RELEASE NOTES

RobotStudio 2025.4

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Release Notes for RobotStudio 2025.4

General

The release name is RobotStudio 2025.4 and the build number is 25.4.11475.0. The build date is November 27, 2025.

User documentation

Documentation for RobotStudio, RobotWare and add-ins can be accessed from the Help page.

RobotStudio

The RobotStudio Operating Manual is available in all languages supported by RobotStudio except Czech, i.e. English, German, French, Italian, Chinese, Japanese, Spanish.

RobotWare

RobotWare manuals for IRC5 and OmniCore are included in the RobotWare distributions that can be installed from the Add-Ins Gallery.
Release notes for RobotWare can be accessed from the Help page or the Add-Ins Gallery.

Tutorials

Tutorials are available at the RobotStudio product pages at https://new.abb.com/products/robotics/robotstudio.

System Requirements

Required Software

Microsoft Windows 11 or later is required.

The Windows App Installer is a pre-requisite for the virtual OmniCore FlexPendant software, see https://www.microsoft.com/en-us/p/App-Installer/9NBLGGH4NNS1. The App Installer is a default built-in app in Windows, but may have been removed on some PCs.

Sideloading of apps must be enabled on Windows to install the virtual OmniCore FlexPendant.

To enable sideloading follow these steps:

1. Open **Settings**.
2. Click **System** > **For developers**.
3. Ensure **Developer Mode** is set to **On**.

Recommended Hardware

ITEM	REQUIREMENT
CPU	2.0 GHz or faster processor, multiple cores recommended
Memory	8 GB minimum 16 GB or more if working with large CAD models
Disk	10+ GB free space, solid state drive (SSD)
Graphics Card[1]	High-performance, DirectX 11 compatible, gaming graphics card from any of the leading vendors. For the Advanced lightning mode Direct3D feature level 10_1 or higher is required.

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ITEM	REQUIREMENT
Screen Resolution	1920 x 1080 pixels or higher is recommended
Mouse	Three-button mouse
3D Mouse	Any 3D mouse from 3DConnexion, see http://www.3dconnexion.com.
Virtual Reality Headset	Meta Quest, HTC Vive or any Windows Mixed Reality Headset. Note that special PC hardware requirements apply when using RobotStudio with VR, see https://www.oculus.com/oculus-ready-pcs/, https://www.vive.com/us/vive-ready/, or, https://www.microsoft.com/en-us/mixed-reality/windows-mixed-reality, respectively.

[1] RobotStudio will not benefit from the additional features of so-called ‘Professional’ or ‘Workstation’ graphics cards. The price level of these are at a much higher range than gaming graphics cards with comparable performance. High-end gaming PCs are very suitable for offline programming with RobotStudio. Such a PC will provide good performance for a limited budget.

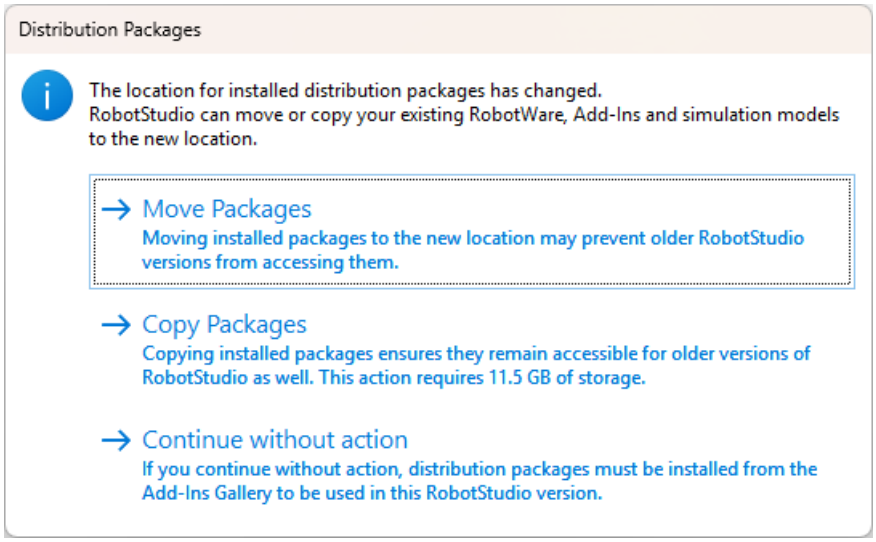
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Information

Changed location for Distribution Packages

The installation location for RobotWare, add-ins and simulation models has been changed.
Distribution Packages were earlier installed to a per-machine location (*C:\ProgramData\ABB*).
They are now installed to a per-user location (*C:\Users\username\AppData\Local\ABB*) thereby isolating add-ins to individual users.

The first time the new version is started, the user has the option to move or copy existing packages to the new location:



New Functionality - Add Collision Free Path planning support for CRB 1810 PoWa - Add Collision Free Path planning support for Scara robots - Collision Free Path: Support for MoveJ ### Add Collision Free Path planning support for CRB 1810 PoWa
Collison Free Path planning is now available for CRB 1810 PoWa robots.

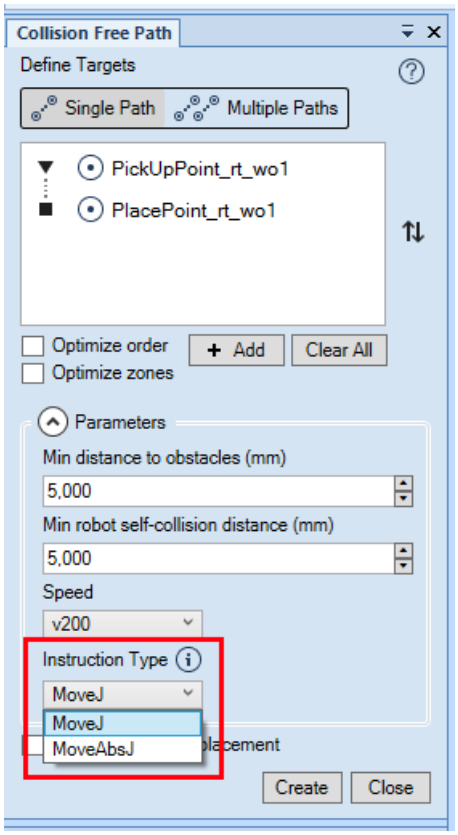
Add Collision Free Path planning support for Scara robots

Collison Free Path planning is now available for Scara robots.

Collision Free Path: Support for MoveJ

It is now possible to create a collision free path with MoveJ instructions and Cartesian Targets (corresponding to RAPID robtargets) in the Collision Free Path tool. This behavior is now the default when creating a collision free path, but a path with only MoveAbsJ instructions can still be generated by selecting "MoveAbsJ" from the "Instruction Type" dropdown menu. Please note that when "MoveJ" is selected a MoveAbsJ instruction can still be generated in specific cases, such as singularities.

