were not imported.                                                                                                                                                                                               |
| 960471546<br>960471587 | 3559870<br>3571410 | Some custom widgets did not display on the local viewer.                                                                                                                                                                                                 |
| 960471597              | 3616092            | Gaps appeared in the Trend Logger display if the trend duration was greater than 9 or 10 hours.                                                                                                                                                          |
| 960476857              | 3571740            | The height and width resizing tools from the formatting options did not work for lines or for open and closed polygons.                                                                                                                                  |
| 960478267              | 3583073            | You could not install BLUE Open Studio 2023 on 32-bit versions of Windows 10.                                                                                                                                                                            |
| 960478571              | 3578870            | If Polish was selected as the language on the IDE, a screen with a Trend could not be opened on Mobile Access.                                                                                                                                           |
| 960487264              | 3660887            | Auto screen scaling was unable to correctly scale some Trend Control elements.                                                                                                                                                                           |
| 960499583              | 3683452            | The username tag was not changing from the guest user when the LogOn function was called from a script in a background task, and the Viewer was launched through RunStartup.exe.                                                                         |
| 960499662              | 3639095            | The Trend save trigger was not allowed on a thin client.                                                                                                                                                                                                 |
| 960504464              | 3650355            | After upgrading to BLUE Open Studio 2023.1, an application did not start up cleanly because of problems executing a RunVB script function.                                                                                                               |
| 960520615              | 3684141            | It was not possible to to identify which screens were linked to animation errors in output.                                                                                                                                                              |
| 960523039              | 3694442            | If a mono-spaced font was used for the legend section of the Trend Control, pen colors were not displayed.                                                                                                                                               |
| 960531721              | 3730687            | In Mobile Access, using the ShowInPlaceInput() function inside of a linked symbol resulted in the On Down or Built-in commands to not work outside the linked symbol.                                                                                    |
| 960536222              | 3735488            | A Trend Control object in Mobile Access showed an incorrect trend, even after a HotFix (3239438) was applied that addressed erratic behavior by the Trend Control in Mobile Access.                                                                      |
| 960542136              | 3736723            | New lines were not saved in a scheduler worksheet.                                                                                                                                                                                                       |
| 960545419              | 3780444            | The IDE froze while editing a text box or graphics, and the object properties could not be seen.                                                                                                                                                         |
| 960545867              | 3755469            | An application that used Industrial Graphics did not work as expected.                                                                                                                                                                                   |
| 960554095              | 3795120            | When CODESYS Tag Integration was used with IoT View, the application could not read strings.                                                                                                                                                             |
| 960570098              | 3842590            | After upgrading to version 2023.1, variables linked to OPC DA tabs did not appear.                                                                                                                                                                       |
| 960570448              | 3838530            | Industrial Graphic pushbuttons sometimes remained stuck in the down position after being released.                                                                                                                                                       |
| 960585943              | 3879113            | The database synchronization dialog was displayed erroneously.                                                                                                                                                                                           |
| 960653691              | 4097596            | The LDAP security system did not work properly when using the BLUE Open Studio 2023.1 Embedded HMI runtime.                                                                                                                                              |
| NA                     | 3730800            | The calendar custom widget did not work as expected.                                                                                                                                                                                                     |
| NA                     | 3720979            | The grid object did not work as expected if a row contained a line break.                                                                                                                                                                                |
| NA                     | 3641333            | After upgrading an application to BLUE Open Studio 2023.1, the Mobile Access Task did not start properly.                                                                                                                                                |
| NA                     | 3668871            | When the TreeView was used in JSON format, it did not function properly.                                                                                                                                                                                 |
| NA                     | 2117792            | Server tags in Mobile Access did not display updated values upon a first-time read from a screen script's OnWhile routine.                                                                                                                               |

# Pro-face BLUE Open Studio 2023.1 Release Notes

Last revision: 7/12/2024

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- Software Coexistence
- New Features and Enhancements
- Deprecated or Removed Features
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- Installation Guide
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## New Features and Enhancements

This is a summary of important features and enhancements that have been introduced in this version.

## Communication Drivers

We added or significantly improved the following communication drivers in this release:

| Driver | Description                                                                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ABBTf  | ABB Totalflow devices that support the native DB2 serial protocol using the TCI (Totalflow Communication Interface) library over TCP/IP.<br>Driver restored in this release. |
| ABKE   | Serial Communication with Allen Bradley devices Using DF1 protocol.<br>Driver restored in this release.                                                                      |
| BACSL  | Communication with master stations using the BACnet/IP or BACnet MS/TP protocol.<br>Driver restored in this release.                                                         |
| DNP    | Communication with slave devices (outstations) using the DNP3 protocol.<br>Driver restored in this release.                                                                  |
| XVGU   | USB Communication between Studio and Schneider Electric Harmony XVGU Tower Light devices.<br>Driver restored in this release.                                                |

For more information, see Issues Resolved for Specific Communication Drivers below.

## Industrial Graphics Improvements

There is improved support for Industrial Graphics in this release.

## Support for Import of SVG as an Industrial Graphic

The Industrial Graphic Editor supports import of Scalable Vector Graphics (SVG) as Industrial Graphics. A list of supported SVG elements can be found at [SVG Github](#). You can perform the following:

- Import an SVG into the Industrial Graphic Editor. The graphic elements are automatically converted to an Industrial Graphic, which can include many primitives.
- Insert the SVG while using the **Image** icon from the **Tools** panel of the Industrial Graphic Editor.
- Use SVG for the **UpImage** and **DownImage** on a button.
- Use SVG for the **Quality & Status** display icons under **Styles** configuration.

## Limitations of SVG Support at the Time of this Release

The following features are not supported at the time of this release:

- SVG animations are not yet supported, and any animation configured on a SVG element will not be imported.
- SVG Marker and Clip elements

## Mobile Access Improvements

### Grid Object Improvements

- Faster performance, for scrolling and for interacting with cells
- Faster performance for large data sets using pagination
- Page scrolling using the scroll bar

### TreeView Custom Widget Improvements

The TreeView custom widget, which is included as part of the Custom Widget Library, has been improved as follows:

- Users can filter the nodes that will be displayed at runtime.
- Users can set node icons dynamically during runtime:

## Linux Runtime Improvements

There are several improvements to the Linux runtime.

### Alarm, Event, and Trend History

- The history lifetime feature is now supported for Alarms, Events, and Trends.
- This feature allows better control of disk usage.

### Standard Driver Sheet Support

In addition to the MAIN DRIVER SHEET (MDS), you can create several standard driver sheets (SDS) for each driver. The standard driver sheets provide additional fields, which you can use to control communication.

### Tag Integration

You can browse the following Tag Integration sources to import device registers or server items directly into your project.

- RSLogix 5000 Family (ABCIP)
- Allen-Bradley PLC5, SLC500 (ABTCP)
- CoDeSys (COSYS)
- OPC UA servers

## Python Editor and Runtime

Global Procedures, Startup Scripts, and Background Scripts can now be written in Python using the new Python editor, in addition to the existing VBScript functionality. Features of the Python editor are:

- Implements and hosts Python 3.11.13.
- Unified namespace and support for specific Built-In Language functions.
- Support for external Python modules on all platforms based on architecture:
  - 32-bit on Windows and Windows IoT Enterprise.
  - 32-bit on Linux on arm.
  - 64-bit on Linux on arm64 or x86\_64.
- Python Runtime as a background task.
- Support for Windows and Linux runtimes.

