RELEASE NOTES

RobotStudio 2025.2

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Release Notes for RobotStudio 2025.2

General

The release name is RobotStudio 2025.2 and the build number is 25.2.11220.0. The build date is May 16, 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 10 Anniversary Edition or later, 64-bit edition, 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 10 and later, 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 **Update & Security** (Windows 10) or **Privacy & security** (Windows 11) > **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 2, 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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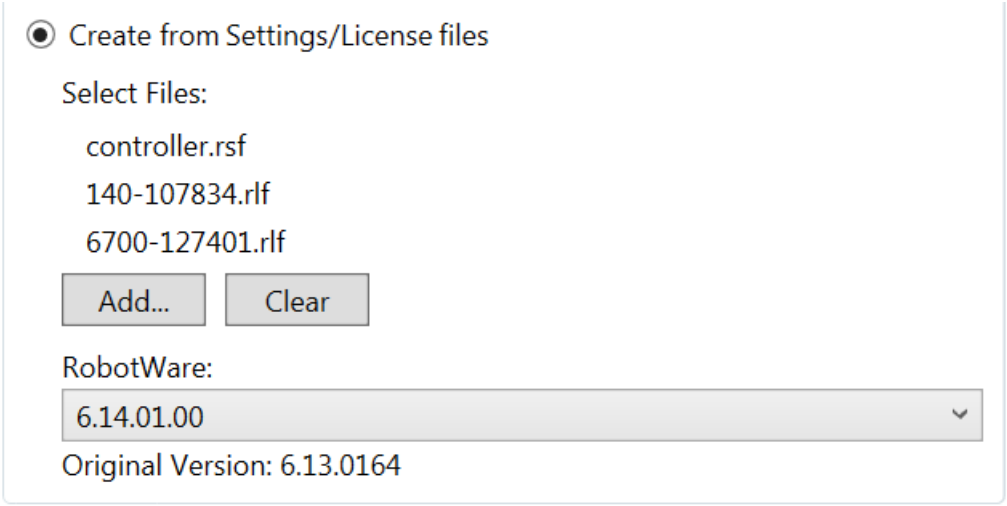
New Functionality

- Create Virtual Controller from Settings and License file
- Graphics Toolbar
- Import and export OmniCore user authentication database
- Update data protection passphrase via RobotStudio jobs

Create Virtual Controller from Settings and License file

When creating a new Virtual Controller, there is now an option to define the controller by specifying a Robot Settings file (.rsf) and/or Robot License files (.rlf).

- If no license file defined, a virtual license will be used.
- If no settings file is defined, all licensed options will be added.
  In this case, it is recommended to use Modify Installation to verify the controller settings.
  For RobotWare 7.x (OmniCore), the settings file is mandatory.
- If both license and settings files are defined, they should originate from the same controller.

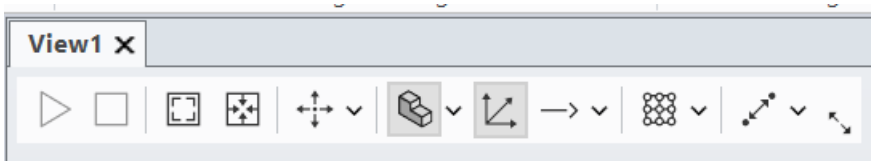


Graphics Toolbar

The semitransparent buttons for selection levels, snap modes and measurement in the Graphics window have been replaced by a toolbar. The toolbar also includes controls for freehand manipulation.
The toolbar can be switched between an expanded and a collapsed view by clicking the button in the bottom right corner.
Expanded view:

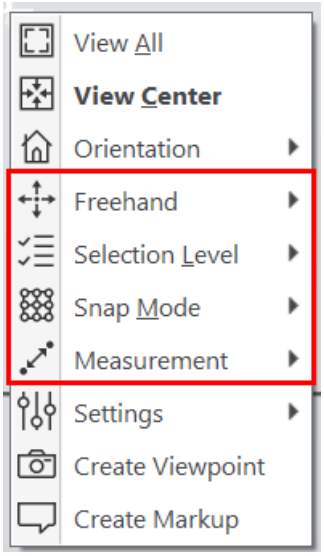


Collapsed view:



The toolbar can be hidden and shown by right-clicking in the Graphics window and selecting Settings - Show Toolbar.
The default visibility of the toolbar can be set in Options - Graphics - Appearance.
When the toolbar is hidden, the commands are instead available from the right-click menu in the Graphics window:

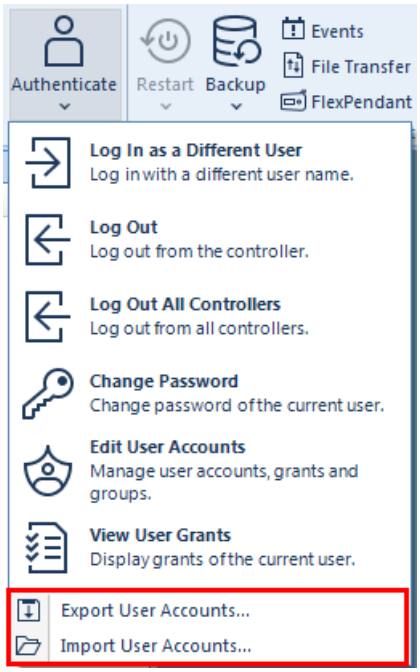
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Import and export OmniCore user authentication database

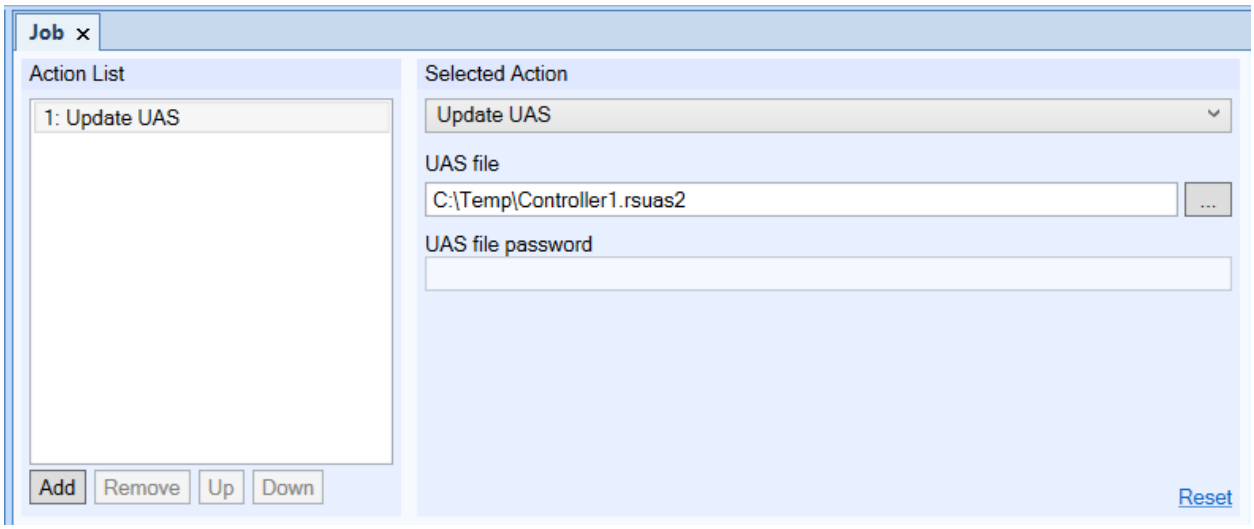
From RobotWare 7.19.1 it is possible to import and export the user authentication database that includes user names, passwords, groups and assigned grants. This way the user authentication configuration can efficiently be transferred between controllers.

In RobotStudio, the commands for import and export are accessed from the Authenticate menu. The grant "Manage UAS settings" is required. After importing, the controller must be restarted for the changes to take effect.