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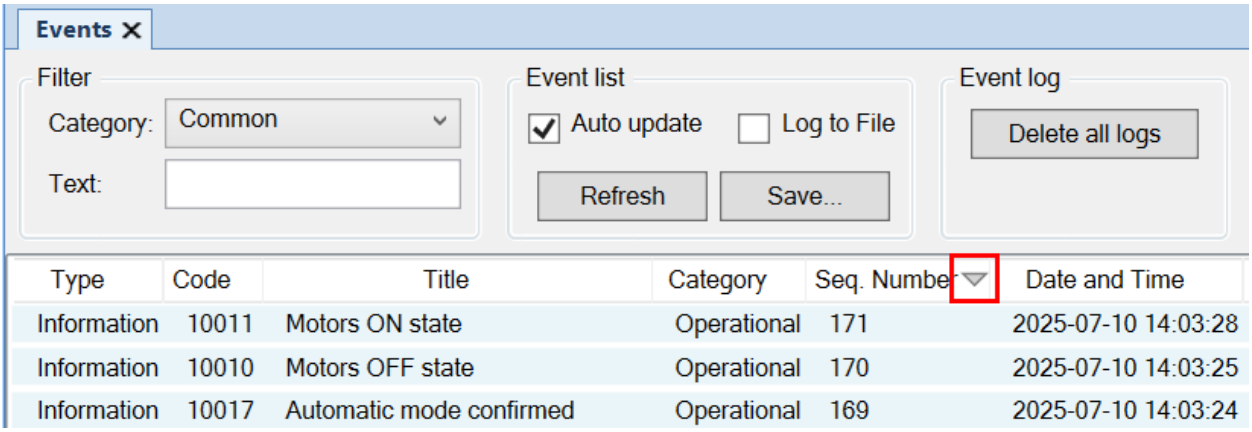


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Improvements

Event Log sorting

In the Events window, there is now an indication of the column and direction used for sorting log items.
When the window is opened the events are always sorted by sequence number, but the direction is persisted between sessions.

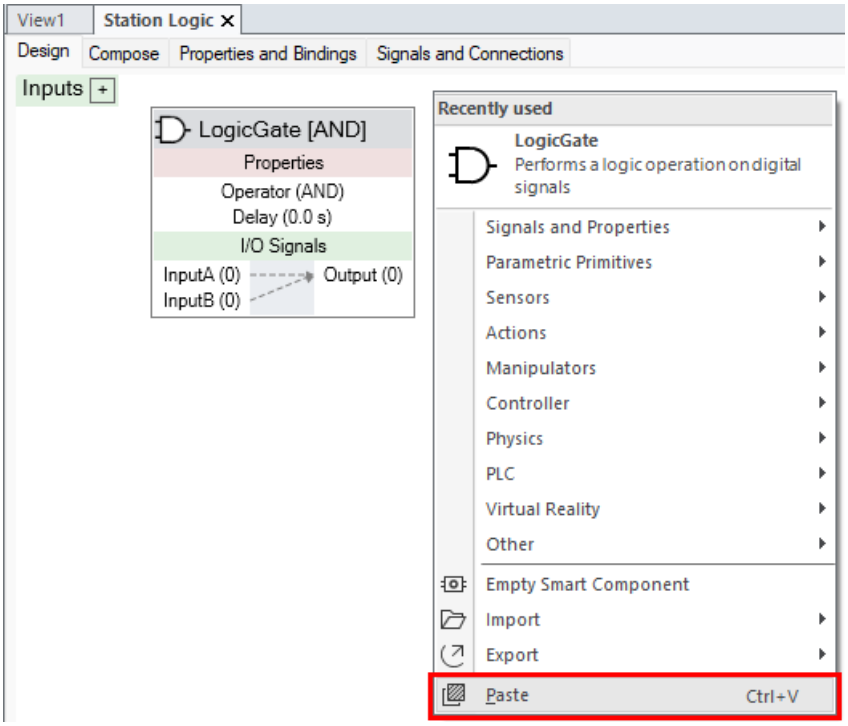


Offs/RelTool in RAPID Path Editor

Move instructions that use Offs or RelTool in the target argument are now visualized correctly in the RAPID Path Editor, provided that only numeric literals are used in the function arguments.

Smart Component context menu inconsistency

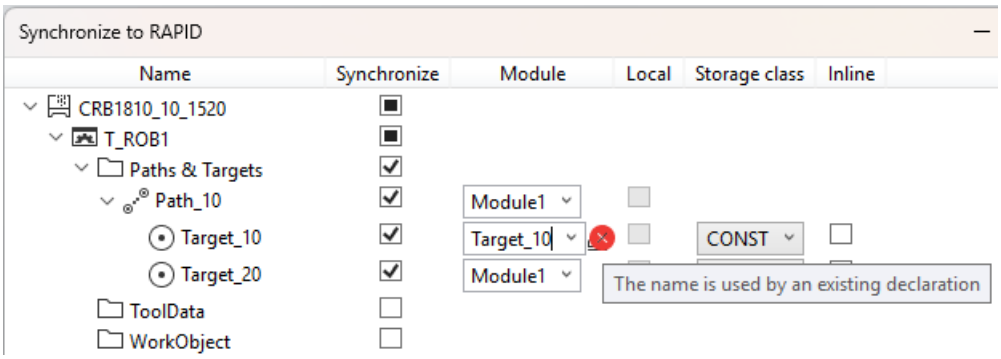
In the Smart Component designer, it is now possible to insert a component by pasting from the clipboard:

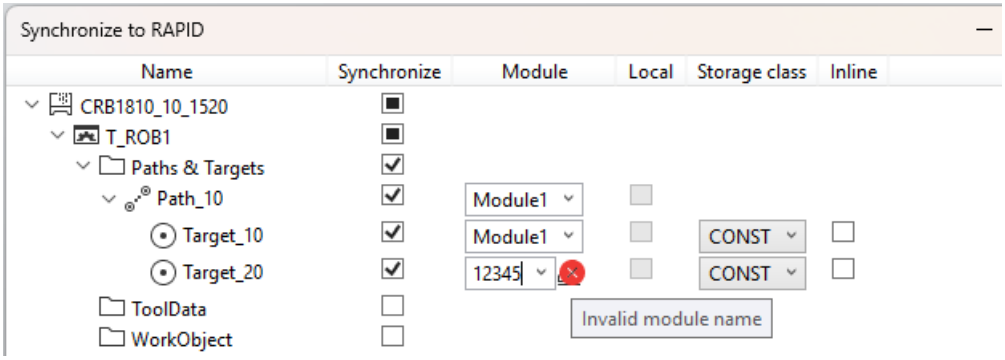


Synchronization window should warn the user if a target module has an invalid name

The validation of module names when performing Synchronize to RAPID has been improved. There is now an indication why a module name is not allowed, and the OK button is disabled if there are any errors.
Additionally, the size of the dialog is now remembered between sessions.

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Corrections

Exception when creating system from backup

Fixed an error that could occur when creating a Virtual Controller from a backup with license dependencies.

Controller From Layout: Inconsistent tack base frame

Fixed an issue with 'Controller From Layout' for combinations that require controller type selection. The task frame position was not updated after selecting a valid controller type.

Wrong dialog to map library

Fixed an issue where RobotStudio would incorrectly launch the IRT710 configurator when starting a virtual controller with unmapped mechanical units.

RobotStudio Support Tool analysis takes a long time

When opening the RobotStudio Support Tool it could take a long time (sometimes several minutes) for the analyzing of the software and log files to be completed and for the "Save Report" button to appear. The performance of the analysis has been improved making is possible to save the report quicker.

Unknown error - Print

Fixed an error that could occur when pressing CTRL+P while a non-printable window was active.
Also improved the appearance when printing the contents of the Output window.

Collision Free Path - inconsistency in teared-off window

Tearing off the Collision Free Path tool window no longer creates a duplicate of the tool, as this was not useful and resulted in inconsistencies.