### Limitations of Python Support in this Release

- Does not support graphic scripts.
- Does not support the local Viewer, the Studio Mobile Access (SMA) viewer, or Thin Clients.

## Deprecated or Removed Features

This is a summary of features that have been deprecated or removed from this version.

### OPC DA Client (Legacy)

BLUE Open Studio has supported two OPC DA interfaces: OPC DA Client (legacy) and OPC XML/DA. OPC XML/DA is a newer and more powerful OPC DA Client interface that is compatible with the older OPC DA Client (legacy) interface. Starting with this release, OPC DA Client (legacy) is disabled by default in new projects, though projects created in previous versions that use OPC DA Client (legacy) will function. OPC DA Client (legacy) will be fully deprecated in a future release of BLUE Open Studio. To prepare for the upcoming full deprecation, convert OPC DA Client (legacy) to OPC XML/DA.

## Global Procedures Import Function

The **Import** option for all Global Procedures worksheets (accessed on the context menu) has been removed.

## Issues Resolved in this Release

This release resolves the following issues reported by our users. If you reported an issue to us, you should have been given a case number at that time. You can look for your case number in the list below.

Documentation changes are not counted as resolved issues, so if you reported an issue and it was resolved by a documentation change (such as by clarifying a step in a procedure), then it might not be included in this list.

### Issues Reported by Our Users

| Case No.  | ID      | Description                                                                                                                            |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| 960126845 | 1616311 | GetUserPwdAging() function Return Values were not completely documented.                                                               |
| 960148620 | 1721779 | The Symbol Object Properties dialog "Use linked size" feature and special considerations for resizing linked symbols were not properly |

|           |         |                                                                                                                                                                                                                                      |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 960149050 | 1899490 | documented.                                                                                                                                                                                                                          |
| 960167245 | 2061373 | The Industrial Graphics graphics refresh rate was not documented.                                                                                                                                                                    |
| 960188673 | 1974501 | Industrial Graphics editor was freezing when saving certain symbols.                                                                                                                                                                 |
| 960193543 | 1981211 | Custom zoom property was not working on iOS thin clients. This item was resolved in a previous release.                                                                                                                              |
| 960195902 | 1969637 | Executing SetPassword() on Embedded HMI generated unexpected characters in Event Logger events.                                                                                                                                      |
| 960210402 | 2044600 | The limit of 999 Standard Driver Sheets for each project was incorrectly documented.                                                                                                                                                 |
| 960210897 | 2044748 | Hardkey license was not recognized if another USB dongle for licensing of 3rd party software was attached to the USB hub/port replicator.                                                                                            |
| 960216850 | 2070393 | The DBCursorOpenSQL and DBExecute interaction with SQL Stored Procedures was not documented.                                                                                                                                         |
| 960218655 | 2133076 | Industrial Graphics editor was freezing when saving certain symbols used in multiple screens.                                                                                                                                        |
| 960220573 | 2145930 | Rectangle object caption was not aligning correctly on Mobile Access. This item was resolved in a previous release.                                                                                                                  |
| 960220573 | 2149151 | The zoom action was not working correctly on Mobile Access. This item was resolved in a previous release.                                                                                                                            |
| 960222794 | 2149174 | MS SQL Server 2019 Express timestamps were incorrect.                                                                                                                                                                                |
| 960226126 | 2172147 | On Mobile Access, the Alarm Control Object (set to History) did not refresh the alarm list if using a tag as dynamic filter.                                                                                                         |
| 960246843 | 2261531 | Event log was recording incorrect previous value on tag changes received from an OPC UA client.                                                                                                                                      |
| 960250352 | 2270051 | Simultaneous Requests were no longer working.                                                                                                                                                                                        |
| 960257526 | 2307786 | Momentary Pushbutton events were not correctly blocked by security level.                                                                                                                                                            |
| 960257939 | 2306538 | Closed Polygon objects were changing shape and size when dragged from one place to another on a screen.                                                                                                                              |
| 960259629 | 2312147 | Using Trend worksheet Save On Trigger -> Second and Save On Tag Change at the same time generated redundant records.                                                                                                                 |
| 960259790 | 2314194 | Projects with several screens with background images caused abnormal program termination.                                                                                                                                            |
| 960263713 | 2329033 | Momentary button was launching E-Sign feature when the user did not have permissions to display this feature.                                                                                                                        |
| 960267281 | 2354232 | On Touch, On Touch Start, On Touch Delta, and On Touch Completed Command animation options were not available for Windows Embedded applications and were not properly documented.                                                    |
| 960278144 | 2391954 | Corrupted HST files were preventing normal startup and operation.                                                                                                                                                                    |
| 960279156 | 2400336 | HTML5Render.exe was not able to process 3D image rendering as well as Google Chrome or Microsoft Edge could.                                                                                                                         |
| 960280975 | 2407175 | The Studio hardkey was conflicting with a third-party hardkey, causing Studio not to recognize the hardkey license.                                                                                                                  |
| 960287427 | 2441271 | VBScript variables used in Command animations were logging false positive errors.                                                                                                                                                    |
| 960288515 | 2471217 | E-Signature Time-out feature of the security system was not working as documented.                                                                                                                                                   |
| 960289940 | 2486513 | Linked symbols appeared larger in Mobile Access than in the runtime, changing the look of grouped polygons.                                                                                                                          |
| 960292366 | 2464074 | When adding tags to an OPC UA Client worksheet using the UA browser, FLOAT/REAL types from the OPC UA server were not supported.                                                                                                     |
| 960298019 | 2486476 | On Double Click Command animation was not working properly when applied to a Text Box object.                                                                                                                                        |
| 960300547 | 2493189 | OPC UA client write commands were returning Bad Type Mismatch and resetting the tag to the old value.                                                                                                                                |
| 960303387 | 2504795 | OPC UA client write commands were timing out.                                                                                                                                                                                        |
| 960307522 | 2517119 | The TreeView custom widget did not refresh without trigger, and it did not include the ability to search for specific nodes using a search bar.                                                                                      |
| 960309252 | 2538426 | Startup value of class tag was missing on thin clients when the Scope was set to Local.                                                                                                                                              |
| 960315071 | 2550599 | Linux runtime was logging Windows error messages during startup.                                                                                                                                                                     |
| 960315402 | 2554314 | Combo Box Object was showing incorrect values and incorrect formatting when the values of the array tag data source changed.                                                                                                         |
| 960316637 | 2564118 | Alarm message colors were not updating correctly when the tag value changed from alarm at the same time as it was acknowledged.                                                                                                      |
| 960316737 | 2558581 | Simultaneous Requests were no longer working on Windows Embedded.                                                                                                                                                                    |
| 960317463 | 2559666 | HTML tags were not being removed properly from URL screen parameters.                                                                                                                                                                |
| 960317592 | 2582578 | When extending the LDAP schema to allow saving security rights, writing to the "proprietarySCADAInfo" attribute did not work correctly and generated an error stating "Warning! Security rights data from LDAP server is corrupted." |
| 960319515 | 2572470 | Trend data output with HST2TXT included 00:00:00 data from the day following the specified date range.                                                                                                                               |
| 960320795 | 2591305 | Studio Database Gateway errors occurred on Turkish OS.                                                                                                                                                                               |
| 960327206 | 2603727 | Saving and closing certain Industrial Graphics screens was slow because of tag validation.                                                                                                                                           |
| 960331853 | 2626378 | The failure of the Open() function to work correctly if passed incorrect data type parameters was not fully documented.                                                                                                              |
| 960333263 | 2634114 | Reload LDAP settings upon LogOn feature was not updating user information as designed.                                                                                                                                               |
| 960338903 | 2811965 | OPC UA Advanced setting Status tag was updated with WriteResponse > ResponseHeader > ServiceResult, but not with each individual Results StatusCode.                                                                                 |