The Jobs action Update UAS has also been updated to add support for loading an OmniCore authentication database into the controller. When an OmniCore UAS file (.rsuas2) has been selected, the password field becomes disabled, since that is only used for IRC5 files.

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Update data protection passphrase via RobotStudio jobs

Data protection passphrase is defined in RobotWare Installation Utilities and used to protect security sensitive data in user backups generated by the controller. Starting from RobotStudio 2025.2, it is now possible to change the passphrase when full system is running, by using RobotStudio jobs functionality. Only a user that knows the current previous passphrase can modify it. This allows for using a temporary passphrase during initial commissioning and then change it later when systems are commissioned and placed in the production environment.

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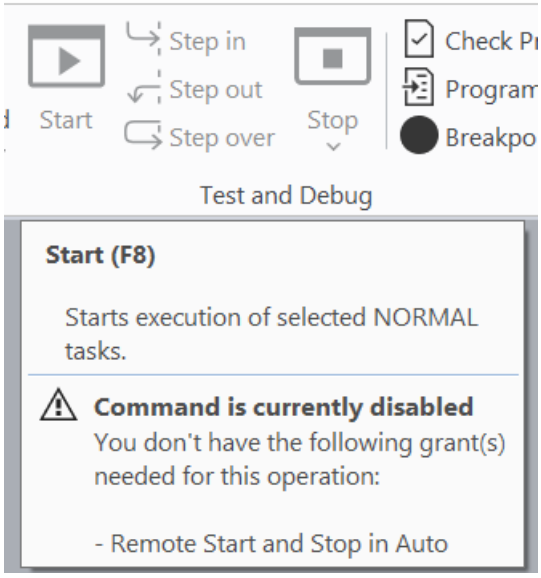
Improvements

Improve 'Supported 3D Formats' in the operating manual

The section 'Supported 3D Formats' in the RobotStudio operating manual has been revised to clarify the capabilities, limitations and license requirements of the various file formats.

Step RAPID without grant results in error

Start, stop and step of RAPID execution requires the grant "Remote Start and Stop in Auto" for a remote user connected to an OmniCore controller in Auto mode. RobotStudio will now check this condition and disable the corresponding commands if the grant is not present.



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Information

Removed support for migrating old Signal Analyzer recordings

Signal Analyzer recordings created before 2019 (and never opened in a later version of RobotStudio) are no longer supported.
Workaround: Open the recording in RobotStudio 2025.1 (or older) to ensure that it is migrated to a supported format.

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Corrections

Open folder not working

Fixed an issue where 'Open folder' was not working when right-clicking the Controller>HOME folder for real controllers. It will now open File transfer.

Not possible to transfer a file with more than 99 characters in the name

It is now possible to use File Transfer to upload a file with more than 99 characters in the name to an OmniCore controller.

Select configuration window appears even though Auto Configuration has been performed

For targets with a taught configuration, Auto Configuration can in some cases calculate a different configuration if a joint value is close to a quadrant boundary. The existing configuration will no longer be overwritten in this case.

Cut & Paste of RAPID module does not work properly

Cut & Paste of a RAPID module between tasks now works as expected, deleting the module from the source task. Also the module icon in the Controller browser now has the correct cut appearance.

Collision set: Robot hose not supported

Robot hoses are not supported in collision sets since they cannot be detected, it is therefor no longer possible to add them to collision sets in the tree view.

Mirrored geometry not imported correctly

Fixed an issue in CAD import where left-handed transformation matrices in an assembly structure were not handled correctly.

"Logged in" is not shown for logged in user in Edit User Accounts

Fixed some issues in Edit User Accounts where casing of user names was handled incorrectly. User names in the controller are not case sensitive.

Crash when making changes to custom collision geometry

Fixed a fatal error that could occur when generating custom collision geometry with high fidelity for Collision Free Path Planning. The generation can still fail in rare cases, but will not cause the application to crash.

OPC UA nodes missing

When configuring the OPC UA Client Smart Component the OPC UA nodes referenced by a reference of type 'Organizes' were not shown when browsing the OPC UA nodes. This has now been fixed.