Improper search filtering in Addins Gallery

The search functionality in the Add-Ins Gallery has been corrected so that only packages which match all search terms are displayed. It is now also possible to search for phrases by enclosing them in double quotes.

Robotstudio project duplicate key error

Fixed the error "Exception: An item with the same key has already been added" that could in rare cases occur when opening a project.

TCP Trace for Move Along Path

TCP Trace requires a simulation for full functionality, and is therefore no longer supported when performing Move Along Path.

Sync To Rapid Failure

Fixed two issues in Sync to RAPID that could cause corrupt code related to RAPID functions and service routines.

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Error opening RAPID module with special characters

If a RAPID module name was renamed to a name that was linguistically the same (for example by changing the German character "ß" to a double "s"), then an error was shown in the Output window when trying to open or perform any other operation on the RAPID module. This has now been fixed.

Unpack fails with VC Installer exception

Corrected an error that could occur when unpacking a Pack & Go based on old versions of RobotWare for OmniCore (e.g. 7.0.x).

AI Assistant: Link to documentation not opening

Fixed an issue where links to documentation in the AI Assistant's response were sometimes not clickable.

Intermittent Signal Analyzer issue

Fixed an issue that caused Signal Analyzer logs to become empty intermittently when logging data from controllers that had been running for a long time. Roughly around every 49 days there would be a time window of 3 days when Signal Analyzer logging would fail.

AI Assistant - Code example colors fix

Fixed an issue where code snippets in the AI Assistant response did not use the same syntax coloring as the regular RAPID editor.

Exception when configuring network on controller

For RobotWare 7.17 or later, a proper error message will now be shown if trying to configure public or IO network in a way that would cause an overlap between subnets.

Not possible to simulate OPC UA communication with Ethernet IP Anybus

Fixed an issue in the OpcUaClient Smart Component when mapping a fieldbus device such as Ethernet IP Anybus.
In a virtual controller the actual input/output data size may be larger than the size defined in the I/O configuration, and this would lead to errors in the component configuration. The OpcUaClient component will now truncate the data to the configured number of bytes.

Support tool without geometry Collision Free Path Planning

Fixed an issue where the active tool would be ignored if no collision geometry representing the tool was attached to the robot. This could result in getting an out of reach result from Collision Free Path Planning, because it was calculating using tool0, even though the target was actually reachable with the active tool TCP. This has now been fixed, and the active tool TCP will always be taken into account, even when there is no collision geometry for the tool.

Replace robot resets external axis joint limits

Replace robot will no longer reset the ARM values for external axes.

Cannot assign a device to a new signal in RobotStudio

Fixed an issue that could cause the list of I/O devices to be empty when creating or editing an I/O signal under Configuration.

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Mechanism modeler: Window focus lost

Fixed an issue where clicking Cancel after Apply, when adding links or joints, would cause the RobotStudio window to be sent to the back behind other windows.

Compatible configuration selection when jumping to target

There is now a new option 'Use a compatible configuration' that is selected as a default. With this option, when jumping to a target or instruction, RobotStudio will use a compatible configuration to the currently stored one if it exists. If there is no compatible configuration, the dialog will be shown.
The new option can be found under Options -> Mechanism.

Reimporting cloud attachment fails

Importing an attachment from a Cloud project could fail if the attachment had been imported earlier and the file deleted. This error has been fixed.

Fatal Error in Place tooldata

Fixed a crash that could occur when using Place to position a tooldata and selecting Parent reference.

VSM: Fatal error when setting minimum speed

Fixed a crash that could occur when setting minimum speed in safety supervisions in Visual SafeMove.

Corrupt folder names in backup

Fixed an error in .tar unpack that could result in a corrupt backup from a controller with RobotWare 7.19 or newer and long paths in the file system.

Fix potential crash when using a custom cable material

When adding a new custom material, the default values for all properties was zero. If the values for Young's modulus were left unchanged, and the material was used to create a cable, it lead to a crash. The minimum value for Young's modulus has now been adjusted to be greater than zero to prevent this issue.

Fatal error after minimal install

Fixed a crash that would occur if installing RobotStudio with only the Online feature selected.

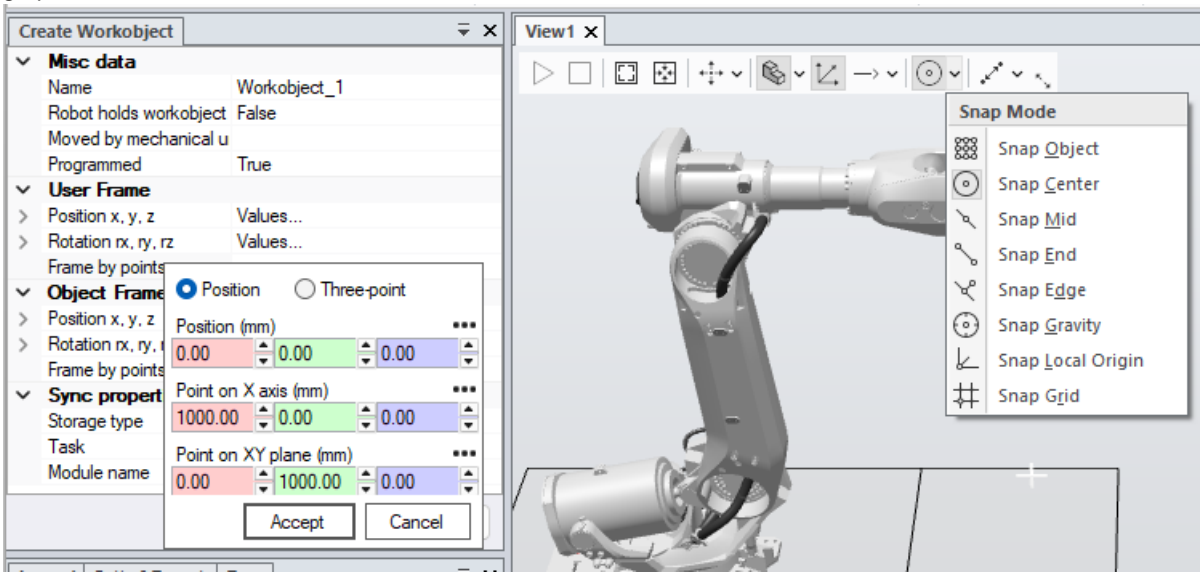
Timeout when restoring a large backup

Fixed a timeout that could occur when restoring a large backup to a controller with RobotWare 7.18 or later.

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Pop-up closed when changing selection level

In Create Workobject or Tooldata, the pop-up windows for selecting positions would close when clicking on the graphics toolbar. This issue has been fixed.



Collision Free Path disabled for robot on gantry

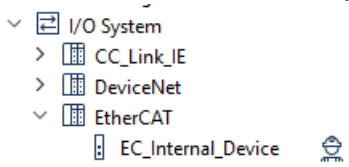
The Collision Free Path functionality was previously disabled if the robot was mounted on a gantry which had mechanical units with follower joints. Now it is possible to use the Collision Free Path also in those scenarios.

Create button not visible in 'New Virtual Controller'

Fixed an issue in New Virtual Controller where the height of the dialog could exceed the height of the screen for a backup with many add-ins.

FSoE device is not shown with safety symbol in Controller tab

In the Controller browser, the safety icon is now shown for safety enabled EtherCAT devices (FSoE).