|           |                    |                                                                                                                                                                                                                                                                      |
|-----------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 960338934 | 2758270            | .NET controls created in previous releases were not loading properly.                                                                                                                                                                                                |
| 960339640 | 2787574            | As a Web Thin Client enhancement, a user can now disable screen reloading when tags are updated or when changes are made to the application. The screens will reload after the application is restarted, allowing the updates to be delayed until a downtime period. |
| 960342121 | 2832078            | Screen performance slowdown due to many Smart Message objects was not documented.                                                                                                                                                                                    |
| 960342874 | 2841767            | When security was configured with LDAP in an application running as a service, the application would not run on Mobile Access.                                                                                                                                       |
| 960345533 | 2895571            | LDAP Server Status tag values "7" and "8" were not documented in the Help Manual Security chapter.                                                                                                                                                                   |
| 960345776 | 2863211            | The built-in function FTPGet() return value "-9" was not documented.                                                                                                                                                                                                 |
| 960346459 | 2857275            | The Azure IoT Hub Connections folder was not visible in the Project Explorer Tasks tab when the language was not set to English.                                                                                                                                     |
| 960348461 | 2869957            | Alarm History objects stopped updating with new records after 3:00 pm in the Japan time zone (UTC+9).                                                                                                                                                                |
| 960351092 | 2874437            | In applications created in previous versions of Studio, embedded images were not displayed on Industrial Graphics screens.                                                                                                                                           |
| 960351445 | 2881960            | Historical trend data Min and Max values were not displaying properly at single-day periods.                                                                                                                                                                         |
| 960352001 | 2901314            | During application development, the local viewer was not always able to open Industrial Graphics startup screens.                                                                                                                                                    |
| 960354729 | 2966350            | In a Windows Embedded application, simultaneous viewing of Trend objects on local Viewer and Mobile Access, caused the Trend object to stop updating.                                                                                                                |
| 960355262 | 2899485            | Industrial Graphics AddItem function was not working properly.                                                                                                                                                                                                       |
| 960355695 | 2896682            | In trend objects on Mobile Access, the start time string tag did not update when changed during runtime by using a pointing device (such as a mouse).                                                                                                                |
| 960356766 | 2918563            | OPC UA Client did not support several security policies.                                                                                                                                                                                                             |
| 960356879 | 2906287            | Linux runtime Trend object store and forward operation to AVEVA Insight was not deleting files after forwarding data as documented.                                                                                                                                  |
| 960359982 | 2916114            | Using "\$" in screen animation Tag/Expression fields was no longer supported.                                                                                                                                                                                        |
| 960360389 | 2925120            | OPC UA connections were causing abnormal program termination.                                                                                                                                                                                                        |
| 960362398 | 2927252            | OPC DA structures accessed through tag integration were being shown in the Studio tags database as string tags with no members.                                                                                                                                      |
| 960368891 | 3054410            | Studio Database Gateway was not closing the Excel file when the Studio runtime was stopped.                                                                                                                                                                          |
| 960369466 | 2981510            | Pushbutton objects were not consistently updating the button state image when pressed and released quickly.                                                                                                                                                          |
| 960371544 | 2984616            | Grid objects were not updating SQL source table when values were entered on Mobile Access.                                                                                                                                                                           |
| 960371873 | 2988257            | Database access was not working for Windows Embedded applications.                                                                                                                                                                                                   |
| 960380583 | 3044737            | On Mobile Access, clicking a checkbox object caused the screen to move with the cursor.                                                                                                                                                                              |
| 960383961 | 3058751            | The License Server feature stopped working on 20.0.3.1 and 23.0.0.                                                                                                                                                                                                   |
| 960387544 | 3055452            | The built-in function LookupLoad numColKey parameter was interpreted differently on Mobile Access screens.                                                                                                                                                           |
| 960389148 | 3081294            | Trend object was not displaying correctly when the History Format was Historian.                                                                                                                                                                                     |
| 960392668 | 3111301            | If the project security system Security Mode was configured as "Distributed – Server" or "Distributed – Client," Mobile Access did not start.                                                                                                                        |
| 960394484 | 3198401<br>3267858 | An abnormal program termination occurred when more than one client accessed a Mobile Access screen containing objects with invalid database connections.                                                                                                             |
| 960394797 | 3236833            | Create User dialog box cut off information on the right if the language was French.                                                                                                                                                                                  |
| 960399858 | 3239438            | Trend Control objects were not displaying data correctly on Mobile Access.                                                                                                                                                                                           |
| 960403291 | 3258244            | Symbols using polygons could not be enlarged even if "Use linked size" was unchecked.                                                                                                                                                                                |
| 960413346 | 3305218            | The file paths for Remote Agent were not updated in the documentation.                                                                                                                                                                                               |
| 960423229 | 3360115            | The OPC UA server security setting tag integration limitation was not documented.                                                                                                                                                                                    |
| 960424041 | 3359142            | The built-in language Database/ERP function limitation of 16000 rows per operation was not documented.                                                                                                                                                               |
| N/A       | 2269924            | DataProtect.exe utility was not working with the "INIT" option.                                                                                                                                                                                                      |
| N/A       | 2320902            | Hidden characters in class member descriptions corrupted the application folder.                                                                                                                                                                                     |
| N/A       | 2351662            | The OPC UA Client had a latency when sending write commands.                                                                                                                                                                                                         |
| N/A       | 2651413            | Input enabled grid object cells were not working on Mobile Access.                                                                                                                                                                                                   |
| N/A       | 2832105            | There was no documentation explaining the translation requirements for Alarm/Event Control object filtered Message values that include string expressions.                                                                                                           |
| N/A       | 2836720            | Linked picture object properties were changed to lowercase.                                                                                                                                                                                                          |
| N/A       | 2869187            | The Studio Database Gateway stopped responding to requests and required a restart.                                                                                                                                                                                   |
| N/A       | 2893638            | There was no documentation explaining how to open native screens as screens from Industrial Graphics screens.                                                                                                                                                        |
| N/A       | 2972882            | Tag datatype and unit changes in Historian were not being updated in Studio.                                                                                                                                                                                         |
| N/A       | 3007092            | Studio license evaluation time was not being tracked correctly.                                                                                                                                                                                                      |