Incorrect positioner position for 'View Robot at Target' and 'Jump To Target'

When multiple mechanical units were active at the same time and controlled different joints on the same mechanism, only one of the joints was moved and the rest of the joints got the current joint values of the mechanism when using 'View Robot at Target' or 'Jump To Target'. Now the joint values are correctly set from the external axis values of the targets.

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Undo of multiple SetBrush modifications reverts all positions

When moving multiple SetBrush instructions using Move & Rotate and then clicking Undo, all the instructions would be reverted. This has been fixed by ensuring a new Undo step is created when a different object is manipulated.

Adjust robtargets not working

Fixed an issue when using Adjust robtargets would fail with a .NET exception: "Index was out of range. Must be non-negative and less than the size of the collection."

Show/hide graphics shortcut guide disabled with Basic license

It is now possible to show or hide the shortcut guide and change other graphics settings from the right-click menu with Basic license.

Attached work object gets wrong orientation

Fixed an issue where attached work objects were oriented according to the attachment frame of the mechanism and could be wrong. It will now be oriented according to the mechanical unit frame for linear joints, which is read from the controller.

Synchronize to RAPID - Bad formatting

Fixed an issue when synchronizing to RAPID, the indentation of the first declaration could be incorrect.

ASCII STL only partially imported

RobotStudio now supports import of non-standard ASCII STL files with multiple solid elements.

SmartComponents not keeping simulation going

All manipulator smart components that execute over a time period will now keep the simulation going even if there is no controller in the station.

Restart needed to create a controller with newly installed RobotWare

After installing a new RobotWare version, it is no longer necessary to restart RobotStudio before it can be used to create a new Virtual Controller.

Virtual Controller from Layout with MultiMove and Motor/Gear Units

It is now possible to create an OmniCore Virtual Controller from layout with MultiMove and motor or gear units.

Fixes to auto-complete in the RAPID editor

When using Insert Instruction, or when pressing the Tab key for auto-completion, placeholders such as <ARG> and <ID> would sometimes only be partially selected, and sometimes not be selected at all. This has now been fixed. The first placeholder will now be selected when an auto-completion is inserted, and pressing tab will step forward to the next placeholder.

Export Viewer error

Fixed an error that could occur when trying to export a viewer in glTF format from a simulation with Smart Components.

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Examine World Zone not working

Fixed an issue that caused Examine for a World Zone to zoom in on the wrong area.

RobotStudio is opening the incorrect version for RobotWare manuals

When trying to view documentation for different RobotWare versions, the wrong manual could sometimes be opened. This issue has been fixed.

Wrong icon for Profinet safe device

Fixed an issue where Profinet safe devices could be missing the safety icon in the controller tree view (an operator with a safety helmet).

Procedure call not synced

Fixed an issue with "Synchronize to RAPID" where procedure calls would not be removed in RAPID if the corresponding path is missing in the station.

SmartComponent: Design view error

Fixed an issue where transient copies from a Source component would remain in the design view when the simulation ended. Dragging the dead component would cause an exception and RobotStudio to crash.

Backup via Jobs requires PC Interface even if connecting via management port

The option PC Interface/RobotStudio Connect is no longer required for using Jobs on a controller connected via the management port.

Robot movement choppy in Free Run

When setting Free Run in the simulation configuration and running the simulation "As fast as possible" the robot movement could become very choppy. The time synchronization between the RobotStudio simulation and the virtual controller has now been improved for Free Run, resulting in a smoother simulation.

Visualization error after surface operation

Fixed an issue where geometric surfaces created from boolean operations would only be visible from one side.

Hyperlink not working in activated log message

Fixed an issue where the hyperlinks were not working in the popup window when double-clicking a log message in the Output view.

No configurations available for a reachable target

In certain situations a target created with Create Target would not contain any configurations, even though an identical target could be achieved through Teach Target, and a configuration could be found with Auto Configuration. This has now been fixed.