Cloud: Error when creating branch with special characters in the name

Fixed an error that could occur when trying to create a branch with forbidden characters in the name. The Create New Branch dialog will now validate that the branch name is valid.

Fatal error when unselecting mechanism in Controller From Layout

Fixed a crash that could occur in Controller From Layout if no RobotWare distributions were installed.

Signal Analyzer fatal error

Fixed a crash that could occur when clicking an event in the Signal Analyzer timeline.

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Improved Add-In Dependency Handling in Modify Installation

Improved Handling of Add-in Dependencies in RobotWare Distributions (from version 2025.4) RobotWare add-in distributions may contain multiple add-ins, which can have dependencies on other add-ins from separate distributions. **Before version 2025.4:**
If any add-in within a distribution had unresolved dependencies, the entire distribution could not be added via *Modify Installation*. **Starting with version 2025.4:**
RobotStudio now supports adding such distributions even when some add-ins have unresolved dependencies. These add-ins will be automatically deselected, allowing the rest of the distribution to be installed without interruption.

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Known Limitations

IO Configurator 6

*Safety configuration problem with PROFIsafe Controller or CIP-Safety scanner

Changing safety settings in Visual SafeMove or IO Configurator 6 does not always work in conjunction with the "PROFISafe controller" or "CIP-Safety Scanner" option. Connection with robot controller can be lost during any IO-configuration, sometimes resulting in that the Flex Pendant reboots. Again this is only applicable when the PROFISafe controller or CIP-Safety scanner option is present in the system. Problem is dependent on how many devices are configured on respective industrial network. I.e. EtherNet/IP or ProfiNet.

Online

Signal Analyzer Online recordings not saved

When recording signals from a real controller with RobotWare 6.13.03 and later, or RobotWare 7.6.1 and later, there is a sporadic issue which causes the signal changes to not be recorded.

Routine variables can't be displayed in RAPID Watch with RobotWare 6.12

A limitation in RobotWare 6.12 prevents variables declared in a routine from being displayed in the RAPID Watch window.

Port speed cannot be set at the same time as 'Obtain IP address automatically'

In the Public Network settings dialog the Port speed drop down menu is disabled when 'Obtain IP address automatically' is selected.

Workaround:

1. Select 'Use the following IP address' and specify any valid IP address.
2. Select the desired port speed and press OK.
3. Select 'Obtain IP address automatically' and press OK.

Individual RAPID tasks cannot be stopped for RobotWare 5.60 and later

When running multitasking systems, it is not possible to start and stop individual tasks with the dropdown menu of the task node in the Controller browser. This is due a restriction introduced with RobotWare 5.60 and later. However, from RobotWare 6.03 onwards, then RAPID tasks to execute or to stop can be selected from RobotStudio RAPID tab.

FlexPendant Viewer running with automatic reloading

When having FlexPendant Viewer running with automatic reloading of the screens and at the same time jogging the robot with the joystick the robot jogging might halt when the FlexPendant Viewer reloads.

Cable harness not visible in Online Monitor

Physics-based dynamic cables that are part of a robot model are not visible in Online Monitor.

Online – Paint

Backup for Paint systems does not create backup of the PIB for IRC5P with RobotWare 5.xx

The Backup function of RobotStudio does not create a backup of the PIB board of the IRC5P system when running RobotWare 5.xx. Workaround: Create the backup of the PIB board with the FlexPaint Pendant using an USB-stick.

Go Offline does not work for Paint systems

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The Go offline function will not create a working Virtual controller system for Paint system unless the Paint package I/O option is set to Simulated.

Online – Integrated Vision

Installation error when having previous versions of RobotStudio or Insight Explorer

If you have a previous version of RobotStudio or Cognex In-Sight software installed, installing a new version of RobotStudio may result in the following error message

Module C:\Program Files (x86)\Common Files\Cognex\InSight\5.7.1674.0\CvsInSightDisplay.ocx failed to register. HRESULT -2147220472. Contact your support personnel.

Workaround: To correct the issue, open Windows Settings -> Apps -> Apps & features, select the current ABB RobotStudio 202x.y, select Modify, and step through the installation wizard and select Repair. Alternatively, uninstall and reinstall RobotStudio.

Note: Only one version of the In-Sight Display Control can be registered at a time, and this is always the latest version installed. Although older versions of RobotStudio or In-Sight may seem to function with this version installed, their compatibility with this version is not guaranteed.

RobotStudio may hang for up to 60 seconds when configuring jobs with PatMax 1-50

The user interface of RobotStudio may freeze for up to 60 seconds when configuration Integrated Vision jobs with the tool PatMax 1-50.

Workaround: Use PatMax 1-10 instead

Remaining error – New Emulators

New camera models have been added to the camera emulator option in RobotStudio 6.04.01. Some of these new models are not yet fully compatible. Our recommendation is to choose a camera model from the 7000 series which is fully compatible with Firmware version 4.10.2.

Emulated cameras not discovered when controller in Motors On

For RobotWare 5.61 onwards, the camera discovery mechanism is disabled when the controller is in Motors On. As a consequence, the camera nodes will not appear in the controller browser.

Workaround: Switch to Manual Reduced Speed and use the Refresh command on the Integrated Vision node in the browser to make the cameras appear.

Information – Camera firmware version and update

The minimum firmware version to be used with Integrated Vision is 4.08. If this version is not available for a specific camera model, then the newest version available shall be used. There are two important things to know before upgrading a sensor:

- The user must make sure to first backup the files on the camera. This can be done using the Rapid snippets for camera backup/restore, or the FlexPendant Explorer.
- The latest available firmware version may vary across sensor types. However, when the firmware update utility presents the latest available version it shows the firmware with the highest version number which may not apply to the sensor to be updated. However, the appropriate firmware will be applied.

Information – The spreadsheet view

The spreadsheet view is not enabled when editing in the in the following modes “Add part location tool”, “Add part inspection tool”. Before entering the spreadsheet mode click for example “Setup Image” or Output to Rapid.

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Information – Calibration board without fiducial

When using the calibration boards, checkerboard or board with dots, the user must select the preferred origin by clicking and accepting (press enter) three points on the board. Only after these three points have been selected it is possible to click "calibrate" to execute the calibration.

Information - Use default camera settings

If the camera is not using default communication settings the result may be that RAPID instructions return error code “Communication Error”. The safest method to get default settings is to go to Connect->Add Sensor Right click and select “Show all sensors”. Select the device to reset and click “Apply factory settings” in the lower right corner. The most important settings are:

```
Telnet port: 23
User: "admin"
Password: ""
```

Information – User Credentials

It is now possible to create user profiles with different access levels on the camera. For detailed information about this, please refer to the Integrated Vision User Manual.

Remaining error – Save image on camera

It is not possible to save an image on the camera using “Save Image”. This is by design, but the dialog still allows the user to try to do this. The result is that the image is not saved and no error message is given.

Remaining error - Connect button greyed out for no reason

It may sometimes happen that the “Connect” button is greyed out, with the tooltip saying the camera is not on the correct subnet although the IP settings are OK.

Workaround: Restart the Integrated Vision Add-In

Remaining error – VC started from Controller->Add controller does not detect cameras

A VC that is started from Controller->Add controller does not detect cameras on the network, even if the VC_network_definition.xml is correctly configured and the firewall is turned off. The reason is that the controller is not able to detect new cameras on the network when it is in “Motors On” state. When the VC is started stand-alone in RobotStudio it is automatically set to “Motors On“ when started.