## Issues Resolved for Specific Communication Drivers

| Case No.  | ID      | Description                                                                                                                |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------|
| 960321155 | 2582531 | In the MELSE driver, hexadecimal addresses were not reading values correctly.                                              |
| 960340962 | 2837118 | In the MQTT driver, parallel processing of legacy MQTT and Sparkplug I/O addresses was not working correctly.              |
| 960343079 | 2842327 | The ABBTF driver was unable to get data from multiple devices that are connected to a single controller.                   |
| 960343858 | 2855351 | The OMRON driver stopped working when trying to read tags that were not present on the device.                             |
| 960371580 | 3009505 | The SCHNE driver did not communicate with tag names with a Station that included an XSY file parameter.                    |
| 960393308 | 3186658 |                                                                                                                            |
| 960372142 | 3001223 | Drivers do not support serial encapsulation on the Linux runtime. This was not documented clearly.                         |
| 960375350 | 3001818 | The MODSL driver manual was not updated to the latest version.                                                             |
| 960377805 | 3079576 | After a network connection failure and recovery, SIETH driver communication did not resume.                                |
| 960380543 | 3034912 | The OMDIR driver failed to write string or float values correctly to the device using the Standard Driver Sheet.           |
| 960389238 | 3061236 | The OMDIR driver failed to read blocks with an invalid address on the Main Driver Sheet.                                   |
| 960396369 | 3196930 | The MQTT driver was unable to publish more than 82 characters when the Main Driver Sheet tag Action was set to Read+Write. |
| 960403163 | 3314675 | The MOTCP driver was unable to write an odd number of characters when using the Header STS.                                |
| 960409236 | 3283162 | The OMDIR driver communication failed when there were structured tags with incorrect syntax on a driver sheet.             |

## Known Issues and Workarounds

This is a list of known issues that remain in this version, with appropriate contingencies and workarounds.

| ID      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1135583 | <p>Issue: Only the first 512 characters of a String tag are saved when selecting the Retentive Value string tag property for projects running in the Embedded HMI runtime edition on Windows Embedded.</p> <p>Workaround: Limit String tags to 512 characters when running projects in the Embedded HMI runtime edition on Windows Embedded.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1631020 | <p>Issue: Some communication drivers (e.g., MODBU) have not yet been improved to support long strings, which means they are limited to 81 characters per read operation.</p> <p>Workaround: Divide long strings into shorter strings of 81 or fewer characters per string, and then store those shorter strings in multiple device registers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1788460 | <p>Issue: Screen viewer performance suffers if SetTagDisplayUnit function is called more than 21 times by a screen.</p> <p>Workaround: Limit the number of times a screen calls to function SetTagDisplayUnit to 21 or fewer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2376863 | <p>Issue: If your Windows <b>Display</b> settings the <b>Scale and layout</b> scale is set to a value other than 100%, the Industrial Graphics editor dialog controls may not display properly.</p> <p>This might be due to scaling of the user interface. As computer displays have achieved higher resolutions, operating systems have implemented UI scaling to ensure that text, apps, and other items are displayed large enough to be usable. This UI scaling can affect the behavior of some apps, especially those that include drawing or rendering functions.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. Exit the development environment.</li> <li>2. Go to the <b>Display</b> control panel in Windows, and then make sure the <b>Scale and layout</b> scale is set to 100%. (In Windows 10, right-click on your monitor screen and select <b>Display settings</b> from the context menu.)</li> <li>3. Run the Studio development environment.</li> <li>4. If the issue persists, restart your computer to make sure the scale is applied correctly.</li> </ol> |
| 2400387 | <p>Issue: On Mobile Access, when Zoom Mode is set to Custom Zoom, the user can use touch gestures on the screen to zoom in, zoom out, or navigate over the screen content. On iOS devices, if you do this and your finger touches an object that has a command assigned to it, this command will be executed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2487802 | <p>Issue: Verify project can end up taking more than an hour if there are unused tags in the project.</p> <p>Workaround: Use the <b>Remove unused tags</b> tool before using <b>Verify</b>.</p> <ol style="list-style-type: none"> <li>1. In the <b>Tags</b> group of the <b>Home</b> tab of the ribbon, select <b>Remove unused tags</b>. (Alternately, right-click the <b>Project Tags</b> folder in the <b>Global</b> tab of the <b>Project Explorer</b>.)</li> <li>2. See the <i>Help Manual</i> for more information, including instructions to use <b>Verify</b> again after using the <b>Remove unused tags</b> tool.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| N/A     | <p>Issue: If you install Studio without a license, you can open a project in evaluation mode or demo mode. If you try to open another project, the project will not be opened. Depending on the method used to open the project, you may see an evaluation or demo mode notification, or an error message may be generated.</p> <p>Workaround: Close and restart Studio and open the project. Studio will open with the last opened project in evaluation mode or demo mode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N/A | <p>Issue: Text Box objects are drawn incorrectly in project screens that are viewed through Mobile Access.</p> <p>This might be due to scaling of the user interface. As computer displays have achieved higher resolutions, operating systems have implemented UI scaling to ensure that text, apps, and other items are displayed large enough to be usable. This UI scaling can affect the behavior of some apps, especially those that include drawing or rendering functions.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. Exit the development environment.</li> <li>2. Go to the <b>Display</b> control panel in Windows, and then make sure the <b>Scale and layout</b> scale is set to 100%. (In Windows 10, right-click on your monitor screen and select <b>Display settings</b> from the context menu.)</li> <li>3. Run the Studio development environment.</li> <li>4. Save your project screens as HTML, and then test your project again.</li> <li>5. If the issue persists, restart your computer to make sure the scale is applied correctly.</li> </ol> |
| N/A | <p>Issue and Workaround: Industrial Graphic function <code>SetCustomPropertyValue (name, "value", isConstant)</code>: If the second parameter (<i>value</i>) is an array with an array index tag, the function will not work unless you format the parameter as a constant by enclosing it in quotes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| N/A | <p>Issue: Industrial Graphic function <code>SetCustomPropertyValue (name, "value", isConstant)</code>: If the second parameter (<i>value</i>) is an array with an array index tag, the function will not work if either the array or the array index has the prefix <code>HMI :</code>.</p> <p>Workaround: Because the prefix <code>HMI :</code> is optional, do not use it for these tags. As noted above, you may also need to enclose the parameter in quotes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NA  | <p>Issue: If a screen containing a custom widget is opened simultaneously in the Windows Viewer and in a web thin client browser on the same machine, the custom widget will work only in first viewer opened.</p> <p>Workaround: Do not open a screen containing a custom widget simultaneously in the Windows Viewer and in a web thin client browser on the same machine.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Installation Guide

### Upgrading from a Previous Version and Licensing

#### Removing Previous Versions or Previous Versions of Industrial Graphics

Different versions of BLUE Open Studio can coexist on the same machine, but some components cannot coexist. See Software coexistence for more information. Because of this, one of the following actions is recommended before installing the new version:

- Use the installer of all previous versions of BLUE Open Studio to remove Industrial Graphics.
- Remove any previous versions of BLUE Open Studio.

#### Existing Studio Projects

Finally, when you open an existing project for the first time in a new version, that project is automatically and permanently updated to the new version. This is true regardless of whether you have upgraded your software license(s). Therefore, you should back up your existing projects before you open them in the new version. Each major version of the software creates a corresponding projects folder (for example, "BLUE Open Studio 2023.1 Projects") in your user directory, so you can copy (not move) your projects from the old projects folder to the new projects folder.

## System Requirements

This section describes the system requirements and additional considerations for installation to develop projects, or to use the computer as a project runtime server and/or thin client.