An error message appears when Execute Move Instruction

An error message stating 'Operation not allowed. You need write access' appeared when executing the 'Execute Move Instruction' command, when working with a Virtual Controller, this no longer occurs.

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Device map erased

The I/O instance editor for signals will no longer reset the device mapping when unsetting the device.

Fix RAPID Editor mismatch with OmniCore FlexPendant

When modifying RAPID code on the OmniCore FlexPendant the code in the RAPID Editor in RobotStudio could end up in a mismatch with the controller. This could present itself as empty lines being added to the code in RobotStudio and incorrect lines being modified when applying RAPID code changes to the controller. The issue has now been fixed and the code shown in the RAPID editor in RobotStudio should now match the code in OmniCore FlexPendant.

CTRL+F/H doesn't update open Find/Replace window

If the Find/Replace window is already open, then selecting a text and clicking CTRL+F or CTRL+H didn't update the text in the Find/Replace window. This has now been fixed so there is no need to close the window when selecting and searching for a new text.

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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.

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Go Offline does not work for Paint systems

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 2019.x, 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

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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.

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

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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

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

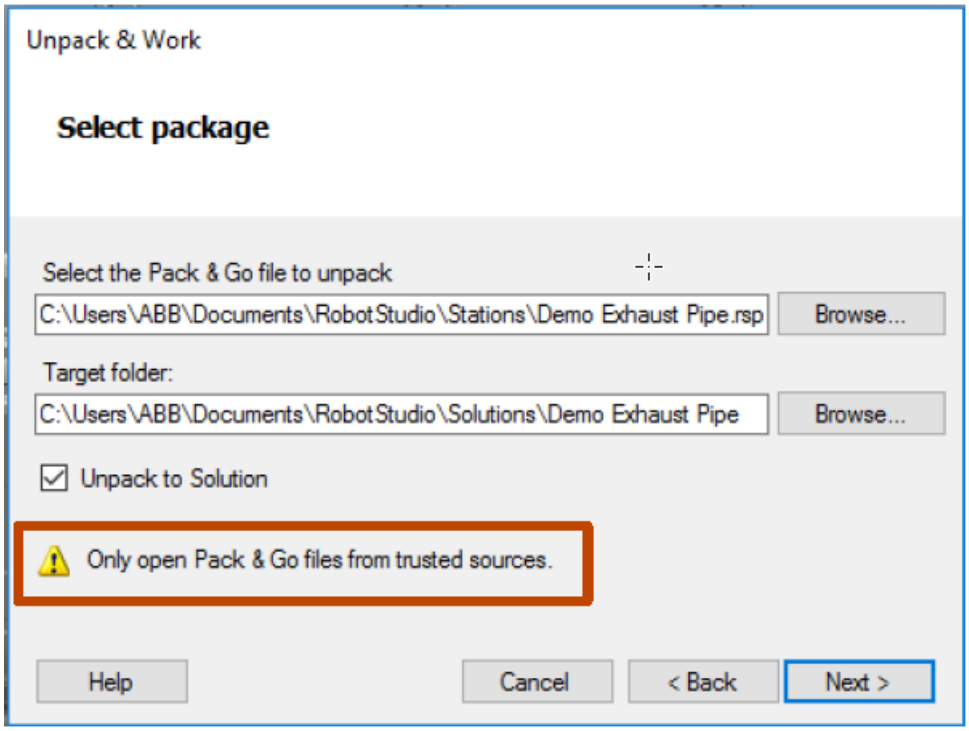
Workaround: Re-build or modify the virtual controller system to use IRB 1660ID 1.55 m / 6 kg instead when using RobotWare 6.04 or later.

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

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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.



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

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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.

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

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state.

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

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.

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

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can no longer be started from the Virtual FlexPendant, the RAPID Editor or the RAPID Tasks window.

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

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versa does not support robtargets that are declared locally to a procedure.

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.