Workaround: To allow it to discover cameras, turn the control panel key to manual mode or launch the VC as part of a station.

User tip - Removing cameras from configuration

To remove a configured camera from the list of configured cameras, use the configuration editor. Enter Configuration->Communication->Application Protocols and remove the desired camera. Perform a warm start to complete the operation.

User tip – Viewing all cameras present on the network

Connect->Add Sensor is normally used for setting the IP addresses of sensors that are not currently on the correct subnet (192.168.125.X). Since the dialog shows all cameras “seen” by the PC, this dialog is useful when error tracing camera network problems. If a camera does not appear on the network using the “Add sensor” dialog as suggested above, it is advisable to cycle the power of the camera. If the camera receives power from the controller, then cycle power by turning the mains switch.

User tip – Warm start the controller after changing network settings

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Whenever changing the network settings of the camera, either from Connect->Add Sensor or Connect->Network settings, it is important to warm start the controller. If this is not done, RAPID instructions will give the error “Communication Error” and the FTP-mounted camera disk is not accessible. If DHCP address is used and persist, please try a static address instead.

Offline

Point cloud data in JT files can't be imported

Point cloud data in JT files is not imported by RobotStudio.

Issue with collision avoidance for palletizer robots

When configuring collision avoidance for a palletizer robot using RobotWare 6.11, attaching an object to a mechanism link can result in an error and the configuration will not be loaded.

The YuMi library revision 1 cannot be successfully updated to YuMi revision 2

When opening a Pack&Go file with a station that has a reference to `IRB14000_0.5_0.5__01.rslib` you get the option to update it to the newer `IRB14000_0.5_0.5__02.rslib`.

The following issues occurs if you select ‘Yes’ and update the model:

- The attached parts, for example Smart Grippers, are detached.
- The new YuMi robot is not connected to the virtual Controller.
- The old YuMi mechanism is converted to a component.

Answer ‘No’ to this question to keep the original revision 1 model and avoid the problems mentioned above.

RobotStudio needs to be restarted to update a modified library instance

When editing a library file (.rslib) that is used in a currently open station, then RobotStudio needs to be restarted to update the library. Simply re-opening the station is not enough to update the content of the station. Unless RobotStudio is restarted, the old library instance will remain in memory and be loaded even though the underlying file has been updated. This is a known limitation and is expensive to fix. There is a workaround to the problem, which is to restart RobotStudio.

The robot IRB 1600ID 1.55 m / 6kg replaced by IRB 1660ID1.55 m / 6 kg in RobotWare 6.04

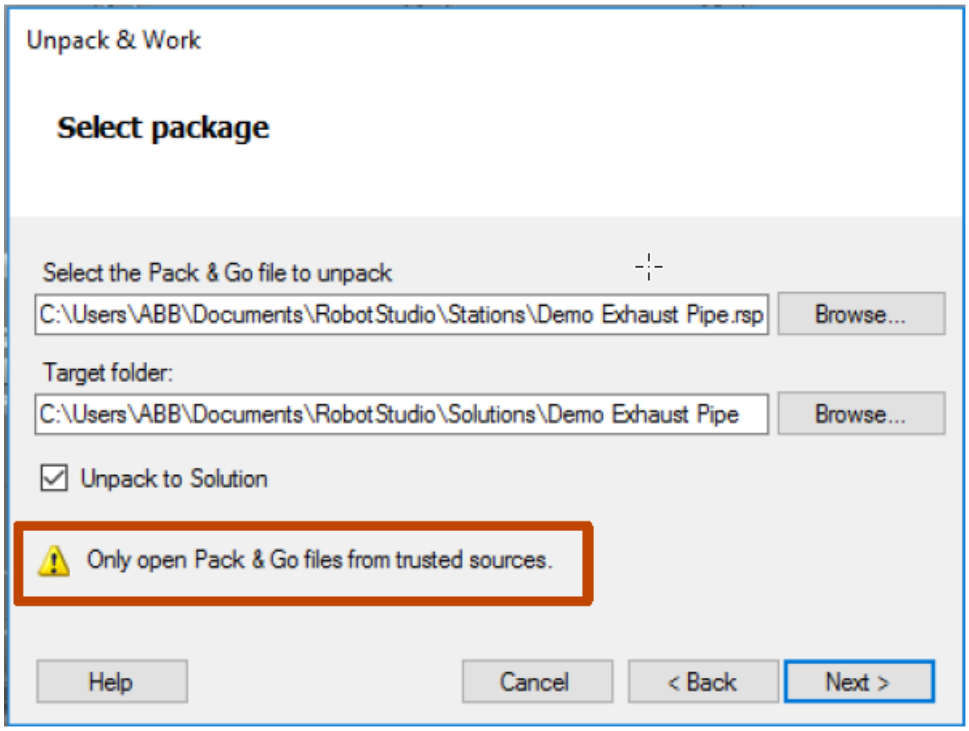
The robot IRB 1600ID 1.55 m / 6 kg is not available in RobotWare 6.04 and later. It has been renamed to IRB 1660ID 1.55 m / 6 kg. Virtual controller systems for IRB 1600ID 1.55 m / 6 kg based on RobotWare 6.03 cannot upgraded to RobotWare 6.04 and later. This means that Pack&Go files for this robot based on RobotWare 6.03 cannot be upgraded to RobotWare 6.04 automatically

Workaround: Re-build or modify the virtual controller system to use IRB 1660ID 1.55 m / 6 kg instead when using RobotWare 6.04 or later.

FlexPendant and RAPID applications run with logged in user rights

A FlexPendant or RAPID application running on the virtual controller runs with the rights of the logged-in Windows user. RAPID applications running in a background task will start to execute when the Pack&Go file is opened and FlexPendant applications will start to execute when the user starts the Virtual FlexPendant. A warning message has been added to the Unpack&Work wizard to make the user aware that only Pack&Go files (.rspag) from trusted sources shall be opened.

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Compatibility of RobotStudio Library and Stations with older RobotStudio versions

RobotStudio is generally not forwards compatible, i.e. it is not possible to load stations or libraries created in RobotStudio 6.04 into an earlier version of RobotStudio such as e.g. RobotStudio 5.x, 6.03.02 or earlier. However, RobotStudio is backwards compatible, which means stations and libraries created in versions 5.x, 6.03.02 or earlier can be opened in RobotStudio 6.04

TrueMove path visualization fails for customized zone data

The TrueMove path visualization function only supports predefined zonedata. It will not work for user defined zonedata.

Backup fails for RobotStudio solutions with SafeMove or Electronic Position Switches

Backups are automatically created for virtual controller systems that are part of a RobotStudio solution when saving the station. For virtual controller systems with the RobotWare options SafeMove or Electronic Positioning Switches the backup will fail since these systems contain files that are read-only. As a result, an error message is presented in the output window: `<System name>: Backup failed`. The station will be successfully saved but there will be no backup created. Workaround: Ignore the error message `<System name>: Backup failed` and create a manual backup whenever needed. The RobotStudio Option “Enable automatic backup of controllers in solution” that is available in ”RobotStudio Options -> Robotics -> Virtual Controller” can be de-selected to disable the backup function.

IRB 14000 cannot be combined with any other robot

The function system from layout fails if trying to create a MultiMove system where one robot is an IRB 14000. The reason is that the IRB 14000 cannot be combined with any other robot.

Workaround: Create a separate system for the IRB 14000.