### Hardware Requirements

#### Standard requirements

- A Windows-compatible computer with a standard keyboard, a pointer input (mouse, trackpad, or touchscreen. etc.), and an SVGA-minimum display.

#### Optional Items

- A USB port or memory card slot, to be used for hardkey licensing of the software.  
This item is optional because softkey licensing is also available.
- Serial COM ports and adapters, to be used for direct communication with PLCs and other devices.  
This item is optional because many newer device protocols use Ethernet communication (TCP or UDP) instead of serial communication.
- More storage and/or memory, depending on the size of the project.

## Software Requirements

One of the following operating systems:

- Windows:
  - Windows 11
  - Windows 10, version 1909 or later (including LTSC/LTSB versions)



Windows Server:

- Windows Server 2022
- Windows Server 2019
- Windows Embedded:
  - Windows 11 IoT Enterprise
  - Windows 10 IoT Enterprise (LTSC/LTSB version only)

Use the Pro or Enterprise editions of Windows because they include Internet Information Services (IIS) as a pre-installed feature that can be turned on. Do not use the "Home" and "Education" editions of Windows, because many features are hidden or disabled in these editions.

You can install the full software on a Windows Embedded device if it meets the system requirements listed above. If you do not plan to develop projects on that device, install Embedded HMI instead. For more information, see the Help Manual.

Update Windows before you install the software so that you have the latest security fixes and system components.

## Linux Runtime Requirements

If you are using on a Linux target station, here are the software and hardware requirements. For more information on installing, running, and using , see the Help Manual.

- A computer or device (referred to as a *target station*) running Linux (kernel 4.4 or higher). has been compiled for and validated on the following architectures:

| Processor        | Minimum Versions of Required Libraries | Location of Redistributable Software                      |
|------------------|----------------------------------------|-----------------------------------------------------------|
| aarch64<br>arm64 | libc: 2.23<br>libstdc++: 6.0.21        | <program folder>\Redist\IoTView\Linux\arm64-2.23-6.0.21\  |
| armv7l<br>armhf  | libc: 2.23<br>libstdc++: 6.0.21        | <program folder>\Redist\IoTView\Linux\armv7l-2.23-6.0.21\ |
| x86_64<br>amd64  | libc: 2.23<br>libstdc++: 6.0.21        | <program folder>\Redist\IoTView\Linux\x86_64-2.23-6.0.21\ |

If your architecture is not covered by the table above, contact your software distributor. can be compiled for most modern operating systems.

- To use Mobile Access to visualize run-time data and open project screens, the target station needs to have a properly configured web server that supports CGI. Apache is the preferred web server in most cases, and it is required if you plan to use Custom Widgets in your project screens. Otherwise, NGINX and Lighttpd are good alternatives to Apache.
- 10 MB of free memory (RAM) minimum, but 32 MB recommended (or more). More memory might be required, depending on your project size.
- An Ethernet or Wi-Fi network adapter, for TCP/IP networking.
- A USB flash drive or a network connection, to facilitate copying files to the target station from the computer with the full installation of the Studio Product Name software.

## .NET Framework

This software requires .NET Framework 4.8 (or later) installed and enabled.

If Windows is fully updated on your computer, the latest versions of .NET Framework should be installed, but they might not be enabled. Use either the **Windows Features** control panel in Windows or the **Server Manager** console in Windows Server to confirm that .NET Framework 4.8 is enabled.

In some cases, it might not be possible to update Windows through normal means. For example, if your computer is on a private network without access to the Internet, it might not be able to contact the Windows Update service. You can use another computer to download an offline installer for .NET Framework and then transfer it.

## Optional Software

- Internet Information Services (IIS) installed and turned on. IIS is the default web server for Windows.

This item is optional because it is not required to develop a basic project and then run it on a standalone device, but it is required to use more advanced features.

- In most cases, IIS is required to install and use Mobile Access. You may choose not to install the Mobile Access Runtime feature at this time. You can install it at a later time, for either IIS or CGI. For more information, see the "Mobile Access Runtime" feature in the "Selectable Features" section below.
- IIS is required to run projects that include Industrial Graphics symbols.

- Either Microsoft Edge or Google Chrome, to be used for viewing project screens in Mobile Access.

This item is optional because you can always use the built-in Viewer program to view project screens.

- Internet Explorer 11, to be used for viewing project screens in Web Thin Client.

This item is optional because you can always use the built-in Viewer program to view project screens.

Previous versions of Internet Explorer are no longer supported. In some cases, you can use Microsoft Edge in Internet Explorer (IE) mode, which enables backward compatibility for legacy websites and applications like Web Thin Client. It is supported with limitations, however, and you might see unexpected behavior while viewing project screens. For more information, go to: <https://www.microsoft.com/en-us/edge/business/ie-mode>

## System Sizing

The operating system, storage, and memory requirements will necessarily increase for larger projects; the minimum requirements listed above are only for projects of up to 4,000 tags. The following table shows the complete requirements:

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

| Project Size          | Operating System                                   | Storage        | Memory         |
|-----------------------|----------------------------------------------------|----------------|----------------|
| up to 4,000 tags      | Windows, Windows Server, Windows Embedded Standard | 2 GB available | 1 GB available |
| up to 64,000 tags     | Windows, Windows Server                            | 4 GB available | 2 GB available |
| up to 10 million tags | Windows Server only (multi-core)                   | 8 GB available | 4 GB available |

Your computer needs to meet only the minimum requirements when you first install the software and begin to develop your project, but the requirements will increase as your project grows. Every computer or device that you plan to use as a runtime station is subject to the same requirements.

## Industrial Graphics

If you are using Industrial Graphics screens, the project should be hosted on a dedicated Windows system with IIS installed. The additional system recommendations for this dedicated system are:

- CPU PassMark® > 5200 pts
- 16 GB available RAM memory (Each client session requires ~200 MB of memory, depending upon graphics complexity.)

These recommended requirements are suitable for a system with ten clients, browsing pages with approximately 40 dashboard/charting components with ~250 I/O tags on the page. Pages may take a longer time to display on the first visit. The display time depends on graphics and script complexity. Additional clients can be supported by increasing the number of CPUs, CPU speed, and Memory.

## User Privileges

You need to have administrator privileges on your computer to install Studio. If you are not already signed on as a user with administrator privileges when you run the software installer, you can choose to run the installer as an administrator. To do this, right-click the installer program file (setup.exe), and then on the shortcut menu, click **Run as administrator**. You will be asked for the appropriate username and password.