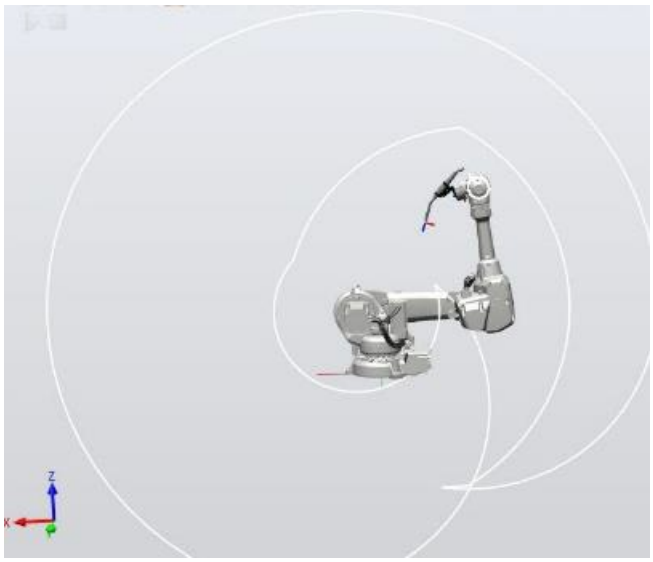
Workaround: Re-create the system with the simulated I/O option.

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

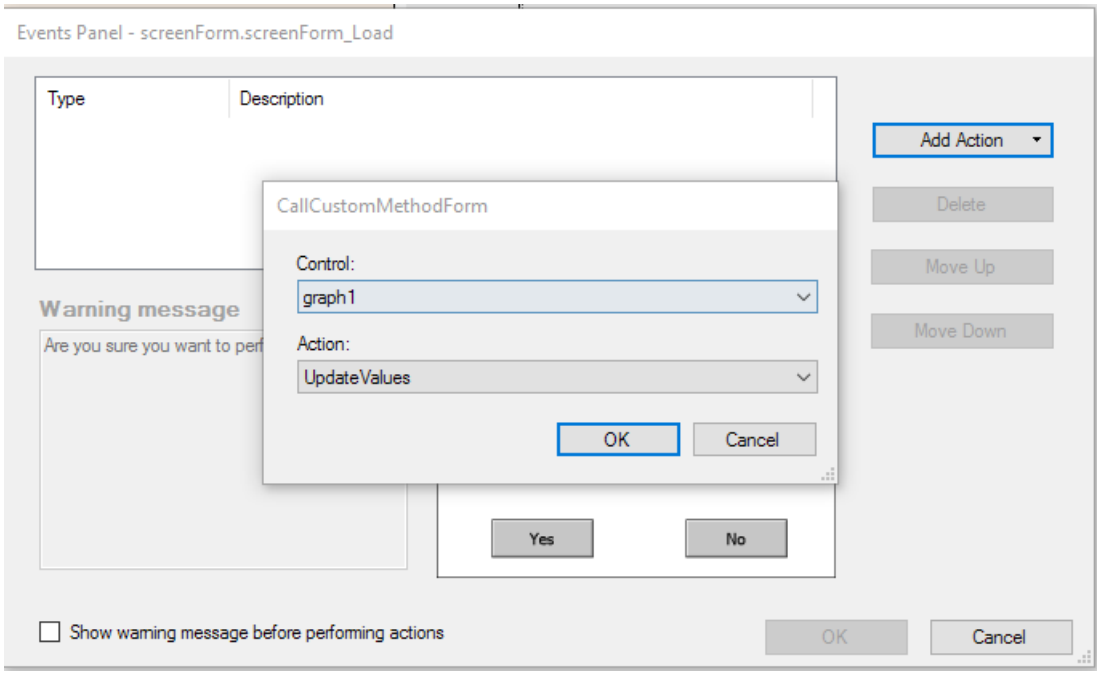
Numeric controls and decimal separators

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

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FlexPendant application file(s) on the FlexPendant unit, you need to manually reset the FlexPendant for it to reload its assets.

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.

PictureBox control as a Widget

If a Picture Box control is created as a widget from a Windows 8 operating system, the control is not shown on the FlexPendant. The behavior is fine with any other operating system like Windows 7.

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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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