The Work Envelope function does not support IRB 14000

The function is disabled for the IRB 14000 and cannot be activated.

The 2D work envelope fails for certain robot models

As a result, the generated work envelop may appear distorted.

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Update of current selection in the 3D graphics window may be delayed

A problem related to the graphics driver has been observed on certain PCs. The problem is that the update of the current selection in the 3D graphics is delayed until the next redraw.

Workaround: Add or uncomment the following line in the file RobotStudio.exe.config

```
<add key="DoublePresentWorkaround" value="true" />
```

Failure to open Pack&Go file to same folder the second time

RobotStudio will prevent Pack&Go files to be opened to the same folder a second time if the station contains VC systems with the EPS or SafeMove option. This is by design to prevent the safety controller configuration file to be accidentally overwritten.

Workaround: Remove the write protection manually using Windows Explorer.

Updates of instruction template and code snippets

RobotStudio will not automatically update the user files for instruction templates and code snippets files in the folders:

…\My Documents\RobotStudio\Instruction Templates
…\My Documents\RobotStudio\Code snippets

Workaround: The user has to manually copy the latest files from

%ProgramFiles%\ABB Industrial IT\Robotics IT\RobotStudio 5.xx\Instruction Templates

and

%ProgramFiles%\ABB Industrial IT\Robotics IT\RobotStudio 5.xx\Code Snippets

to the data folder.

I/O signals configured with access level 'DEFAULT'

When IO signals are configured with access level 'DEFAULT', only input signals are possible to set/reset from the I/O Simulator and I/O Window. To be able to affect also output signals, set the access level to ‘ALL’ for them in the Configuration Editor.

VC does not start with RRI option and GSI folder structure missing

The VC will hang when started with a system containing the RobotWare option RRI (Robot Reference Interface) if the GSI folder structure is missing.

Workaround: Create GSI Folder before starting the VC inside the *HOME* directory of the system. See the Application Manual for Robot Reference interface for more information.

System in Guard Stop state in Automatic mode after run-time error

Certain run-time errors may cause the controller system to enter Guard Stop state in Automatic mode. This is the same behavior as in a physical robot controller system. This typically happens when a run-time error related to Conveyor Tracking occurs. A simulation cannot be started when the controller is in this state.

Workaround: To reset the controller state, open the Control Panel window and first switch to Manual mode, and then back to Automatic mode.

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Path handling of instructions with multiple joint targets

The path functions Rotate, Translate, and Mirror do not work as expected with instructions containing via points as jointtargets. The functions will leave the jointtargets as is. Interpolate Path gives an Unknown Error and Tool Compensation reports an error message.

Event Manager: Simulation cannot be triggered by analog system signals

The event manager only supports analog station signals, not analog system signals.

Record Movie requirements

Movie recording requires the optional Windows component 'Media Features' which is not included by default in Windows N versions. It can be installed from Settings > Apps > Optional features.

Conveyor Tracking

*Conveyor objects must be re-added for stations created prior to RS 6.05

When opening stations with conveyor tracking created prior to RobotStudio 6.05, conveyor objects must be re-added.

Incorrect default values for c1Position and c1Speed for RobotWare 5 with the PaintWare option

The default values for the parameters c1Position and c1Speed may become incorrect for a virtual controller system. The symptom is that its attribute values are all zero, see snapshot below.

Workaround: Save the following lines to a CFG file named ‘TEMP.CFG’ or similar and load in the virtual controller followed by a restart.

```
EIO:CFG_1.0:5:0::
#
EIO_SIGNAL:
 -Name "c1Position" -SignalType "AI" -Unit "CnvIf"\
 -SignalLabel "ctPosition" -UnitMap "0-31" -Access "ALL"\
 -MaxLog 21474.8 -MaxPhys 1 -MaxPhysLimit 1\
 -MaxBitVal 2147483647 -MinLog -21474.8 -MinPhys -1 -MinPhysLimit -1\
 -MinBitVal -2147483647
 -Name "c1Speed" -SignalType "AI" -Unit "CnvIf" -SignalLabel "ctSpeed"\
 -UnitMap "32-63" -Access "ALL"\
 -MaxLog 21474.8 -MaxPhys 1 -MaxPhysLimit 1\
 -MaxBitVal 2147483647 -MinLog -21474.8 -MinPhys -1 -MinPhysLimit -1\
 -MinBitVal -2147483647
```

MultiMove

MultiMove error: ‘Object reference not set to an instance of an object’

When the Test Play button is pressed in the MultiMove tool, the following error message may be displayed: ‘Object reference not set to an instance of an object’, but the robot moves and the Status ‘Calculation OK’ is displayed. In addition, when ‘Create Paths‘ is pressed the following message is displayed: ‘Can't create paths : Value cannot be null’, and no paths are created. In the ‘Create Paths Settings’, is the WP TCP drop down empty.

Reason: Workobject is not set for the current task.

External Axis

Error 50091: ‘Restart not possible’ after warm start of a system with external axis

When restarting a system with activated mechanical units the activation state is lost. Then the program can no longer be started from the Virtual FlexPendant, the RAPID Editor or the RAPID Tasks window.

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Workaround: Reset the program pointer (‘Program Pointer to Main’) before starting the program from the Virtual FlexPendant, the RAPID Editor or the RAPID Tasks window, or, start the program from the Simulation Play button.

Network Drives and UNC Paths

RobotStudio on computers with roaming user profiles

RobotStudio may fail on PC configurations with roaming user profiles, i.e. when the users’ documents folder resides on a server and not on the local disk.

Workaround: Redefine the ’User Project Folder’ to a folder on the local disk (File → Options → General → Files&Folders → User Project Folder).

Virtual Controller does not support UNC paths

UNC paths cannot be used to locate Virtual Controller systems. Using UNC paths for VC systems will cause the log message ‘Failed to initialize FW upgrade framework’ to appear when the system starts. Subsequent attempts to work with the VC such as synchronizing RAPID data will fail.

Creating and starting systems located on a network drive

When using a network drive to store RobotStudio data such as RobotWare systems or the RobotWare mediapool, the following problems may occur:

- Virtual controller does not start
- Not possible to open Virtual FlexPendant

Cause: By default, the .NET Framework does not allow execution of code from a remote file system. This means the application may behave unexpectedly if the media used by the system or the system itself resides on a network share.

Workaround: To resolve this, the user must explicitly grant the required permissions:

1. Open the file *Virtual FlexPendant.exe.config* located in *C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio 5.61\Bin*
2. Add the following lines:

```
<?xml version="1.0"?>
<configuration>
    <startup useLegacyV2RuntimeActivationPolicy="true">
        <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.0"/>
    </startup>
    <runtime> <!-- THIS IS ONE OF THE NEW LINES!!! -->
        <loadFromRemoteSources enabled="true"/> <!-- THIS IS ONE OF THE NEW LINES!!! -->
    </runtime> <!-- THIS IS ONE OF THE NEW LINES!!! -->
</configuration>
```

The Virtual FlexPendant must be restarted for the changes to take effect. For further information, see http://msdn.microsoft.com/en-us/library/dd409252(v=vs.100).aspx

RAPID

Robtargets that are LOCAL to a PROCEDURE cannot be synchronized with RobotStudio

The RobotStudio synchronization engine that translates 3D data of the station to RAPID code and vice versa does not support robtargets that are declared locally to a procedure.