## Selectable Features

On the Select Features page of the installation wizard, you can select which features and software components to install. If you deselect features that you know you will not use, you will decrease the amount of hard drive space required for installation.

| Feature                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program Files                              | The main program files for the project development application, project runtime server, and project runtime client. This feature cannot be deselected.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Custom Widget Framework                    | Installs files for the Custom Widget Framework, which is used to create HTML5-based widgets and use them in project screens. This feature cannot be deselected.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Database Gateway and Historian Integration | Installs Studio Database Gateway, AVEVA Historian integration, and AVEVA Insight integration. This feature is required for any database communication.<br><br>This feature requires .NET Framework 4.8 (or later) installed and turned on.                                                                                                                                                                                                                                                                                                                                                                                |
| Demo Projects                              | Sample projects that demonstrate the capabilities of the software.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Hardkey Support                            | Additional drivers to support the use of hardkey (USB) software licenses.<br><br>For more information, see Third-party software below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Industrial Graphics                        | Industrial Graphics is a powerful modern graphic editor that enables creation of portable graphic libraries that can be reused in products that use this platform-agnostic solution. It acts as a companion to our native graphics tools.                                                                                                                                                                                                                                                                                                                                                                                 |
| Mobile Access Runtime                      | Additional software to make the project runtime accessible to mobile devices such as tablets and smartphones, using HTML5-compatible browsers to view the project screens.<br><br>This feature requires Microsoft .NET Framework 4.8 and Microsoft IIS--with ASP, ASP.NET, and ISAPI Extensions enabled--installed and turned on. This required software will be installed if necessary.<br><br>Whether or not this feature is selected during installation, a separate Mobile Access Runtime software installer (MobileAccessSetup.exe) will be copied to the program folder. This installer can be run at a later time. |
| PDF Printing                               | Additional software for printing runtime reports directly to PDF files.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Python                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Runtimes – Additional >                    | Installs files for the runtime, the platform-agnostic project runtime software for Linux and other operating systems.<br><br>Selecting this feature will not install it on your computer at this time. It will copy the installation files to the program folder, so that the runtime files can be installed on another computer or device at a later time.                                                                                                                                                                                                                                                               |
| Runtimes – Additional > Embedded HMI       | Project runtime server and client software for Windows Embedded, also called Embedded HMI.<br><br>Selecting this feature will not install it on your computer at this time. It will copy the installation files to the program folder, so that the runtime files can be installed on a Windows Embedded computer at a later time.                                                                                                                                                                                                                                                                                         |
| Security System Device Driver              | Installs device driver for security system to lock the keyboard (kbdlock).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                |                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| Symbol Library | A library of premade but configurable screen objects such as pushbuttons, toggle switches, gauges, dials, and indicator lights. |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|

## Items Added to the Start Menu

The installer creates a shortcut on your desktop and adds the following items to the Windows **Start** menu:

| Item (BLUE Open Studio folder)     | Description                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| BLUE Open Studio Help Manual       | A comprehensive technical reference and user guide.                                                                                                   |
| BLUE Open Studio Quick Start Guide | A brief, printable guide to the project development environment, including a step-by-step tutorial for how to develop and deploy a simple project.    |
| BLUE Open Studio Register          | A utility program that you can use to view and change your software license settings.                                                                 |
| BLUE Open Studio Release Notes     | The document that you are reading now.                                                                                                                |
| BLUE Open Studio Remote Agent      | A utility program that lets other stations remotely manage the project runtime when it is running.                                                    |
| BLUE Open Studio SCADA             | A shortcut that automatically runs the most recently opened project.                                                                                  |
| BLUE Open Studio Studio            | The project development environment, project runtime and/or project viewer. Its actual capabilities are determined by your software license settings. |

## Third-Party Software Components

These third-party software components are installed along with the software, most of which are added to the Windows Apps & Features list. Do not uninstall these components unless this software has been uninstalled already; see the table below for more details.

| Component                                                                                            | Description and notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Microsoft Visual C++ Redistributable (multiple versions)                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| novaPDF SDK 10 Printer Driver<br>novaPDF SDK 10 COM (x64)<br>novaPDF SDK 10 COM (x86)<br>Studio PDF3 | These components let projects save runtime reports as PDF files. They are installed when you select the PDF Printing feature for installation; for more information, see <a href="#">Selectable Features</a> above. These components will be uninstalled when this software is uninstalled unless they are being used by another installed software package.                                                                                                                                                                                                                                                                                                   |
| Sentinel Protection Installer 7.7.1                                                                  | This component supports the use of Sentinel-type hardkeys (also called dongles). It is installed . This component is not uninstalled when you uninstall the software, but it can be uninstalled manually.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CodeMeter Runtime Server                                                                             | <p>Wibu Systems' CodeMeter Runtime is installed on your computer . It supports the use of Wibu-type hardkeys (also called dongles), which are offered as alternatives to Sentinel-type hardkeys. For more information about the differences between Sentinel and Wibu, ask your software distributor.</p> <p>Unlike the other components described above, the CodeMeter Runtime Server is not added to the Windows Apps &amp; Features list. It runs as a background process named CodeMeter Runtime Server, which is found in the Windows Task Manager. When you uninstall this software, the CodeMeter Runtime Server is also uninstalled automatically.</p> |

## Possible Issues During Installation

This section describes issues that might occur during installation.

### "Failed to complete script based install"

You might receive the following message during installation: "Error 1628: Failed to complete script based install." For more information about this issue and how to resolve it, go to: <https://community.flexera.com/t5/InstallShield-Knowledge-Base/Error-1628-Failed-To-Complete-Script-Based-Install/ta-p/4014>

### "CodeMeter Development Kit is already installed"

If you try to install an earlier version on a computer that already has a later version installed, you might receive the following message during installation: "Version x.x.x.x of CodeMeter Development Kit is already installed. Downgrading to Version x.x.x.x is not possible, installation will be aborted." CodeMeter is supplemental software used to manage hardkey licenses. To resolve this issue, use Task Manager in Windows to stop CodeMeter Runtime Server (CodeMeter.exe) before you install the earlier version.

### "The local print spooler service is not running"

If you select the PDF Printing feature for installation but the Print Spooler service is not running on your computer, you might receive the following message during installation: "The local print spooler service is not running. Please restart the spooler or restart the machine." You can click OK to acknowledge the message and finish the installation, but the PDF Printing feature will not be installed correctly. To resolve this issue, do the following:

1. Use the Services app in Windows to make sure the Print Spooler service is running. If not, start the Print Spooler service.
2. Run the software setup again and then use the Repair command to repair the installation on your computer.

### Restore from a System Restore Point

If the installation fails for any reason, you can use the System Restore feature in Windows to revert your computer to a previous restore point.

# Documentation Installed with the Software

The following documentation is installed in the program folder, which means you do not need an Internet connection to access it:

| Document                                               | Description and Location / Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Release Notes<br>( <b>Readme.html</b> )                | The release notes document summarizes product news and installation information. To access this document: <ul style="list-style-type: none"><li>From the Windows Start menu: go to <b>Start &gt; Studio Company Name &gt; Studio Product Name plus Version &gt; Studio Product Name plus Version Release Notes</b>.</li><li>From within the project development environment: go to the Help tab of the ribbon and then click Release Notes.</li><li>From the file: assuming default installation location on the hard drive, the file is located at <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\ReadMe.html</b></li></ul>                                                                                                                                                                                                                                                                                                                                                                         |
| Help Manual<br>( <b>TechRef.chm</b> )                  | The help manual provides comprehensive and searchable help for the project development environment, instructions for how to develop and deploy projects, and complete descriptions of all of our built-in functions. To access this document: <ul style="list-style-type: none"><li>From the Windows Start menu: go to <b>Start &gt; Studio Company Name &gt; Studio Product Name plus Version &gt; Studio Product Name plus Version Help Manual</b>.</li><li>From within the project development environment: go to the Help tab of the ribbon and then click Help.</li><li>From the file: assuming default installation location on the hard drive, the file is located at: <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\Bin\TechRef.chm</b></li></ul>                                                                                                                                                                                                                                           |
| Quick Start Guide<br>( <b>QuickStart.pdf</b> )         | The Quick Start Guide provides a tour of the project development environment, descriptions of essential concepts, and a simple project development tutorial. All of this information is also included in the Help Manual. To access this document: <ul style="list-style-type: none"><li>From the Windows Start menu: go to <b>Start &gt; Studio Company Name &gt; Studio Product Name plus Version &gt; Studio Product Name plus Version Quick Start Guide</b>.</li><li>From the file: assuming default installation location on the hard drive, the file is located at: <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\Bin\QuickStart.pdf</b></li></ul>                                                                                                                                                                                                                                                                                                                                            |
| Driver documents<br>( <b>&lt;driver name&gt;.pdf</b> ) | Each communication driver has its own document that describes the protocol used by the driver, how to configure the communication settings for the driver, how to format station IDs and I/O addresses in driver worksheets, and any other technical requirements for connected devices. If you download an updated driver package from our website, that package should include an updated driver document.<br><br>Each driver has its own separate <b>&lt;driver name&gt;.pdf</b> document. For example, the driver document for the basic Modbus driver (MODBU) is <b>MODBU.pdf</b> . To access these documents: <ul style="list-style-type: none"><li>From within the project development environment: go to the <b>Help</b> tab of the ribbon and then select <b>Communication Drivers</b>.</li><li>From the file: assuming default installation location on the hard drive, the files are located at: <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\Drv\&lt;driver name&gt;.pdf</b></li></ul> |
| License document<br>( <b>License.pdf</b> )             | The License document provides legal information regarding your license to use Studio Product Name. You are asked to agree to this document when you install the software. To access this document: <ul style="list-style-type: none"><li>From within the project development environment: go to the <b>Help</b> tab of the ribbon and select <b>License Agreement</b>.</li><li>From the file: assuming default installation location on the hard drive, the file is located at: <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\License.pdf</b></li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Copyright document<br>( <b>Copyright.pdf</b> )         | The Copyright document provides legal information regarding the copyrights of the incorporated third-party software. You are asked to agree to this document when you install the software. To access this document: <ul style="list-style-type: none"><li>From within the project development environment: go to the <b>Help</b> tab of the ribbon, select <b>About</b>, and then select the <b>More</b> button.</li><li>From the file: assuming default installation location on the hard drive, the file is located at: <b>C:\Program Files (x86)\Studio Company Name\Studio Product Name plus version\Copyright.pdf</b></li></ul>                                                                                                                                                                                                                                                                                                                                                                                                |

## List of legacy drivers

The complete list of these legacy drivers in alphabetical order is:

| Driver | Description                                                            |
|--------|------------------------------------------------------------------------|
| 9154   | 9154 - Controller 9154, Toledo Balance [v1.00]                         |
| A2420  | ALTUS, ALNET I Protocol with AL2420 [v1.04]                            |
| ABENI  | Allen Bradley, AB-1761-NET-ENI Gateway interface (CE) [v1.11]          |
| ADAM   | ADVANTECH - Old ADAM 4000 driver version [v1.11]                       |
| ADAM2  | ADVANTECH - Series 4000/5000 and compatibles (CE) [v1.04]              |
| AGRI   | Agri-Datalog, EAP Protocol (CS950, AC2500, EC200 and CPM8) [1.04]      |
| ALFA   | ALFA - Scale / Family 3000 (CE) [v1.11]                                |
| ALNE2  | ALTUS, ALNET II Protocol - AL-3405 (CE) [v2.5]                         |
| ALNET  | ALTUS, ALNET I Protocol - AL-1000 / AI-2000 / AL-3130 Families [v1.68] |
| AS511  | SIEMENS - S5 with PG Port (CE) [v11.05]                                |
| ATOS   | ATOS, APR03 Protocol - MPC506 [v1.10]                                  |
|        |                                                                        |