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Workaround: Declare the robtargets as global or local to a module instead.

Robtarget names must be unique in RAPID even if they are LOCAL

RobotStudio requires that robtarget names are unique for the RAPID synchronization to work properly, i.e. you cannot have a global robtarget named pMyTarget1 in module A and a local robtarget with the same name in Module B.

Global robtargets cannot be made local through Synchronization to VC

Global robtargets cannot be changed to local through Synchronization to VC, the option is disabled (PDD 3140).

Workaround: Change the robtargets to module local in the RAPID Editor and Synchronize to station.

Error Message: Sync. to Station completed with errors

Error Message: Sync to Station completed with errors: New data *name type* has same name as existing object in same block *routine*.

When this error message appears, there is a storage type mix-up between data already stored in RS and in the VC. Because of this, and per design, the data is not considered the same data.

Workaround:

1. Ensure all data declarations have the same definition in RS as in RAPID (there is no user interface for this).
2. Sync to station should now work.
3. Sync back to controller, and remember to change the data declarations back to what you want.

Paint

The new conveyor tracking module DSQC2000 is not supported for paint robots.

The new conveyor tracking module DSQC2000 is not supported for paint robots.

Lack of Virtual Controller support for the Paint systems

Paint systems that are configured using the Paint package I/O option Discrete, Compact or Fieldbus, will result in a SysFail state.

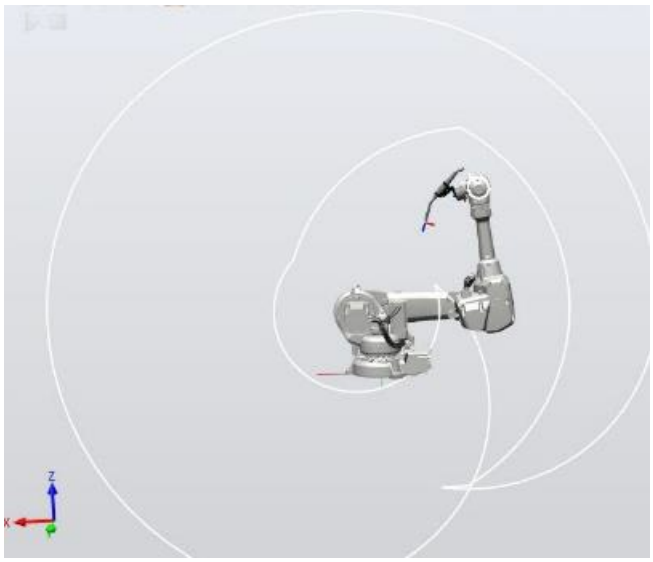
Workaround: Re-create the system with the simulated I/O option.

Graphics and Geometry

***Display of working range optimized for furthest reach**

The current algorithm uses a fixed value for joint five which gives the furthest reach for a given tool. The sweep is not optimized to get the shortest reach on the "inside" of the working area.

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Enforce selected graphics device for PCs with multiple graphics cards

For best performance when running RobotStudio on a PC with multiple graphics cards, RobotStudio can be configured to use a specified device. By this option you can ensure maximum performance. This is useful for e.g. Lenovo W540 that has both an integrated Intel graphics device and a discrete NVIDIA card.

Open the file *RobotStudio.exe.config* that is located in the folders

C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio x.y\Bin64

and

C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio x.y\Bin

and uncomment the line:

```
<add key="GraphicsDeviceType" value="Discrete"/>
```

Valid values are 'Discrete', 'Integrated' and 'Warp' (software renderer). Note that there are two different files, one for the 32-bit version, and another for the 64-bit version.

Problems when undoing Boolean operations on Geometry

Undoing a Boolean operation might not succeed. To recover from these problems, you need to delete the items that caused the problem.

ScreenMaker

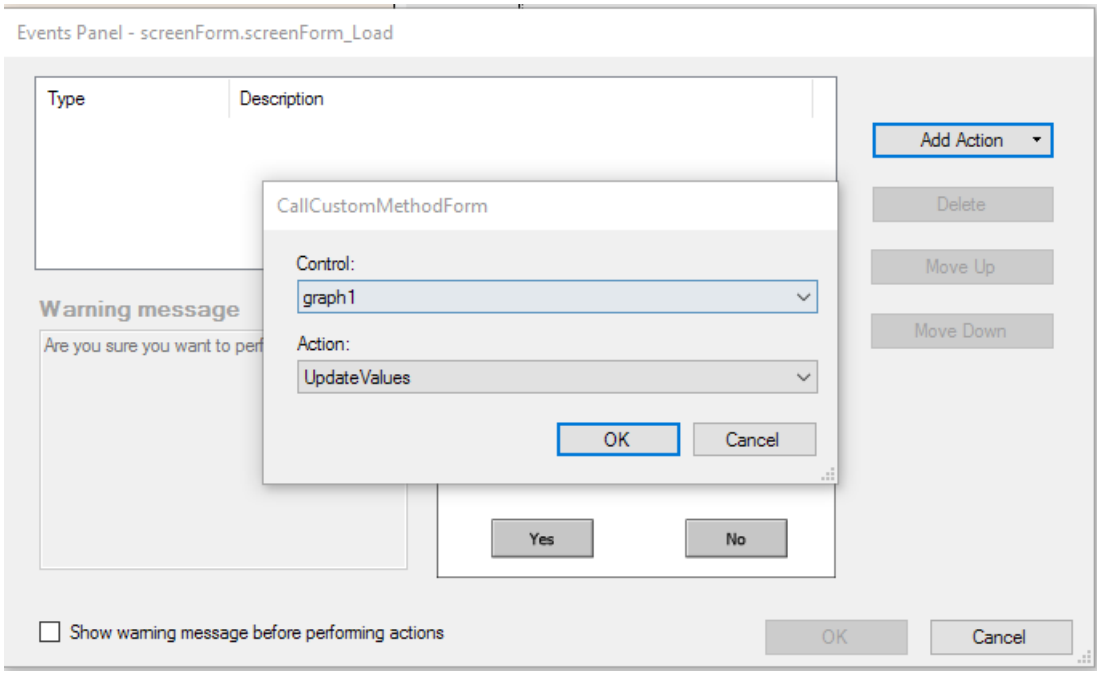
Numeric controls and decimal separators

To use numeric controls in ScreenMaker on the PC set the decimal symbol to a single period ('.'). Other decimal symbols are not supported and binding values will not work in the Virtual FlexPendant. The behavior on the real FlexPendant is not affected by this PC setting.

Graphs on secondary screens

To use a Graph on a secondary screen (not the main screen) a custom action is needed. Otherwise, the Graph will not be updated properly. In the ScreenForm that contains the Graph add a Load event. In this event add an action using Add Action->Advanced->Call Custom Action. Select the Graph control and the UpdateValues action.

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Binding to the Enabled property

Connecting the *Enabled* property of any control to a BOOL variable or IO signal may not work as expected. The variable or signal may be inadvertently changed leading to unexpected behavior. Instead, bind to a digital output where the *Access Level* is set to *ReadOnly*

A ScreenMaker cannot be deployed a controller with disabled Default User

Workaround: Enable the Default User.

NumEditor in ScreenMaker disables the controls in a group box or panel

If you are using the NumEditor control in a group box or a panel, and that box or panel is enabled by an input signal, then all other controls of that group or panel will become disabled if the editor is opened and closed.

Button with multiple states in ScreenMaker app do not update the images if button is disabled

For an app which uses Buttons with multiple states connected to images that change depending on the value of a RAPID variable, then if the button is disabled, the button shows the greyed image of the state which was active when the disabled state was shown the first time.

ScreenMaker fails for RobotWare 5.12

ScreenMaker fails to build applications for RobotWare 5.12.
Workaround: Update to a later RobotWare version.

A ScreenMaker application may fail to build if the DPI setting is not set to 100%

Certain UI controls in ScreenMaker may fail to build correctly if the DPI setting is not set to ‘Smaller – 100%’.
Symptom: The error message caused by this problem will read ‘System.Drawing.Font’ does not contain a constructor that takes 2 arguments.
Workaround: Set DPI to 100% on your PC.

File changes to FlexPendant applications does not load the changes until a FlexPendant reset

With RobotWare 6.0x the controller's restart will no longer reset the FlexPendant memory. This was part of an effort to improve the restart time of the controller. This means that after placing a new FlexPendant application file(s) on the FlexPendant unit, you need to manually reset the FlexPendant for it to reload its assets.

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To manually reset the FlexPendant you need to use the reset button on the FlexPendant's backside. (See Operating Manual – IRC5 with FlexPendant, 3HAC16590)

Running Routine with Movement

RunRoutine Button control does not always work correct when a routine with movements is called. As a workaround use instructions like StopMove, StorePath, RestorePath and StartMove to control the movements of the robot. A Trap routine could be called with a normal button control and in the Trap the above instructions can be used to control the movements of the robot.

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RobotWare Compatibility

Supported RobotWare versions

RobotStudio works with RobotWare 5.07 and later. Please check details below. The latest supported RobotWare version for IRC5 and OmniCore controllers is stated under Help/About in RobotStudio. RobotWare packages can be added to RobotStudio from the Add-Ins Gallery window.

RobotWare 5.05 and 5.06 Compatibility

RobotWare 5.05 and 5.06 including revisions thereof are not supported by RobotStudio 5.15 and later versions. Please use the corresponding version of RobotStudio for managing robot controllers with any of these RobotWare versions.

RobotWare 5.07 Compatibility

General

The location of the program pointer is not updated in the RAPID Editor during program execution.

Offline

A limitation in the versions 5.07.02, 5.07.03, and, 5.07.04 of RobotWare may cause the Virtual Controller to System Failure state during I-start on certain computers. The problem is due to the ctrl.bin-file not being correctly created.
Workaround: Create an empty ctrl.bin file in the INTERNAL folder of the controller system, and then perform a warm start.
Note: The problem will reappear if the system is I-started. The virtual controller does not support RobotWare 5.07.08 and RobotWare 5.07.07.

Online

FlexPendant Viewer does not work RobotWare 5.07.

RobotWare 5.08 Compatibility

RobotWare 5.08 and its revisions of are supported with the following limitations:

Offline

RobotWare 5.08 is not supported.
Workaround: Use RobotWare 5.08.01 or later.

RobotWare 5.10 Compatibility

RobotWare 5.10 and its revisions of are supported with the following limitations:

Offline

Starting a controller will generate internal UAS error in controller error log.

RobotWare 5.11 Compatibility

RobotWare 5.11 and its revisions of are supported with the following limitations:

Offline

Linear jogging of a robot across joint values that will cause a change of confdata may fail. For example, if the robot is jogged linearly when joint values is passing 90 degrees for axis 1 may cause the robot to stop or to change configuration.

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RobotWare 5.12 Compatibility

RobotWare 5.12 and its revisions of are supported with the following limitations:

Paint

Paint backups from RW 5.12.01 are not compatible with RW 5.12.02 or later. Restoring a paint system backup from RobotWare 5.12.01 will cause SysFail for RobotWare 5.12.02 or later.
Workaround: Add the following parameters to the configuration files:
EIO.CFG

```
EIO_SIGNAL:
-Name "doMainInMC" -SignalType "DO" -Unit "SysComm" -UnitMap "44"
-Name "A1HVErrNo" -SignalType "GO" -Unit "SysComm" -UnitMap "150-151"\
-Access "ALL"
-Name "A1HVEn" -SignalType "DO" -Unit "SysComm" -UnitMap "155"\
-Access "ALL"

EIO_CROSS:
-Res "A1HVEn" -Act1 "HVEnabled"
```

SYS.CFG:

```
CAB_TASK_MODULES:
-File "INTERNAL:/pntrapid/T_ROB1/cycinfo.sys" -ModName "cycinfo"\
-Task "T_ROB1"
-File "INTERNAL:/pntrapid/csvlkup.sys" -ModName "csvlkup" -AllTask \
-Hidden
```

RobotWare 5.13 Compatibility

RobotWare 5.13 and its revisions of are supported with the following limitations:

Paint

Paint backups from RW 5.12.02, 5.12.03 or RW 5.13 or 5.13.01 not compatible with RW 5.13.02 or RW 5.13.03. There are several changes in the configuration database for I/O (EIO.CFG) and Controller (SYS.CFG) that will cause System Failure if an old backup is loaded. There are also changed in installed RAPID modules. To create a compatible configuration, proceed as follows:

1. Create and start a VC with a RobotWare 5.13.03 system containing the same options as your original backup, but do not load the backup.
2. Save the EIO.CFG and SYS.CFG to file.
3. Compare the saved files with the corresponding files of your backup. (You can use a text file comparison tool for simplification.)
4. Add your system-specific configuration to the general configuration files saved from the 5.13.01-system using a text editor.
5. Replace the files of the original backup with the corresponding modified configuration files.
6. Go through the RAPID modules of the backup and remove the default modules (i.e. those that are not changed by the user).
7. Load the backup and restart the system. You are done.

RobotWare 5.15 Compatibility

Signal Analyzer Online

The feature Signal Analyzer Online requires RobotWare 5.15.03 or later.

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RobotWare 6 Compatibility

Overview

RobotWare 6.00 and 6.00.01 systems cannot be directly upgraded to RobotWare 6.01. To upgrade a system, you need to create backup and migrate it using the tool ‘Migrate Backup or Folder’, then recreate the system and finally, restore the backup. For this reason, the functions ‘Unpack&Work’, ‘Go Offline’ and ‘New Solution with Station and Robot Controller – From backup’ are blocked to prevent upgrade from RobotWare 6.00 or 6.00.01 to RobotWare 6.01. RobotStudio, however, is compatible with both RobotWare 6.00 / 6.00.01 and 6.01.

General Compatibility Limitations

Safety Configuration

Safety configuration of a track motion IRC5 system equipped with a safety controller of type EPS or SafeMove can be done without the need to read track motion parameters manually when using RobotWare 5.11.01 or later. Encrypted parameters needed by the safety controller will be automatically read by EPS Wizard and SafeMove Configurator, respectively.

Configurations

The feature ***Configurations*** for selecting the robot arm configuration (confdata) may fail, or not present all solutions, in some specific circumstances even when the target is reachable if RobotWare 5.14 or earlier is used.

Workaround: Upgrade to RW5.14.01 or later

Microsoft Visual C++ 2010/2013 requirement

The redistributables for Microsoft Visual C++ 2010 and 2013 are no longer included in the RobotStudio installer. These are required when starting a Virtual Controller using RobotWare 5.x or RobotWare 6.00 - 6.06. If the requirement is not already installed on the PC, the user will be prompted to download and install it when such a Virtual Controller is started.

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