|        |                                                                                 |
|--------|---------------------------------------------------------------------------------|
| AWID   | AWID, Applied Wireless ID [1.01]                                                |
| AXIOM  | AXIOM, I/O Board [v1.04]                                                        |
| BERK   | Communication driver with Berkeley Bxi controller (CE) [v1.1]                   |
| BUEP   | BOSCH, BUEP19E Protocol - CL200 / CL300 / CL500 [v1.20]                         |
| CAN    | CAN / CANOpen CiA 301 Specification (CE) [1.3]                                  |
| CATIU  | CATIU (CE) [v1.00]                                                              |
| CD600  | SMAR - CD600 [v2.0]                                                             |
| CFW    | WEG - CFW [v1.10]                                                               |
| CNS    | ALLEN-BRADLEY, ControlNet Protocol - PLC5 / PLC5000 Families (CE) [v1.10]       |
| COWAF  | OMRON CompoWay Communication Protocol (CE) [v1.1]                               |
| CSTAS  | AS400 Warehouse (CE) [v1.00]                                                    |
| CTC    | CTC, CTC Serial Data Communication (CE) [v1.02]                                 |
| CUTL   | CUTLER-HAMMER - D50 / D300 (CE) [v2.01]                                         |
| CYLON  | Cylon, UCU and UC32.xx devices [v2.0]                                           |
| DAKOT  | Dakota Fluid Power RTU via TCP/IP [v1.2]                                        |
| DEVN   | Hilscher/Synergetic board - DeviceNet Slave [v1.00]                             |
| DEVNM  | Hilscher/Synergetic board - DeviceNet Master (CE) [v1.00]                       |
| DSC    | DSC - Reader DSC (CE) [v1.01]                                                   |
| EUROM  | EuroMap 17 Protocol [v1.01]                                                     |
| EXFO   | EXFO, WA-5900 device [1.03]                                                     |
| FANUC  | GE FANUC, SNP Serial Protocol - Series 90 / 90/30 CPU 341 (CE) [v10.4]          |
| FATEK  | FATEK, FALCON PLC (CE) [2.00]                                                   |
| FERT   | FERTRON - Fertron PLC (CE)[v1.04]                                               |
| FLK    | Communication driver for 2640A/2645A/2680A/2686A Fluke devices [v1.00]          |
| FSPACE | FlashPoint - Interface with Flash Control (CE) [1.03]                           |
| FPACV  | Flash Point PC Based Control (CE) [1.01]                                        |
| GARM   | Garmin, P000/L001/A010 Protocol, GPS V Devices (CE) [1.00]                      |
| GAUGE  | Leybold Inficon, Vacuum Gauges devices [1.0]                                    |
| GFLUX  | GammaFlux, Auxiliary Communication Protocol, TTC Devices (CE) [1.00]            |
| GPIBN  | NATIONAL, IEE 488.1 Protocol - GPIB [v1.20]                                     |
| HDPS   | Siemens - Profibus DP Slave Compatible (CE)[1.03]                               |
| HI     | HI Tecnologia, SCP-HI Protocol [1.02]                                           |
| HIEHV  | Ethernet (TCP/UDP) communication with HITACHI EHV devices.                      |
| HILD   | Siemens - Profibus DP Master Compatible (CE)[1.13]                              |
| HITCH  | HITACHI - H Series (CE) [v2.03]                                                 |
| HMF01  | RFID, Transponder Omron (Only CE) [1.00]                                        |
| IDEC   | IDEC Serial Protocol - MicroSmart(CE) [1.5]                                     |
| IZCL   | Solidyne - IZAC/Clipper Network Protocol [v1.01]                                |
| JETTE  | Jetter - Jetter devices using the Jet32.dll API [v1.1]                          |
| KAWR   | Kawasaki Robotics [v1.3]                                                        |
| KEBCO  | KEB-DIN 66019 Protocol (CE) [v1.01]                                             |
| KLOCK  | KLOCKNER-MOELLER, SUCOM 1 Protocol - PS316/PS32/PS4-201-MM1/LPC42/PS416 [v1.07] |
| LAMIX  | LAMIX - Display Lamix (CE) [v1.08]                                              |
| LLINK  | Communication driver for Enersafe LifeLink Device (CE) [v1.1]                   |
| LOPER  | LOPER -Protocolo de comunica??o CTB-100/QA-NEC/CELESC [v1.0]                    |
| MBLAU  | MICROBLAU, TD3000 (CE) [2.00]                                                   |
| MCTRL  | Motion Control protocol (CE) [v1.03]                                            |
| MEMP   | MEMP, CEMIG [v1.00]                                                             |
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| MERID | MODBUS MERID Protocol RTU/ASCII (CE) [v1.4.0]                                |
| MESSU | MESSUNG, Proprietary Protocol (PLC Messung) - [v1.00]                        |
| MISTC | OPTO22, MISTIC Protocol - OPTO22 Controller (CE) [v1.03]                     |
| MITSA | MITSUBISHI Protocol, Melsec-A (CE) [v10.3]                                   |
| MODPL | MODBUS PLUS Protocol [v1.11]                                                 |
| MOLOW | MOLOW Protocol RTU/ASCII [v1.1]                                              |
| MPI   | SIEMENS, MPI Protocol - S7 [v1.30]                                           |
| MPIAD | SIEMENS, MPI Green Cable Protocol - 3964R (CE) [v1.0]                        |
| MPMPI | SIEMENS, MPI Protocol (HMI MP370) - S7-200, S7-300, S7-400 (only CE) [v1.04] |
| MSLMP | Ethernet communication with MITSUBISHI iQ-R Series devices.                  |
| MTCON | MTConnect Driver [v1.0.0]                                                    |
| MTRAC | SEW - Movitrac31 [1.00]                                                      |
| N2JC  | N2, Johnson Control - N2 Protocol(CE) [1.03]                                 |
| NAPCO | HI Tecnologia, SCP-HI Protocol [1.0]                                         |
| NLMPI | Hilscher, NetLink-MPI Protocol, Siemens S7-300/400 Family (CE) [1.3]         |
| OC    | Nematron - Interface with OpenControl PC Base Control [v1.01]                |
| OMEIP | OMRON (STI) Safety Relays via Ethernet/DeviceNET Router Protocol (CE) [v1.0] |
| OMPLC | OMRON, Host Link Protocol - C Series/Sysmac Way/Host Link Units (CE) [v3.01] |
| OPMMP | OPTO22, OPTO-MMP Protocol (CE) [v1.1]                                        |
| OPTO  | OPTO22, OPT-MUX Protocol - Analog/Digital Boards [v1.03]                     |
| PAC3K | Automation Direct PAC Devices (Legacy, use ADPRO instead) (CE) [v1.4]        |
| PAGER | Send pager messages using TAP protocol (CE) [v1.00]                          |
| PIDAT | OSI Software, Protocol TCP/IP - PI Data Archive Interface Driver [v1.02]     |
| PNOZ  | PILZ, PNOZmulti Safety System (CE) [v1.03]                                   |
| PPCBR | SCP, BOSCH REXROTH [1.01]                                                    |
| PROT1 | TOSHIBA, Computer Link Protocol - Prosec-T1 / Prosec-T2 (Only CE) [v2.01]    |
| RK512 | SIEMENS, RK512 Protocol - S5 / S7 / 3964R [v1.09]                            |
| RLC   | RLC Arm (CE Only) [v1.00]                                                    |
| RTP   | RTP 2000/2300 Protocol [v1.02]                                               |
| SAGE  | Communication with SAGE using IEC-60870-5-101 - [v1.1]                       |
| SAIA  | SAIA, P8 Protocol - PCD2 [1.00]                                              |
| SATCH | Satchwell, SatchNet Protocol, IAC200/400 IAC600 Devices (CE) [1.00]          |
| SIEME | SIEMENS, S7 PLC communicating via Serial interface (CE) [v10.8]              |
| SIPPI | SIEMENS, S7-200 PLC communicating via PPI interface (CE) [v10.8]             |
| SISTE | Sistema, CP-3000 (Mono and Multiprocessor) [v1.00]                           |
| SL2DP | SIEMENS - ProfBus DP Sinec L2 - Board 5412-A2 [v1.00]                        |
| SNPP  | SNPP [1.01]                                                                  |
| SPA   | SPA, SPA-bus [v1.01]                                                         |
| SPIIM | SPI, SPI protocol for Injection Molding Equipment [1.01]                     |
| SPO52 | Send and receive data using a serial port (CE) [v1.5]                        |
| SSTDH | SST DHP Protocol, Interface Cards for Allen-Bradley [v1.8]                   |
| SSUE  | Serial Output of User E Protocol [v1.01]                                     |
| STRAT | Straton - Interface with STRATON PC Base Control [v1.00]                     |
| STRIO | SST, RIO Protocol, Interface Cards for Allen-Bradley [1.2]                   |
| SYMAX | AEG SCHNEIDER (SQUARE D), Symax [1.06]                                       |
| T9091 | TOLEDO - Module 9091 [1.04]                                                  |
| TAGW  | TAGWELL SoftPLC v[1.3]                                                       |
| TFLUX | TOLEDO, TLP2 Protocol-TOLFLUX 9300 [v1.01]                                   |
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| THERM | THERMA, TH2131 [v1.01]                                              |
| TOYOP | TOYOPUC Devices [v1.0]                                              |
| TSTCP | Test Driver for TCP/IP(CE) [1.0]                                    |
| UNITE | UNI-TELWAY, UNI-TELWAY Protocol - TSX (CE) [1.04]                   |
| USB4D | USB4D Driver for Communication with US Digital USB4 Devices [1.0]   |
| VILL  | VILLARES - Dedicated equipment (CE) [v2.0]                          |
| VIRGO | Altersys - Interface with Virgo PC Based Control (CE) [1.03]        |
| VMASC | VMASC, Visual Motion ASCII protocol (Rexroth) [1.01]                |
| VPCE  | VIPA, MPI and Industrial Ethernet (S7COMM library) (CE only) [v1.4] |
| WA982 | WATLOW CONTROLS, Series 981 / 984 [v2.00]                           |
| WTP2  | WEG - TP02 [v1.00]                                                  |
| XRC   | MOTOMAN - XRC BSC Compliant Slave Protocol (CE) [v1.10]             |
| XRCM  | MOTOMAN - XRCM BSC Compliant Master Protocol (CE) [v1.1]            |
| YOMX  | YOKOGAWA, MX100 devices (NT/2k/XP) [1.01]                           |
| YU35  | YOKOGAWA, PC Link Comm. Protocol - UT35 [1.00]                      |